QSC™

Technical Service Manual

PowerLight3 Series

- PL325
- PL340
- PL380

QSC™

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PowerLight 3 Series
Technical Service Manual

PL325

PL340

PL380

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PL325 and PL340 amplifier, rear view

PL380 amplifier, rear view

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Tables and Figures

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Specifications

	PL325	PL340	PL380
Stereo Mode (both channels driven)			
8Ω / EIA 1 kHz / 1% THD	500 W	800 W	1500 W
4Ω / EIA 1 kHz / 1% THD	850 W	1250 W	2500 W
2Ω / EIA 1 kHz / 1% THD	1250 W	2000 W	4000 W*
Bridge Mono Mode			
8Ω / EIA 1 kHz / 1% THD	1700 W	2600 W	5000 W
4Ω / EIA 1 kHz / 1% THD	2500 W	4000 W	8000 W*
Typical Distortion (20 Hz–20 kHz, 3 dB below clip, or 20 Hz–5 kHz, 10 dB below clip, or 20 Hz–20 kHz, 20 dB below clip)			
8Ω	0.002–0.01%	0.002–0.01%	0.01–0.03%
4Ω	0.005–0.01%	0.005–0.01%	0.03–0.06%
2Ω	0.02%	0.02%	0.10%
Maximum Distortion (20 Hz–20 kHz, 1 dB below rated power)			
4–8Ω	0.05%	0.05%	0.20%
Frequency Response (8Ω)	20 Hz–20 kHz, ±0.2 dB	20 Hz–20 kHz, ±0.2 dB	20 Hz–20 kHz, ±0.2 dB
Noise (20 Hz–20 kHz, 32 dB gain)	-106 dB	-105 dB	-104 dB
Dynamic Headroom (4Ω)	2 dB	2 dB	2 dB
Damping Factor (8Ω)	500	500	200
Output Circuitry	Class H (2-tier)	Class H (2-tier)	Class D
Input Sensitivity @ max gain			
(26 dB setting)	3.28 V (+12.5 dBu)	3.92 V (+14 dBu)	5.27 V (+16.7 dBu)
(32 dB setting)	1.60 V (+6.3 dBu)	1.96 V (+8.1 dBu)	2.67 V (+10.7 dBu)
Maximum Gain (1.2 V setting)	34.5 dB	36.4 dB	39.1 dB
Input Impedance	>10 kΩ, balanced or unbalanced	>10 kΩ, balanced or unbalanced	>10 kΩ, balanced or unbalanced
Maximum Input Level			
(1.2 V setting)	11 V (+23 dBu)	11 V (+23 dBu)	10 V (+22 dBu)
(32 dB setting)	14.6 V (+25.5 dBu)	14.6 V (+25.5 dBu)	22 V (+29 dBu)
(26 dB setting)	25 V (+30 dBu)	25 V (+30 dBu)	25 V (+30 dBu)
Controls and LEDs—Front Panel	Common: AC Power Switch, Power LED (blue), Br Mono LED (yellow), Par LED (orange) Each Channel: Signal -35 dB LED (green), -20 dB LED (green), -10 dB LED (orange), Clip/Prot LED (red), Gain Control (21 detents, 1 dB steps)		
Controls and LEDs—Rear Panel	Common: Input Mode Parallel LED (orange), Stereo LED (green), Br Mono LED (yellow); Sensitivity 26 dB LED (orange), 32 dB LED (green), 1.2 V LED (yellow) Each Channel: LF Filter Switch off–30 Hz (yellow LED)–50 Hz (red LED); Clip Limiter Switch off–on (yellow LED)		
Input Connectors	Common: HD15 DataPort (inputs parallel with XLR inputs) Each Channel: Male XLR, Female XLR, 3-Pin Terminal Block		
Output Connectors	Each Channel: 5-Way Binding Posts, Neutrik Speakon® (upper has both channel outputs)		
Amplifier and Load Protection	Short circuit, open circuit, thermal, RF protection. On/off muting, DC fault shutdown, active inrush current limiting		
AC Power** / Cordset			
120 V, 50–60 Hz	8.5 A / NEMA-15	12 A / NEMA-15	18 A / L5-30 (30 A twist-lock)
230 V 50 Hz	7.5 A / Euro 16 A	7 A / Euro 16 A	11 A / Euro 16 A
Dimensions	Height: 2 RU 3.5" (8.9 cm); Width: 19" (48.3 cm); Depth: 15.63" (39.7 cm) from front mounting rails		
Weight Net / Shipping	22 lb (10 kg) / 31.5 lb (14.3 kg)	22 lb (10 kg) / 31.5 lb (14.3 kg)	24 lb (11 kg) / 33.5 lb (15.2 kg)
Agency Approvals	UL, CE, RoHS / WEEE compliant, FCC Class B (conducted and radiated emissions)		

* Burst mode testing required due to AC service current limitations

** Representative of current draw with tyical music program material with occasional clipping

All specifications are subject to change without notice.

1. Introduction

1.1 Restriction of Hazardous Substances Directive (RoHS)

All PowerLight 3 Series amplifiers are manufactured to conform to the European Union's RoHS Directive, which reduces the amount of hazardous substances allowed in products for sale within its member nations. In electronic equipment such as audio power amplifiers, this applies primarily to certain toxic heavy metals, such as lead, which may be present in electronic components, solder, and other parts.

RoHS-compliant materials

When servicing RoHS-compliant amplifiers, it is important for the service technician to use only RoHS-compliant components and solder (lead-free). All replacement parts provided by QSC for RoHS-compliant products are certified as RoHS compliant.

RoHS-compliant tools

Soldering irons and desoldering apparatus used on RoHS-compliant products must also not be contaminated by hazardous substances, such as lead. Therefore, you cannot use the same soldering and desoldering tools for RoHS-compliant products and solder as you do for non-compliant products and solder. You must either use separate soldering irons, desoldering tools and braid, etc., or at the very least designate separate tips and braids and use only the appropriate ones. If you contaminate a tip or braid, even inadvertently, by using it on a non-compliant product or solder, you can no longer use it with RoHS-compliant products or solder.

1.2 Service bulletins and updates

Contact QSC Technical Services to make sure you have the most up-to-date service bulletins, schematics, and parts lists for PowerLight 3 Series amplifiers. Service materials may be distributed in hard copy, via fax, and electronically (Adobe Acrobat PDF) via CD-ROMs, FTP from the QSC web site (**www.qscaudio.com**), and e-mail.

At the time of this manual's publication, one service bulletin, PL30001 *(PL380 and Standby),* had been released for the PowerLight 3 amplifiers.

1.3 The well-equipped service bench

To properly service PowerLight 3 amplifiers, a technician needs the right tools. The technician's service bench should have the following equipment:

- Digital multimeter with RMS AC voltage and current
- Digital clamp-on ammeter
- Dual-trace oscilloscope
- Low-distortion audio sine wave generator
- Audio distortion analyzer
- Switching amplifier measurement filter, such as Audio Precision AUX-0025
- Bank of non-inductive load resistors, configurable as 8 ohms (min. 1500 watts capacity), as 4 ohms (min. 3000 watts), and 2 ohms (min. 4000 watts). See Figure 1.1.
- Variable AC voltage source, such as a Variac or Powerstat variable transformer;
  For PL325 and PL340: rated current capacity of up to 25 A (for 120 V models) or 12 A (for 230 V models)
  For PL380: rated current capacity of up to 50 A (for 120 V models) or 25 A (for 230 V models)
- Philips and flat screwdrivers

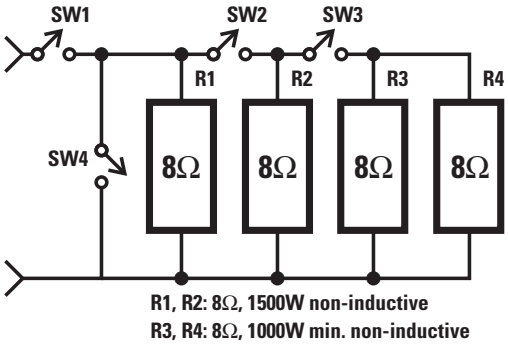

Figure 1.1. Load resistor bank

Table 1.1. Load resistor bank switch truth table

	SW1	SW2	SW3	SW4
∞Ω (no load)	OFF	•	•	•
8Ω	ON	OFF	OFF	OFF
4Ω	ON	ON	OFF	OFF
2Ω	ON	ON	ON	OFF
0Ω (short circuit)	ON	•	•	ON

- Soldering iron with a fine tip (25–60 W recommended)
- RoHS-compliant rosin-core solder
- Long-nose pliers
- Diagonal cutters
- Wire strippers
- PL380

Automated test equipment, such as an Audio Precision workstation, is very useful for servicing QSC amplifiers. Contact QSC Technical Services to obtain applicable AP test files.

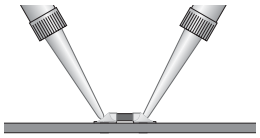

Figure 1.2. Use two irons

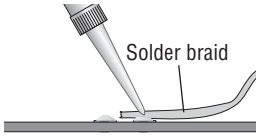

Figure 1.3. Soak up solder

1.4 Working with surface-mount components

PowerLight 3 amplifiers, like many modern electronic products, use surface-mount technology (SMT) components where appropriate in order to make high-density circuitry that is reliable and economical to manufacture.

SMT components are used in the amplifiers' small-signal and control circuits, so they do not handle significant amounts of power; therefore, they are subject to very little stress and should seldom fail. Sometimes they do fail, or they require replacement for a performance upgrade or modification. Thus, it is important to know how to work with SMT components.

Specialized tools and equipment exist for soldering, unsoldering, and removing SMT components quickly and efficiently, but they are often expensive. Most SMT repairs, though, can be handled reasonably well with common tools and equipment, such as tweezers, solder braid, and fine-tip soldering irons.

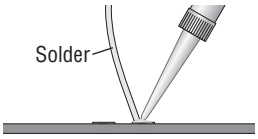

Figure 1.4. Apply new solder

Two-terminal components (resistors, capacitors, diodes, etc.)

Removal

1. Use two soldering irons, preferably about 25 to 40 watts, with fine tips.
2. With a soldering iron in each hand, hold one tip on the solder at one end of the component and the other tip on the other end (Figure 1.2).
3. Once the solder melts on both ends, grip the component between the two tips and lift it from the circuit board.
4. Use solder braid and a soldering iron to remove the solder from the two pads (Figure 1.3).

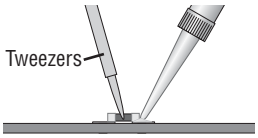

Figure 1.5. Place component

Insertion

1. With a soldering iron and RoHS-compliant solder, melt just enough solder onto one pad to create a small mound (Figure 1.4).
2. Grasp the component in the middle with tweezers. Melt the small mound of solder with the iron and place the component across the two pads (in the correct orientation, if the component is sensitive to direction) and press it flat against the circuit board, with one end of the component immersed in the melted solder (Figure 1.5).
3. Hold the component in place and take the soldering iron away. Let the solder harden to tack the component in place.
4. Fully solder the other end of the component to its pad. Let the solder harden (Figure 1.6).
5. Fully solder the tacked end of the component to its pad (Figure 1.7).

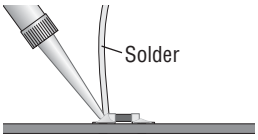

Figure 1.6. Solder one end of the component

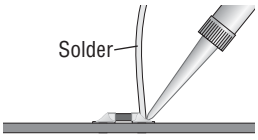

Figure 1.7. Solder other end

1.4 Working with surface-mount components (continued)

Three-terminal components (transistors, etc.)

Removal

1. With a soldering iron and solder braid, remove as much solder as possible from the middle terminal of the component.
2. With a soldering iron in each hand, hold one tip on the solder at the terminal at one end of the component and the other tip on the terminal at the other end.
3. When the solder on both ends melts, grip the component between the two tips and lift it from the circuit board. You might need to quickly touch the pad on the middle terminal with a soldering iron to melt any remaining solder that might be holding the component down.
4. Use solder braid and a soldering iron to remove the solder from the three pads.

Insertion

1. With a soldering iron and RoHS-compliant solder, melt just enough solder onto one pad to create a small mound of solder.
2. Grasp the component with tweezers. Melt the small mound of solder with the iron and place the component in the correct orientation across the three pads and press it flat against the circuit board, with one terminal of the component pressed into the melted solder.
3. Hold the component in place and take the soldering iron away. Let the solder harden to tack the component in place.
4. Fully solder the other terminals of the component to their pads. Let the solder harden.
5. Fully solder the tacked terminal of the component to its pad.

Multi-pin components (ICs, etc.)

Removal

Removing a multi-pin SMT component is a delicate procedure. Ideally, you should use a soldering iron with an attachment that allows you to heat all the pins simultaneously.

If such a soldering device is not available, use this procedure:

1. Use a soldering iron and solder braid to remove as much solder as possible from the pins of the component.
2. With fine tweezers, carefully try to lift each pin to see if it's free. If it's not, touch it with the tip of the soldering iron and if necessary, use the solder braid to remove the remaining solder.
3. Repeat the process until all the pins are free and you can remove the component.

Insertion

1. With a soldering iron and RoHS-compliant solder, melt just enough solder onto one pad to create a small mound of solder. It is usually easiest to use a pad that corresponds to one of the end or corner pins of the component.
2. Grasp the component with tweezers. Melt the small mound of solder with the iron and place the component in the correct orientation upon its pads and gently press it flat against the circuit board, with the appropriate terminal of the component pressed into the melted solder.
3. Hold the component in place and take the soldering iron away. Let the solder harden to tack the component in place.
4. Fully solder the other terminals of the component to their pads. Let the solder harden.
5. Fully solder the tacked terminal of the component to its pad.

1.5 PL380 Service Fixture

With its class D output section, the PL380 amplifier differs from all previous QSC stand-alone models, which up to now have used linear output circuitry in either a class AB configuration or a class AB-based class G or H one.

To the end user, these differences should not be apparent, except that he or she may notice that such a high-power amplifier does not generate much heat and appears to consume much less electricity than might be expected. The PL380 amplifier should behave sonically like a high-quality, high-power audio amplifier.

Figure 1.8. The PL380 service fixture

Being a class D amplifier, the PL380 uses pulse-width modulation to allow output transistors that are either fully on or fully off to produce varying output voltages. To reduce noise, the clock for the output sections' modulators is synchronous with the power supply's clock. However, that interdependence makes testing and troubleshooting one section of the amplifier without the other impossible. This is the reason for the PL380 service fixture (Figure 1.8). It is necessary for many of the procedures described in Chapter 2's section on the PL380 test procedure, and in Chapter 3's sections on PL 380 troubleshooting.

Figure 1.12 shows the schematic for the PL380 service fixture. The fixture is available for purchase from QSC Technical Services.

Functions of the service fixture

- **Substitutes for the amplifier's housekeeping supply.** The housekeeping supply powers the clock, power supply switching, and modulation circuitry. The fixture allows you to operate and check these key areas of the amplifier's circuitry even without its being connected to the AC mains.

  It also allows you to operate the amplifier for testing and troubleshooting at low AC mains voltages that would be less likely to cause damage if a fault exists.

- **Monitors the ±15-volt rail currents.** The terminal strip on the service fixture provides precision voltages that are analogous to the currents drawn by the positive and negative 15-volt supply rails. The voltages are scaled to 1 volt = 1 ampere. This is useful for detecting abnormal situations such as defective op amps or other circuitry that could cause abnormally high or low current demand.

- **Monitors the +5-volt suppy.** The 5-volt regulated supply powers the clock and logic circuitry. Because it is derived from other higher voltage DC supplies, the presence of the voltage on the screw terminal indicates that they also are functioning.

- **Verifies clock switching.** The "Sync Sig" terminal should carry a 250 kHz pulse train signal. Its presence verifies that the clock oscillator and divider circuits are operating. Because of the cables connecting the fixture to the amp, the pulse train will tend to be messy, with significant ringing. Therefore, the signal is useful only to verify the operation of the amp's circuitry.

Hooking up the service fixture

These steps describe how to set up the service fixture and connect it to the PL380.

Prepare the service fixture

1. Set the service fixture on the right side of your test bench work area, with the screw terminals and hookup leads facing toward you. Setting the fixture this way makes it nearly impossible to connect the hookup leads the wrong way.

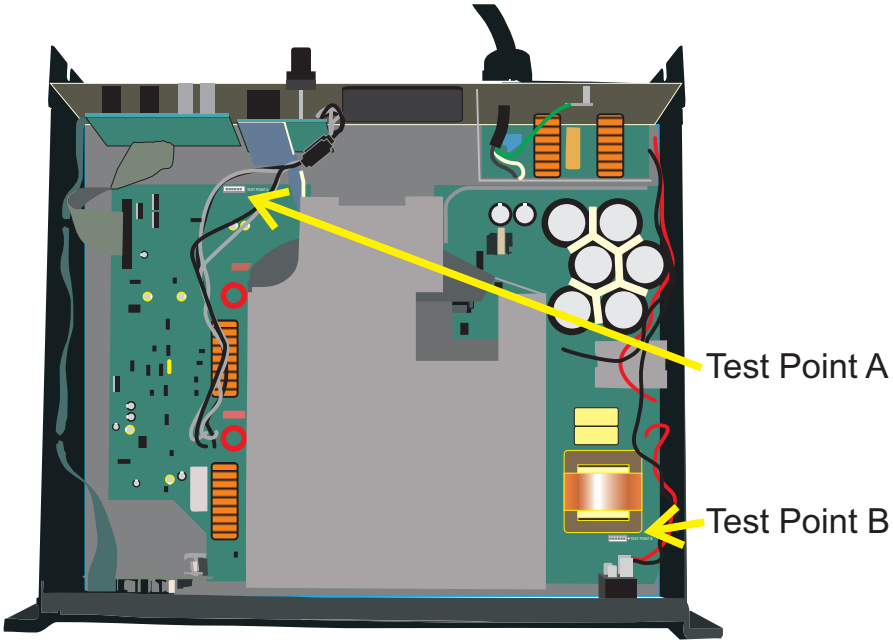

Figure 1.9. Locations of Test Point A and Test Point B

2. Turn off the service fixture's power switch and connect it to the AC mains. The service fixture has a universal power supply that can operate on any AC voltage from 100 to 240 volts.

Prepare the amplifier

3. Disconnect anything connected to the amplifier's inputs and outputs.
4. Disconnect the amplifier from the AC mains and allow at least five minutes for the internal voltages to bleed down.
5. Remove the amplifier's bottom cover.
6. Set the amplifier on the test bench next to the service fixture, with its open side up and front panel facing you.

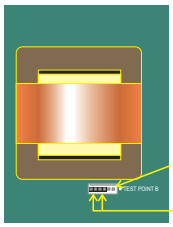

Figure 1.10. Jumpers to be removed from Test Point B

7. Locate the two test points on the amplifier's main circuit board. Test Point A is located near the output board, while Test Point B is in front of the power transformer (Figure 1.10).
8. Remove the two jumpers from Test Point B (Figure 1.11). Set them aside to be re-installed later.

Connect the fixture and amplifier

9. Connect the service fixture's two hookup leads to the corresponding test points. Make sure you orient the housings correctly (as shown in Figure 1.12) when you plug them onto the test point headers.

   As the lengths of the leads suggest, the long one goes to Test Point A and the short one to Test Point B .

Initial tests with the service fixture

These initial tests with the service fixture will allow you to determine whether the amplifier's clock and control circuitry are working properly, with no risk of damaging high-power devices or circuits.

Tools and equipment needed

- Oscilloscope (2 channels minimum) and probes
- Digital multimeter (frequency counter is a plus)

Service fixture tests

1. **Start-up sequence**—Turn on the service fixture's power switch and watch the amplifier's LED display on the front panel. The clip/protect indicator LEDs should light briefly and then go out. (If they stay on, then it is usually because an audio signal is being put into the amplifier inputs. Disconnect any input signals for this stage of testing.)

   The amplifier should start with its normal sequence. You should hear a small relay click after about two seconds, followed by a large relay click about two seconds after that.

2. **Regulated +5 volts**—Check for the regulated 5 volts DC at the "+5V REG." terminal (reference to the fixture's ground

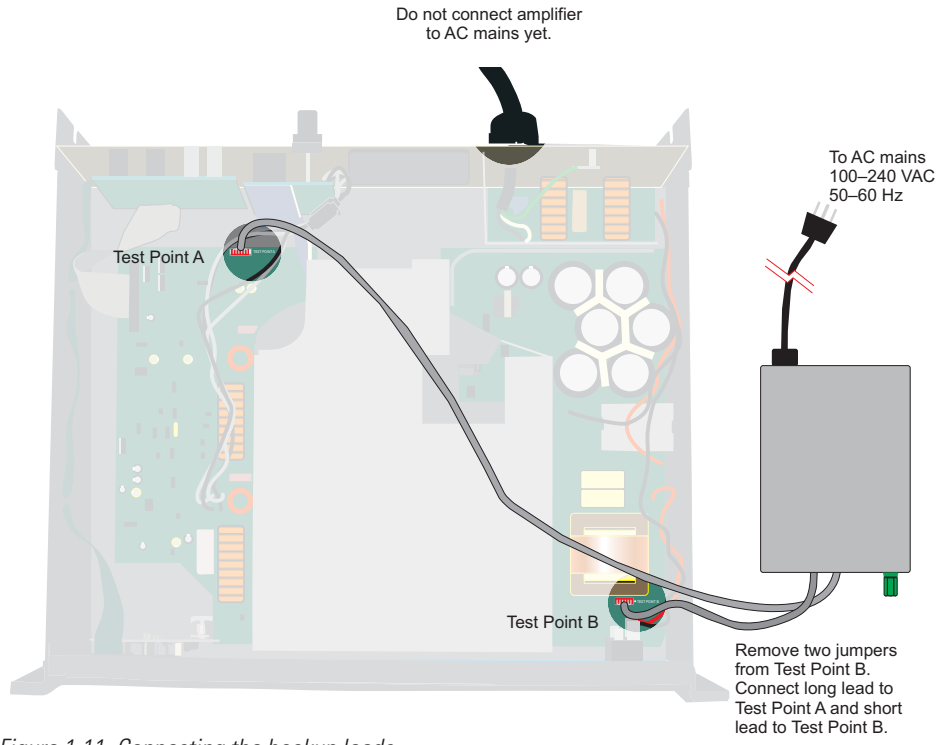

Figure 1.11. Connecting the hookup leads

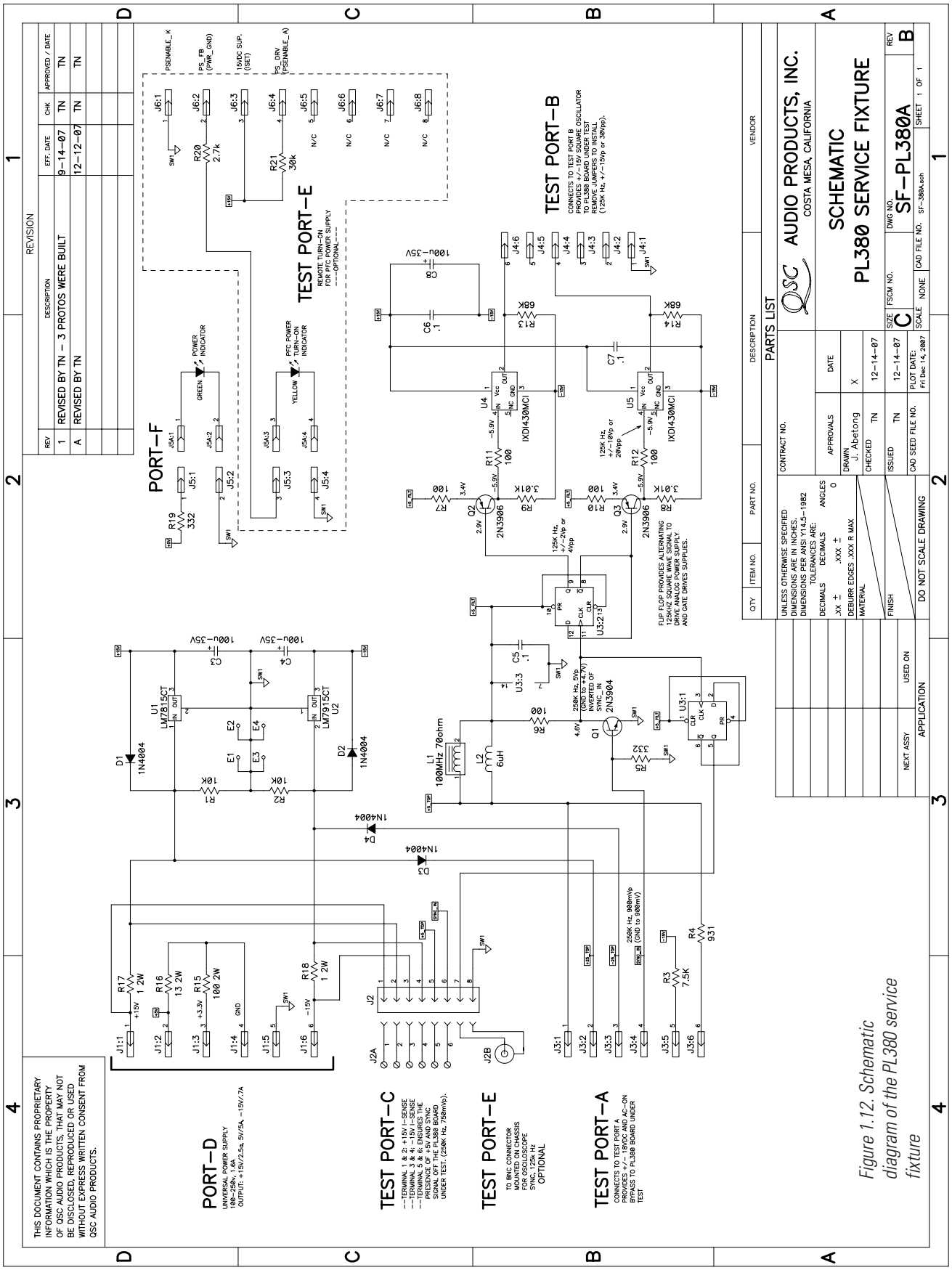

Figure 1.12. Schematic diagram of the PL380 service fixture

1.5 PL380 Service Fixture (continued)

terminal). The voltage is derived from other low-voltage power supplies, so its presence indicates that the other supplies are probably good.

If the voltage is not present, then check the other supplies and associated circuitry to find the fault. For more detailed troubleshooting, see *Troubleshooting Serious Failures* in Section 3.1.

3. **Power supply sync signal**—Connect an oscilloscope to the sync signal terminal on the service fixture. You can use the ground terminal on the fixture for the scope probe's ground clip.

   You should see a steady 250 kHz pulse train. The purpose of this terminal is simply to verify that the clock and divider circuits are working; the signal here is not clean and has a significant amount of ringing, but that is not important.

   If the signal is not present, then check the clock oscillator circuit (74HC4060 ripple counter U1, Y1, C3, C8, R4, R10, et al; on the schematic, see sheet *"AMP CH-A,"* zones C-8 and D-8), the dividers and complementary logic generators (74HC74 flip-flops U4:1, U4:2, U7:1, and U7:2; same sheet, zones C-7 and C-6), and the Schmitt inverters U5:1 and U5:2. For more detailed troubleshooting, see *Troubleshooting Serious Failures* in Section 3.1.

4. **Low-Voltage Supply Current**—Measure the voltages on the +15 V and -15 V current monitoring points. These terminals present voltage analogs of the current demand on the low-voltage supply rails, scaled to 1 volt = 1 ampere. For example, a voltage of 0.55 volt on the -15 V terminals would indicate that 0.55 A was being drawn from that supply rail.

   Typically, the currents drawn should be approximately 400 mA on the negative rail and 500 mA on the positive when the amplifier is muted (during the start-up sequence, for example). When the output FET gates are being driven, the current should increase to about 500 mA on the negative rail and 800 mA on the positive one.

   If the currents drawn appear to differ substantially from these figures, there may be a fault in the low-voltage circuitry.

5. **IGBT drive**—The service fixture allows you to use an oscilloscope to check the drive signals to the gates of the power supply IGBTs, Q68 and Q69. Figure 1.13 shows what the signals should look like. For more details on the IGBT drive waveforms, please see the *Troubleshooting Serious Failures* section in Chapter 3.

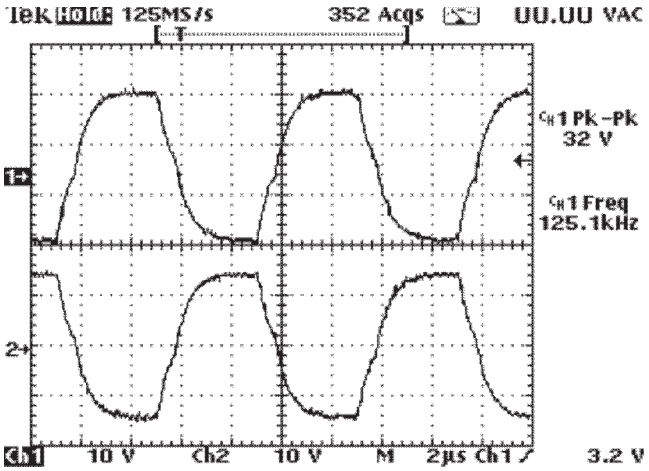

Figure 1.13. Proper IGBT drive signals (with chassis ground reference)

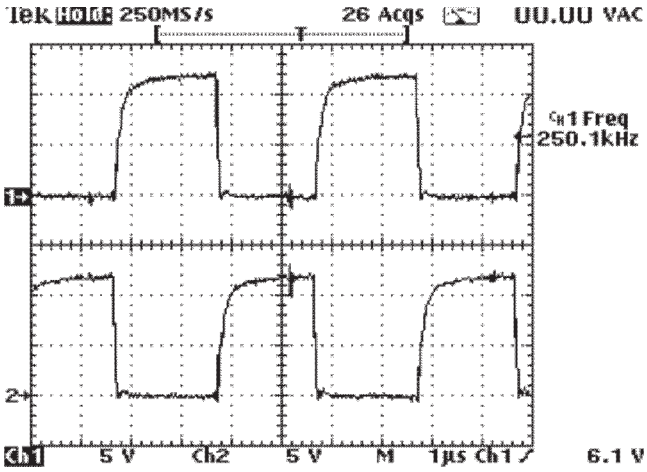

Figure 1.14. Proper FET gate drive signals with FETs installed (with chassis ground reference)

6. **FET drive**—The service fixture also makes it possible to check and verify the drive signals to the gates of the output FETs, Q10, Q11, Q58, and Q59 (see Figure 1.14). However, to get at the FET gates you must remove the amplifier module (the main circuit board assembly) from the chassis.

   For more details on the FET drive waveforms, please see the *Troubleshooting Serious Failures* section in Chapter 3.

2. Technical Descriptions and Testing

2.1 PL380 Circuit Description

The PL-380 uses an unregulated, open-loop switchmode power supply that provides DC power to a pair of high-power Class D amplifier channels. A master clock circuit synchronizes and regulates the switching frequencies of all power supply and audio amplification sections. Various input circuits, controls and displays, protection systems, and output monitoring connect to the various subsystems.

Power Supply

There are three distinct power supply domains in this amplifier.

- The **main power supply** provides ±185 volts at high current to the main rails of the output section.
- The **auxiliary power supply** is derived from the main supply, providing ±16-volt rails that are used by the cooling fan and various low-voltage circuit blocks. Note that this supply tracks the voltage and on/off status of the main supply.
- The **"housekeeping" supply** (labeled on the schematic as a "keep-alive" supply) uses a separate low-power flyback system to provide power to functions that need to be active during standby.

The main power supply uses a large, center-tapped primary-side reservoir capacitor bank (C209, C210, C213, C214, C216, and C217) charged to DC voltages of about ±165 V by an offline (direct from the AC mains) rectifier, BR1. The rectifier is wired as a voltage doubler for 120 V AC operation, and as a full-wave bridge for 230 V, and thus either configuration results in about the same DC voltage on the reservoir.

The main switching devices, D68 and D69, are mounted along with the rectifiers on one of the two smaller heat sinks and operate at a frequency of 125 kHz to alternately couple the positive and negative reservoir voltages (reference to the center tap of the reservoir, node PRICAPCT) through T2:1, which are the primary windings of the main power transformer, an E55-core isolation type. Capacitors C231 and C232, together with the inductance of the primary, form a series resonant tank that shapes the voltage waveform across the primary into a pseudo-sinusoid instead of a square wave.

The transformer's secondary voltages are rectified into a bank of eight capacitors (Channel 1: C247–C250; Channel 2: C253, C254, C259, and C260), which store nominal DC voltages of about ±185 V. The secondary HF (fast) rectifiers D82–D85 are mounted on a second, smaller heat sink.

The auxiliary supply uses single-turn taps on the main transformer T2, with surface-mount rectifiers and small electrolytic capacitors, to produce a bipolar pair of DC rails of approximately ±16 V.

The housekeeping flyback supply operates independently of the high-power main supply, and powers certain circuit functions that allow the main supply to operate.

Turn-On Sequence

The AC power switch spans points W17 and W18 and controls power only to the housekeeping supply, which has a much smaller DC reservoir (C190 and C191) than the main does. When switched on, this supply starts in about a half second and provides secondary-side DC power to the crystal-controlled clock circuit (U1, Y1, and associated components) and main supply controller IC (U49), resulting in 125 kHz drive to the main power supply switches.

After a short delay, the inrush-current relay, K2, closes and charges the main supply's reservoirs through large NTC resistors, R262 and R266, which prevent drastic inrush current surges. During this time, the primary and secondary reservoirs charge smoothly in unison because the power supply switches are already operating. After about one second, the main power relay, K1, closes and couples the AC rectifiers directly to the primary reservoir, bypassing the inrush resistors and providing full power. There is an additional 1-second delay to allow all internal voltages to settle before the amplifier comes out of muting.

Turn-off behavior

When power is removed, the amplifier mutes promptly, but the power supply switches continue operating until primary and secondary DC voltages have discharged to about 20%. There is an OR-diode from the main reservoir to the housekeeping reservoir that maintains voltage to the aux supply during this period. When this DC voltage drops below about 45 V, the "housekeeping" supply stops switching and the amp shuts off fully. This sequence of delays and controlled inrush current will occur on all starts and restarts, without causing adverse transients.

AC Cordsets

The 230 V version of the PL380 uses a 20 A/250 V rated Neutrik Powercon® AC inlet, and the provided cordset uses 1.5 $mm^2 \times 3$ wiring with a 16 A/250 V plug. The 120 V version uses a fixed 12/3 jacketed cable with a 30 A twist-lock plug. (We expect to use the 30 A 120 V PowerCon connector when it becomes available.)

Due to the high efficiency of Class D circuitry, there is a greater difference between peak operating current and average operating current at 1/8 of maximum power, so there is an extra margin of current carrying capacity in the AC components.

Amplifier Channels

Each of the two amplifier channels uses two large switching FETs operating as a half-bridge at a clock frequency of 250 kHz. The FETs

are mounted under the single large heat sink, together with HF diodes that clamp the output voltage when their respective FETs turn off.

At idle (i.e., no audio signal), the duty cycle of the drive signal is 50/50 and the output voltage is zero with respect to the secondary reservoir center tap. As with all Class-D (PWM) amplifiers, turning on the positive side switch for longer intervals and the negative side for shorter ones will push the output voltage proportionally towards the positive rail, and turning on the low-side switch for longer intervals will lower the output voltage towards the negative rail. When either switch's "on" time reaches 100%, the amplifier has reached the equivalent of clipping and the output voltage will be equal to that supply rail's voltage.

Both switches must be operated in alternation, with very exact synchronization to prevent cross-conduction (both switches on simultaneously) or excessive "dead time" (both switches off). A complex, optically coupled, separately powered gate drive circuit for each FET receives timing signals from the modulator and provides several amps of drive current to rapidly charge and discharge the FET gates. If there is any significant disorder in this circuitry, leading to both FETs turning on at once, immediate failure is likely.

Output Filter

The pulse width modulated voltage must be filtered before it can be connected to external loudspeakers. The main low-pass filter uses a toroidal inductor and high-quality film capacitor (L1 with C64, and L3 with C171) on each channel output, along with additional trap components to further reduce switching interference at 250 kHz to approximately 55 dB. Some distortion analyzers may still have difficulty reading the distortion with this much interference present. Any available HF filters should be engaged to remove as much of this interference as possible.

Output Connections

A twisted pair of wires from each channel couple the high-current output signal to the speaker connectors, which use parallel 30 A binding posts and 30 A Neutrik Speakon connectors. The output peak voltage swing can reach 200 V, and output current can peak at 80 A, but internal limiter circuits and the normal dynamics of music program will prevent long-term currents in excess of the connector ratings. Technicians should be aware of the amplifier's potentially hazardous output voltages when making bench connections.

Input Connections

Input connections are balanced XLR in parallel with "euro-block" screw terminals and the DataPort™ inputs. There are six input panel switches: a three-position input sensitivity switch (1.2 V input, 32 dB, or 26 dB), which combines with the 21-detent front panel gain controls to regulate overall gain as desired; a three-position Parallel-Stereo-Bridge Mono switch; two three-position low-frequency filter (high-pass) settings, and two clip limiter enable switches. LEDs of different colors indicate certain switch selections, so the end user can easily check the setup with a quick glance.

QSC DataPort

The PL380 uses the same type of HD-15 connector used on other QSC DataPort amplifiers to connect to QSControl devices such as Basis processors. Two changes for the PowerLight 3 series are:

- Input signals from the DataPort are directly parallel with the XLR and euro-block inputs, allowing the signals to be patched to other amps for greater flexibility.
- The sensitivity switch settings are visible to the Basis processor.

Protection Systems

As with all audio amplifiers, full rated power is only required for brief peaks in the audio program, and typical use rarely exceeds 1/8 of full power, when averaged over some time. Therefore the amplifier must allow high peak power to flow for short periods of time but also provide longer-term protective systems that limit this power to reasonable levels. The amplifier's protection relies on peak clamps for certain instantaneous overstresses, with analog gain reduction in each channel to reduce long-term overloads, and as a last resort, muting of the amplifier if stresses continue to build up. The limiter thresholds and time constants are matched to the thermal behavior of the systems being protected.

In brief, protection systems are provided for:

- **Peak clamping of output current,** with internal gain reduction and/or muting to reduce long-term output current to a reasonable value. This protection occurs when outputs are shorted, and gain reduction will also be observed within two seconds, when attempting full power into 2 ohms, and after about 5 seconds into 4 ohms.
- **AC current limiting.** An additional system measures power supply current and reduces gain of both channels as necessary to keep currents within the carrying capacity of the overcurrent protective devices. This prevents nuisance tripping of internal and external circuit breakers.
- **Over-temperature protection.** A precision temperature sensing IC is mounted in the heat sink close to each channel's output devices, and it controls a DC "thermal bus" for each channel, whose voltage is used to increase fan speed, cause gain reduction (thermal limiting) and, if necessary, amplifier muting, to keep the temperature of the heat sink below 85° C.
- **High Frequency Limiting**. Certain internal parts are subject to overload if operated at full powers near 20 kHz, and therefore

frequency-sensitive limiting will prevent full power operation above about 15 kHz. A backup system mutes the amplifier quickly in the event of runaway oscillations.

- **Clip Limiting.** While clipping is not harmful to the amplifier, the clip limiter will minimize distortion when it occurs. A user-selectable switch engages the clip limiter on each channel.

2.2 PL380 Major Circuit Blocks

The following notes cover the same areas noted before in further detail, with references to voltages, part numbers, and PCB locations. All locations and directions are described though the amplifier is placed upside down with the cover removed, with the front panel facing the observer. This section should be read with the PL380 schematic at hand for reference.

Power Supply

Unless otherwise noted, this section refers to the schematic sheet *SUPPLY, PL380.*

AC Entry

AC power enters the amplifier through an chassis-mounted cordset or AC inlet, circuit breaker, and line filter located on an auxiliary PCB in the right rear corner (L15 and L16; Y-caps C234 and C235; and X-caps C294, C295, and C293, which are discharged by R348, R349, and R350 within 2 seconds after power is disconnected). Sleeved wires couple the two sides of the AC voltage to selected terminals on the main PCB: J19 to J20 (all voltages), and J15 to J21 (230 V) or J15 to J22 (120 V). These lines lead to power control relays discussed below (schematic zone D-8).

Housekeeping Supply

A smaller fuse, F1, protects the inrush limiting resistors in the event of a downstream load fault. A small amount of AC power is taken after this fuse to the power switch via W17 and W18, returning to a housekeeping reservoir C190 and C191 (zone C-8), charged by D64 through a current-limiting resistor bank that comprises R261, R263, R264, and R267. This reservoir supplies U41, an integrated TOP244VN flyback switcher that produces auxiliary supply voltages through transformer T1. The components immediately surrounding U41 provide feedback, over- and undervoltage sensing, and flyback clamping.

The circuitry on the secondaries of T1 (zone B-6) provide a +10 V DC supply (for future low-power accessory circuits), and unregulated ±25 V voltages. The 25-volt rails are reduced by regulators U42, U44, U45, and U50 to produce clean ±15 V and ±5 V bipolar supply rails. These regulated rails are labeled +15_TOP, +5_TOP, , and -15_TOP, -5_TOP. Providing power for the clock and audio switching circuitry is another set of ±5 V rails, labeled +5:SW and -5:SW, which are decoupled through L5, L6, C226, and C227 to filter out switching noise. All circuitry connected to these rails will be powered as soon as U41 starts operating, which normally occurs any time the amplifier is turned on.

The +5:SW rail powers the crystal-controlled clock and divider circuitry (schematic: see sheet *AMP CH-A, PL380,* zone C-7 and D-7), which is centered around U1 and U4–U7. The divider sends a sync pulse train to U49 (schematic: see sheet *Power Supply, PL380,* zone D-2), a PWM switch-mode supply controller that delivers switching pulses with controlled dead time to U46. A specialized gate drive IC, U46 in turn provides a gate drive signal through transformer T4, to the pair of isolated-case switching transistors Q68 and Q69. T4's two secondary windings have opposing polarities so that the gate drive pulses will alternately switch the transistors on and off.

The result of the switching is a 125 kHz alternating current through the primary of the power transformer, T2. The transformer has a turns ratio of 10:11, so the secondary voltage is about 10% higher than the primary voltage. Thus, the energy from the primary reservoir capacitors—C209, C210, C213, C214, C216, and C217 (zone D-5)—couples through to the transformer secondary, where it is rectified and stored in the secondary reservoirs comprising C247–C250 and C253, C254, C259, and C260 (zone C-3). These are the ±185-volt rails for the two channels' output sections.

Ordinarily, at startup there is little or no voltage on the primary reservoir, and therefore, little current flows through the switches. The aux supply powers a sequence of delays that causes the inrush and main relays to close progressively, ramping the entire main supply up to full voltage in a controlled manner.

Power Supply On-Off Sequencing

The relay control circuitry is shown in zone C-5 of the schematic sheet *PROT/CNTRL, PL380*. When the amplifier is turned on, the following sequence must occur to make the main power supply turn on:

1. The AC voltage detector (schematic: see sheet *"Power Supply, PL380"* zone B-7 and B-8) connects to the incoming AC line through resistors R258 and R259. It must sense that the amplifier has AC mains voltage coming in to the power supply.

   If it does, the AC voltage signal will turn transistor Q66 on, which turns Q67 off. This allows current to flow through the LED side of the optocoupler, U40, and pulls the AC-ON bus high to +5 V. Resistor R265 adds a small amount of hysteresis, so that the turn-off threshold is slightly lower than the one for turn-on.

2. In the relay control circuitry, the AC-ON bus turns transistor Q34 off. The IGBTs in the power supply should be receiving gate drive pulses, which would cause bus IGBT-SW (a safety interlock to prevent the relays from closing if the main power switches are inactive) to charge capacitor C104. The bus AC-OFF-LO is a remote control line that permits C104 to be remotely discharged to shut down the main supply.

3. When the capacitor charges to greater than 3.3 V, the compara-

tor U24:1 will swing low, turning on Q35 and Q37. These actuate relay K2 (schematic: sheet *Supply, PL380*, zone C-6), which couples AC through large NTC resistors R262 and R266 to the main AC rectifier BR1. The resistors limit inrush current as the primary reservoirs charge.

4. Transistor Q35 also charges C107 through R142. The voltage on pin 7 of U24:2 reaches +5 V (the threshold set by bus +5V:LIN) in about one second, at which point the comparator will trip low and turn on transistor Q43. This turns on relay K1, through bus 50A-RY, to bypass the inrush-limiting resistors. The main supply will have now now reached full operating voltage and at normal AC line voltage, the secondary DC rails should measure ±185 V.
5. The final timing delay is established by C108. When Q43 turns on to energize K1, transistor Q48 turns off. This allows C108 to charge through R163, D35, R166, and D43, controlling the rate of charge of capacitors C111 and C114. When C111 and C114 reach +5 V thresholds (set by the +5_TOP bus), which takes about one second, comparators U24:3 and U24:4 respectively switch the RUN-A-LO and RUN-B-LO buses low, which enables the audio switching on channels 1 and 2. This allows the channels to pass audio signals.
6. When AC power is removed, including when the amplifier is switched off, the AC detector circuit mentioned earlier shuts down the AC-ON bus within several AC cycles. This lets Q34 quickly discharge C104, which triggers a rapid discharge of all the other timing capacitors as well. This ensures that the delay intervals are all reset when the amplifier is turned on again. The RUN-A-LO and RUN-B-LO buses disable the audio switching, which immediately mutes the audio.

   Meanwhile, the housekeeping supply operated by U41 keeps running, powered through D70 by energy stored in the primary reservoir, and so the clock and power supply switching continue until the reservoir voltage drops to about 45 V. Through this after-shutoff switching action, the primary and secondary reservoirs discharge together. This ensures that inrush current is managed properly when the amplifier is switched on again.
7. The red Clip LEDs on the faceplate will light as long as auxiliary power is present and the amp is in muting. On amplifiers manufactured in January 2008 or earlier, it is normal for the clip LEDs to remain lit for about 15–20 seconds after the amplifier is switched off. On amplifiers manufactured in February 2008 or later, the clip LEDs will flash briefly at turn-off and then remain dark.

Amplifier Channels

NOTE: Most components are duplicated in the two amplifier channels, so these descriptions will limit themselves to channel 1's circuitry (schematic: see sheet *"Amp Ch-A, PL380"*) unless there is an actual difference to be noted.

High Current Switching

The amplifier channel uses two large switching FETs, Q10 and Q11, operating as a half-bridge at 250 kHz. They are mounted under the single large heat sink, together with HF diodes D14 and D15 and steering diodes D12:1 and D12:2, which clamp the output voltage when their respective FET turns off.

Power for Gate Drives

Each FET is driven by a gate drive circuit that consumes appreciable power and also must be referenced to its respective FET's source terminal. Therefore, each gate drive circuit has an unregulated 25-volt power supply that suitable for its location in the overall channel circuit. FET Q11's source is connected to the fixed -185 V rail; therefore, power for its gate drive circuitry comes from the LO-SIDE GATE-A supply. The source terminal on the high-side (positive) FET, Q10, is connected through D12:1 to the switched PWM audio bus SW-A, so its power supply, HI-SIDE GATE-A, floats with respect to the audio circuitry.

Gate Drives and Signal Isolation

In the high-side gate drive power supply, the regulator U20 drops the unregulated 25 volts down to 12 volts for the gate driver IC, U17, so it can produce 12-volt gate drive pulses. Regulator U15 reduces the 12 volts to 5 volts for the optocoupler U12, which isolates the gate drive circuitry from the ground-referenced modulator and logic circuitry. The components D4, C29, and R43 delay the negative-going transitions out of U9:2 to control the dead time.

Close Synchronization of FET Switching

Each FET of the pair switches on within tens of nanoseconds after the other switches off. These transitions must be coordinated closely to avoid both overlapping conduction—which would cause destructive "shoot-through" currents—and excessive dead time, which would increase audio distortion. Gate drive circuit disorders that cause an FET to stay on too long are likely to result in both FETs' destruction.

Output Current Clamping

The PWM signals also separately enable current sources that sample each FET's source terminal voltage during its "on" state to determine the current through the FET. Transistor Q8 is the current source associated with Q10; when it is switched on by U6:6, it forward-biases D16 and D17, resulting in a signal voltage that corresponds with the current through the FET. Transistor Q12 converts the voltage into a current on the OC-LIM-A bus.

The negative FET, Q11, has a similar current sensing circuit comprising Q9, U6:5, D18 and D19, Q13, and their associated components. This circuit also feeds bus OC-LIM-A.

The Overcurrent Feedback network (schematic: see sheet *Amp Ch-A,*

2.2 PL380 Major Circuit Blocks (continued)

PL380, zone B-1) passes the current through resistor R87 to produce a signal voltage, which is compared to ±5 V reference voltages. If the signal exceeds about ±6.2 volts the network sends a correction signal through R82 to bus OC-FB-A. This is a feedback bus for the modulator, and the correction signal reduces the amount of modulation to limit the FET current to about 70 A peak when the FETs are cold, and less at higher temperature.

PWM Modulator

Comparator U8 is the pulse-width modulator that converts the audio signal into a PWM stream that controls the output FETs. At its non-inverting input, pin 2, a triangle wave develops from C21 integrating the 250 kHz square wave current from bus CLK-A through R34. The triangle wave is averaged about ground potential, so that with no audio signal the comparator produces two 50/50 pulse trains that switch between the negative and positive rails. One output, Q, is the complement of the other, $\overline{Q}$. If these pulse trains were averaged by an integrator, the resulting voltages would be zero. PWM negative feedback from SW-A through R35 and R36, as well as audio negative feedback from OUT-A through R29 and R24, help keep any DC offset to minimal amounts.

Audio signal voltage from U3:2, through R30, combines with the triangle wave voltage, thereby changing the points, with respect to the triangle wave, at which pin 2 crosses zero volts. This varies the duty cycles of the Q and $\overline{Q}$ so they are proportional to the audio signal voltage.

Amplifier Muting

The amplifier mutes protectively during turn-on and turn-off, as well as when various overstresses occur. It mutes by disabling the PWM pusle trains to the output FETs; when both FETs are off, the channel passes no audio and power dissipation is minimal.

When bus RUN-A-LO is low, the output of U6:1 is high. It feeds flip flop U7:2's D input, and thus when the flip flop's Q output goes high it will allow U9's four NAND gates to pass the PWM stream from AMP_TRIG_A. RUN-B-LO, U6:2, U7:1, and U30 do the same for channel 2.

Output Filter Network

A passive low-pass network comprising L1 and C64 integrate the PWM stream on SW-A back into a fairly smooth audio waveform with the switching-frequency components reduced about 40 dB. The resulting audio spectrum deliverable to the loudspeaker load is reasonably flat to beyond 20 kHz.

Inductor L2 and capacitor C71 form a parallel-resonant 250 kHz trap that adds about another 15 dB of attenuation of the switching noise. A zobel network, which comprises C78 and two high-power resistors, R85 and R86, further stabilizes the output impedance. The resistors, mounted under the large heat sink, are protected against excessive high frequency output signals by the protective limiter described next.

Protective Limiter

A limiter circuit reduces stresses on the amplifier channel when certain conditions are detected. For example, a fast-rising stress like excessive output current will be clamped first by the overcurrent feedback but will trigger the limiter if it is sustained. Slower-changing stresses like high temperature trigger limiting as the first defense, and then muting if the limiter control voltage is driven to its limit. Muting eliminates all significant stress and heat generation. When the clip limiter function is engaged, the limiter also reduces the amount of distortion that occurs during clipping.

The gain reduction cell of the limiter circuit is op amp U3:1 and dual LM13600M transconductance op amps U2:1 and U2:2, which act as parallel variable negative feedback loops about U3:1. Normally, the control current via R7 and R8 is zero, and so the transconductance op amps are cut off and have no effect on the gain of U3:1.

Bus LIMITER-A is normally held at -5 V by R27. Several control circuits—detecting excessive FET current, excessive temperature, zobel network overload, and excessive power supply current—can pull this voltage upward if necessary. For example, excessive high-frequency voltage at bus ZOB-A, across R85 and R86 in the zobel network, will cause Q4 to pull the LIMITER-A bus high.

As the LIMITER-A bus voltage gets pulled more positive, Q1, D1, and Q2 conduct, feeding up to 2 mA of control current via R7 and R8. The transconductance op amps U2:1 and U2:2 then will pass signal, increasing the effective negative feedback around U3:1 and reducing its gain.

This ciruict offers up to 40 dB of gain reduction. If the control current exceed 2 mA, though, the voltage across R19 will push A-LIM to a negative voltage and turn on Q3, which pulls bus A-MUTE-LO low, muting the amplifier. Muting promptly relieves overloads such as overcurrent, and the amp will cycle in and out of muting quickly. A shutdown due to excess temperature will usually take 30 to 60 seconds to return to normal, during which muting will continue.

Thermal Sensing

A precision temperature-to-voltage converter, U10 is located in a heat sink hole packed with thermal grease near channel 1's power devices. The sensor's output voltage is amplified to a more usable level by U11:1. The resulting thermal bus voltages A-THERM and B-THERM change linearly from 6.84 V at 0° C to 3.41 V at 80° C, and are used for several purposes: fan speed control, protective muting.

Fan Speed Control

In the fan speed control circuitry (schematic: see sheet *"Protect/ Control, PL380"* zone A-7), buses A-THERM and B-THERM are buffered respectively by Q41 and Q38. When either channel's thermal bus voltage drops to below 4.4 V (at approximately 55° C), its transistor, Q38 or Q41, will turn Q44 on. This will turn on Q47, gradually increasing the fan voltage from 10 V. Higher temperatures will further increase the fan voltage. The maximum fan voltage available, which would be at temperatures at or about the point of

thermal shutdown, is about 30 V DC. Feedback elements R160, R157, Q45, and R153 provide stabilizing feedback to regulate the fan voltage. R152 provides the reference current that sets the cold or low-speed fan voltage.

- Fan failure or blockage will ultimately result in amplifier muting once the heat sink temperatures reach about 80° C. This will remove most sources of heat dissipation and prevent further overheating.
- Q36 and Q39 diode-OR the THERM-A and THERM-B voltages into a common bus called A/B_THERM.

Thermal Limiting and Muting

In the thermal sensing circuit (schematic: see sheet *"Amp Ch-A, PL380,"* zone A-5), Q7's emitter connects to a 4.48 V reference, defined by R41, R42, and the +5V:LIN supply bus. When the heat sink reaches about 75° C, the voltage on THERM-A decreases to turn on Q7, which pulls the LIMITER-A control bus voltage positive, activating the limiter circuitry to reduce the heat dissipation. If this fails to arrest temperature rise, the amplifier will mute when the heat sink reaches about 80° C.

Zobel Network Protection

The RC network on the output must be protected against dissipations that exceed the 200-watt rating of the resistors. When the voltage on ZOB-A is excessive, it will turn on Q4, which pulls the voltage positive on LIMITER-A.

Prolonged high frequency overloads will trigger muting, but if the instability is due to component fault or abnormal load conditions, runaway oscillations will promptly trigger muting via C224, R383, R384, and Q83 pulling low bus A-MUTE-LO.

Prolonged Overcurrent Limiting

Overcurrent feedback via OC-FB-A into the modulator instantly clamps peak currents, but the amplifier also needs to prevent prolonged operation at such high levels. The output of the current sensing network, OC-LIM-A, reaches a signal-rectifier circuit Q5 and Q6, which pulls the LIMITER-A bus toward positive after several seconds of peak output current.

Power Supply Current Limiting

Excessive long-term average power supply current triggers the bus PS-LIM, which turns on Q79 on channel 1 and Q76 on channel 2. Both channels limit simultaneously.

Clip Detection and Limiting

During normal switching, the modulator output is coupled via U6:4 through high frequency rectifiers D6 and D7 into C35, producing a positive voltage on CLIP-A. When the channel clips, the modulation has reached 100% and switching therefore stops. The voltage on CLIP-A drops to zero, which triggers the Clip LED, and sends a 4 V flag to the DataPort.

When the clip limiter switch on the rear panel is set to "off," it connects CL-A-ON to ground; when set to "enable" the clip limiter, it is open and allows the falling voltage at CLIP-A to let Q72 turn on and put limiter control current directly into R7 and R8. This bypasses the relatively slow limiter bus, and acts rapidly on C228 and C257 to produce prompt limiting of clip events.

DC Fault Shutdown System

The DC shutdown system (schematic: see sheet *"Protect/Control, PL380"* zones A-4 and A-5) looks for significant DC offsets on either channel and triggers a power supply shutdown in such an event. Large DC voltages normally indicate a serious component fault such as a shorted output device, and limiting the energy to the load and through the output devices may prevent further damage.

Capacitor Overvoltage Protection

Prolonged output voltage of a given polarity may in rare occasions result in current being drawn from one rail and flowing to the other rail (thru the catch diodes) long enough to pump the off-side rail to an excessively high voltage. The capacitor overvoltage protection circuit (schematic: see sheet *"Protect/Control, PL380"* zones A-3 and B-3) divides the rail voltages down to compare them with ±5 V references. If either rail exceeds 225 V, the corresponding polarity of the amplifier signal will be clamped by the op amps and diodes to prevent further overvoltage.

If *both* rails exceed 225 V (corresponding to an approximately 22% high AC mains line with no signal present), both clamps will operate, probably quenching the signal altogether. However, the amplifier should continue switching, which will maintain a load on the supply capacitors. The power supply's primary-side overvoltage shutdown may also occur in this sort of situation.

Peripheral Signal-Processing Circuits

Many additional circuits, powered by the ±15 V rails, provide for user adjustments, status displays, gain control, input buffering etc. A brief orientation and review of these circuits follows.

Amplifier Balanced Inputs with Gain Adjustment

Op amps U21:1 and U22:1 (schematic: see sheet *"Inp-Displ, PL380"*) are the input stages for channels 1 and 2, respectively. They are arranged as differential amplfiers with precision 0.1% resistors to maintain a very high common-mode noise rejection ratio.

A three-position switch allows the selection of different gain structures, and an auxiliary set of contacts light corresponding indicator LEDs and also provide an indicating voltage for remote monitoring of the switch position.

Low Frequency Filters

The signal is padded by R322 and R323 to prevent full-scale signals' overloading the input of op amp U21:2, which with components C290, C291, C292, R334, and R335 make a switchable 30 Hz or 50 Hz, two-pole input filter. R327 and R337 restore the gain lost by R322 and R323. Channel 2 has an identical arrangement.

2.2 PL380 Major Circuit Blocks (continued)

Gain Controls

The front-panel gain control, configured as a variable attenuator, is fed through a blocking capacitor, C95. The signal returns to and is buffered by op amp U51:2. Channel 2 has an identical arrangement.

Bridge-Mono and Parallel Signal Routing

The "parallel inputs" position of switch SW3 connects together the corresponding input terminals of channels 1 and 2. The "stereo" position completely separates inputs.

The "bridge mono" position routes the output from channel 1's gain control buffer into channel 2's gain buffer, replacing that channel's normal input signals.

Switchable Clip Limiting

As described earlier under Clip Detection and Limiting, switches SW2 and SW5 defeat clip limiting when closed and enable it, along with a yellow LED indicator, when open.

Front-Panel Controls and Displays

Ribbon cable J7A-J7B runs from the input board to the front panel board, carrying signals to and from the gain controls and various status LEDs.

LEDs LD16 (orange) and LD17 (yellow) repeat the rear-panel status LEDs that display the mode switch settings.

LEDs LD7 and LD8 (red) display clipping, limiting, and protect activity.

Circuitry connected to LD1–LD3 and LD4–LD6 provide a stepped display of the output signal level, triggering at -35 dB, -20 dB, and -10 dB. Op amps U23:2 and U23:1 convert the output signal into a quasi-logarithmic form that maps to the linear step circuits that switch on the successive LEDs.

"DataPort" Connector and Monitoring Signals

The DataPort is a QSC-specific connector scheme that passes low-voltage (line level) signals to and from external monitoring devices such as the Basis series. The DataPort may also host a plug-in accessory that receives power from the +15 V line and sends processed signals to the amplifier. In brief:

- **Vmon-A and Vmon-B** represent the output voltage, scaled down 50:1 (100 V at the speaker = 2 V at the Vmon output). DC voltages riding under these signals show the state of the bridge-parallel and gain/sensitivity switches.
- **Imon-A and Imon-B** represent the output current, scaled to approx 50 A = 2 V. DC voltages riding under these signals represent temperature information for each channel.
- **Clip-A and Clip-B** rise to 4.2 V during clipping and muting, and to 1.7 V during limiting.
- The "**IDR**" line has a resistor and diode combination that is unique to this model, allowing remote identification.
- The **+15 V DC** line is fused at 1 A by surface mount fuse F4.
- "**Stby**" carries a voltage representing the main rails, scaled to about +12 V peak. Pulling this line to ground will shut down the main power supply via the STBY-LO bus.

2.3 PL380 Test Procedure

Test Equipment required:

- **Distortion analyzer with built-in signal generator**
  The generator must have total harmonic distortion plus noise (THD+N) of no higher than 0.01%, and the analyzer must be capable of resolving to that level as well. We suggest either the *HP-Agilent 339A* or the *Audio Precision System One, System Two, ATS-1,* or *ATS-2*. The PL380 test procedures written for Audio Precision System One can be obtained by sending an e-mail request to tech_support@qscaudio.com.
- **High power load resistor bank** (8, 4, and 2 ohms)
- **20 MHz oscilloscope** and **digital multimeter**
- **Switching amplifier measurement filter**
  Suggested: Audio Precision AUX-0025)
- **Variable autoformer** (Variac, Powerstat, etc.), 0–140 V AC, 50 A for 100 V/120 V models or 0–260 V AC, 30 A for 230 V model
- **Burst sinewave generator** (if the analyzer doesn't have burst output mode)
  Suggested: HP 33120A Waveform Generator

Notes:

- The PL380 is a class D amplifier; as such, it uses a process that results in some residual 250 kHz switching noise in the amplifier output signal; this noise could produce misleading results in measurement of power, percent THD, and noise. We recommend using a low-pass filter such as the Audio Precision AUX-0025 to reduce the noise prior to the analyzer. Figures 2.1 and 2.2 show the PL380 amplifier's output signals with and without the AUX-0025 filter.
- Measuring 2-ohm power requires a burst sine wave signal (Figure 2.3). This is to avoid excessive power supply current demand under testing, which would trigger the protection circuit and quickly reduce the output power to a safe level (approximately 2800 watts with a continuous sine wave signal).

The circuit design of the PL380 is fine-tuned and requires no internal trim pots. Therefore, no adjustment or calibration is required during testing. If the amplifier does not meet specifications in this test procedure, it requires service. Follow the troubleshooting guide in the service manual to repair the amplifier as needed.

Setup

1. Set switches and controls as follows:
   - AC switch (front panel) *off*.
   - Gain controls (front panel) to minimum, or fully counter clockwise.
   - Mode switch (rear panel) on *stereo*.
   - Sensitivity switch (rear panel) on *32 dB*.
   - Clip limiter switches (rear panel) *off*.
   - High-pass filter switches (rear panel) *off*.
2. Connect a test load(s) to the output terminals of the amplifier.
3. Connect the distortion analyzer input to the AP AUX-0025 filter's channel A output.
4. Connect the AP AUX-0025 filter's channel A input to the channel 1 output terminals of the amplifier.
5. Set up and connect a dual-channel oscilloscope to the following test points:
   - Channel 1—Set vertical sensitivity to 2 V/div; connect a 10× probe to the channel speaker output.
   - Channel 2—Set vertical sensitivity to 0.1 V/div; connect a 1× scope probe to the distortion analyzer output.
6. Connect the analyzer's test signal output to the amplifier's channel 1 XLR input.
7. Set the analyzer signal to a 1.0 V rms 1 kHz sine wave.
8. Turn on the analyzer's 80 kHz filter.

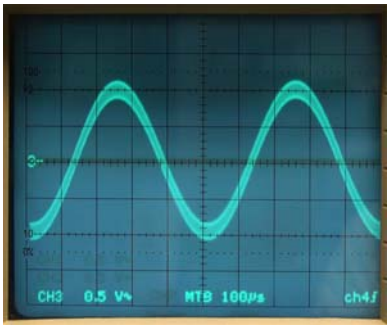

Figure 2.1. Signal with 250 kHz switching noise

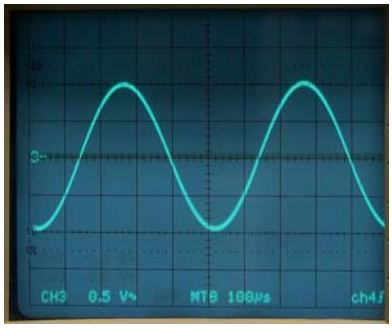

Figure 2.2. Signal with switching noise filtered out

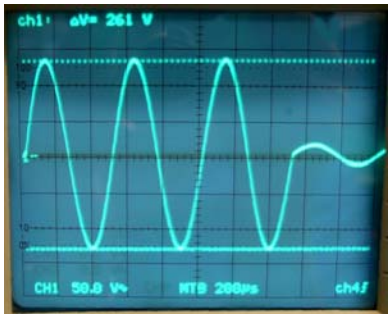

Figure 2.3. Burst sine wave signal for 2Ω power testing

9. Plug the amplifier's power cord into a variable autoformer (set to 0 V) and set up an ammeter to monitor AC line current.

Power On and Mute Delay Test

1. Turn the amplifier on and slowly increase the AC voltage to 120 V (120 V model) or 240 V (230 V model) while monitoring the AC line current. At full voltage, the idle AC current should be about 2.5 A (120 V model) or 1.25 A (230V model).
2. Verify that the fan is operating at low speed.
3. Turn the power switch off and on a few times to verify the 3-second power-on muting delay and the instant power-off mute; listen to how the power relays engage about 3 seconds after turn-on but disengage instantly at turn-off.
   NOTE: When AC power is turned off, the amplifier mutes the audio immediately, but the power supply switches continue operating until the primary and secondary DC voltages have discharged to about 20% of normal. Below this point, the auxiliary supply itself stops switching and the amplifier becomes fully quiescent. On amplifiers made in January 3008 or earlier, it is normal for the Clip and Power LEDs to remain lit for about 15 to 20 seconds after the amplifier shuts off. On later amplifiers, the Clip LED will flash at the moment of turn-off, and they and the Power LED will shut off.

Channel Output Test

1. Look for amplified signal on scope channel 1. Check for a noisy or contaminated gain potentiometer by looking for general instability on the distortion waveform (scope channel 2) while you rotate the gain control.
2. Set the amp gain control to maximum (fully clockwise) and verify the output level of 32 dBV (40 V rms), with a 1 V input.
3. Select 8-ohm load and set the analyzer signal output at 2.7 V rms, 1 kHz. Confirm that this amplifier is producing 1500 watts (109.5 V rms), with less than 1% THD. Repeat steps 1 through 3 with the other channel.

Signal Indicators Test

1. Disconnect the load resistors.
2. With a 2.7 V rms, 1 kHz input signal into the channel, turn the gain control to maximum. The three signal LEDs (Signal, -20 dB, and -10 dB) should be lit. Set the analyzer's 0 dB reference to this level.
3. Turn down the signal by 10 dB. The -10 dB LED should be dim.
4. Turn down the signal another 10 dB (-20 dB to the reference level). Both the -10 dB and -20 dB LEDs should be off.
5. Turn the amp gain control to minimum. All three signal LEDs should be off. Repeat this test with the other channel.

Bridge Mode Test

1. Turn off the power switch.
2. Set the mode switch to the bridge position. The bridge LEDs on the front and rear panels should light when you turn the amplifier back on.
3. Connect the load to the two red output binding posts (channel 1 positive and channel 2 negative).
4. Select an 8 ohm load resistance and apply a 2.7 V rms, 1 kHz sine wave signal to amp channel 1's XLR input. Adjust the amp gain control to obtain 5000 watts output (200 V rms).

   Quickly verify that the THD is below 1%, and then turn the gain control down all the way to prevent excessive current stress on the AC line and power stress on the test load.
5. Turn the amplifier off and set its mode switch back to stereo. Connect a separate load resistance to each channel's output.

Frequency Response Test

1. Connect an 8-ohm load resistance to channel 1's output. Apply a 2.7 V rms, 1 kHz sine wave signal to amp channel 1's XLR input and turn its gain control all the way up. The output voltage should be 108 V rms.
2. Reduce the signal by 10 dB to 34.1 V rms (150 watts output). Set the analyzer's 0 dB reference to this point.
3. Check the frequency response from 20 Hz to 20 kHz by sweeping or spot-checking frequencies between these extremes. Verify that the output voltage's amplitude at each frequency is 0 dB, ±0.20 dB.
4. Repeat steps 1 through 3 for channel 2.

4 Ohm Power vs. Distortion Test

1. Connect a 4-ohm load resistance to channel 1's output. Apply a 2.7 V rms, 1 kHz sine wave signal to amp channel 1's XLR input .

2. Adjust the gain control to obtain 2500 watts output power (100 V rms). Verify that the THD is below 1%. Check the output power at 20 Hz and 10 kHz; it should also be 2500 watts, with THD less than 1%.
3. Turn the gain control down 3 dB to obtain 1250 watts (70.7 V rms). Verify that the THD is below 0.02%. Check the output power at 20 Hz and 20 kHz; it should be 1250 watts, with THD less than 0.06%.
4. Repeat steps 1 through 3 for channel 2.

2 Ohm Power and Short Circuit Current Test

1. Connect a 2-ohm load resistance to channel 1's output. Apply a 2.3 V rms, 1 kHz sine wave burst signal (3 out of 10 cycles) to amp channel 1's XLR input.
2. Adjust the gain control to obtain 4000 watts of burst output power (at least 252 V p-p, undistorted, during the bursts), as shown in Figure 2.3.
   NOTE: adjust the variable autoformer to maintain the AC line voltage at 120 V or 240 V during this test.
3. Change the test signal to a 1.6 V rms, 1 kHz continuous sine wave.
4. Verify amplifier output power of 2000 watts (63.2 V rms), with less than 0.1% THD. While the amplifier is producing power into the load, apply a short circuit across the output.
5. After a couple of seconds, the amplifier will start cycling in and out of protective cutback, alternately drawing low current and then high current. Measure the AC line current at its maximum; it should be no greater than 13 A (120 V model) or 7 A (230 V model).
6. Remove the short. The channel's output signal should immediately resume into the 2-ohm load as before, with no delay or hangup.
7. Repeat steps 1 through 6 for channel 2.

Thermal Test

1. Set both gain controls to minimum and apply a 2.7 V rms, 1 kHz sine wave signal to both channels' inputs.
   NOTE: You can do this by setting the mode switch to parallel.
2. Apply a short circuit across the output of each channel and turn both gain controls to maximum. The clip LEDs should light.
3. Measure AC line current; should be about 13–21 A (120 V model) or 6.5–12 A (230 V model). As the amplifier gets hot, the current draw will increase slowly. That is normal.
4. Block the fan's intake and verify that the fan speed ramps up from low speed to high.
5. After a while, the thermal protection should engage; the AC line current should drop significantly to about 2.5 A (120 V model) or 1.3 A (230 V model).
6. Remove the short from the outputs and unblock the fan's intake.
7. Select the 8-ohm loads and allow the amplifier to fully recover from thermal protection; verify that output signals are still present on each channel and that the fan speed ramps down from high speed to low.

Output Noise Test

1. Connect an 8-ohm load resistance to channel 1's output. Apply a 2.7 V rms, 1 kHz sine wave signal to amp channel 1's XLR input.
2. Turn the amplifier gain controls to maximum. Set the analyzer's 0 dB reference to this level.
3. Disocnnect the input signal from the amplifier input and measure the residual noise level produced into the load. The noise signal should be at least 104 dB below the 0 dB reference.
4. Repeat steps 1 through 3 for channel 2.

Turn On/Turn Off Transient Test

1. Connect a loudspeaker to the output of each amplifier channel.
2. Disocnnect any inputs from the amplifier.
3. Turn on the amplifier and listen for any transient or thump noises during turn-on delay sequences.
4. Turn off the amplifier; on amplifiers made in February 2008 or later, all LEDs should turn off immediately, while on those made in January 2008 and earlier the clip and power LEDs will stay lit for some time. Listen for any transient or thump noise at turn-off.

Final Check

This completes the amplifier test procedure for this model. Inspect the amplifier for mechanical defects. Inspect the solder connections. Reassemble the amplifier and verify its operation prior to returning the product to service.

2.4 PL340 Test and Calibration Procedure

Test Equipment required:

- **Distortion analyzer with built-in signal generator**
  The generator must have total harmonic distortion plus noise (THD+N) of no higher than 0.01%, and the analyzer must be capable of resolving to that level as well. We suggest either the *HP-Agilent 339A* or the *Audio Precision System One, System Two, ATS-1,* or *ATS-2*. The PL340 test procedures written for Audio Precision System One can be obtained by sending an e-mail request to tech_support@qscaudio.com.
- **High power load resistor bank** (8, 4, and 2 ohms)
- **20 MHz oscilloscope** and **digital multimeter**
- **Variable autoformer** (Variac, Powerstat, etc.), 0–140 V AC, 30–50 A for 100 V/120 V models or 0–260 V AC, 20–35 A for 230 V model

Setup

1. Set switches and controls as follows:
   - AC switch (front panel) *off*.
   - Gain controls (front panel) to minimum, or fully counter clockwise.
   - Mode switch (rear panel) on *stereo*.
   - Sensitivity switch (rear panel) on *32 dB*.
   - Clip limiter switches (rear panel) *off*.
   - High-pass filter switches (rear panel) *off*.
2. Connect a test load(s) to the output terminals of the amplifier.
3. Set up and connect a dual-channel oscilloscope to the following test points:
   - Channel 1—Set vertical sensitivity to 2 V/div; connect a 10× probe to the channel speaker output.
   - Channel 2—Set vertical sensitivity to 0.1 V/div; connect a 1× scope probe to the distortion analyzer output.
4. Connect the analyzer's test signal output to the amplifier's channel 1 XLR input.
5. Set the analyzer signal to a 1.0 V rms 1 kHz sine wave.
6. Turn on the analyzer's 80 kHz filter.
7. Plug the amplifier's power cord into a variable autoformer (set to 0 V) and set up an ammeter to monitor AC line current.

Power On and Mute Delay Test

1. Turn the amplifier on and slowly increase the AC voltage to 50 V (120 V model) or 100 V (230 V model) while monitoring the AC line current. The power indicator LED should be at half-brightness, and the current draw should not exceed 0.3 A (120 V model) or 0.15 A (230 V model).
   Continue increasing the voltage to 100 V (120 V model) or 200 V (230 V model), and pause for about three seconds until the mute/protect circuit disengages.
   Continue to 120 V (120 V model) or 240 V (230 V model). At full voltage, the idle AC current should be about 1.0 A (120 V model) or 0.5 A (230V model).
2. Verify that the fan is operating at low speed.
3. Turn the power switch off and on a few times to verify the 6-second power-on muting delay and the instant power-off mute. The power-on delay should proceed like this:
   - The blue Power LED at half brightness for three seconds
   - Power and Clip LEDs at full brightness for another three seconds
   - Amplifier unmutes; Power LED remains bright while Clip LEDs turn off

   All LEDs should turn off immediately when the amplifier is turned off.

Channel Output Test

1. Look for amplified signal on scope channel 1. Check for a noisy or contaminated gain potentiometer by looking for general instability on the distortion waveform (scope channel 2) while you rotate the gain control.
2. Set the amp gain control to maximum (fully clockwise) and verify the output level of 32 dBV (40 V rms), with a 1 V input.
3. Select 8-ohm load and set the analyzer signal output at 1.96 V rms, 1 kHz. Confirm that this amplifier is producing 800 watts (80 V rms), with less than 1% THD. Repeat steps 1 through 3 with the other channel.

Signal Indicators Test

1. Disconnect the load resistors.
2. With a 1.96 V rms, 1 kHz input signal into the channel, turn the gain control to maximum. The three signal LEDs (Signal, -20 dB, and -10 dB) should be be lit. Set the analyzer's 0 dB reference to this level.
3. Turn down the signal by 10 dB. The -10 dB LED should be dim.
4. Turn down the signal another 10 dB (-20 dB to the reference level). Both the -10 dB and -20 dB LEDs should be off.
5. Turn the amp gain control to minimum. All three signal LEDs should be off. Repeat this test with the other channel.

Bridge Mode Test

1. Turn off the power switch.
2. Set the mode switch to the bridge position. The bridge LEDs on the front and rear panels should light when you turn the amplifier back on.
3. Connect the load to the two red output binding posts (channel 1 positive and channel 2 negative).
4. Select an 8 ohm load resistance and apply a 1.96 V rms, 1 kHz sine wave signal to amp channel 1's XLR input. Adjust the amp gain control to obtain 2600 watts output (144 V rms). Verify that the THD is below 1%.
5. Turn the amplifier's gain controls to minimum.
6. Turn the amplifier off and set its mode switch back to stereo. Connect a separate load resistance to each channel's output.

Bias (Crossover) Adjustment

NOTE: The bias should not need readjusting unless the amplifier is overheating or draws excessive idle current.

1. Let the amplifier cool down to room temperature.
2. Turn off the analyzer's 80 kHz filter.
2. Set the analyzer signal sine wave output to 0.2 V rms at 20 kHz and set the amplifier gain controls to full gain. Put the signal into the input of one channel.
3. Put an 8-ohm load on the channel's output.
4. Adjust the bias trimpot VR43 (channel 1) or VR166 (channel 2) for a total THD+N figure of 0.07% or slightly less. Figure 2.4 shows what the residual crossover spike should look like when the bias is properly set.THD+N.
   This adjustment must be done quickly, before the amplifier starts to warm up significantly. If the amplifier begins to feel warm to the touch before you complete the bias adjustment, you must turn it off and allow it to cool down to room temperature before trying again.
5. Turn the channel's gain control to minimum. Verify that the AC line current is no more than 1.0 A (120 V model) or 0.5 A (230 V model).
6. Turn off the amplifier to let it cool down, then repeat the procedure for the other channel, if needed.
7. Turn the analyzer's 80 kHz filter back on.

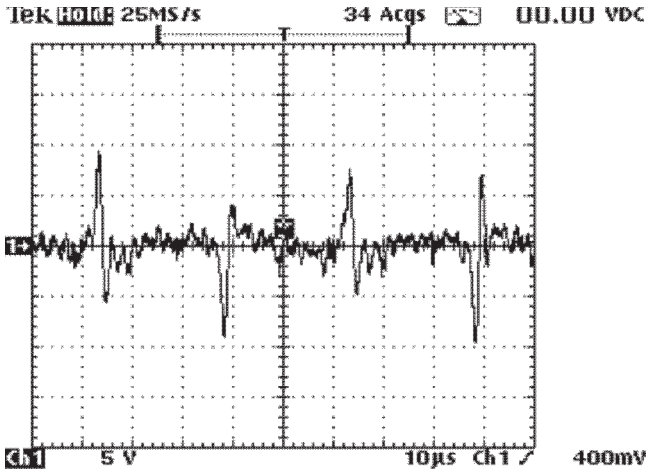

Figure 2.4. Noise and distortion residual with bias properly set

Frequency Response Test

1. Connect an 8-ohm load resistance to channel 1's output. Apply a 1.96 V rms, 1 kHz sine wave signal to amp channel 1's XLR input and turn its gain control to full gain. The output voltage should be about 78 V rms.
2. Reduce the signal by 10 dB to 25 V rms (80 watts output). Set the analyzer's 0 dB reference to this point.
3. Check the frequency response from 20 Hz to 20 kHz by sweeping or spot-checking frequencies between these extremes. Verify that the output voltage's amplitude at each frequency is 0 dB, ±0.20 dB.
4. Repeat steps 1 through 3 for channel 2.

4 Ohm Power vs. Distortion Test

1. Connect a 4-ohm load resistance to channel 1's output. Apply a 1.96 V rms, 1 kHz sine wave signal to amp channel 1's XLR input .
2. Adjust the gain control to obtain 1250 watts output power (70.7 V rms). Verify that the THD is below 1%. Check the output power at 20 Hz and 10 kHz; it should also be 1250 watts, with THD less than 1%.
3. Turn the gain control down 3 dB to obtain 625 watts (50 V rms). Verify that the THD is below 0.02%. Check the output power at 20 Hz and 20 kHz; it should be 625 watts, with THD less than 0.02%.
4. Repeat steps 1 through 3 for channel 2.

2 Ohm Power and Short Circuit Current Test

1. Connect a 2-ohm load resistance to channel 1's output. Apply a 1.96 V rms, 1 kHz sine wave signal to channel 1's XLR input.
2. Adjust the gain control to obtain 2000 watts of output power (63.2 V rms). Verify that the THD is below 1%.
   NOTE: adjust the variable autoformer to maintain the AC line voltage at 120 V or 240 V during this test.
3. Turn the channel gain down 3 dB, to obtain output power of 1000 watts (44.7 V rms). While the amplifier is producing power into the load, apply a short circuit across the output.
4. Measure the AC line current; it should be no greater than 7 A (120 V model) or 4 A (230 V model).
5. Remove the short. The channel's output signal should immediately resume into the 2-ohm load as before, with no delay or hangup.
6. Repeat steps 1 through 5 for channel 2.

Thermal Test

1. Set the amplifier gain controls to minimum and apply a 1.96Vrms, 1 kHz input signal to both channels. Note: set the Input Mode switch in the PARALLEL position if only one input is available.
2. Apply a short across the output of each channel and turn the amplifier gain controls to maximum. Clip LEDs should be on.
3. Measure AC line current; should be about 12 - 14 Aac for both channels. As the amplifier gets hot, there will be some current drift upwards. That's normal.
4. Block the fan's intake and verify the fan speed will ramp up from low to high speed.
5. Run the test until thermal protection engages; the AC line current will drop significantly to 1A.
6. Remove the short from the outputs and remove the block from the fan's intake.
7. Select 8 ohm load and allow the amplifier to fully recover from thermal protection; verify output signal of each channel and fan speed ramps down from high to low speed.

Output Noise Test

1. Connect an 8-ohm load resistance to channel 1's output. Apply a 1.96 V rms, 1 kHz sine wave signal to amp channel 1's XLR input.
2. Turn the amplifier gain controls to maximum. Set the analyzer's 0 dB reference to this level.
3. Disconnect the input signal from the amplifier input and measure the residual noise level produced into the load. The noise signal should be at least 105 dB below the 0 dB reference.
4. Repeat steps 1 through 3 for channel 2.

Turn On/Turn Off Transient Test

1. Connect a loudspeaker to the output of each amplifier channel.
2. Disconnect any inputs from the amplifier.
3. Turn on the amplifier and listen for any transient or thump noises during turn-on delay sequences.
4. Turn off the amplifier; all LEDs should turn off immediately. Listen for any transient or thump noise at turn-off .

Quality Review

This completes the amplifier test procedure for this model. Inspect the amplifier for mechanical defects. Inspect the solder connections. Reassemble the amplifier and verify its operation prior to returning the product to service.

2.5 PL325 Test and Calibration Procedure

Test Equipment required:

- **Distortion analyzer with built-in signal generator**
  The generator must have total harmonic distortion plus noise (THD+N) of no higher than 0.01%, and the analyzer must be capable of resolving to that level as well. We suggest either the *HP-Agilent 339A* or the *Audio Precision System One, System Two, ATS-1,* or *ATS-2*. The PL325 test procedures written for Audio Precision System One can be obtained by sending an e-mail request to tech_support@qscaudio.com.
- **High power load resistor bank** (8, 4, and 2 ohms)
- **20 MHz oscilloscope** and **digital multimeter**
- **Variable autoformer** (Variac, Powerstat, etc.), 0–140 V AC, 30–50 A for 100 V/120 V models or 0–260 V AC, 20–35 A for 230 V model

Setup

1. Set switches and controls as follows:
   - AC switch (front panel) *off*.
   - Gain controls (front panel) to minimum, or fully counter clockwise.
   - Mode switch (rear panel) on *stereo*.
   - Sensitivity switch (rear panel) on *32 dB*.
   - Clip limiter switches (rear panel) *off*.
   - High-pass filter switches (rear panel) *off*.
2. Connect a test load(s) to the output terminals of the amplifier.
3. Set up and connect a dual-channel oscilloscope to the following test points:
   - Channel 1—Set vertical sensitivity to 2 V/div; connect a 10× probe to the channel speaker output.
   - Channel 2—Set vertical sensitivity to 0.1 V/div; connect a 1× scope probe to the distortion analyzer output.
4. Connect the analyzer's test signal output to the amplifier's channel 1 XLR input.
5. Set the analyzer signal to a 1.0 V rms 1 kHz sine wave.
6. Turn on the analyzer's 80 kHz filter.
7. Plug the amplifier's power cord into a variable autoformer (set to 0 V) and set up an ammeter to monitor AC line current.

Power On and Mute Delay Test

1. Turn the amplifier on and slowly increase the AC voltage to 50 V (120 V model) or 100 V (230 V model) while monitoring the AC line current. The power indicator LED should be at half-brightness, and the current draw should not exceed 0.3 A (120 V model) or 0.15 A (230 V model).
   Continue increasing the voltage to 100 V (120 V model) or 200 V (230 V model), and pause for about three seconds until the mute/protect circuit disengages.
   Continue to 120 V (120 V model) or 240 V (230 V model). At full voltage, the idle AC current should be about 1.0 A (120 V model) or 0.5 A (230V model).
2. Verify that the fan is operating at low speed.
3. Turn the power switch off and on a few times to verify the 6-second power-on muting delay and the instant power-off mute. The power-on delay should proceed like this:
   - The blue Power LED at half brightness for three seconds
   - Power and Clip LEDs at full brightness for another three seconds
   - Amplifier unmutes; Power LED remains bright while Clip LEDs turn off

   All LEDs should turn off immediately when the amplifier is turned off.

Channel Output Test

1. Look for amplified signal on scope channel 1. Check for a noisy or contaminated gain potentiometer by looking for general instability on the distortion waveform (scope channel 2) while you rotate the gain control.
2. Set the amp gain control to maximum (fully clockwise) and verify the output level of 32 dBV (40 V rms), with a 1 V input.
3. Select 8-ohm load and set the analyzer signal output at 1.6 V rms, 1 kHz. Confirm that this amplifier is producing 500 watts (63 V rms), with less than 1% THD. Repeat steps 1 through 3 with the other channel.

Signal Indicators Test

1. Disconnect the load resistors.
2. With a 1.6 V rms, 1 kHz input signal into the channel, turn the gain control to maximum. The three signal LEDs (Signal, -20 dB, and -10 dB) should be be lit. Set the analyzer's 0 dB reference to this level.
3. Turn down the signal by 10 dB. The -10 dB LED should be dim.
4. Turn down the signal another 10 dB (-20 dB to the reference level). Both the -10 dB and -20 dB LEDs should be off.
5. Turn the amp gain control to minimum. All three signal LEDs should be off. Repeat this test with the other channel.

Bridge Mode Test

1. Turn off the power switch.
2. Set the mode switch to the bridge position. The bridge LEDs on the front and rear panels should light when you turn the amplifier back on.
3. Connect the load to the two red output binding posts (channel 1 positive and channel 2 negative).
4. Select an 8 ohm load resistance and apply a 1.6 V rms, 1 kHz sine wave signal to amp channel 1's XLR input. Adjust the amp gain control to obtain 1700 watts output (116.5 V rms). Verify that the THD is below 1%.
5. Turn the amplifier's gain controls to minimum.
6. Turn the amplifier off and set its mode switch back to stereo. Connect a separate load resistance to each channel's output.

Bias (Crossover) Adjustment

NOTE: The bias should not need readjusting unless the amplifier is overheating or draws excessive idle current.

1. Let the amplifier cool down to room temperature.
2. Turn off the analyzer's 80 kHz filter.
2. Set the analyzer signal sine wave output to 0.16 V rms at 20 kHz and set the amplifier gain controls to full gain. Put the signal into the input of one channel.
3. Put an 8-ohm load on the channel's output.
4. Adjust the bias trimpot VR43 (channel 1) or VR166 (channel 2) for a total THD+N figure of 0.07% or slightly less. Figure 2.4 shows what the residual crossover spike should look like when the bias is properly set.THD+N.
   This adjustment must be done quickly, before the amplifier starts to warm up significantly. If the amplifier begins to feel warm to the touch before you complete the bias adjustment, you must turn it off and allow it to cool down to room temperature before trying again.
5. Turn the channel's gain control to minimum. Verify that the AC line current is no more than 1.0 A (120 V model) or 0.5 A (230 V model).
6. Turn off the amplifier to let it cool down, then repeat the procedure for the other channel, if needed.
7. Turn the analyzer's 80 kHz filter back on.

Frequency Response Test

1. Connect an 8-ohm load resistance to channel 1's output. Apply a 1.6 V rms, 1 kHz sine wave signal to amp channel 1's XLR input and turn its gain control to full gain. The output voltage should be about 64 V rms.
2. Reduce the signal by 10 dB to 20 V rms (51 watts output). Set the analyzer's 0 dB reference to this point.
3. Check the frequency response from 20 Hz to 20 kHz by sweeping or spot-checking frequencies between these extremes. Verify that the output voltage's amplitude at each frequency is 0 dB, ±0.20 dB.
4. Repeat steps 1 through 3 for channel 2.

4 Ohm Power vs. Distortion Test

1. Connect a 4-ohm load resistance to channel 1's output. Apply a 1.6 V rms, 1 kHz sine wave signal to amp channel 1's XLR input .
2. Adjust the gain control to obtain 850 watts output power (58 V rms). Verify that the THD is below 1%. Check the output power at 20 Hz and 10 kHz; it should also be 625 watts, with THD less than 1%.
3. Turn the gain control down 3 dB to obtain 425 watts (41 V rms). Verify that the THD is below 0.02%. Check the output power at 20 Hz and 20 kHz; it should be 425 watts, with THD less than 0.02%.
4. Repeat steps 1 through 3 for channel 2.

2 Ohm Power and Short Circuit Current Test

1. Connect a 2-ohm load resistance to channel 1's output. Apply a 1.6 V rms, 1 kHz sine wave signal to channel 1's XLR input.
2. Adjust the gain control to obtain 1250 watts of output power (50 V rms). Verify that the THD is below 1%.
   NOTE: adjust the variable autoformer to maintain the AC line voltage at 120 V or 240 V during this test.
3. Turn the channel gain down 3 dB, to obtain output power of 625 watts (35.4 V rms). While the amplifier is producing power into the load, apply a short circuit across the output.
4. Measure the AC line current; it should be no greater than 6 A (120 V model) or 3 A (230 V model).
5. Remove the short. The channel's output signal should immediately resume into the 2-ohm load as before, with no delay or hangup.
6. Repeat steps 1 through 5 for channel 2.

Thermal Test

1. Set the amplifier gain controls to minimum and apply a 1.6Vrms, 1 kHz input signal to both channels. Note: set the Input Mode switch in the PARALLEL position if only one input is available.

2. Apply a short across the output of each channel and turn the amplifier gain controls to maximum. Clip LEDs should be on.

3. Measure AC line current; should be about 12 - 14 Aac for both channels. As the amplifier gets hot, there will be some current drift upwards. That's normal.

4. Block the fan's intake and verify the fan speed will ramp up from low to high speed.

5. Run the test until thermal protection engages; the AC line current will drop significantly to 1A.

6. Remove the short from the outputs and remove the block from the fan's intake.

7. Select 8 ohm load and allow the amplifier to fully recover from thermal protection; verify output signal of each channel and fan speed ramps down from high to low speed.

Output Noise Test

1. Connect an 8-ohm load resistance to channel 1's output. Apply a 1.6 V rms, 1 kHz sine wave signal to amp channel 1's XLR input.
2. Turn the amplifier gain controls to maximum. Set the analyzer's 0 dB reference to this level.
3. Disconnect the input signal from the amplifier input and measure the residual noise level produced into the load. The noise signal should be at least 105 dB below the 0 dB reference.
4. Repeat steps 1 through 3 for channel 2.

Turn On/Turn Off Transient Test

1. Connect a loudspeaker to the output of each amplifier channel.
2. Disconnect any inputs from the amplifier.
3. Turn on the amplifier and listen for any transient or thump noises during turn-on delay sequences.
4. Turn off the amplifier; all LEDs should turn off immediately. Listen for any transient or thump noise at turn-off .

Quality Review

This completes the amplifier test procedure for this model. Inspect the amplifier for mechanical defects. Inspect the solder connections. Reassemble the amplifier and verify its operation prior to returning the product to service.

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3. Troubleshooting

3.1 PL380: Symptoms, causes, and remedies

Prerequisites to troubleshooting

Safely turning on an unknown PL380 amplifier

Using the service fixture

Before connecting it to AC power, always first check the amplifier using the PL380 service fixture. This allows you to check the timing and control circuits safely before applying power. See Section 1.5, *PL380 Service Fixture,* for details and procedures.

Using a variable autoformer

When first checking the operation with AC power of an amplifier on the bench, always turn your variable autoformer down to zero before plugging the amplifier into it.

After you turn the amplifier on, gradually turn up the transformer to 65% of full operating voltage (78 V for a 120 V unit, or 150 V for a 230 V unit), then pause for about six seconds as you observe the turn-on sequence of the amplifier; during this time the power supply will begin switching, the relays will energize, idle current will reach about 2 A (120 V unit) or 1 A (230 V), the power indicator LED will light, and finally the clip LEDs will light for about 2 seconds and then extinguish. Observing the amp through this sequence will help you determine what, if anything, is wrong with it.

If you see or smell smoke, flames, or any other signs of short circuits or excessive current draw, quickly turn the transformer back down to zero. If no such problems occur, it is usually safe to turn it up to the amplifier's full operating voltage for further testing or troubleshooting. Idle current at this point should not exceed 2.5 A (120 V unit) or 1.3 A (230 V).

AC current draw

At idle, the current draw should be approximately 2 to 2.5 A (120 V) or 1 to 1.3 A (230 V).

- The main heat sink will get noticeably warm but not hot, eventually causing the fan speed to increase slightly.
- Power supply heat sinks should be cool at idle.

On/off muting

- During the normal startup sequence, use loudspeakers connected to the amp's outputs to confirm silent on-off muting. There should be at most only a small click audible in the loudspeaker during on-off muting.

Relay Circuit, Inrush System.

- To prevent high surge currents that would otherwise flow into the large primary- and secondary-side capacitors, the power supply IGBTs start switching *before* voltage is applied to the main reservoir capacitors. The TOP switch "keep-alive" power supply based around U41 starts up first, providing power for the crystal divider clock circuit and IGBT drivers.
- Then the primary reservoir is charged up through the inrush limiting relay, K2, and large NTC resistors R262 and R266 (schematic: see sheet *"Power Supply, PL380,"* zone D-6). Because the IGBTs are switching, the secondary reservoirs charges along with the primary reservoir. After a short delay, the main relay, K1, closes to bypass the inrush resistors.
- After shut-off, the IGBTs continue switching until the keep-alive supply discharges the primary reservoir to less than 25% of its normal full voltage. Thus, the voltages of the secondary reservoir capacitors track those of the primary reservoir, both up and down.
- *Never* attempt to start up the amp with fully charged primary capacitors and discharged secondary capacitors; high peak currents will damage the IGBTs if the primary reservoir has a voltage more than 70% higher than the secondary one. Normal "hot restarts" are allowable because the IGBT switching will keep the secondary linked to the primary voltage.
- NOTE: an interlock feature (schematic: see sheet *"Protect/Control, PL380"* zone D-5 and D-6) halts the relay sequence if the IGBTs fail to switch. This prevents the primary capacitors' being charged without also charging the secondary capacitors. If there is no IGBT drive voltage on signal bus *IGBT-SW,* R133 remains at zero and does not provide voltage to ramp up C104.
- If the IGBTs have been removed, *always* discharge the primary capacitors *before* re-installing or replacing the IGBTs or turning the amplifier on.

120V/240V wiring (schematic: see sheet *"Power Supply, PL380,"* zones C-6, C-7, D-6, and D-7)

- For 120V operation, wire jumper W1 (zone D-6) must be in place, and terminal J22 would connect to J15 from the line filter.
- For 220–240V operation, W1 is not installed and terminal J21 connects to J15.

WARNING: Never connect J21 to J15 with W1 in place, because if power is applied it will short-circuit the AC from the line filter and cause damage to inrush components, the line filter, etc.

SAFETY WARNING

The primary and secondary reservoir capacitors are not covered. They store dangerously high voltages during operation and for some time after power is turned off. ***Do not touch them until they are fully discharged.***

Classifying Failures

Most amplifier failures divide generally into two categories:

1. **Serious**—Problems that keep the amplifier from running or that cause catastrophic failure; these must be diagnosed using the service fixture. Typical indicators of serious amplifier failure include blowing a circuit breaker or fuse and/or emitting a burning smell or smoke.
2. **Minor**—The amplifier runs without excessive losses, but with incorrect or reduced performance.

Troubleshooting Serious Failures

NOTE: The audio circuits of channels 1 and 2 are identical. For simplicity, the PL380 troubleshooting instructions describe only channel 1's components. See the schematic diagrams to identify the corresponding components on channel 2.

What to look for

Symptoms may include one or more of these:

- The amplifier draws excessive current; it may trip circuit breakers or blow fuses.
- The amplifier's switch-mode power supply (for example, the IGBTs and their control circuit) has failed.
- One or more output FETs and/or its control circuits have failed.

Possible situations

Overvoltage failure: If the amplifier has been operated with an excessively high AC voltage (>140 V for 120 V models, or >280 V for 230 V models), these components may be damaged and require replacement:

- Capacitors C190 and C191 may have vented.
- The TOP switch supply U41 and diode D66 may have been damaged.
- The primary winding of transformer T1 may be open.

Excessive current draw: If the amplifier draws excessive current at low AC voltage:

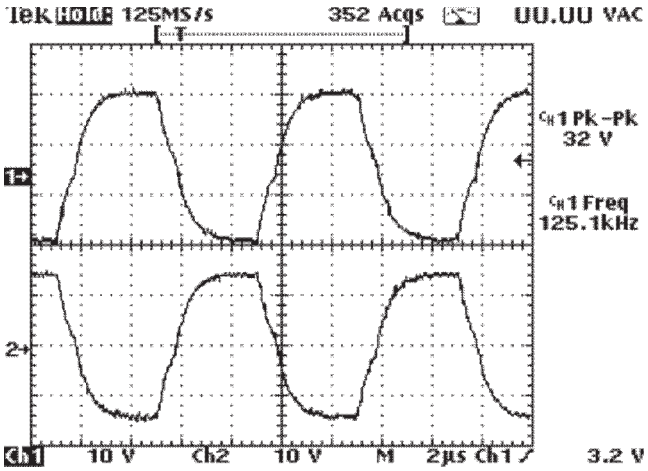


Figure 3.1 IGBT gate drive waveforms

- Check for possible shorts in AC rectifier BR1 (schematic: see sheet *"Power Supply, PL380,"* zone D-6), or the IGBT switches Q68 and Q69 (zone D-4), or the clamp diodes D86 and D87 (zone D-4).
- Also check the line filter components and wiring, especially the 120 V/240 V configuration (for 120 V, J22 connects to J15 and uses a jumper at W1; for 240 V, J21 connects to J15, with no W1).

Failed switch-mode power supply: If you suspect that the switching supply IGBTs Q68 and Q69 (QSC part # QD-000315-00) are damaged:

- Always remove and replace both IGBTs as a pair whenever one or both fails. Do this even if one appears to be okay. If either IGBT is damaged, check the gate coupling resistors R293 and R294 for possible open circuits; check diode D106 for a possible short. Confirm that the windings of T4 are intact. U46 may also be damaged.

Note: The PL380 uses a special type of IGBT with internal isolation. No mounting film or insulation is required. Use only thermal grease between the IGBT and the mounting surface of the heat sink. Use only the exact replacement part, IXGR60N60C2 (QSC part number QD-000315-00).

- Inspect and repair damaged or burnt traces, if needed. For best results, always replace R293, R294, R290, R291, U46, and D106 when replacing blown IGBTs. On amplifiers made after January 2008, there also are fuses to replace, F5 and F6. With the AC voltage completely shut off, check gate drives at each IGBT by using the service fixture to power the control circuits via TEST PORT-A and TEST PORT-B. Confirm that the IGBT gate drive waveform is correct, as shown in Figure 3.1.

Check the drive waveform at the gate of each IGBT (schematic: see sheet *"Power Supply, PL380,"* zone D-4), Q68 and Q69. Confirm that

3.1 PL380: Symptoms, causes, and remedies (continued)

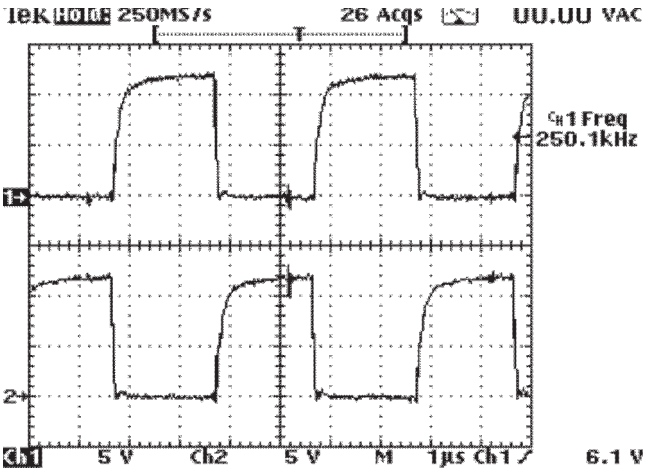


Figure 3.2 FET gate drive waveforms

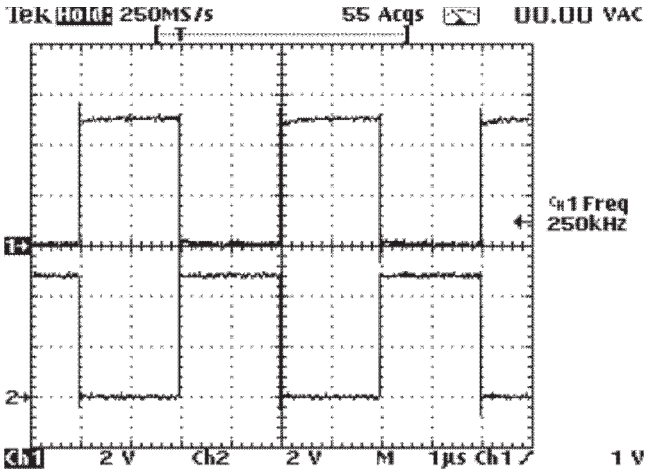


Figure 3.4 The clock drive logic signals.

the wave shapes are normal and match each other well. Each gate's pulse train should be a rounded square wave reaching ±15 V. Note how the waveform flattens slightly as the voltage passes through zero (this controls the dead time between the IGBTs' alternating turn-off and turn-on).

If the pulse train waveforms are not correct or not present, see "Troubleshooting switch-mode supply control circuit problems."

Failed output FETs: If you suspect that the output switching FETs Q10 and Q11 (channel 1; QSC part # QD-000318-00) or Q58 and Q59 (channel 2; same part number) may be blown or shorted:

- Check each FET in circuit by measuring the resistance between its gate and its source. Shorted devices will measure less than 1 ohm.

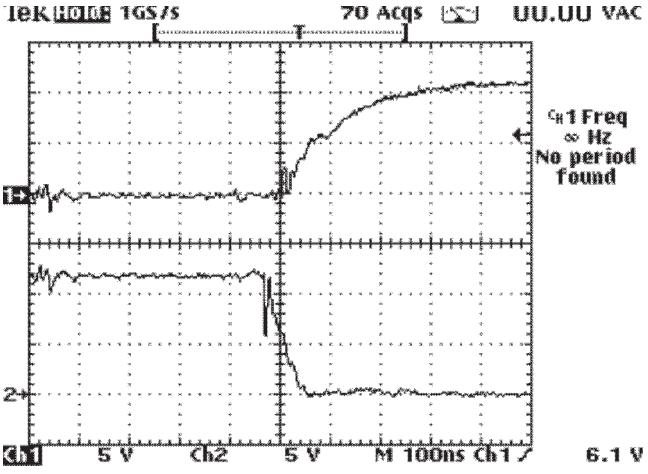


Figure 3.3 Dead time between one pulse turning off and the other turning on should be about 20–30 ns at the 5 V level.

- When replacing FETs, also check their associated gate drive resistors, IC driver, diode, etc. For example, if Q10 is shorted, check D10, R60, R61, and U17.

With the AC voltage completely shut off, check the gate drive signal at each FET by using the service fixture to power the control circuits via TEST PORT-A and TEST PORT-B. Confirm that the signals on the FET gates are normal square waves at 250 kHz, alternating between 0 and +12 V (see Figure 3.2), before replacing the heat sink.

CAUTION: Voltage—even residual amounts—on the main supply rails can cause high current surges into a grounded scope probe when it is connected to the FET sources. To avoid this, use only isolated scope probes to look at gate drive signals when the main power supply is operating.

With FETs in place (powered by the service fixture), each gate drive should display a similar square-wave shape, with pulses alternating between zero and +12 V, with a slightly rounded leading edge and steeper falling edge as shown in Figure 3.2.

If there is any signal into the modulator, you should also observe some pulse-width modulation (PWM).

You should observe a slight "dead time" between one gate's shutoff and the other's turn-on (see Figure 3.3). The pulse shutting off should pass thru 5 V about 20–30 ns before the pulse turning on does (the two traces should cross each other near zero volts). This helps ensure that both FETs on a channel output never turn on simultaneously.

Check the gate drive resistors and the turn-off diode if the slopes or dead time are wrong.

If the waveforms are not correct or not even present, see "Trouble-shooting Power FET Control Circuit Problems."

3.1 PL380: Symptoms, causes, and remedies (continued)

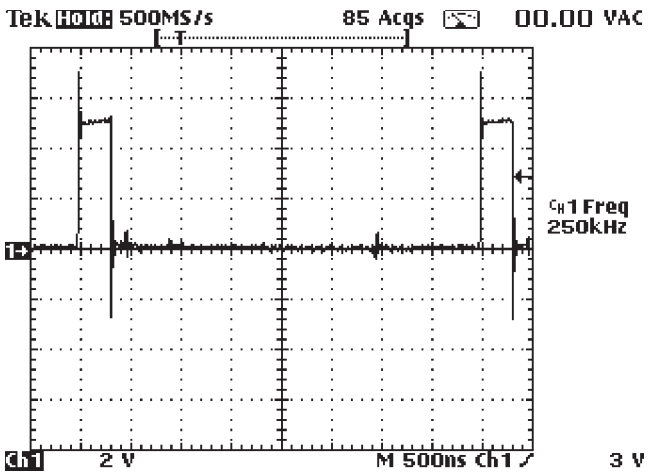


Figure 3.5 The power supply sync pulse.

Troubleshooting switch-mode supply control circuit problems

Troubleshooting the power supply control circuitry requires that the service fixture be connected to the amplifier.

Excessive current draw from the service fixture: The current draw should be about 800 mA positive and 500 mA negative with all the gate drives operating (measure using the service fixture's current monitoring feature). The current draw should be approximately +620 mA and -380 mA when the amp is muted (no gate drive).

- Abnormally high current draw often indicates a short-circuited gate drive or a short on the output of one of the linear regulators, which will get very hot and current limit. When investigating possible short circuits, look for solder shorts or bad ICs.
- Solder shorts on the 5 V regulators will typically overload the 12 V or 15 V regulators feeding them.

Abnormally low current draw: This usually indicates some major switching subsection, such as a gate driver, is not working. If none of the switching subsections are working, check for clock problems.

Clock problems: If the clock is not working, there will be no drive to the power supply IGBTs or the audio output FETs.

- Check logic circuitry (schematic: see sheet AMP CH-A, zone C-7). Crystal Y1 should oscillate at 16 MHz, and you should be able to trace the 1 MHz signal from U1 pin 7 to where it is divided to 500 kHz and 250 kHz in U4.
- The square waves in Figure 3.4 show what the clock drive logic signals should look like on pins 2 and 5 of U4. The signals' frequency and voltage are 250 kHz and 0 to 5 V.
- Components C15, R26, and R21 create a short pulse buffered by U5:1, which serves as the power supply sync signal. Note that it is the same 250 kHz frequency as the clock drive signal but comprises short positive pulses. See Figure 3.5.
- With the AC shut off and the amplifier powered by the service fixture, check the drive signal at the gate of each of the two IGBTs. See Figure 3.1. They should appear as somewhat rounded square waves from gate driver transformer T4 (schematic: see sheet *"Power Supply, PL380"* zone D-3), measuring about ±14 V peak. Each waveform should have a slight but visible flattening as it crosses zero, which forms a short dead time where both IGBTs are off (an IGBT turns on at a V_{GS} of about 7 V).
- The sources of the drive signals are on the primary side of transformer T4. Trace T4 input back to U46 (schematic: see zone D-2), which may be damaged after an IGBT breakdown. Verify that the +15 V supply is present and so are drive signals from U49, which should be synchronized to the 250 kHz pulse from the SYNC line (see Clock, above). Check and if necessary, confirm the values of, C275 and C277 (HF soft start time constant), Q70, R297, R298 (reduces dead time), Q71, C276, D102, R300, and R299 (resets C275, and also holds Q71 off if the TOP-SW supply is not running).

  NOTE: In normal operation, D102 and R299 couple negative TOP-SW pulses into C276, turning off Q71 and enabling U49 to ramp up to normal operation. The service fixture simulates the effect of these pulses by pulling the base of Q71 to -0.6 V.
- **DC Fault problems**. If either channel develops a large DC offset, the power supply is shut down to prevent load damage. Sheet PROT/CNTRL, zone A-5, shows the DC shutdown system. Each channel's output is integrated via RC networks: R139 with C105 (channel 2) and R140 with C106 (channel 1). Excessive long-term positive or negative output voltages are rectified by signal network D29, D30. D32 and Q40, Q42, Q46, and D33, pulling down on AC-OFF-LO which discharges C104 (zone C-6), thus shutting down the power supply. This behavior is also likely if a low-voltage audio stage generates DC due to component fault, being shorted to a rail, etc.

Power FET control circuit problems

The service fixture supplies operating power for all four FET gate drive circuits, which can be inspected with the main supply voltage shut off. **CAUTION:** Voltage—even residual amounts—on the main supply rails can cause high current surges into a grounded scope probe when it is connected to the FET sources. To avoid this, use only isolated scope probes to look at gate drive signals when the main power supply is operating.

With the FETs in place, AC power shut off, and the service fixture supplying power, the drive signal at the gates (referenced to the source) on each channel should be two similar but complementary

3.1 PL380: Symptoms, causes, and remedies (continued)

0–12 V square waves, with a slightly rounded leading edge and steeper falling edge (see Figure 3.2).

If there is any signal into the modulator, you should also observe some pulse-width modulation (PWM).

You should observe a slight "dead time" between one gate's shutoff and the other's turn-on (see Figure 3.3). The pulse shutting off should pass through 5 V about 20–30 ns before the pulse turning on does (the two traces should cross each other near zero volts). This helps ensure that both FETs on a channel output never turn on simultaneously.

Gate drive issues: Each FET is switched on and off by a specific isolated gate drive signal that uses the source terminal as a reference. The FET sources are at different potentials, and each gate drive circuit requires its own 25 V power supply. Therefore, each gate drive and supply has a voltage shifting scheme appropriate for its location in the circuit. For example, the gate drive for the low-side (negative) FET, Q11 (schematic: see sheet *"Amp Ch A, PL380,"* zone C-3), uses the -185 V rail (at the FET source), not ground, as a reference. Therefore, the gate drive power derives from capacitively coupling power pulses from the ground-referenced housekeeping transformer tap via C262 and C263 (schematic: see sheet *"Supply, PL380,"* zone C-3). The pulses are rectified by D94 and D95 and place about 25 V on C261 and C284. For channel 2, the voltage at LO-SIDE GATE-B derives from an identical circuit (schematic: zone C-2).

The source on each high-side (positive) FETs, Q10 on channel 1 and Q58 on channel 2, must alternate between the positive and negative rail voltages. The gate drive circuitry, therefore, is powered via a coupling transformer, T3 (schematic: see sheet *"Supply, PL380,"* zone A-4), a low-capacitance 1:1:1 gate drive transformer whose primary is coupled to the 16 V housekeeping supply tap, with each secondary connected to rectifiers shown (schematic: zone A-3) that provide 25 V of floating power to each high-side gate drive.

One FET gate drive does not work

The Channel 1 gate drive circuitry is shown on schematic sheet *"Amp Ch A, PL380,"* zones D-4 and C-4. Channel 2's is on *"Amp Ch B, PL380,"* zones D-3, D-4, C-3, and C-4.

If one FET gate drive is working but not the other, you only have to troubleshoot the defective one. You can use the one that works as a reference, though.

- With your voltmeter, check and confirm the gate drive supply voltages, measured with respect to the reference *(pin 2 of the MC7812CT; pins 2, 3, 6, and 7 of the LM78L05)* of each regulator. There should be approximately +25 V (unregulated) at the inputs *(pin 1)* of U19 and U20 (channel 1) or U38 and U39 (channel 2), and +12 V on the outputs *(pin 3)*.
  The outputs *(pin 1)* of regulators U14 and U15 (channel 1) or U33 and U34 (channel 2) should be +5 V.
- With your oscilloscope, check and confirm the optocoupler input signals, with respect to ground.
  On channel 1, optocouplers U12 and U13 should receive a 5 V PWM logic signal at their inputs *(pin 2)*. On channel 2, the corresponding devices are U31 and U32.
  Confirm that U12 and U13 are delivering a 5 V PWM output to inputs of U17 and U18 (etc). Confirm that U17 and U18 are delivering 12 V gate drive.
- Undervoltage lockout—Voltage dividers formed by R342 and R343 (on U17) and R340 and R341 (on U18) hold the respective "enables" *(pin 3)* low until the 12 V supply has neared full voltage. Confirm that the values are correct.

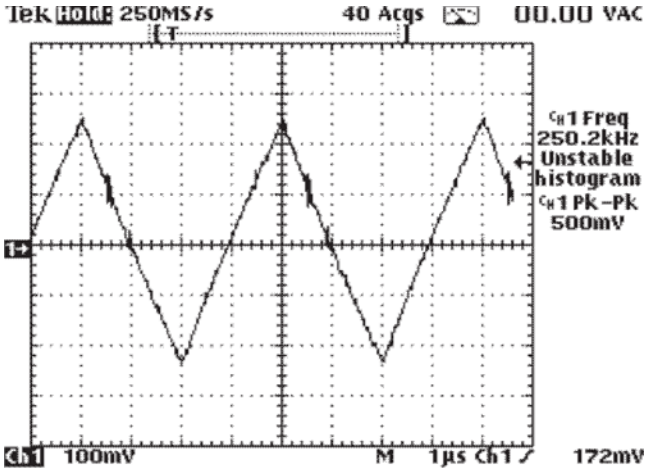


Figure 3.6 Triangle wave at comparator inputs (pin 2 of U8 and U28).

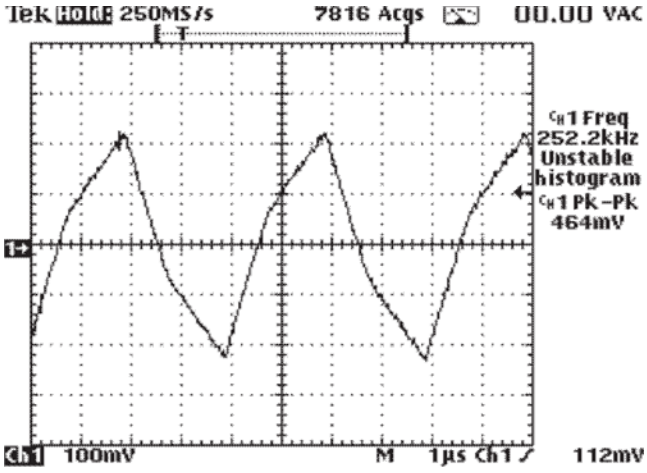


Figure 3.7 Triangle wave with supply rails energized.

Both gate drives do not work

First check the supply voltages and signal flow as described above in "One FET gate drive does not work." Then continue with these steps:

- Check the mute logic signals at U7. A logic low at pin 5 ("AMP_TRIG_B") or 9 ("AMP_TRIG_A") will mute the PWM signals to their respective channel's output devices. A logic high (approx. +5 V) will enable the PWM signals.
- Check for PWM pulse streams at pins 3, 6, 8, and 11 on U9 (channel 1) and on U30 (channel 2).
- Confirm that the audio signal to the modulator input is not DC-locked, which could drive the modulator output to full positive or full negative and result in no PWM switching.

Modulator issues

Even during muting, the clock will drive a 250 kHz square wave to the modulators. On channel 1, clock signal CLK-A goes through R34 and C19 into C21, creating a triangle wave for the inputs of the LT1016 ultra-fast precision comparator, U8. Likewise, on channel 2, clock signal CLK-B goes through R204 and C126 into C127, creating the triangle wave for comparator U28's inputs.

The waveform shown in Figure 3.6 is what you should see at pin 2 of U8 and U28 with no power on the main rails.

Modulator waveform with normal amplifier voltage

With normal supply rail voltages, after muting ends you should observe a distinct change in the triangle wave to a "double slope" waveform (see Figure 3.7) as feedback occurs thru R35 and R36. This may not be visible with zero main supply voltage.

- When the amplifier's muting period ends, verify that there pulse-width modulated logic signals on all outputs of U9 and U30 (pins 3, 6, 8, and 11). Note that the polarities are reversed for positive and negative gate drives.

Troubleshooting Minor Failures

NOTE: The audio circuits of channels 1 and 2 are identical. For simplicity, the PL380 troubleshooting instructions describe only channel 1's components. See the schematic diagrams to idnetify the corresponding components on channel 2.

What to look for

Symptoms may include one or more of these:

- The amplifier operates, but poorly or incorrectly.
- Often, the customer complains that the amplifier runs too warm in idle or exhibits excessive distortion, turn-on noise (excessive thump), or instability.

Possible Situations

- Idle current exceeds 2.5 A (120 V) or 1.2 A (230 V) because of insufficient dead time
- Excessive distortion
- Turn-on noise (DC Offset) problems
- Instabilities
- Abnormal clipping behavior
- Zobel network problems
- Anomalies in frequency response and gain
- Current limiting
- Output current clamping
- Main rail overvoltage clamping
- Fan does not run, or stays on high speed

Idle current exceeds 2.5 A (120 V) or 1.2 A (230 V) because of insufficient dead time: On channel 1, R43, D4, and C29 on the positive-going pulse transitions and R44, D5, and C30 on the negative-going ones set the dead time by slightly delaying the *on* transition of each gate drive pulse.

On channel 2, R215, D48, and C137 set the dead time on the positive-going pulse transitions, while R217, D47, and C139 do the same for the negative-going transitions.

Too little dead time will increase idle current and heating. Too much dead time will reduce idle current slightly but cause excess THD, especially into loads of about 2 to 4 ohms per channel. The normal midband THD, at 10% of full power (approx. 32% of the voltage the amplifier starts to clip at) with a continuous sine wave, should be about 0.05% into 4 ohms and 0.1% into 2 ohms.

Determine which channel draws excessive current:

- Disable the fan by disconnecting the plug from header J5.
- Let the amplifier run at idle for 5 minutes.
- After that, turn the power switch off and measure the temperature on the main heat sink at the front and rear.

  If the front section of the heat sink is warmer than the rear, check channel 2's dead time circuit (R215, D48, and C137; R217, D47, and C139). If the rear section of the heatsink is warmer than the front, check channel 1's dead time circuit (R43, D4, and C29; R44, D5, and C30).

3.1 PL380: Symptoms, causes, and remedies (continued)

Excessive distortion: Each channel should exhibit midband (approx. 1 kHz) THD of 0.01–0.02% at output levels between about 50 W and 500 W (about 20–63 V rms) into 8 ohms, increasing to about 0.2% just below clipping and above about 5 kHz. A slight oscillation or "glitch" in the distortion trace at about 1 to 2 dB below clipping is normal but should not exceed 0.2%. Running signals on the opposite channel should affect THD only slightly.

- Try each channel individually at full power (testing both channels simultaneously will draw too much power, causing limiting). Switching in a 4-ohm load should cause only a slight reduction in the voltage at which the amplifier clips. After several seconds, the gain may cut back to reduce power supply current below about 35 A (120 V) or 18 A (230 V). Typical midband THD at 10 dB below full power will reach 0.04–0.05%.
- Switch the load to 2 ohms. You should observe about 4000 W (approx. 89 V rms or 126 V peak) power for about 1 to 1.5 seconds, with an AC draw of about 60 A (120 V) or 30 A (230 V).

  The gain should then reduce fairly quickly to about 2500 W (approx. 70 V rms or 100 V peak), with an AC draw of about 35 A (120 V) or 18 A (230 V). Typical midband THD at 10 dB below full power will reach 0.1%.
- Moderate distortion problems could be caused by incorrect dead time.

Turn-on noise (DC offset) problems: On channel 1, resistors R23, R309, and R17 (schematic: see sheet *"AMP CH-A, PL380"* zone B-7) provide feedback from the modulator output to op amp U3:2 during muting, keeping the feedback voltages approximately where they belong so there is no large jump when muting ends.

On channel 2, the equivalent components are resistors R194, R368, and R189 and op amp U27:2 (schematic: see sheet *"AMP CH-B, PL380"* zone B-7 and C-7).

If these resistors are missing or incorrect, the channel output may have DC offsets in excess of ±50 mV, as well as turn-on thumps.

Instabilities are indicated by continuous or intermittent bursts of high-frequency oscillation or noise in the audio signal. Check these items:

- Disconnect the load, disable the clip limiter, and drive the channel into clipping with a 1 kHz signal. You may observe slight ringing on the clipped waveform, but no gross oscillations or cutback.
- Put a 6 kHz square wave signal into the channel input and with the load still disconnected, adjust the gain or signal level to get about 50 to 60 volts on the output. Observe the output signal on the oscilloscope.

  Switch an 8 ohm load resistance onto the output, then 4 ohms and 2 ohms. You should observe only slight changes of leading edge and overshoot as the loads are changed.

  With no load, the output may show one or two cycles of damped ringing after the square wave leading edge. If you increase the signal or the channel gain to nearly the point of clipping, the peaking may become excessive, resulting in the amp limiting or muting to protect against severe overshoot.
- The amplifier's frequency response is set by C2 and C200 (schematic: see sheet *"AMP CH-A, PL380"* zone B-8), which are set to produce flat frequency response out to 20 kHz. The phase shift of the 2-pole output filter will result in about 10% peaking on the square wave's leading edges.
- Stability compensation components include C10 with R13, C16 with R32, C13 with R25, R22, and C17 (schematic: see sheet *"AMP CH-A, PL380"* zone B-7). Components R35, R36, and C21 must also be correct.

Abnormal clipping behavior: At just below clipping, you may notice some switching behavior that looks like a slight oscillation on the output. This is normal for the class of modulator used in the PL380 amplifier, and it should not increase THD beyond about 0.25%. It also should not increase greatly when the channel clips with no load, which is the most severe test of the amplifier's stability.

If the switching behavior becomes chaotic with no load or the THD climbs severely at higher powers, first check all the stability components: C10 with R13, C16 with R32, C13 with R25, R22, and C17 (schematic: see sheet *"AMP CH-A, PL380"* zone B-7). Also check the soft-clip circuit, D68 and D108 (zone C-6), and the reference threshold system Q80, Q81, R369–R372, R148, and R391 (schematic: see sheet *"AMP CH-B, PL380"* zone C-7).

Zobel network: An RC damping network (schematic: see sheet *"AMP CH-A, PL380"* zone A-2) across the output, comprising C78 (0.47 µF) with 100-watt resistors R85 and R86 (20 ohms, mounted on the heat sink). This maintains a 10-ohm load on the amplifier at high frequencies, but the resistors could still be overloaded by excessive HF output energy. If this happens, as the power dumped into the resistors exceeds their wattage ratings, bus ZOB-A triggers Q4 via R33, and pulls up on the LIMITER-A bus, reducing the overload. This constrains long-term, 20 kHz power to about 900 W into 8 ohms, which should not interfere with any reasonable audio usage.

A second, fast-acting muting scheme with C224, R383, R384, and Q83 (schematic: see sheet *"AMP CH-A, PL380"* zones A-6 and A-7) mutes the amp within 15 ms if it detects runaway HF behavior, such as no-load operation above 40 kHz.

If the zobel resistors fail, the amplifier may function okay into test loads but will limit prematurely at all frequencies because voltage will pass through C78 and trigger the limiter. The fast muting is meant to protect the zobel resistors.

Frequency response and gain issues: The amplifier's frequency response is set by C2 and C200 (schematic: see sheet *"AMP CH-A,*

3.1 PL380: Symptoms, causes, and remedies (continued)

PL380" zone B-8), which are set to produce flat frequency response out to 20 kHz. The zobel network components noted above will also have a slight effect on frequency response.

Gain problems with otherwise normal THD can be traced to the input section and sensitivity switch (schematic: see sheet *"INP-DISP"* zone C-5), the gain control buffers (zones D-2 and B-2), and the main PCB re-referencing stage (schematic: see sheet *"AMP CH-A, PL380"* zone B-8).

Gain problems accompanied by abnormal THD may be caused by problems with the limiter or problems with feedback networks (schematic: see sheet *"AMP CH-A, PL380"* zone B-7 and B-8) R29, R24 or R35 and R36. The amplifier will probably also be unstable.

Current limiting problems: Confirm that each channel output can be short-circuited, while passing a signal, without failing. The peak current through a short circuit when the amplifier is cold is about 80 A.

With output signals up to about 4 V before the short circuit is applied, each channel shorted should draw about 13 A (120 V model) or 7 A (230 V model) of AC. If both channels are shorted at the same time, the current draw should be about 26 A (120 V model) or 13 A (230 V). After a few seconds, as limiting engages, the AC draw caused by each shorted channel should decrease to about 8–9 A (120 V) or 4–4.5 A (230 V). With higher output signals, the amplifier may also periodically go into protective muting when it is shorted.

Connect 8-ohm load resistors to the amplifier outputs. Use low duty-cycle tone bursts to drive it into slight clipping. Observe the output signals on an oscilloscope. Switch the loads to 4 ohms and then 2.7 ohms; you should see very slight peak reductions. Switch the loads to 2 ohms; you should see only moderate peak reduction (this is the onset of current limiting).

Current limiting should look like rounded clipping; any high-frequency oscillations should be minimal. If you have 1-ohm loads available you can readily observe current limiting; the maximum short-term output current should be about 70–80 A.

Output current clamping problems: High-voltage current sources Q8 and Q9 are enabled shortly after each FET is turned on by U6:6 and U6:5, using a short delay set up by R49, D8, and C38. The current pulls up on D16 and D17 (zone D-3) and D18 and D19 (zone C-3) after the FET has fully turned on. The resulting signals through C67 and C68 create currents in Q12 and Q13 that track FET current. These currents combine into an overcurrent feedback network (zone B-1), which compares this signal to ±5 V references and sends excess current as feedback to the modulator. The feedback prevents any further rise in modulation, therefore clamping the output current to the desired limit (about 80 A peak; less current at higher FET temperatures).

- Any missing or open components will prevent current clamping, which will probably allow FET failure if the outputs are shorted.
- Gross overclamping (distortion) could be caused by missing or open components D16 or D17, D18 or D19, or R76 or R79.
- Mild overclamping could be caused by missing or open R87, and excess THD could be caused by missing C79.

Main rail overvoltage clamping problems: A typical characteristic of class D operation is that as the audio signal swings positive and negative, the FET switches draw power from the loaded power supply rail and recycle some of this power to the opposite rail, via the large catch diodes. For abnormal DC outputs or very low frequency signals, this could pump the "off-side" rail up to abnormally high voltages. The capactor overvoltage protection circuitry (schematic: see sheet *"PROT/CNTRL, PL380,"* zone B-3) detects any overvoltage on positive or negative rails via voltage dividers R171 with R172 and R173 with R174. If either voltage exceeds a 5 V reference, its respective section of U25 will clamp the input signals of both channels via diode network D37–D42.

This circuit will rarely trigger in actual use, since heavy low frequency output signals also tend to cause the power supply to sag, offsetting any "pumping." Therefore, it is difficult to test it for correct operation. However, if you observe positive or negative clamping on both channels' signals, check for defects in the voltage divider or op amp U25.

The fan does not run, or stays on high speed: Thermal buses A-THERM and B-THERM are buffered by transistors Q41 and Q38, respectively. The emitters drive into R147. When either thermal bus voltage goes below 4.4 V, (at approx 55° C), its transistor puts current into Q44's base, in turn driving Q47 to increase the fan voltage from 10 V. The voltage to the fan can range up to the full amount available from the housekeeping supply rails (about 30 V). Feedback elements R160, R157, Q45, and R153 stabilize and regulate the fan voltage. R152 provides the low-speed reference current.

- Fan failure or blockage will ultimately result in protective muting as the heat sink temperature reaches about 80° C. Muting removes most sources of heat dissipation and prevents further overheating.
- Through their emitters, transistors Q39 (channel 1) and Q36 (channel 2) "or" the THERM-A and THERM-B buses into a common bus called A/B_THERM.
- Note that the fan is powered from the main supply and runs for some seconds after turn-off, but it stops during prolonged periods in Standby mode.
- Incorrectly mounting the main heat sink can damage or short the thermal sensors, causing incorrect thermal reading.

3.2 PL325 and PL340: Symptoms, causes, and remedies

When first checking the operation of an amplifier on the bench, always turn your variable autoformer down to zero before plugging the amplifier in.

After you turn the amplifier on, gradually turn up the AC voltage to 25% of full operating voltage (30 V for 120 V model, or 60 V for 230 V) as you observe the amplifier's current draw and confirm that its bias supply is working normally such as the power LED should come on between 30 and 35 V (120 V model) or 60 to 70 V (230 V), with its usual, steady "half-bright" start-up level; this will help you determine what, if anything, is wrong with it.

If you see or smell smoke, flames, or any other signs of short circuits or excessive current draw, quickly turn the AC voltage back down to zero. If the LED comes on at 20 V (120 V model) or 40 V (230 V model) or not until 50 V (120 V model) or 100 V (230 V model), or blinks, do not raise voltage past 60 V (120 V model) or 120 V (230 V model) until you have measured the bias supply voltage. If no such problems occur, it is usually safe to turn the AC up to the amplifier's full operating voltage for further testing. Note: the switching will not start until the AC voltage reaches above about 90 V (120 V model) or 180 V (230 V model).

Power Supply Failure

The customer complains of blowing circuit breakers or fuses, or burning smell or smoke or no power indicator.

Symptoms may include:

- Fuses blow immediately
- Line circuit breakers trip at turn-on
- The amplifier emits smoke
- The amplifier gives off a burning smell
- No power indicator or dim (half-bright)

Possible situations:

Blown IGBTs

Follow *Troubleshooting and Replacing Blown IGBTs* instructions to restore the IGBTs and their control circuit. Before applying AC voltage, verify the following:

- No drivers or output transistors are shorted. If you find any damaged, see *Troubleshooting and Replacing Blown Output Transistors*.
- No rectifiers—D72–D75, D80, D81, D84, and D85—are shorted. Replace any that are damaged.
- Perform a quick test of the bias supply as instructed in *Troubleshooting the TOP-210 Bias Supply Faults*.

Stays in protect; Power LED remains dim

Make sure that pin 2 (STBY) of the DataPort is not terminated to ground by any device that might be plugged into the DataPort, which would cause the amplifier to stick in standby mode.

Note: all measurements should be referenced to PRI_LO.

If node N408 (pin 1 of U13) is 0 V, check the following nodes:

- Node N446 (pin 6 of U13) should be 5 V. If not, check R338, R337, and R336.
- Node N445 (pin 7 of U13) should be 8 V. If not, check R341, R342, and L6. If these parts are okay, C124 may be leaking.
- Node N409 (pin 5 of U13) should be 8 V. If not, check R332, R325, R326, R328, and C121.
- Node N418 (pin 9 of U13) should be 12 V. If not, check D58, R323, R322, and R321. If these parts are okay, C107 or C108 may be leaking.
- Node N410 (pin 8 of U13) should be 8.2 V. If not, check R325, R326, and R328.
- Check Q94 for a possible shorted base-collector junction.

If node N408 (pin 1 of U13) is > 4 V, check the following nodes:

- Node N399 (pin 10 of U19) should be 0 V. If not, check U14:2.
- Node N401 (pin 3 of U19): 210–230 kHz (see Figure 3.8). If not, check U14:1 and Q98.
- Nodes N397 and N398 (pins 11and 14 of U19): 105–115 kHz (see Figure 3.9). If not, U19 or U18 is defective.

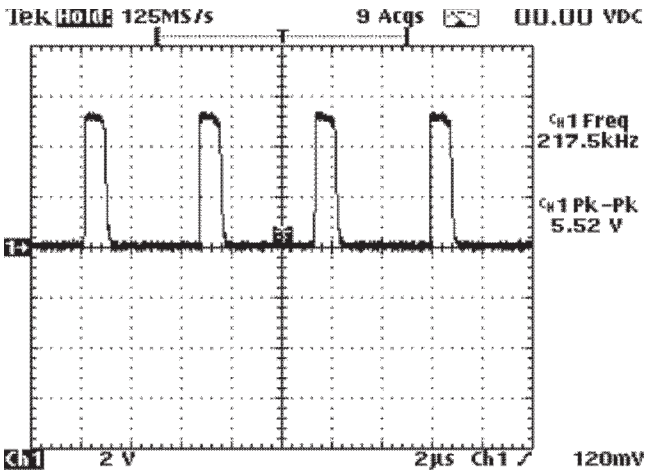


Figure 3.8. Switching pulse at node N401 (pin 3 of U19)

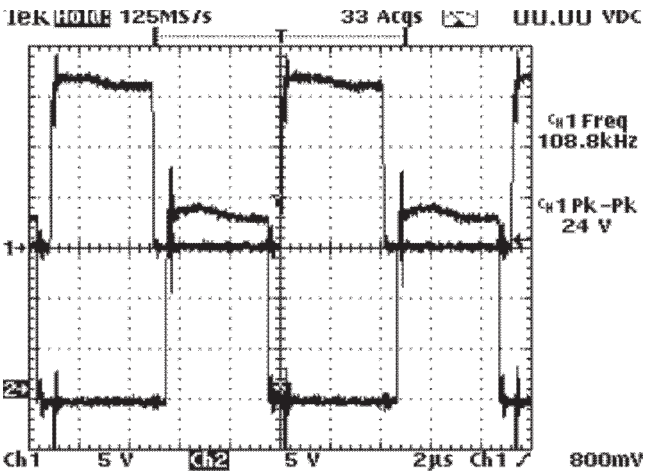


Figure 3.9: Switching signal with dead time at nodes N397 and 398 (pins 11 and 14 of U19).

If the previous steps are okay, check U18, L6, and C144. L6 and C144 rarely go bad.

Protection, Fan, and Muting Problems

The customer complains that the amplifier stays in protect—power supply alternates turning on and turning off; both clip indicators remains lit; unit stuck in mute protect; or no mute delay.

Symptoms may include:

- Power supply alternately turns on and off; power LED and relay repeatedly cycle on and off.
- Amplifier stays muted and in protect; both clip LED indicators remain lit.
- Fan doesn't run or stays on high speed.
- No or brief mute delay.

Possible situations:

Power supply repeatedly turns on and off.

Usually this indicates shorted outputs or drivers, or bad or defective parts in the current limit circuit. Follow the below steps to troubleshoot the unit:

- Check the output transistors and drivers. If any are damaged, see *Troubleshooting and Replacing Blown Output Transistors.*
- Check for leaking capacitors C179, C180, C189, or C190.
- If the outputs and drivers are okay, check the current limit circuitry. See *Troubleshooting Current Limit (Audio Power Stage).* Hint: shorting across C86 will put the unit in mute protect. This might stop the repeadted switching on and off and allow you to troubleshoot for faulty part(s).
- Check for a faulty in DC protection circuit. See *Troubleshooting DC Fault Shutdown.*

Amplifier stays in mute protection.

- If fan runs at high speed, C86 is leaking or the thermal sensor's lead has shorted to the heat sink. See *Troubleshooting Thermal Tracking.*
- Defective U10.

No mute delay

- Defective U10 or shorted D56, Q13, or Q58.
- Channel 1: check Q16 and Q17; Channel 2: check Q61 and Q62.

Fan doesn't run or stays on high speed

See *Troubleshooting Fan Speed* for in-depth troubleshooting.

Instability

The customer may complain of gain problems, spurious noise, or oscillations, or running warm at idle.

Symptoms may include:

- Gain problems
- Oscillations

Possible situations:

Intermittent output

- Check the gain pot.

Gain problems and oscillations

See *Troubleshooting Stability Feedback.*

Runs warm in idle

- Check the step FETs. If any is shorted, it will cause the amplifier to run inefficiently. See *Troubleshooting Step Problems* for in-depth troubleshooting.

Faults With Signal Present

The customer complains that the amplifier passes a signal but doesn't run correctly.

Symptoms covered:

- Premature clipping (without load)
- Premature clipping (with load)
- Excessive distortion
- Runs too hot
- Unequal output in bridged mono mode

Fault: Premature clipping (without load)

- One of the step rails does not work. First inspect for broken or damaged leads on the switching FETs and diodes Q41, Q38, D21, and D22 (channel 1) and Q86, Q83, D47, and D46 (channel 2). If the FETs and diodes are okay, see *Troubleshooting Step Problems* for in-depth troubleshooting.
- Defective clip limiting. See *Troubleshooting Clipping, Limiting (Audio Power Stage).*

Fault: Premature clipping (with load)

- Excessive current limiting into normal load. See *Troubleshooting Current Limit (Audio Output).*

Fault: Excessive distortion

Gain drops about 1 dB; a high-frequency oscillation is superimposed on the audio signal.

- Inspect for damaged or burnt ground traces from the input and display boards to the main board.

Excessive THD, greater than 0.1%.

- Make sure the main board, input, output, and display boards are securely fastened to the chassis for proper grounding.
- See *Troubleshooting Stability Feedback.*

Fault: Amplifier runs too hot

- Make sure the fan is working properly. It should speed up when the amplifier gets warm. See *Troubleshooting Fan Speed* for in-depth troubleshooting.
- Check the step FETs. If any is shorted, it will cause the amplifier to run inefficiently. See *Troubleshooting Step Problems* for in-depth troubleshooting.
- The bias may be set excessively high. Calibrate the bias on the suspect channel as described in the test procedure. Figure 3.10 shows an acceptable crossover spike at the distortion analyzer output.

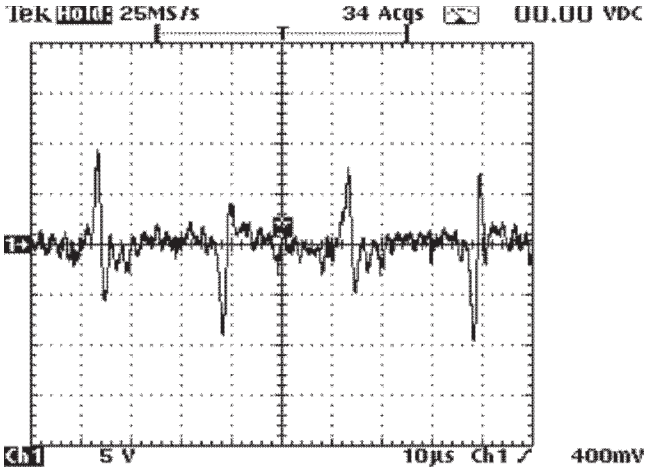


Figure 3.10. Typical crossover residual from distortion analyzer output

Fault: Unequal output level in bridged mono mode

- Check for shorted or damaged (burnt) diodes and transistors: D50, D48, Q46, and Q42.

Troubleshooting Instructions

Power Supply: Troubleshooting TOP-210 bias supply faults—overvoltage, undervoltage, or no voltage

NOTE: The term "bias supply" refers to the small housekeeping power supply that powers the control and switching circuitry in the amplifier's power supply. It does not involve the bias current in the amplifier output sections.

Quick bias supply test

120 V models: Start with the variable transformer set to zero. Turn up the AC voltage slowly to about 25% of the amplifier's full operating voltage (30 V). If the bias supply is working normally, the green *POWER* LED should come on between 30 and 35 V, with its usual steady half-brightness.

If the LED comes on early (at about 20 V), or late (about 50 V or more), or blinks, *do not raise the AC past 60 V* until you first

measure the bias voltage. (The switching will not start until the AC reaches 90 V, so stopping here can save the IGBTs from blowing.) Measure the bias voltage at the + terminal C138; it should be about +18–19 V.

230 V models: Start with the variable transformer set to zero. Turn up the AC voltage slowly to about 25% of the amplifier's full operating voltage (60 V). If the bias supply is working normally, the green *POWER* LED should come on between 60 and 70 V, with its usual steady half-brightness.

If the LED comes on early (at about 40 V), or late (about 100 V or more), or blinks, *do not raise the AC past 120 V* until you first measure the bias voltage. (The switching will not start until the AC reaches 180 V, so stopping here may save the IGBTs from damage.) Measure the bias voltage at the + terminal C138; it should be about +18 to +19 V.

Fault: Bias supply voltage much too high

- Diodes D63–D67 or resistor R349 are open or missing—the feedback path to U16 may be broken.

Fault: No bias supply voltage

- U16 is missing or blown.
- T1 is missing or reversed or has an open primary. Check with an ohmmeter: from pin 1 to pin 2 should measure about 15 ohms.
- Diode D62 may be open or missing.
- U16 may be overloaded (have an excessive current demand on it). Check U13, U14, U18, and U19. Hints: with an ohmmeter, the resistance across C139 (between +16V and PRI_LO) should measure > 20 kΩ; between pins 16 (+VREF) and 1 (PRI_LO) of U19 should measure > 3 kΩ.

Fault: Bias voltage errors

The exact voltage is controlled by the feedback through diodes D63–D67 and resistor R349, as described:

- The + terminal of C138 is the "+18V" rail, with a typical voltage of about 18.8 V.
- Diodes D63–D65 each subtract a "diode drop" (approximately 0.7 V) from the +18V rail.
- The + terminal of C139 is the "+16V" rail, with a typical voltage of about 16.6 V.
- D66, a 10V zener diode, in series with diode D67, subtract about 11 V from +16.6 V.
- Resistor R349 subtracts about 0.5 V, bringing the net voltage at pin 4 (feedback reference) of U16 to about 5.1V.
- U16 uses this feedback to maintain regulation of the +16V and +18V supplies by adjusting the "on" time at pin 5 and thereby adjust the flyback voltage out of T1.
- C142, R356, and R349 form a closed-loop stabilizing circuit that keeps the regulated voltage from "hunting," or varying unnecessarily.
- Transistor Q99 and resistor R374 reduce the voltage of the bias supply by 33% when the AC voltage is turned off. This prevents the Power LED from lighting at half brightness after turn-off as U16 continues to run from the main reservoirs for some time after shut down.

  Resistors R375 and R376 sense the output of U13:3, the "Loss of AC" comparator, and cause Q99 to turn on. If Q99 has shorted, the bias voltages will remain 33% low when AC is turned on.

Fault: Replacing blown TOP-210

If U16 has blown, check T-1 for continuity after removing U16, as its primary may be open. Between pins 1 and 2 should measure about 15 ohms. Replace diode D60 because it has been overstressed.

Power Supply: Troubleshooting and replacing failed IGBTs

Probable causes

- **Short circuits in control circuitry:** The parts operate well within their ratings and should hold up well in the field. The usual cause of failure is when both IGBTs turn on at once, shorting node PRI_HI to PRI_LO. This occurs when something causes the drive signal to one part to remain on when the other part is supposed to turn on. Short circuits from solder or other debris are a possible obvious cause.
- **Short circuits in the load:** Although there is peak current shutdown, shorts in the power amplifier transistors or secondary-side supply components can cause currents to increase too quickly to prevent damage.
- **Overvoltage on the bias supply:** If the TOP-210 bias supply fails to operate, no harm occurs, the unit simply does not operate. However, open circuit (missing part) in several key components can cause the bias supply voltage to be much too high. This blows the 2110 and thus the IGBTs.
- **Broken lead or open rectifier:** D72–D75, D80, D81, D84, D85.

Troubleshooting failed IGBTs

The amplifier's IGBTs are driven by an active, direct coupled integrated circuit rather than a gate drive transformer. IGBT or driver

PLC Power Supply Restoration Kit

The PLC power supply restoration kit contains most often needed parts for restoring a faulty power supply in a PL325 amplifier.

PLC Series Power Supply Restoration Kit (QSC part number: SG-000060-00)

Part Number	Description	Reference	Qty.
QD-000169-00	XISTOR IGBT TO-247AC 600V 55A	Q96 and 97	2
QD-000042-00	DIODE RECT ULTRAFAST 400V 3A	D70 and 71	2
QD-000108-30	DIODE SMT SWITCH 200V .2A 50NS	D78 and 79	2
QD-000113-30	DIODE ZNR 10V 5%	D66	1
RE-001003-30	RESISTOR SMT 10 OHM 1% 1206	R358 and 359	2
RE-003921-30	RESISTOR SMT 39.2 OHM 1%	R349	1
RE-000210-NR	THERMISTOR NTC 15A	R324	1
IC-000134-00	IC CMOS HV DRVR IR2110	U18	1
IC-000024-00	IC REG PWM 40V 0.1A SG3525A	U19	1
IC-000053-30	IC LIN SMT DUAL TIMER LM556	U14	1
IC-000054-30	IC LIN SMT QUAD COMP LM339AM	U13	1
NA	Technical Support CD	NA	1

Needed for PL340

The PL340 amplifier uses the same parts except for the IGBTs, which require a higher current rating.

Part Number	Description	Reference	Qty.
QD-000315-00	IGBT,600V,75A,IXGR60N60C2,TO-247	Q96 and 97	2

failure should be rare (when correctly assembled) but when an IGBT fails, it usually damages the following parts:

- Q96 and Q97 (IGBTs generally fail in pairs)
- Gate drive coupling components D78, D79, R358, R359; check them after removing blown IGBTs.
- U18, the IR2110 high-side gate driver; damage occurs from high current when low-side IGBT, Q97, shorts to PRI_HI. Such current surges typically also damage the gate drive coupling components noted above.
- U19, a SG3525AN pulse-width modulation controller; it may be damaged by high currents shorted through U18 or by overvoltage on the supply rail.
- U14, a 556 dual timer; powered from the 5V reference voltage output of U19, it may be damaged when the SG3525AN fails.
- U13 has fairly high supply voltage ratings and should rarely fail.

Audio Output: Troubleshooting and replacing damaged output transistors

Overview

When an output transistor fails, it will usually become a short circuit across its base, emitter, and collector terminals. A short circuit in one device often cause another to fail as well.

If an output transistor shorts:

- The driver transistor connected to it will probably also fail (Q26, Q27, Q71, or Q72).
- Certain transistors tend to fail or short in pairs: Q39 and Q40, Q36 and Q37, Q84 and Q85, or Q81 and Q82.
- Others may tend to fail or short in groups of four: Q28, Q29, Q34 and Q35; Q73, Q74, Q79 and Q80.

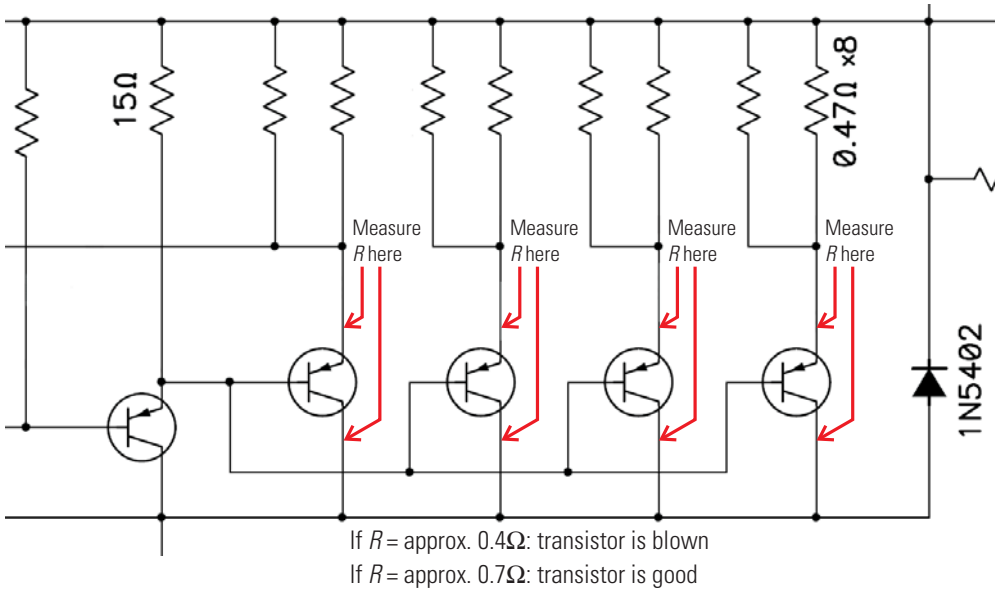


Figure 3.11. Identify damaged transistors by measuring resistance across the collector and emitter.

Troubleshooting hint: Identifying shorted transistors in-circuit

Although the output transistors are arranged in two banks (one NPN and the other, PNP) of four devices, you can identify a shorted output transistor among them without first removing them from the circuit. This requires an ohmmeter that can resolve to tenths of an ohm reliably.

Measure the resistance across the collector and emitter of each transistor in the bank. The ohmmeter's polarity is not important. A damaged transistor will measure about 0.4 Ω, while each good transistor will measure about 0.7 Ω (see Figure 3.11). This test can be done on both NPN and PNP transistors.

Remove and replace damaged transistors with genuine ones of the same type. Do not substitute.

Troubleshooting hint: Checking emitter and base resistors while transistors are removed

When you remove a failed output or driver transistor for replacement, check also for damage in the adjacent resistors. Replace any that are physically damaged or do not measure within 10% of their correct value.

- On each output transistor's emitter is a pair of 0.47-ohm resistors in parallel.
- Each bank of output transistors has a 15-ohm resistor from the base to the supply rail (R85, R86, R208, or R209).
- Each driver transistor has a 200 ohm resistor (R81, R82, R204, or R205) from its base to the supply rail.

Fault: Supply clamping diode shorted

This would draw excessive current from the power supply and trigger DC protection. Check D19 and D20 on channel 1, or D44 and D45 on channel 2.

Fault: Baker clamping circuit problem

A shorted driver transistor may cause damage to one of the Baker clamp diodes.

- Channel 1: check D10–D14 and D16.
- Channel 2: check D35–D39 and D41.

Audio Output: Troubleshooting current limiting

Overview

The usual symptom of weak output current is premature clipping on peaks of the audio signal. This could be caused by a malfunctioning class H step, weak current limiting, or a dead output section.

Fault: No output on one polarity

If the positive or negative half of the output signal is missing, there is an open in the part of the current splitter circuit that leads to the dead output polarity. Check for missing or open components in these locations:

- Channel 1, positive: Q19, Q20, R70, R381, D10, and D14; negative: Q21, Q22, R71, R382, D11, and D12.
- Channel 2, positive: Q64, Q65, R193, R383, D35, and D39; negative: Q66, Q67, R194, R384, D36, and D37

Table 3.1. Clamping voltage troubleshooting

Channel and polarity ☛		Channel 1 +	Channel 1 -	Channel 2 +	Channel 2 -
	Measure across:	C21	C22	C56	C57
	normal voltage on PL325	6.0 V	6.0 V	6.0 V	6.0 V
	normal voltage on PL340	6.5 V	6.5 V	6.5 V	6.5 V
If voltage is too high	check for missing resistor	R60	R61	R183	R184
	or missing transistor	Q14	Q15	Q59	Q60
If voltage is about 0–0.3 V	check for shorted transistor	Q14, Q18, Q24	Q15, Q23, Q25	Q59, Q69, Q71	Q60, Q68, Q70
	or missing resistor	R51, R72	R53, R75	R174, R195	R176, R198
If voltage is approx. 0.7 V	check for missing resistor:	R59	R62	R182	R185
If voltage is wrong	check for wrong value	R59, R60	R61, R62	R182, R183	R184, R185

3.2 PL325 and PL340: Symptoms, causes, and remedies (continued)

Table 3.2. Troubleshooting clamp malfunctions

		Channel and polarity ☛	Channel 1 +	Channel 1 -	Channel 2 +	Channel 2 -
	Measure clamping voltage across:		C21	C22	C56	C57
Clamping voltages collapse too soon	Cutback occurs prematurely:	Check for low resistance	R67, R73	R68, R74	R190, R196	R191, R197
		Check for high resistance	R51, R72	R53, R75	R174, R195	R176, R198
		Check for open or missing diode	D9	D8	D34	D33
Clamping voltages are correct but current is still weak	Check for shorted diode		D10, D14	D11, D12	D35, D39	D36, D37
	Check for missing, open, or unsoldered output transistors or emitter resistors		Q28, Q34, Q36, Q39; R88, R91, R94, R97, R102, R107, R111, R113	Q29, Q35, Q37, Q40; R89, R92, R95, R99, R103, R108, R112, R114	Q73, Q79, Q81, Q84; R211, R214, R217, R220, R225, R230, R234, R236	Q74, Q80, Q82, Q85; R212, R215, R218, R222, R226, R231, R235, R327
	Check for stressed emitter resistors that may be out of tolerance		R88, R91, R94, R97, R102, R107, R111, R113	R89, R92, R95, R99, R103, R108, R112, R114	R211, R214, R217, R220, R225, R230, R234, R236	R212, R215, R218, R222, R226, R231, R235, R327

Fault: Premature clipping at about 60% of maximum peak voltage, at any impedance

This indicates a malfunctioning step in the channel's class H circuitry. See *Troubleshooting a Step Problem*.

Fault: Constant premature clipping, worse at low load impedances

If the amplifier can produce a full output voltage sine wave signal into a load of 8 ohms (PL325: greater than 60 V rms or 85 V peak; PL340: greater than 75 V rms or >110 V peak) but clips prematurely into 4 or 2 ohms, it is safe to assume that the class H step circuitry is all right but the output current capability is too low.

First, check the clamping voltages across C21 (Channel 1 +), C22 (Channel 1 -), C56 (Channel 2 +), C57 (Channel 2 -), as shown in Table 3.1. At idle, all four voltages in the amplifier should be similar. If one is significantly different from the others, check parts according to the following table

The exact voltages will vary with temperature, but the one that does not match the others will indicate the weak cell. A voltage that is too low will cause premature clamping on that polarity of the output section.

If the voltage is correct and current is still low, also check for missing or unsoldered output transistors or emitter resistors.

Audio Power Stage: Troubleshooting current limiting

Fault: Output collapses prematurely

Power supply cutback normally will cause the output signal to collapse after several seconds at continuous level at or near full power into low load impedances, such as 2 ohms per channel or a 4-ohm load in bridged mono. This is done to protect the power supply circuitry from excessive long-term current or overheating while still allowing full power for audio peaks and transients.

If the output collapses immediately instead of after several seconds, it may indicate a premature triggering of the power supply cutback.

Cutback in one or both output sections at high temperature and nearing maximum power into two ohms is also normal. But cutback that occurs when driving loads of 4 ohms or higher per channel (or 8 ohms or higher in bridged mono), or when the amplifier is cold, into 2 ohms per channel or 4 ohms in bridged mono, indicates a problem with the transistor power measuring circuitry (see Table 3.2).

Audio Power Stage: Troubleshooting power supply cutback

Overview

As noted in the power supply description, the amplifier's current limit cuts back when necessary to protect the power supply circuitry. Because the observed effect is a reduced maximum output voltage, in response to prolonged operation above the long-term current

3.2 PL325 and PL340: Symptoms, causes, and remedies (continued)

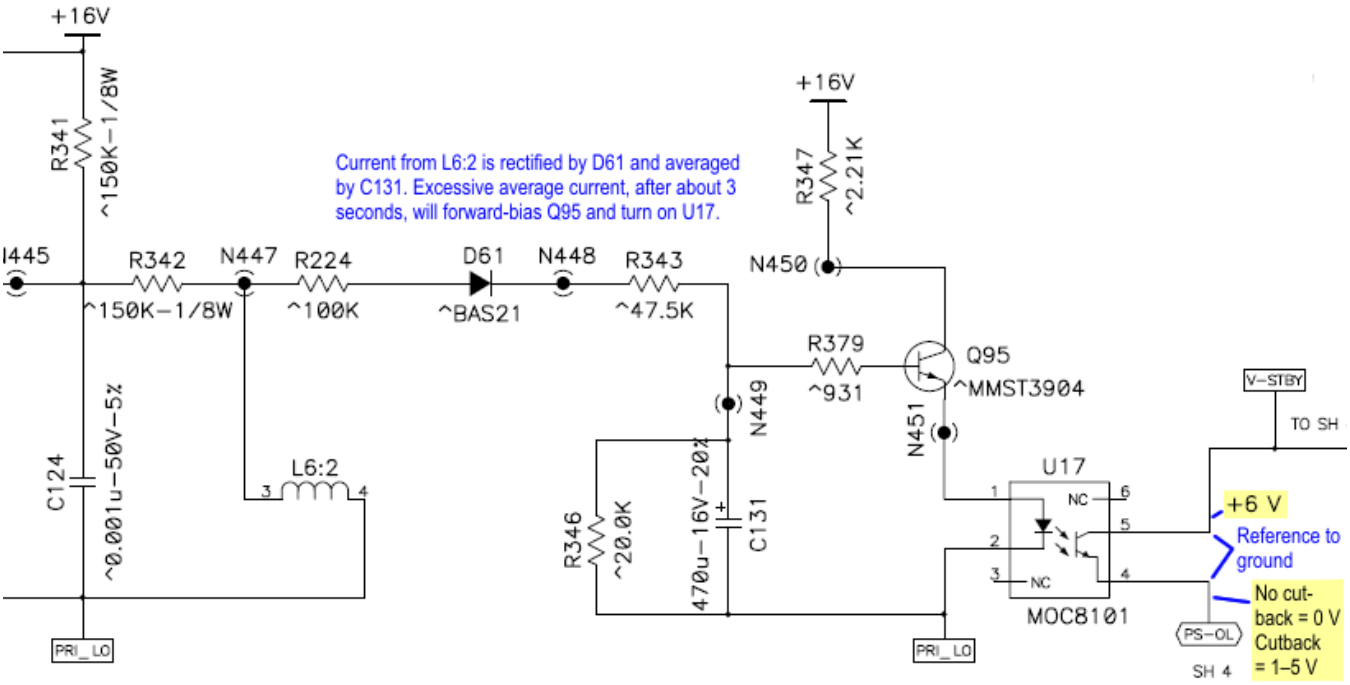


Figure 3.12. The overcurrent detection circuit for power supply cutback.

limit, we commonly refer to this behavior as "power supply cutback", but we must remember that it is actually *amplifier current limiting* in response to an overload signal sent from the power supply. Full-power operation into 2-ohm loads (on both channels) should produce a 50% cutback of current after several seconds.

If the amplifier fails to cut back both channels after about 3 seconds when driving a 2-ohm load on each channel with a continuous test tone at maximum output, the cutback signal is probably missing.

CAUTION: Prolonged operation under these conditions with no cutback could blow the IGBTs or burn out capacitor C144. Conduct testing for no longer than 6–10 seconds.

Check the output (secondary side) pins of the MOC8101 opto-coupler U17 (see Figure 3.12). Confirm the presence of +6 V (reference to amplifier's ground) on pin 5. The voltage on pin 4 should normally be at about 0 V, and go high (+1 to +5 V) after about 3 seconds at full power.

If pin 4 on U17 does not go high, examine the IC itself. If it appears undamaged, trace the circuitry driving U17 (**CAUTION:** this circuitry is on the primary side, which uses PRI_LO as its reference). Check for continuity through L6:2 to PRI_LO (from pin 3 to pin 4); also check for missing or open R343, D61, Q95, or R347, all of which drive the input of opto-coupler U17. A short in R346 or C131 will also prevent voltage reaching U17.

If pin 4 of U17 goes high as it should yet both channels fail to cut back, trace the voltage on the PS_OL bus to R273, which connects to the MUTE+ bus. Continue tracing voltage on MUTE+ to Q16 and Q61. If only one channel fails to cut back, look for missing Q16, R65, or Q17 or Q61, R188, Q62.

Capacitor C131 controls how quickly the power supply cutback reacts. If it is missing, the amplifier current limits will enter cutback almost immediately at or above full power into 4 ohms per channel.

Table 3.3. Troubleshooting clamp transistors

	Channel and polarity ☛	Channel 1 +	Channel 1 -	Channel 2 +	Channel 2 -
Clamping voltage decreases, but no current cutback	Measure voltage on	C21	C22	C56	C57
	Check clamp transistor	Q18	Q23	Q63	Q68

Table 3.4. Troubleshooting short circuit cutback clamping

	Channel and polarity ☛	Channel 1 +	Channel 1 -	Channel 2 +	Channel 2 -
	Measure clamping voltage across:	C21	C22	C56	C57
Clamping voltage does not decrease 50%	Check cutback transistor and resistor	Q24, R67	Q25, R68	Q69, R190	Q70, R191
	Check voltage sense resistor	R73	R74	R196	R197
	Check for shorted or low value resistor	R72	R75	R195	R198

Audio Power Stage: Troubleshooting short circuit cutback

Fault: Short circuit current doesn't cut back

WARNING: Do not maintain a shorted load if cutback fails to occur within 1 second.

It will be necessary to measure the output current with a DC current probe, or by noting the voltage across a low value resistance with a DC scope, in order to determine which output cell—the positive or the negative one—is failing to cut back.

Failure to cut back could indicate either lack of clamping, or lack of voltage cutback. Measure the voltage on the respective clamp capacitor. If the voltage decreases, but current limiting does not cut back, check the clamping transistor (see Table 3.3).

If the measured voltage on the clamp capacitor does not decrease to about 50% during the short, check the circuitry that measures the current during short circuit (see Table 3.4).

Audio Output Stage: Troubleshooting Stability and Feedback

Fault: High frequency oscillations

Symptoms are severe oscillations accompanied by significant current draw and gross distortion.

- Channel 1: C27 or R367 missing, open, or wrong value;
  Channel 2: C62 or R368 missing, open, or wrong value.
- Channel 1: C25 or C26 missing, open, or wrong value;
  Channel 2: C60 or C61 missing, open, or wrong value.
- Secondary reservoir capacitors missing or open (it would be very unlikely that all are defective).

Symptoms are severe oscillation but no large current draw, with low voltage gain.

- Channel 1: R22 open or missing;
  Channel 2: R146 open or missing.

Fault: Marginal instability—may appear only as excessive distortion

- Channel 1: C14 missing or open;
  Channel 2: C49 missing or open.
- Channel 1: C16 missing or too large;
  Channel 2: C50 missing or too large.
- Channel 1: C28 missing or open;
  Channel 2: C63 missing or open.
- Channel 1: C25 or C26 missing or too large;
  Channel 2: C60 or C61 missing or too large.
- C195 or C196 missing on the input board.

Fault: Excessive oscillation just below clipping into 2–4 ohms per channel

NOTE: Into 2-ohm loads, about 0.1% oscillation at just below clipping is normal.

- Channel 1: C17 missing or open; Channel 2: C52 missing or open.

Fault: Excessive switching noise

Switching noise may look like instability on an oscilloscope, but its frequency will be much lower (110 kHz) than an oscillation typically will be. It will be more visible on low-frequency signals (about 200 Hz and lower) and with lower load impedances.

- C129 or C134 missing on output board.
- Bad chassis-to-ground connections; check mounting screws on the output and main boards.

Fault: Incorrect gain

- Channel 1: R23 and R31 set the gain of the output stage;
  Channel 2: R147 and R153 set the gain of the output stage.
- The two gain control potentiometers are each buffered by a single op-amp stage, whose gain is set by a pair of resistors.
  Channel 1: R11 and R16.
  Channel 2: R137 and R139. Make sure Q48 is turned on (with the amplifier not in bridged mono mode). Grounding R137 at Q48 should not affect gain; if it does, check R132, which turns Q48 on or off.
- Each channel's balanced input is a differential op-amp stage. The gain of each is set by four matched resistors R8, R9, R12, and R13 on Channel 1 and R129, R130, R135, R136. Confirm both the + and - sides of the balanced inputs are working; check R5 and R6 on channel 1 and R123 and R124 on channel 2.

Audio Power Stage: Troubleshooting Clipping and Limiting

Fault: Excessive clip sticking (too much distortion during clip limiting)

- Channel 1: C14 is much too large in value;
  Channel 2: C49 is much too large in value;
  (these can also cause increased high frequency distortion).
- Channel 1: R38 is missing or open;
  Channel 2: R161 is missing or open.
- Channel 1: R38 or R39 are of wrong values;
  Channel 2: R161 or R162 are of wrong values.
- Channel 1: Q9 or Q10 is missing or open;
  Channel 2: Q54 or Q55 is missing or open.
- Channel 1: R34 or R35 is missing or open;
  Channel 2: R157 or R158 is missing or open.
- Channel 1: Q8 is missing or open;
  Channel 2: Q53 is missing or open.

Fault: Clip limiting doesn't work (both channels)

- See if U3 is missing or defective.
- Check U3 supply voltages at +13VCL and -13VCL. You can find node +13VCL at the junction of R246 and C73, and -13VCL at R247 and C74.

Fault: Clip limiting doesn't work (only one channel)

With your oscilloscope, probe the op-amp output on pin 7 of U2 (channel 1) or U7 (channel 2), while the channel is clipping. If the signal peaks exceed 4 V during clipping, check these components:

- R38 (channel 1) or R161 (channel 2) may be missing or open.
- R38 or R39 (channel 1), or R161 or R162 (channel 2), may have incorrect values.
- Q9 or Q10 (channel 1), or Q54 or Q55 (channel 2), may be missing or open.
- R34 or R35 (channel 1), or R157 or R158 (channel 2) may be missing or open.
- Q8 (channel 1), or Q53 (channel 2), may be missing or open.

If the op-amp output clamps at 3.5–4 V as expected, check these parts surrounding U3:

- R32 (channel 1) or R154 (channel 2), may be missing or open.

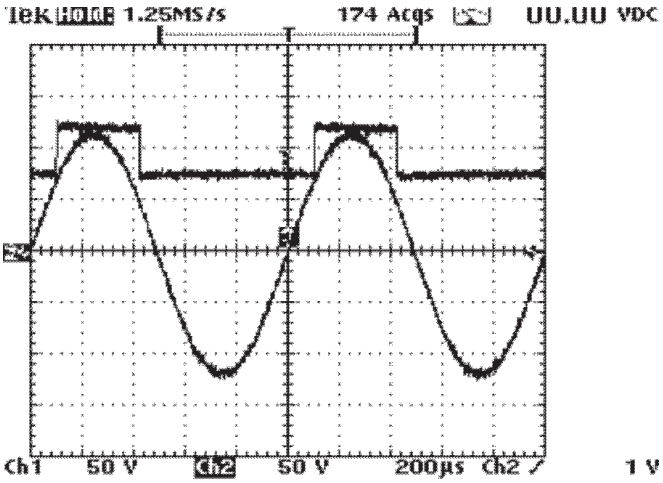


Figure 3.13. Output signal and positive rail steps.

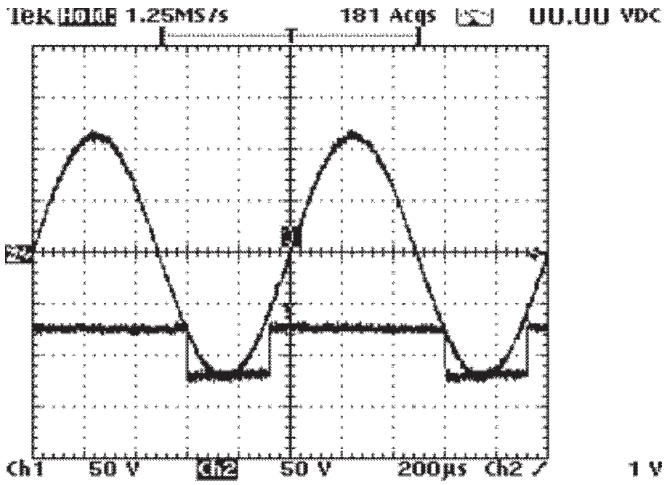


Figure 3.14. Output signal and negative rail steps.

- Q7 (channel 1) or Q52 (channel 2), may be missing or open.
- R28 (channel 1) or Q151 (channel 2), may be missing or open.
- Q6 (channel 1) or Q51 (channel 2), may be missing or open.
- R18 (channel 1), or R141 (channel 2), may be missing or open.
- R19 (channel 1), or R142 (channel 2), may be missing or open.
- On the rear panel DIP switches, SW1:1 (channel 1), or SW1:10 (channel 2), may not be making contact.
- Check each pin on U3.

Fault: Clip limiter oscillates

- C13 (channel 1), or C48 (channel 2), may be missing or open.
- R21 or R27 (channel 1), or R144 or R150 (channel 2), may be missing or open.

Audio Power Stage: Troubleshooting Step Problems

Fault: Step won't turn on (premature clipping)

- First, inspect the step FETs—Q38 and Q41 on channel 1, or Q83 and Q86 on channel 2—as well as diodes D21 and D22 on channel 1 or D46 and D47 on channel 2 for broken leads. Replace any damaged components.
- Check the DC supply voltages on the LM311 step comparators, U4 and U5 on channel 1 or U8 and U9 of channel 2. Measure across pins 8 (V+) and 4 (V-).
  The supply voltages should measure about 14 V on the positive step driver comparators U4 and U8, and about 12 V on U5 and U9, the negative step driver comparators.

If any step circuit will not switch to the high rail, the channel will clip prematurely on that polarity, with any load or even with no load. Make sure the clipping is not actually current cutback, which is usually evident only when driving signal into 2-ohm loads.

With your oscilloscope, probe the output voltage and intermediate rail voltages to confirm the clip point and the lack of step action. Trace the circuit back from the step FET via the gate drive to the drive circuit, to locate cracks, missing parts, etc.

Check the voltage of the nodes POSREF (it should be about 20 V below the +MID-RAIL node) and NEGREF (it should be about 17.5 V above the -MID-RAIL node). Look also for severe mismatches among the comparator resistor ladders: R52 and R54–R56; R57, R58, R63, and R64; R175 and R177–R179; R180, R181, R186, and R187.

Fault: FET does not stay fully turned on

This generally causes clipping and possible distortion problems at low frequencies when the amp drives 2-ohm loads.

Use a 20 Hz sine wave signal and set it to just the onset of clipping on the waveform peaks. Confirm that the step FETs remain fully on for the entire time that the signal exceeds the step threshold and shut off slightly after the signal descends below the threshold. If they shut off prematurely, check for weak gate drive and determine the cause.

- Weak positive step gate drive: check for about 14 V across C32 (channel 1) or C51 (channel 2).
  Check capacitor C31 (channel 1) or C66 (channel 2).
  Resistor R104 (channel 1) or R227 (channel 2) may be low in value, and D18 (channel 1) or D148 (channel 2) may be missing or open.
  Also check R78, D15, and Q30 (channel 1) or R201, D40, and Q75 (channel 2).
- Weak negative step gate drive: check for about 12 V across C67. Check R83, D17, and Q32 (channel 1) or R206, D42, and Q77 (channel 2).

Fault: FET turns on or off very slowly

This generally causes problems at high frequencies when driving 2-ohm loads.

If the turn-on and turn-off slopes are both equally slow, check capacitor C30 (channel 1) or C65 (channel 2) on the positive steps and C29 (channel 1) or C64 (channel 2) on the negative.

If only one slope is slow, check these components and buffer transistors:

- Positive step: R78, R79, D15, Q30, and Q31 (channel 1); R201, R202, D40, Q75, and Q76 (channel 2).
- Negative step: R83, R84, D17, Q32, and Q33 (channel 1); R206, R207, D42, Q77, and Q78 (channel 2).

Fault: Step stuck on (stays on high-voltage rail)

- Check for shorted FETs Q38 and Q41 (channel 1) or Q83 and Q86 (channel 2) and replace damaged FET if necessary.

If the positive step is stuck on, (as evidenced by a permanent high voltage on the switched rail) the FET is certainly bad, since the positive gate drive circuitry cannot indefinitely stay turned on due to its bootstrapped supply.

If the negative step is stuck on, the cause could be a bad FET, or the gate drive circuit could be holding the FET on, which can be confirmed easily by measuring the gate voltage with no signal present; the gate voltage should be very close to the negative high rail voltage. If it is several volts positive with respect to the negative

high rail, then the gate drive is incorrectly turning the FET on. Malfunctioning gate drive circuitry should be checked as descibed under *Fault: Step won't turn on (premature clipping)*.

Fault: Repeated FET failure

Repeated failure of a step FET is usually caused by thermal stress because of a failure to switch fully on or off—that is, the FET lingers in its linear region. Failures usually occur with 2-ohm loads, when the FET's dissipation is highest.

After replacing the FET, you should monitor the step waveform with a large signal. Start with at light load, 8 ohms, to avoid a repeat failure. Advance briefly to heavier loads—4 and then 2 ohms—while closely watching the waveform. You will need to use an isolated scope probe which allows voltage readings to be taken with respect to the intermediate rails, or to FET sources.

Fault: Excessive step distortion (step glitch)

Close scrutiny of the distortion trace, and scope probing of the switched waveform, will help determine the cause of excess step distortion. The step should switch when the output voltage rises to within 10 to 12 volts of the low rail voltage. This switching margin should be fairly constant throughout the audio spectrum, from 20 Hz to 20 kHz.

The switching event itself should be a fairly uniform up or down ramp, changing at a rate of about 25 V/µs. It should therefore take about 2 µs to complete its transition.

Fault: Step switching too close to the rail

The step switches well after the signal voltage has approached to within 10 to 12 volts of the low rail voltage.

This will cause increased step glitch, especially at low load impedances. If this happens at all signal frequencies, check the reference voltages at the nodes POSREF and NEGREF.

- POSREF should be about 20 V below the +MID-RAIL node.
- NEGREF should be about 17.5 V above the -MID-RAIL node.

Confirm correct resistor values in the output voltage divider: R48–R50 (channel 1) or R171–R173 (channel 2).

If the switching problem is present only on high frequencies, check the value of the speed up capacitor C20 (channel 1) or C55 (channel 2) in the output voltage divider, or look for slow switching (see *Fault: Slow or fast switching*, below).

Fault: Step chattering

If the step repeatedly switches on and off in rapid succession, it creates an oscillation burst which increases step glitch. The tendency is usually greater with low-frequency signals and low load impedances. Two or three "false switches" at the step threshold on very low frequency signals into 2-ohm loads is acceptable, but prolonged bursts of chattering on mid or high frequencies may cause FET failure.

To minimize chattering the step comparator has hysteresis, or positive feedback, to slightly shift the threshold when it changes state; when the comparator switches the step on, it shifts the "off" threshold slightly toward zero.

- Positive step: Check the hysteresis resistor R66 (channel 1) or R189 (channel 2).
- Negative step: Check the hysteresis resistor R69 and capacitor C187 (channel 1) or R192 and C193 (channel 2).

Fault: Slow or fast switching

Slow switching reduces step glitch but puts more stress on the FET. Fast switching, on the other hand, increases step glitch. The usable range of step transition speed is about 17–27 volts/µs.

If the turn-on and turn-off slopes both appear to be equally off speed, check the slope capacitors: C30 (positive) and C29 (negative on channel 1, or C65 (positive) or C64 (negative) on channel 2.

If only one slope is slow, check these components and buffer transistors:

- Positive step: R78, R79, D15, Q30, and Q31 (channel 1); R201, R202, D40, Q75, and Q76 (channel 2).
- Negative step: R83, R84, D17, Q32, and Q33 (channel 1); R206, R207, D42, Q77, and Q78 (channel 2).

Fault: Step FET oscillation

Certain FET types tend to oscillate at extremely high frequency while ramping up and down. This injects interference into the signal, effectively increasing the step glitch. Identifying such tendencies is one of the evaluative tasks in qualifying or disqualifying specific FET types. If these problems appear in any QSC amplifier, please report it to QSC Technical Services.

Fault: Severe step oscillation

This happens generally on low frequencies with low load impedances, right at the step threshold.

- Positive step: Check the hysteresis resistor R66 (channel 1) or R189 (channel 2).
- Negative step: Check the hysteresis resistor R69 and capacitor C187 (channel 1) or R192 and C193 (channel 2).

Audio Power Stage and Power Supply: Troubleshooting DC Fault Shutdown

Normal circuit behavior

Any amplifier fault that causes a severely asymmetrical output, such as premature clipping of one polarity, a missing step, etc., may trigger DC fault shutdown. This is normal behavior of the DC fault shutdown circuit.

Tracing the cause of false triggers

If amplifier is shutting down for no apparent cause, you must locate the source of the false DC fault signal. Check the amplifier outputs with a DC coupled oscilloscope to confirm the actual absence of a DC offset. The circuit will trip on DC offsets exceeding about 4 V, positive or negative.

The input of opto-coupler U15 can be safely disabled by shorting pins 1 and 2. This will indicate if the false DC signal's source is before or after U15:

- If the amp comes out of shutdown when you disable U15's input, then look for faults in the DC sense circuitry, including the comparator U10:1. Check the output of U10:1, pin 1. If it goes low during DC shutdown, it is sending the false signal.
- If the amplifier stays in DC shutdown, then the fault lies in U15 or the power supply control circuitry, which is referenced to PRI_LO.

Fault: Shutdown occurs as soon as power supply switching starts

NOTE: Connect a 50-watt resistor in series with AC line to limit fault current, in case the output transistors are shorted. For 120 volts the resistor should be 50 ohms, and 100 ohms for 230 volts.

Connect the DC-coupled oscilloscope to an amplifier channel's ouput. Briefly disable U15 as described under *Tracing the cause of false triggers* to determine if there is actually a DC fault. Repeat for the other channel.

If the amplifier outputs look okay, check the comparator output at pin 1 of U10:1. If it is low, check the voltages on pins 2 and 3:

- Pin 2: should be zero (no signal)
- Pin 3: should be about 2 V, set by R243, R244, and R245.
- Check R348 at U15.

Fault: Shutdown occurs when output signal exceeds 4 V

- Check Q87, C7, R240, and D48 for open or missing components.
- Confirm that D48 is pulled low (-13 V), holding transistor Q87 on. If not, check R117, R118, and Q42.
  NOTE: This control voltage responds to the Bridge Mono mode switch.
- Check R348 at U15.
- Check for open or bad connections at step diodes D21, D22, D46, and D47.

Troubleshooting Thermal Tracking

Fault: Mounting problems with 10K NTC sensing thermistor

Each channel's thermal sensing for fan and bias tracking depends on a 10K NTC thermistor, R30 (channel 1) or R155 (channel 2), that is mounted in a hole in its heat sink. The hole is filled with thermal grease to improve coupling. If the thermistor is not straight while the heat sink is mounted, it may short out against the side of the hole. The thermistor is mounted on a standoff that protrudes into the hole, so it should not short-circuit if care is taken while installing the heat sink.

The heat sinks are live, as they carry the output voltage of their respective channels. If a thermistor short-circuits to its heat sink, this output voltage is coupled to the it. If the short is to the thermistor's grounded lead, the thermistor might not be damaged, although the channel output will then be shorted to ground. If the other lead—the "live" end—shorts to the heat sink, a large signal voltage could be put across the thermistor, which could damage it.

Fault: Short from the "live" end of the thermistor to the heat sink

NOTE: This type of short circuit may occur unnoticed and the amplifier will appear to operate normally. However, the amplifier will exhibit poor bias tracking, and the fan speed may fluctuates between low and high.

Inspect and replace affected NTC.

Fault: Thermistor is bent over and shorted to the driver transistors

The thermistor may touch Q19 or Q26 (channel 1) or Q64, or Q71 (channel 2).

This will cause severe overcurrent to the affected output cell, possibly damaging the parts in series with the shorted transistor. It

may also damage the power supply.

Replace the affected thermistor and driver transistors. Check these components in series with the drive transistors:

- Channel 1
  Q19 shorted: Check, R381, Q20, R70, D10, and D14.
  Q26 shorted: Check *all* the output transistors on this channel, as well as the opposing driver transistor, Q19.
- Channel 2
  Q64 shorted: Check R383, Q65, R193, D35, and D39.
  Q71 shorted: Check *all* the output transistors on this channel, as well as the opposing driver transistor, Q64.

Troubleshooting Fan Speed

The customer complains of fan runs full speed or fan doesn't run.

Symptoms covered:

- The fan is stuck at full speed.
- The fan doesn't run.

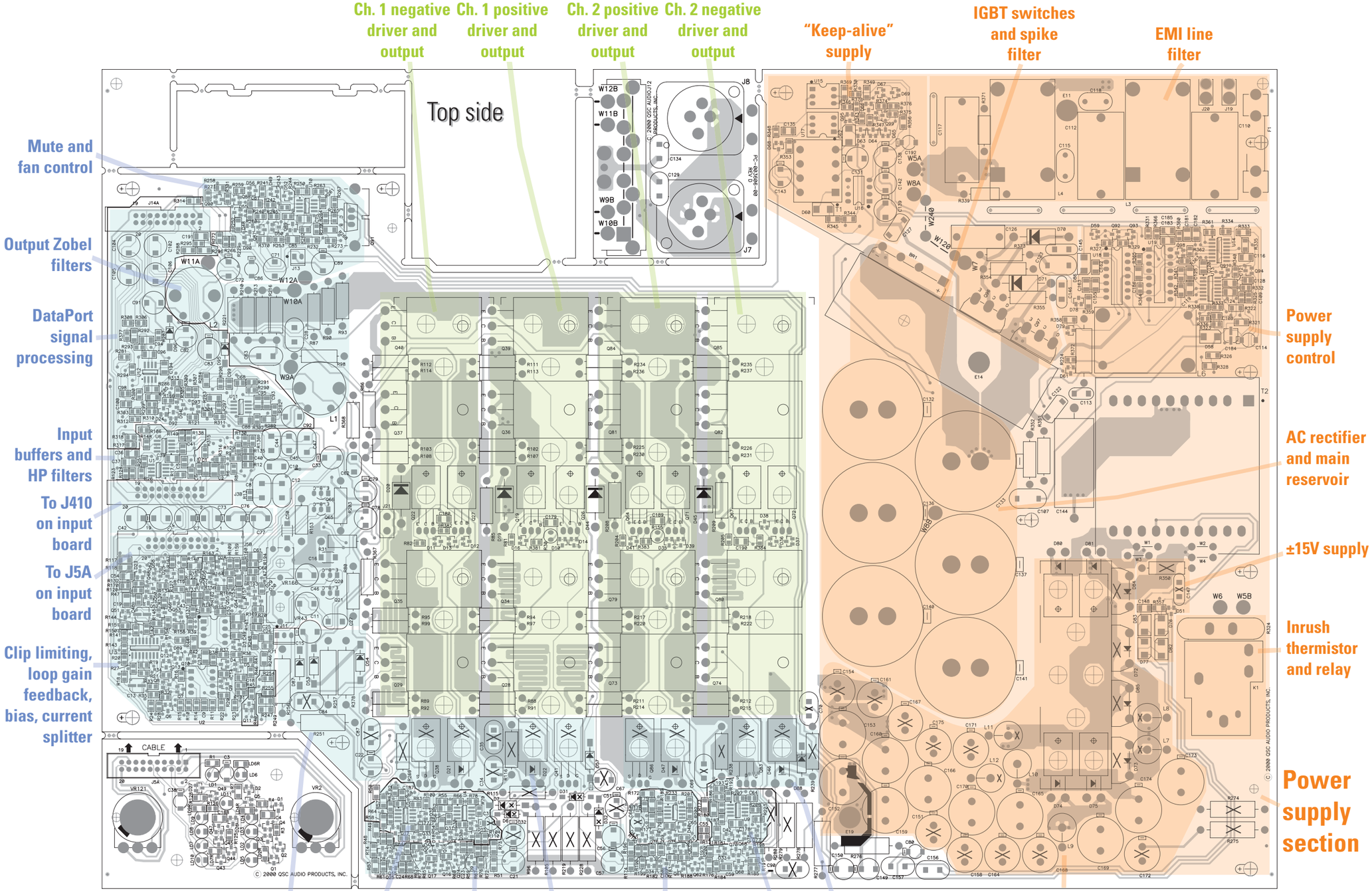
Fault: The fan is stuck on high speed

- C85 may be leaking
- If the amplifier is in thermal protection, C81 may be leaking
- Q88, Q89, or Q91 failed
- Thermistor R30 or R155 shorted to heatsink
- R266 or R271 missing

Fault: The fan doesn't run

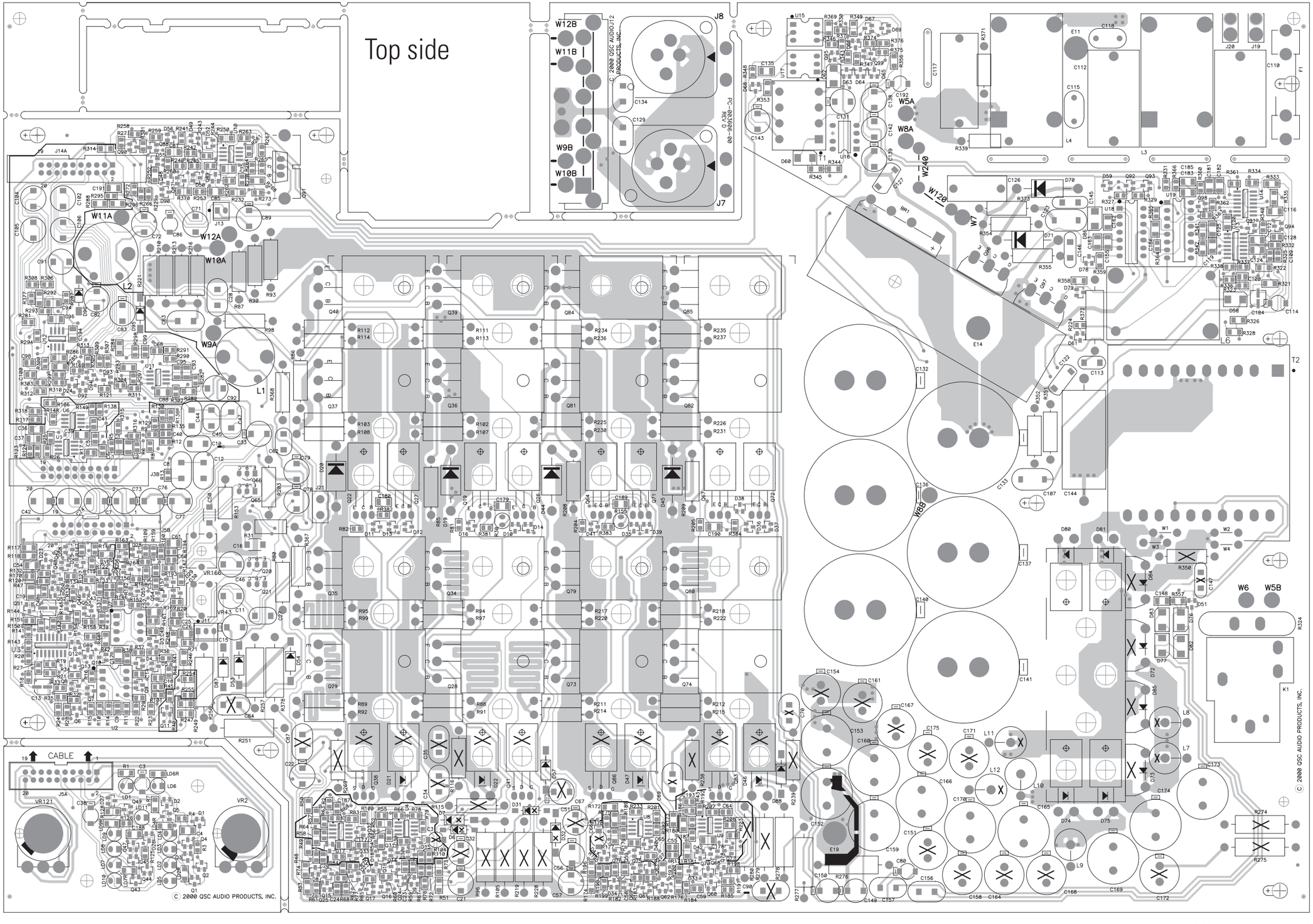
Check the fan voltage; it should be 11 V when the amplifier is cold, and up to 29 V when hot.

- If the fan voltage is okay, replace the fan.
- No voltage: check Q89–Q91, R264, and 265 for open or missing components. Confirm that ±15 V supply voltages are present.



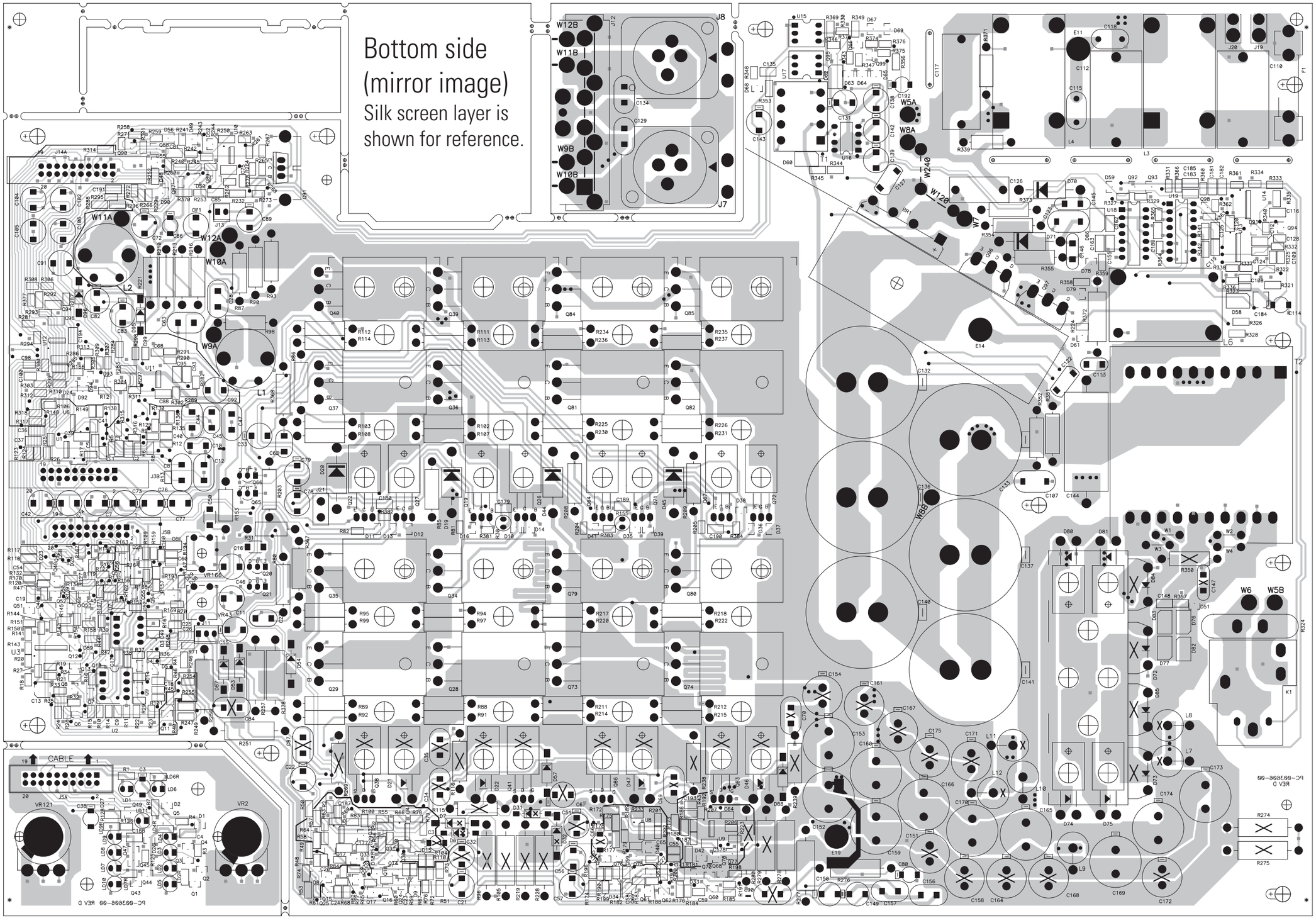
PL325 and PL340 main circuit board, with major circuit sections shown

Top layer



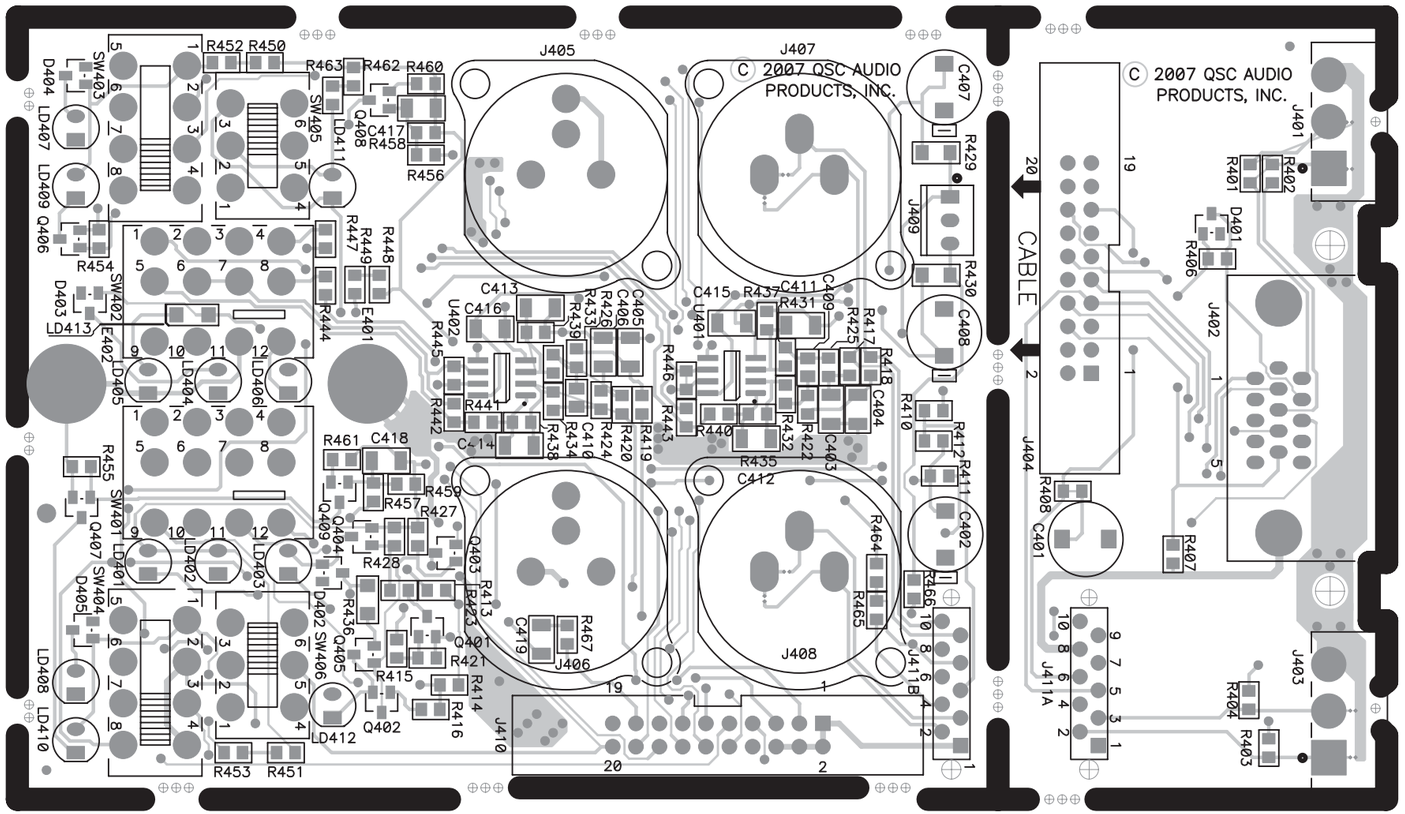
PL325 and PL340 main circuit board, top layer

Bottom layer (mirror image)
Silk screen shown for reference



PL325 and PL340 main circuit board, bottom layer, mirror image

Top side

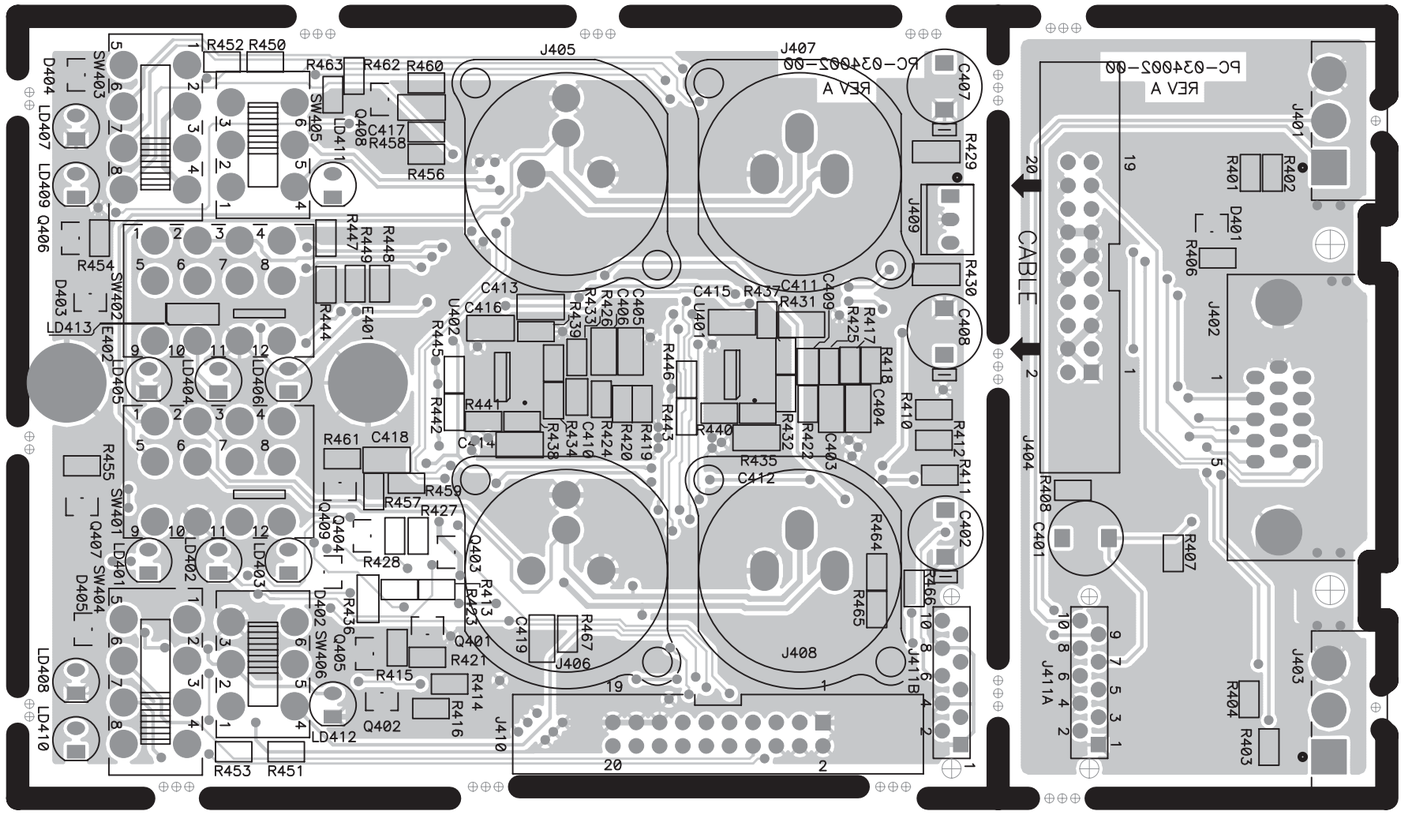


PL325 and PL340 input board, top layer

Bottom layer (mirror image)
Silk screen shown for reference

Bottom side (mirror image)

Silk screen layer is shown for reference.

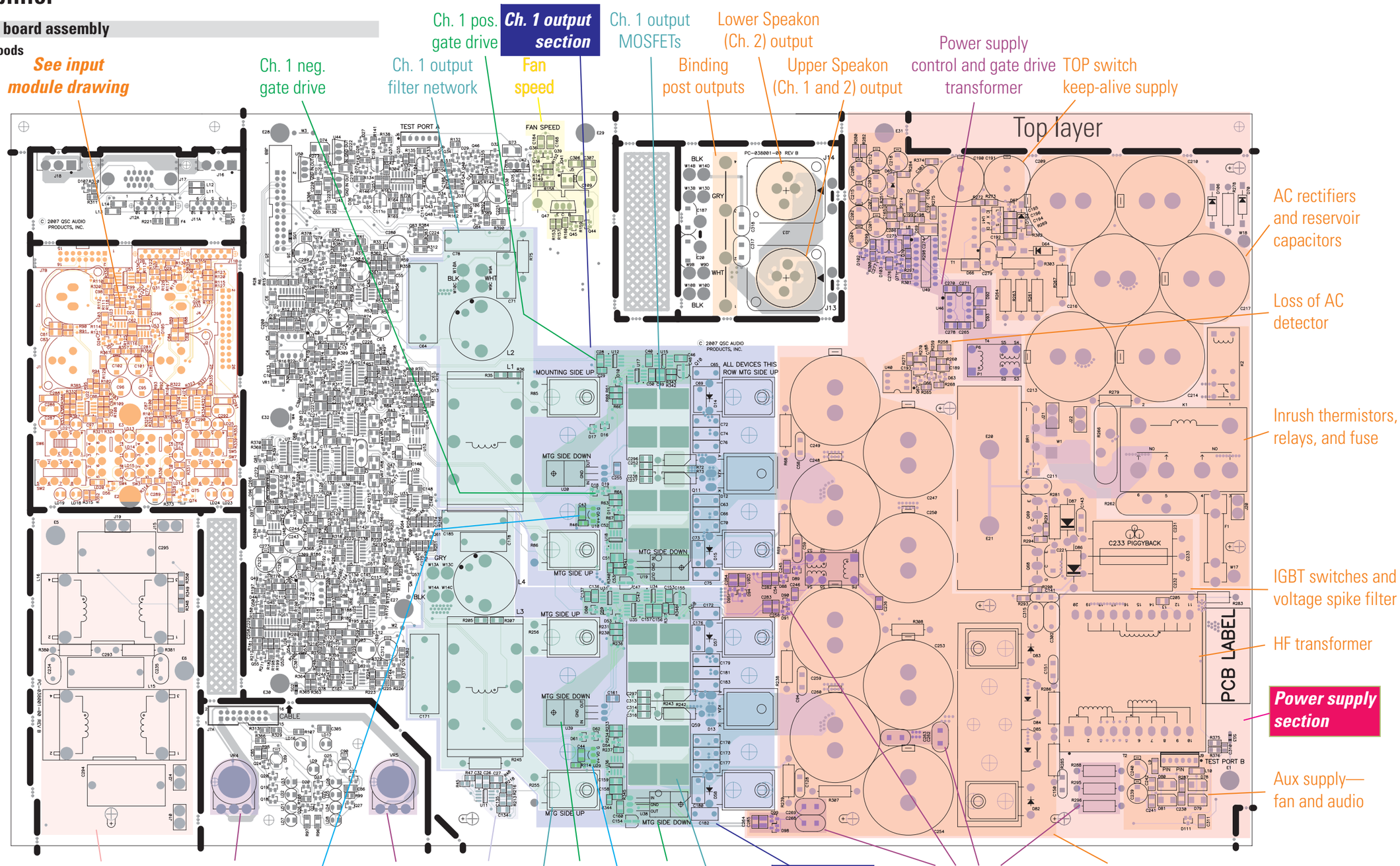


PL325 and PL340 input board, bottom layer, mirror image

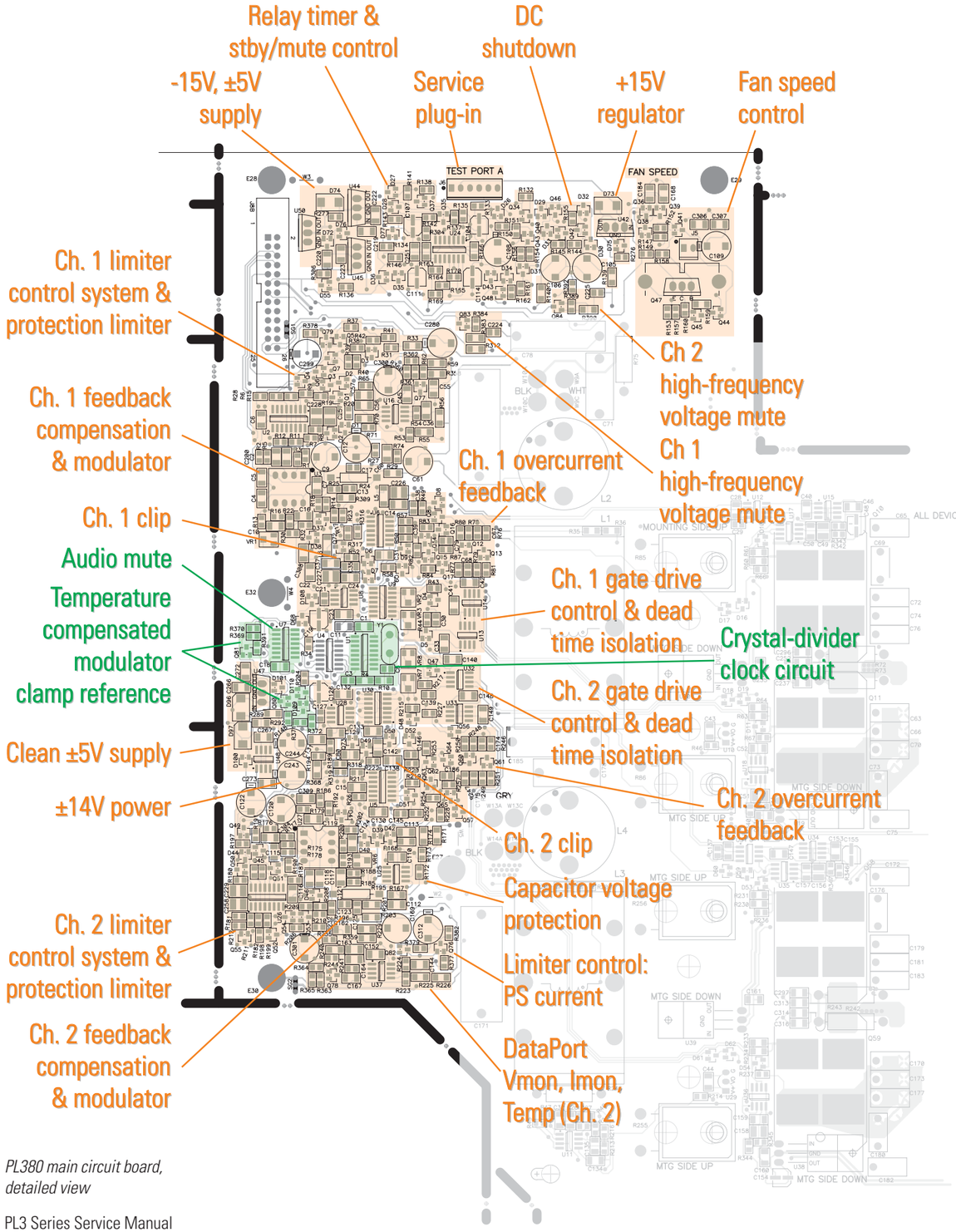
4.2 PL380 Amplifier

Main module circuit board assembly

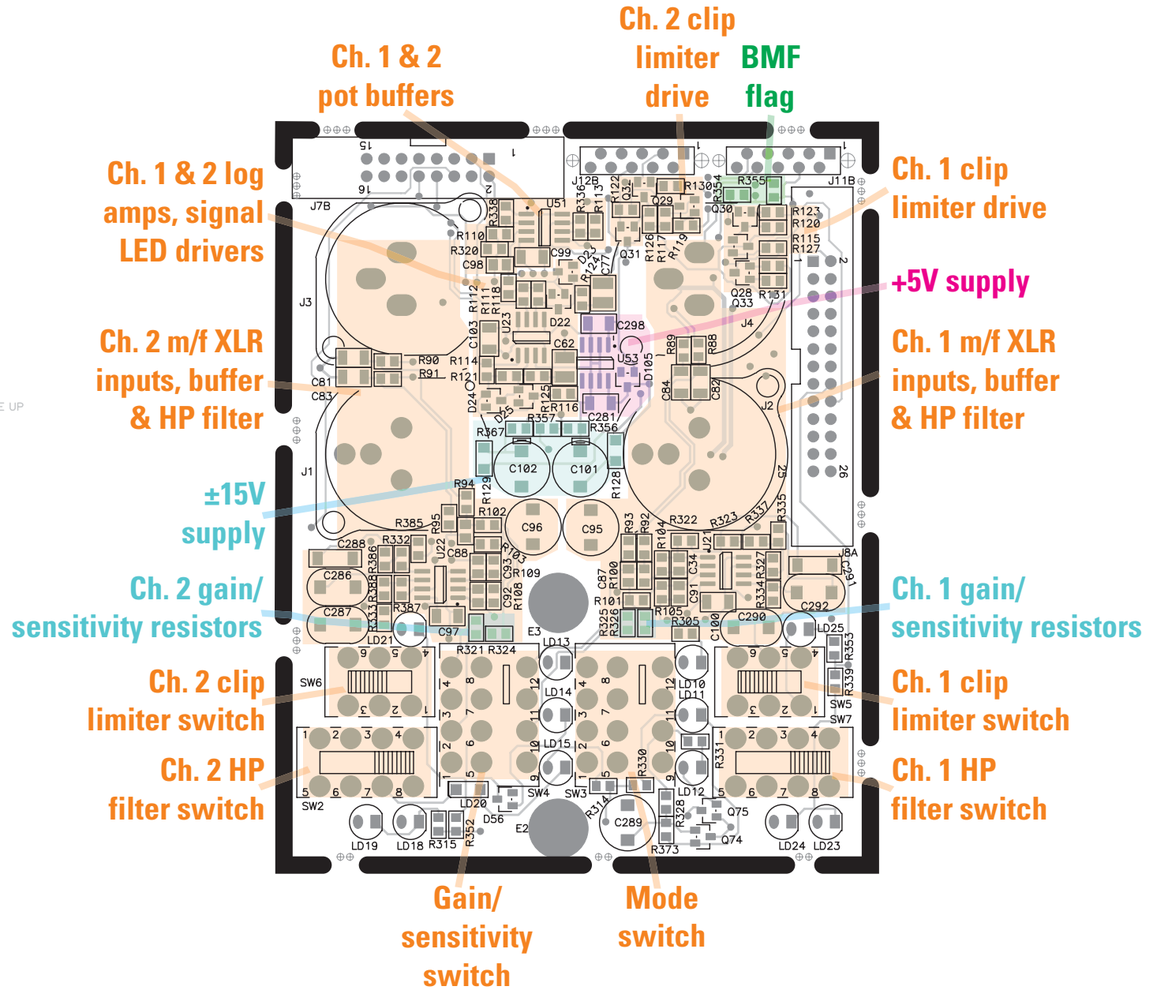
Circuit board neighborhoods



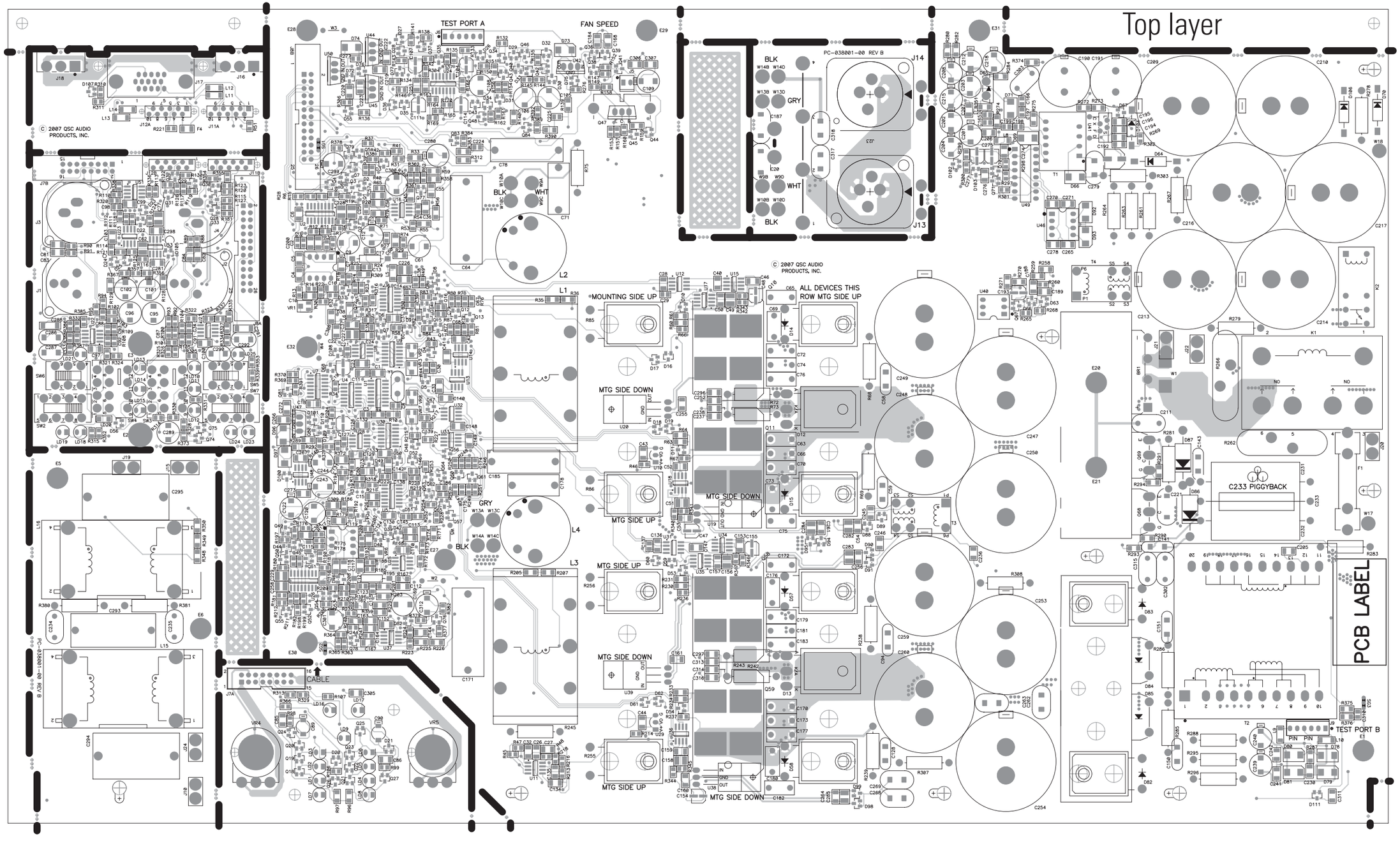
PL380 main circuit board, with major circuit sections shown



PL380 main circuit board, detailed view

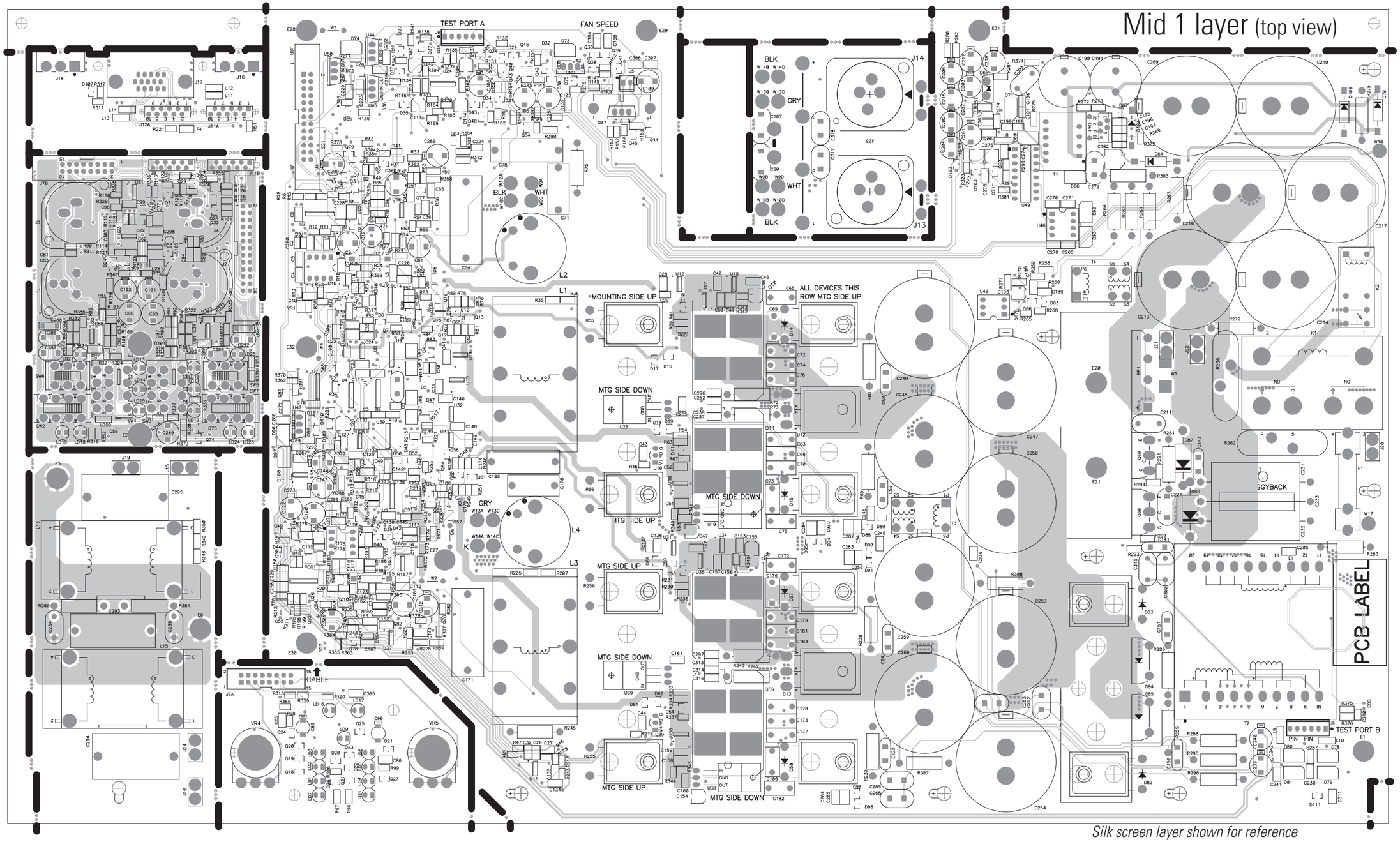


PL380 input board, main circuit blocks shown



PL380 main circuit board, top layer

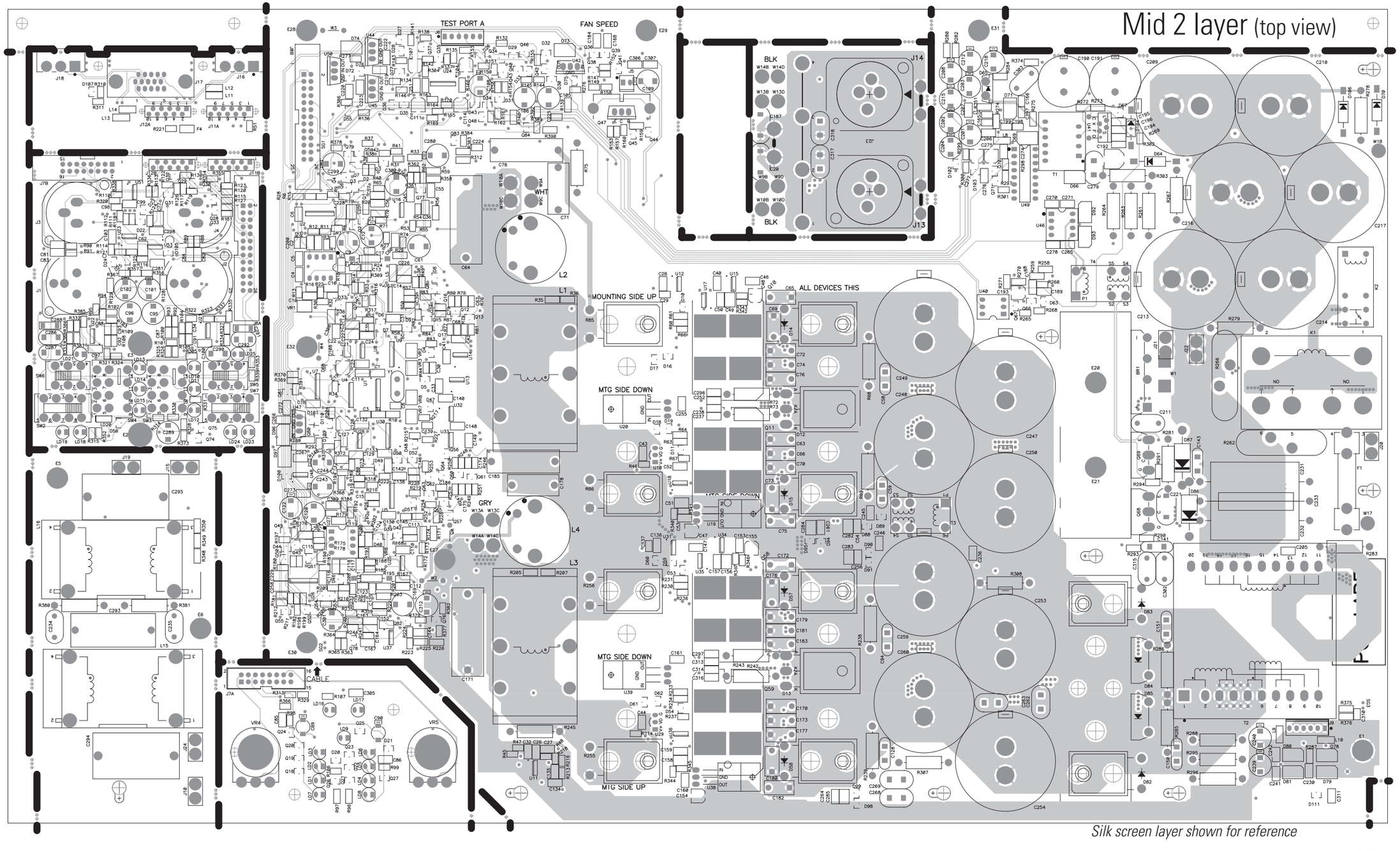
Mid-1 layer (top view)
Silk screen shown for reference



PL380 main circuit board, mid1 layer

Silk screen layer shown for reference

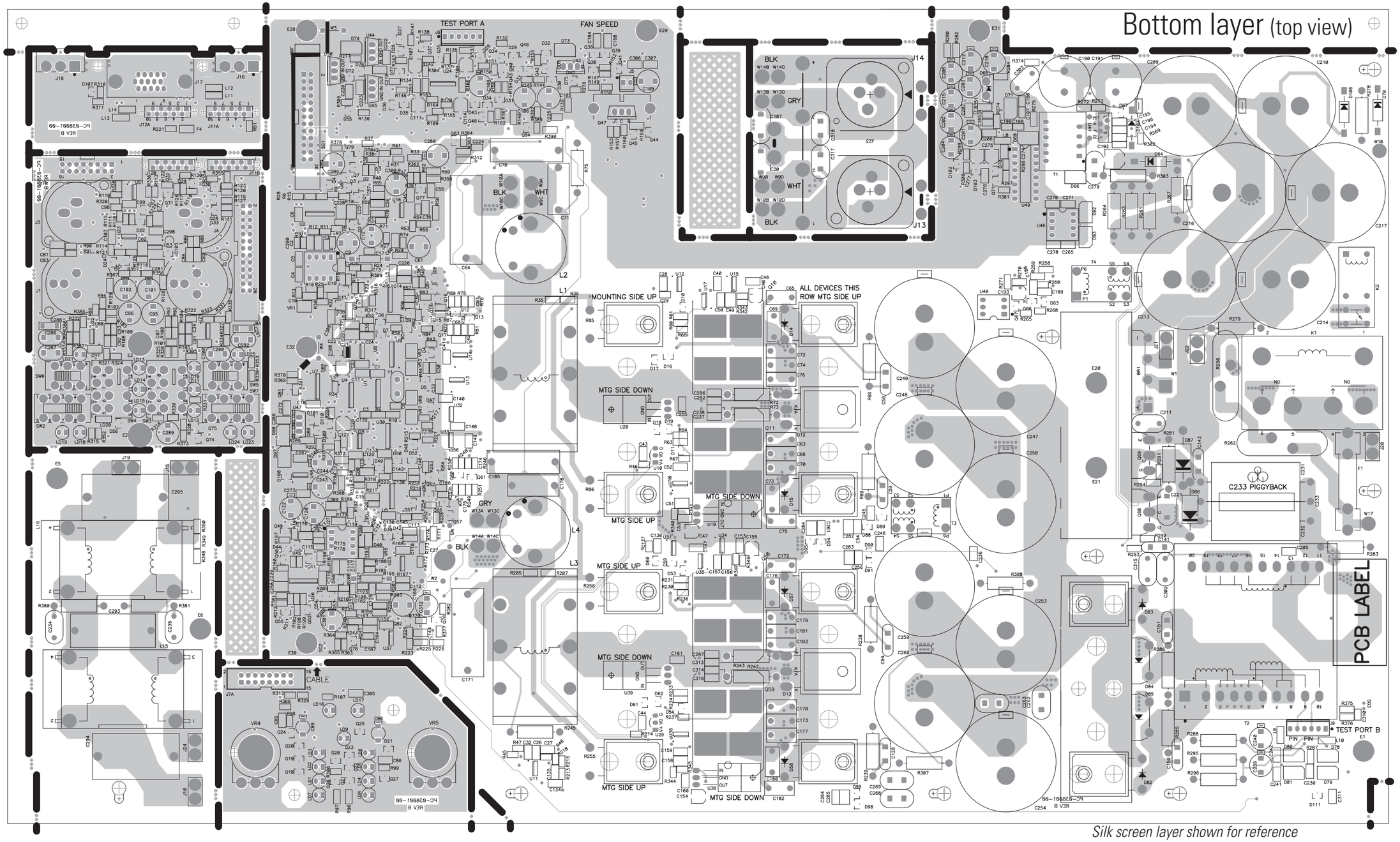
Mid-2 layer
Silk screen shown for reference



PL380 main circuit board, mid2 layer

Silk screen layer shown for reference

Bottom layer (top view)
Silk screen shown for reference



PL380 main circuit board, bottom layer

Silk screen layer shown for reference

REVISION

REV	DESCRIPTION	EFF. DATE	CHK	APPROVED / DATE
A	PRODUCTION RELEASE PER ECO 7793 IO	02-23-07	RAB	DD

5. Schematic Diagrams

Check **www.qscaudio.com** for the latest schematic revisions.

5.1 PL325 Schematics

PL325 schematic notes

NOTES: UNLESS OTHERWISE SPECIFIED

1. THIS DRAWING USED IN CONJUNCTION WITH ASSEMBLY WP-032502-00.
2. COMPONENTS WITH VALUE PREFIXED WITH A "^" REPRESENT SMT COMPONENTS.
3. ELECTROLYTIC CAPACITOR TOLERANCE IS 20%
4. SMT RESISTOR TOLERANCE IS 1%
5. SMT RESISTOR WATTAGE RATING IS 1/10W
6. SMT CAPACITOR VOLTAGE IS 50V

QTY	ITEM NO.	PART NO.	DESCRIPTION	VENDOR

PARTS LIST

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
DIMENSIONS PER ANSI Y14.5-1982
TOLERANCES ARE:
DECIMALS .XX ± DECIMALS .XXX ± ANGLES 0
DEBURR EDGES .XXX R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN PAT QUILTER	10-2-06
CHECKED S. FELTS	02-23-07
ISSUED D. DELARM	02-23-07
CAD SEED FILE NO.	PLOT DATE: Thu Jul 12, 2007

QSC AUDIO PRODUCTS, INC.
COSTA MESA, CALIFORNIA

SCHEMATIC DIAGRAM
PL325 INPUT SCHEMATIC

SIZE D | FSCM NO. | DWG NO. SH-032502-00 | REV A
SCALE NONE | CAD FILE NO. SH-032502-A.sch | SHEET 1 OF 2
SOURCESAFE $/DM/SH/SH032502

DWG NO. SH-032502-00
SH 1
REV A

PLC–BASED PL–3 INPUT PCB.
NUMBERING 401–UP

CH B INP
CH A INP
DATAPORT
10–PIN SOLD RIBBON
PC–3606 DATAPORT RIBBON CABLE
CH B INPUT
CH A INPUT
BR–STEREO–PAR SWITCH WITH KEEPALIVE BMF
PC–3606 INPUT RIBBON 20 PIN BOX
3–POS SENS SW BOTH CH
OFF–33–50 HZ CH B
OFF–33–50 HZ CH A
CLIP LIM–B
CLIP LIM–A

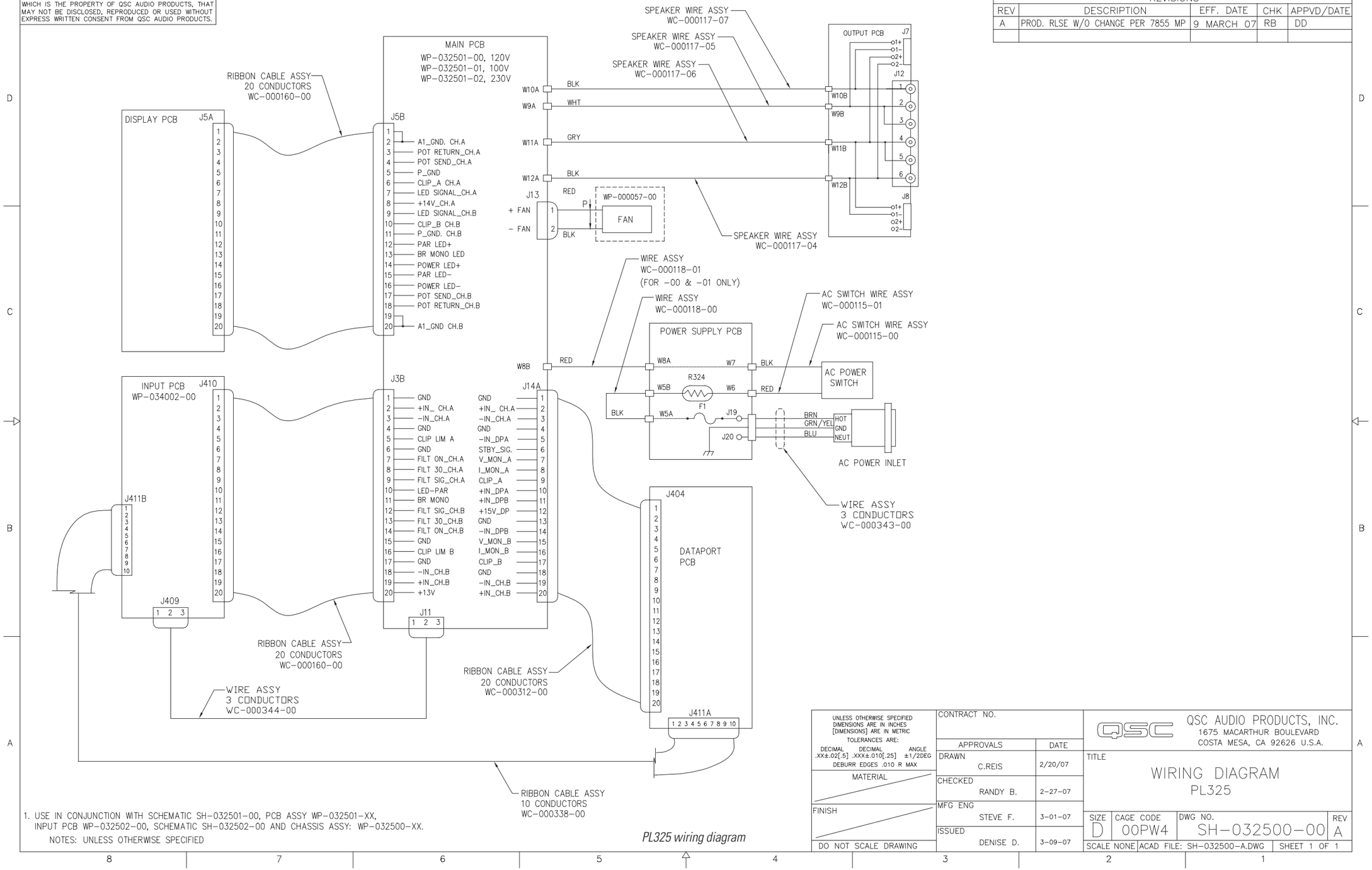
Signal Path

Schematic sheet INPUT, PL325

SIZE	FSCM NO.	DWG NO.	REV
D		SH–032502–00	A
SCALE		CAD FILE NO.	SHEET

SH–032502–00 DWG NO. | A REV | 2 SH

REVISIONS				
REV	DESCRIPTION	EFF. DATE	CHK	APPVD/DATE
A	PROD. RLSE W/O CHANGE PER 7855 MP	9 MARCH 07	RB	DD



1. USE IN CONJUNCTION WITH SCHEMATIC SH-032501-00, PCB ASSY WP-032501-XX, INPUT PCB WP-032502-00, SCHEMATIC SH-032502-00 AND CHASSIS ASSY: WP-032500-XX.

NOTES: UNLESS OTHERWISE SPECIFIED

PL325 wiring diagram

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES [DIMENSIONS] ARE IN METRIC
TOLERANCES ARE:
DECIMAL .XX±.02[.5] DECIMAL .XXX±.010[.25] ANGLE ±1/2DEG
DEBURR EDGES .010 R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN C.REIS	2/20/07
CHECKED RANDY B.	2-27-07
MFG ENG STEVE F.	3-01-07
ISSUED DENISE D.	3-09-07

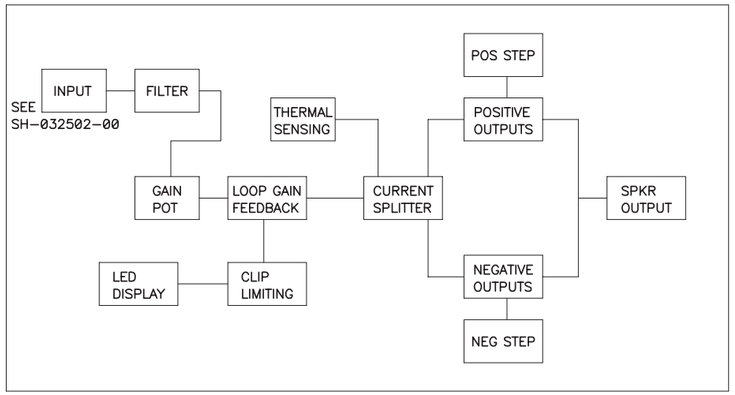
QSC AUDIO PRODUCTS, INC.
1675 MACARTHUR BOULEVARD
COSTA MESA, CA 92626 U.S.A.

TITLE
WIRING DIAGRAM
PL325

SIZE	CAGE CODE	DWG NO.	REV
D	00PW4	SH-032500-00	A

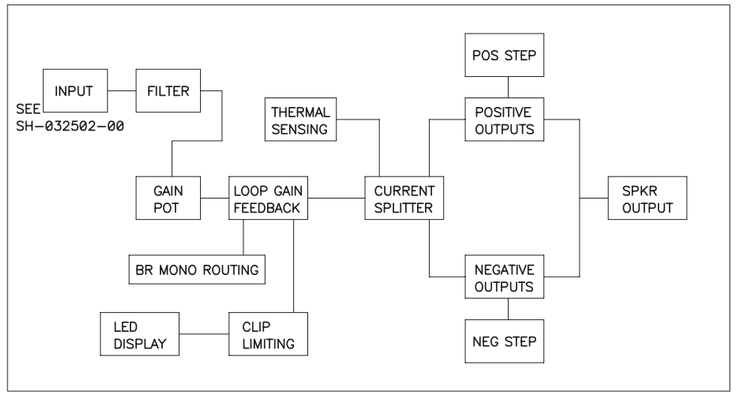
SCALE NONE | ACAD FILE: SH-032500-A.DWG | SHEET 1 OF 1

REVISION				
REV	DESCRIPTION	EFF. DATE	CHK	APPROVED / DATE
A	RELEASED PER ECO 7793 IO	02-23-07	RAB	DD



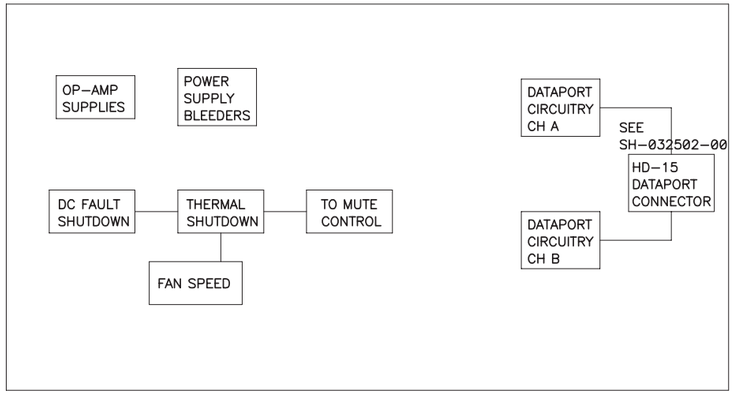
CHANNEL A AUDIO CIRCUITS

SHEET 2



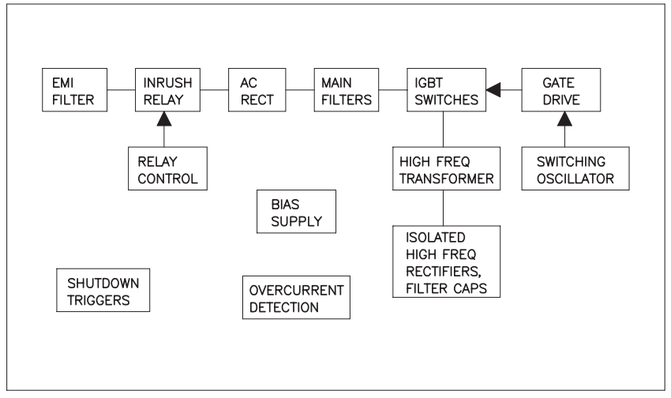
CHANNEL B AUDIO CIRCUITS

SHEET 3



SUPPORT, PROTECTION AND DATAPORT CIRCUITS

SHEET 4



SWITCHING POWER SUPPLY

SHEET 5

TABULATION BLOCK		
DASH NO.	F1 ⚠1	R321, 322, 326, 328 ⚠2
-00 (120V)	25A, 125V	487K
-01 (100V)	30A, 125V	392K
-02 (230V)	15A, 250V	487K

8. ZENER TOLERANCE IS 5%
7. SMT CAPACITOR VOLTAGE IS 50V
6. SMT RESISTOR WATTAGE IS 1/10W
5. RESISTOR WATTAGE RATING IS 1/4W
   FOR RESISTOR WATTAGE RATINGS GREATER THAN 1W, TOLERANCE IS 5%
   FOR RESISTOR WATTAGE RATINGS LESS THAN 1/2W, TOLERANCE IS 1%
4. THROUGH-HOLE FILM AND CERAMIC CAPACITOR TOLERANCE IS 10%, VOLTAGE IS 100V
3. ELECTOLYTIC CAPACITOR TOLERANCE IS 20%
2. COMPONENTS WITH VALUE PREFIXED WITH A "^" REPRESENT SMT COMPONENTS.
1. THIS DRAWING USED IN CONJUNCTION WITH ASSEMBLY WP-032501-XX, SH-032502-00 AND WP-032502-00.

NOTES: UNLESS OTHERWISE SPECIFIED

PL325 schematic guide

QTY	ITEM NO.	PART NO.	DESCRIPTION	VENDOR

PARTS LIST

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS PER ANSI Y14.5-1982
TOLERANCES ARE: DECIMALS .xx ± DECIMALS .xxx ± ANGLES °
DEBURR EDGES .XXX R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN PAT QUILTER	10-2-06
CHECKED S. FELTS	02-23-07
ISSUED D. DELARM	02-23-07
CAD SEED FILE NO.	PLOT DATE: Thu Jul 12, 2007

QSC AUDIO PRODUCTS, INC.
COSTA MESA, CALIFORNIA

SCHEMATIC DIAGRAM
PL325

SIZE D | FSCM NO. | DWG NO. SH-032501-00 | REV A
SCALE NONE | CAD FILE NO. SH-032501-A.sch | SHEET 1 OF 5

SOURCESAFE $/DM/SH/SH032501

DWG NO. SH-032501-00 | SH 1 | REV A

INPUT AND FILTER SECTION, CH A

DO NOT STUFF INPUT PARTS

INPUT RIBBON PINS 1–10

DISPLAY RIBBON PINS 1–10

LED–SIGNAL DISPLAY–A

GAIN–A

CLIP–A

CLIP–LIMIT PROCESSOR

THERMAL AND BIAS SENSING

POS STEP DRIVER

POS OUTPUT SECTION

NEG OUTPUT SECTION

NEG STEP DRIVER

Signal Path

Schematic sheet AMP CH-A, PL325

SIZE	FSCM NO.	DWG NO.	REV
D		SH–032501–00	A
SCALE NONE	CAD FILE NO. SH–032501–A.sch	SHEET 2 OF 5	

DWG NO. SH–032501–00 | 2 SH | A REV

INPUT RIBBON PINS 11–20

INPUT AND FILTER SECTION, CH B

DO NOT STUFF INPUT PARTS

Signal Path

DISP PCB RIBBON PINS 13–20

LED–SIGNAL DISPLAY

DISP PCB RIBBON PINS 9–12

CLIP–B RED SUPER BRIGHT

PAR–LED ORANGE

THERMAL AND BIAS SENSING

CLIP–LIMIT PROCESSOR

POS STEP DRIVER

POS OUTPUT SECTION

NEG OUTPUT SECTION

NEG STEP DRIVER

PWR–GND, TO SUPPLY CT

Schematic sheet AMP CH-B, PL325

SIZE	FSCM NO.	DWG NO.	REV
D		SH–032501–00	A
SCALE NONE	CAD FILE NO. SH–032501–A.sch	SHEET 3 OF 5	

DWG NO. SH-032501-00 | 3 SH | A REV

OPAMP POWER SUPPLIES

DC MUTING

FAN SPEED CONTROL

CH A V–MON, I–MON

CH B V–MON, I–MON

REFERENCE DATAPORT RIBBON CABLE

DO NOT STUFF D/P PCB PARTS

Schematic sheet PROTECT/CONTROL, PL325

SIZE	FSCM NO.	DWG NO.	REV
D		SH–032501–00	A
SCALE NONE	CAD FILE NO. SH–032501–A.sch	SHEET 4 OF 5	

Schematic sheet POWER SUPPLY, PL325

SIZE	FSCM NO.	DWG NO.	REV
D		SH-032501-00	A
SCALE NONE	CAD FILE NO. SH-032501-A.sch	SHEET 5 OF 5	

REV	SH	DWG NO.
A	5	SH-032501-00

REVISION

REV	DESCRIPTION	EFF. DATE	CHK	APPROVED / DATE
A	PRODUCTION RELEASE PER ECO 7793 IO	02-23-07	RAB	DD

5.2 PL340 Schematics

6. SMT CAPACITOR VOLTAGE IS 50V
5. SMT RESISTOR WATTAGE RATING IS 1/10W
4. SMT RESISTOR TOLERANCE IS 1%
3. ELECTROLYTIC CAPACITOR TOLERANCE IS 20%
2. COMPONENTS WITH VALUE PREFIXED WITH A "^" REPRESENT SMT COMPONENTS.
1. THIS DRAWING USED IN CONJUNCTION WITH ASSEMBLY WP-034002-00.

NOTES: UNLESS OTHERWISE SPECIFIED

PL340 schematic notes

NEXT ASSY	USED ON
APPLICATION	

QTY	ITEM NO.	PART NO.	DESCRIPTION	VENDOR

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
DIMENSIONS PER ANSI Y14.5-1982
TOLERANCES ARE:
DECIMALS .XX ± DECIMALS .XXX ± ANGLES 0
DEBURR EDGES .XXX R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN PAT QUILTER	10-2-06
CHECKED R. BALTHAZAR	02-23-07
ISSUED D. DELARM	02-23-07
CAD SEED FILE NO.	PLOT DATE: Thu Jul 12, 2007

QSC AUDIO PRODUCTS, INC.
COSTA MESA, CALIFORNIA

SCHEMATIC DIAGRAM
PL340 INPUT SCHEMATIC

SIZE D | FSCM NO. | DWG NO. SH-034002-00 | REV A
SCALE NONE | CAD FILE NO. SH-034002-A.sch | SHEET 1 OF 2
SOURCESAFE $/DM/SH/SH034002

A REV | 1 SH | SH-034002-00 DWG NO.

PLC–BASED PL–3 INPUT PCB.
NUMBERING 401–UP

CH B INP
CH B INPUT
10–PIN SOLD RIBBON
PC–3606 INPUT RIBBON 20 PIN BOX
DATAPORT
PC–3606 DATAPORT RIBBON CABLE
BR–STEREO–PAR SWITCH WITH KEEPALIVE BMF
3–POS SENS SW BOTH CH
OFF–33–50 HZ CH B
CLIP LIM–B
CH A INP
CH A INPUT
OFF–33–50 HZ CH A
CLIP LIM–A

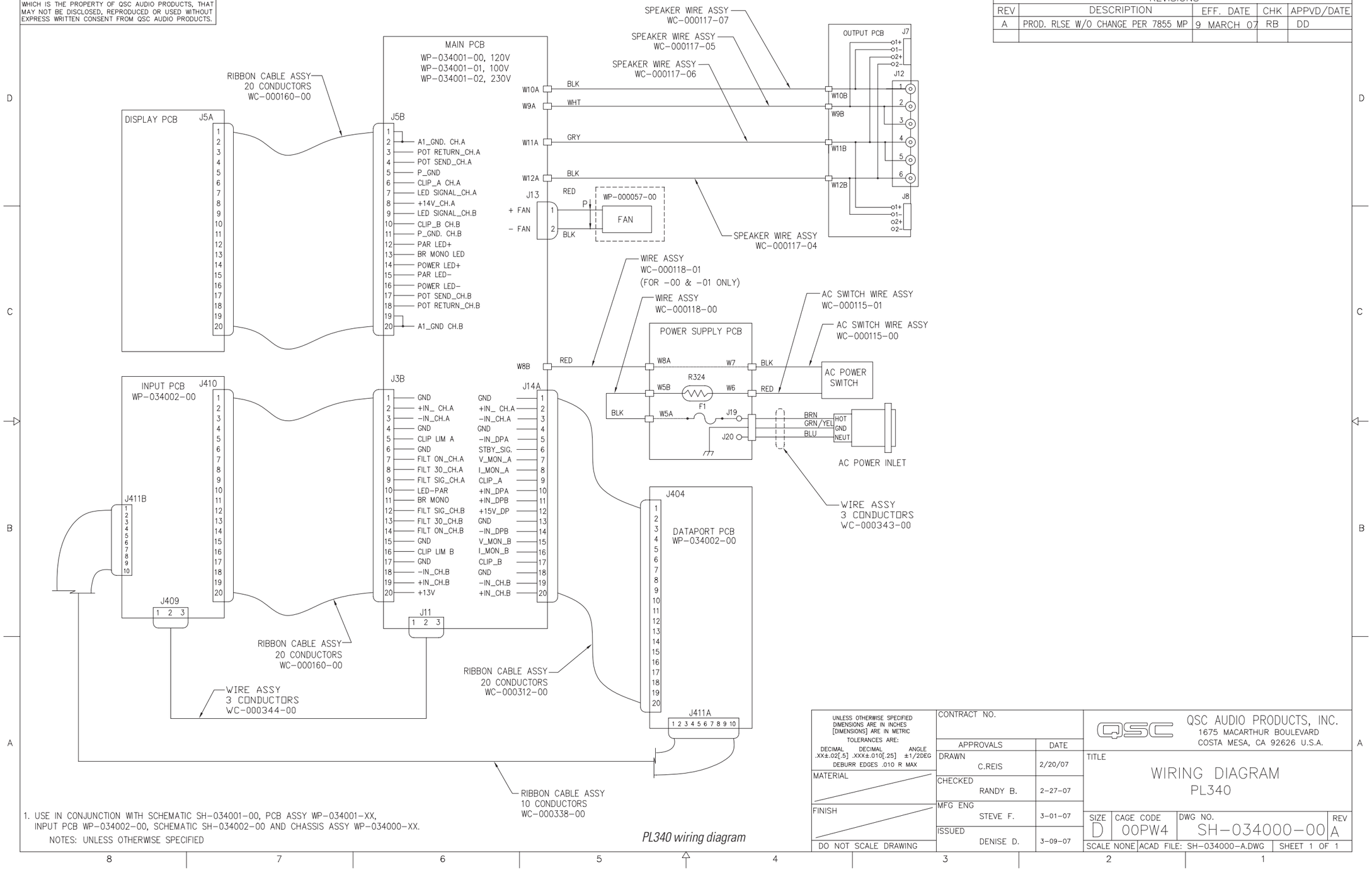
Signal Path

Schematic sheet INPUT, PL340

SIZE	FSCM NO.	DWG NO.	REV
D		SH–034002–00	A
SCALE	CAD FILE NO.	SHEET	

DWG NO. SH–034002–00 | 2 SH | A REV

REVISIONS				
REV	DESCRIPTION	EFF. DATE	CHK	APPVD/DATE
A	PROD. RLSE W/O CHANGE PER 7855 MP	9 MARCH 07	RB	DD



1. USE IN CONJUNCTION WITH SCHEMATIC SH-034001-00, PCB ASSY WP-034001-XX, INPUT PCB WP-034002-00, SCHEMATIC SH-034002-00 AND CHASSIS ASSY WP-034000-XX.

NOTES: UNLESS OTHERWISE SPECIFIED

PL340 wiring diagram

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES [DIMENSIONS] ARE IN METRIC
TOLERANCES ARE:
DECIMAL .XX±.02[.5] DECIMAL .XXX±.010[.25] ANGLE ±1/2DEG
DEBURR EDGES .010 R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN C.REIS	2/20/07
CHECKED RANDY B.	2-27-07
MFG ENG STEVE F.	3-01-07
ISSUED DENISE D.	3-09-07

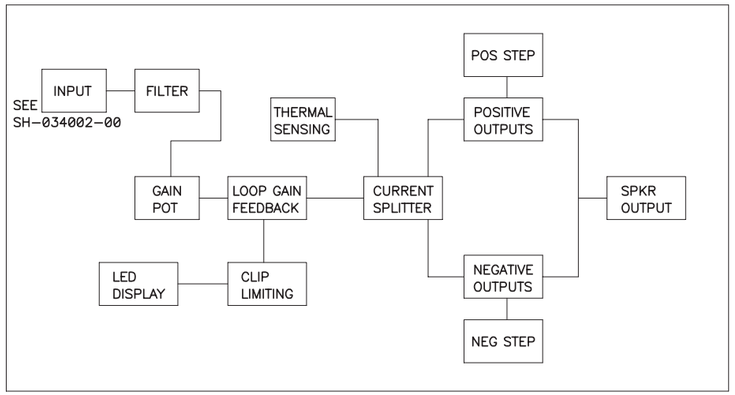
QSC AUDIO PRODUCTS, INC.
1675 MACARTHUR BOULEVARD
COSTA MESA, CA 92626 U.S.A.

TITLE
WIRING DIAGRAM
PL340

SIZE	CAGE CODE	DWG NO.	REV
D	00PW4	SH-034000-00	A

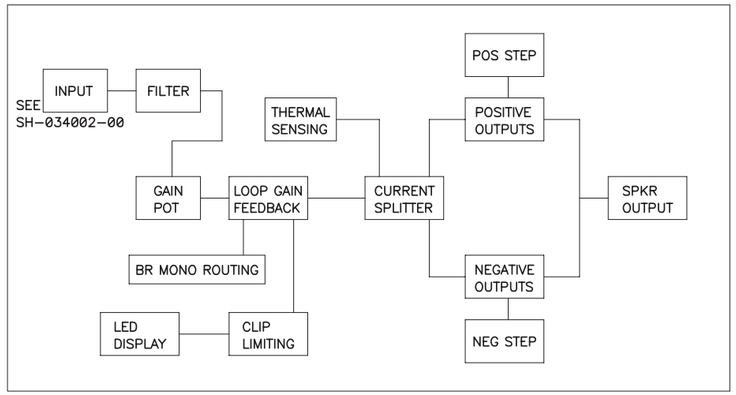
SCALE NONE | ACAD FILE: SH-034000-A.DWG | SHEET 1 OF 1

REVISION				
REV	DESCRIPTION	EFF. DATE	CHK	APPROVED / DATE
A	PRODUCTION RELEASE PER ECO 7793 IO	02-23-07	RAB	DD



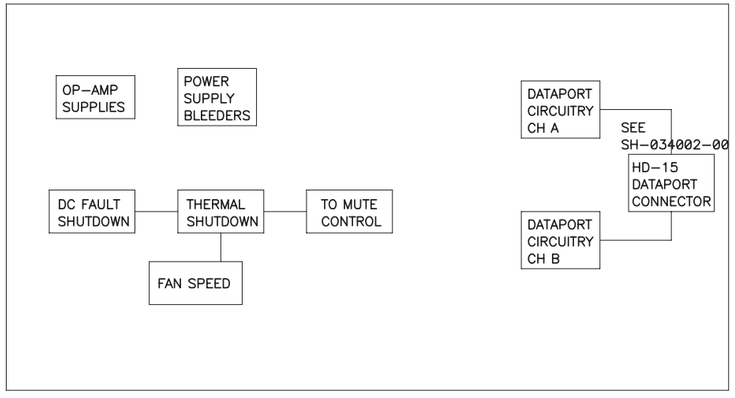
CHANNEL A AUDIO CIRCUITS

SHEET 2



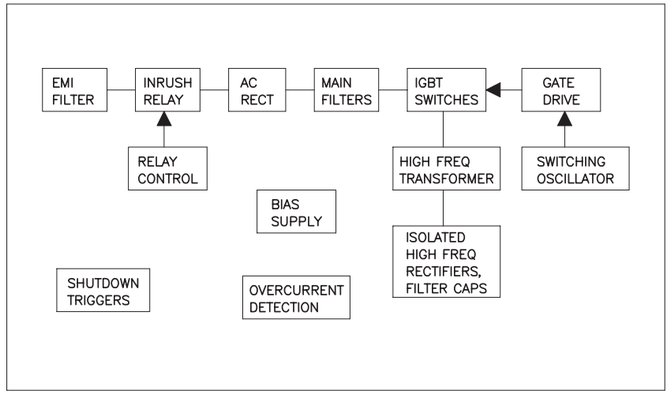
CHANNEL B AUDIO CIRCUITS

SHEET 3



SUPPORT, PROTECTION AND DATAPORT CIRCUITS

SHEET 4



SWITCHING POWER SUPPLY

SHEET 5

TABULATION BLOCK		
DASH NO.	F1 (1)	R321, 322, 326, 328 (2)
-00 (120V)	25A, 125V	487K
-01 (100V)	30A, 125V	392K
-02 (230V)	15A, 250V	487K

8. ZENER TOLERANCE IS 5%
7. SMT CAPACITOR VOLTAGE IS 50V
6. SMT RESISTOR WATTAGE IS 1/10W
5. RESISTOR WATTAGE RATING IS 1/4W
   FOR RESISTOR WATTAGE RATINGS GREATER THAN 1W, TOLERANCE IS 5%
   FOR RESISTOR WATTAGE RATINGS LESS THAN 1/2W, TOLERANCE IS 1%
4. THROUGH-HOLE FILM AND CERAMIC CAPACITOR TOLERANCE IS 10%, VOLTAGE IS 100V
3. ELECTOLYTIC CAPACITOR TOLERANCE IS 20%
2. COMPONENTS WITH VALUE PREFIXED WITH A "^" REPRESENT SMT COMPONENTS.
1. THIS DRAWING USED IN CONJUNCTION WITH ASSEMBLY WP-034001-XX, SH-034002-00 AND WP-034002-00.

NOTES: LESS UNLESS OTHERWISE SPECIFIED

PL340 schematic guide

QTY	ITEM NO.	PART NO.	DESCRIPTION	VENDOR

PARTS LIST

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS PER ANSI Y14.5-1982
TOLERANCES ARE: DECIMALS .XX ± DECIMALS .XXX ± ANGLES °
DEBURR EDGES .XXX R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN PAT QUILTER	10-2-06
CHECKED R. BALTHAZAR	02-23-07
ISSUED D. DELARM	02-23-07
CAD SEED FILE NO.	PLOT DATE: Thu Jul 12, 2007

QSC AUDIO PRODUCTS, INC.
COSTA MESA, CALIFORNIA

SCHEMATIC DIAGRAM
PL340

SIZE D | FSCM NO. | DWG NO. SH-034001-00 | REV A
SCALE NONE | CAD FILE NO. SH-034001-A.sch | SHEET 1 OF 5

SOURCESAFE $/DM/SH/SH034001

DWG NO. SH-034001-00 | SH 1 | REV A

INPUT AND FILTER SECTION, CH A

DO NOT STUFF INPUT PARTS

INPUT RIBBON PINS 1–10

DISPLAY RIBBON PINS 1–10

LED–SIGNAL DISPLAY–A

GAIN–A

CLIP–A

CLIP–LIMIT PROCESSOR

THERMAL AND BIAS SENSING

POS STEP DRIVER

POS OUTPUT SECTION

NEG OUTPUT SECTION

NEG STEP DRIVER

Signal Path

Schematic sheet AMP CH-A, PL340

SIZE	FSCM NO.	DWG NO.	REV
D		SH–034001–00	A
SCALE NONE	CAD FILE NO. SH–034001–A.sch	SHEET 2 OF 5	

INPUT RIBBON
PINS 11–20

INPUT AND FILTER SECTION, CH B

DO NOT STUFF INPUT PARTS

Signal Path

DISP PCB RIBBON PINS 13–20

LED–SIGNAL DISPLAY

DISP PCB RIBBON
PINS 9–12

CLIP–B RED SUPER BRIGHT

PAR–LED

THERMAL
AND BIAS
SENSING

CLIP–LIMIT
PROCESSOR

POS STEP DRIVER

POS OUTPUT SECTION

NEG OUTPUT SECTION

NEG STEP DRIVER

PWR–GND, TO SUPPLY CT

Schematic sheet AMP CH-B, PL340

SIZE	FSCM NO.	DWG NO.	REV
D		SH–034001–00	A
SCALE NONE	CAD FILE NO. SH–034001–A.sch	SHEET 3 OF 5	

DWG NO. SH–034001–00 | 3 SH | A REV

OPAMP POWER SUPPLIES

DC MUTING

FAN SPEED CONTROL

CH A V–MON, I–MON

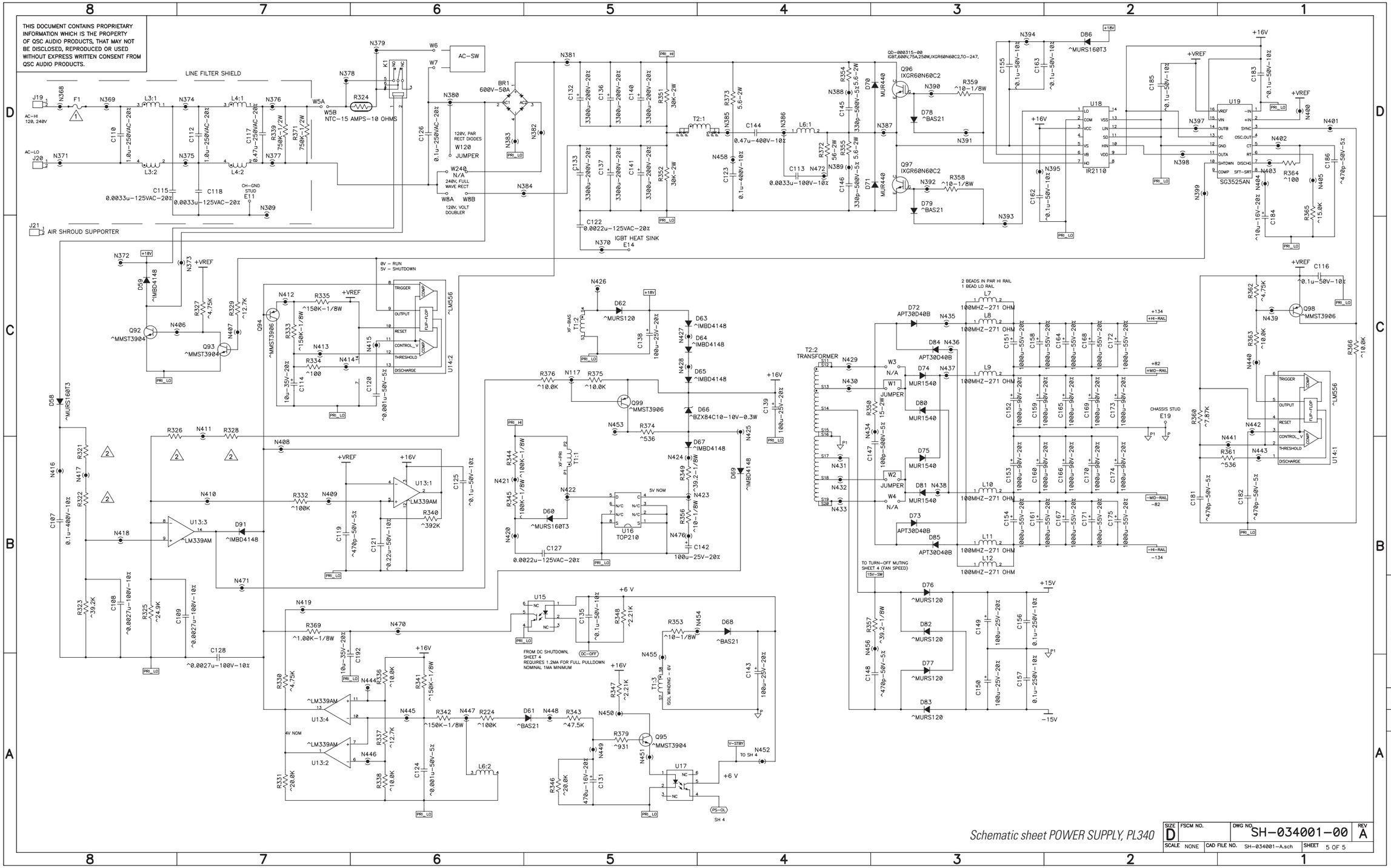
CH B V–MON, I–MON

REFERENCE DATAPORT RIBBON CABLE

DO NOT STUFF D/P PCB PARTS

Schematic sheet PROTECT/CONTROL, PL340

SIZE	FSCM NO.	DWG NO.	REV
D		SH–034001–00	A
SCALE NONE	CAD FILE NO. SH–034001–A.sch	SHEET 4 OF 5	



Schematic sheet POWER SUPPLY, PL340

SIZE	FSCM NO.	DWG NO.	REV
D		SH-034001-00	A
SCALE NONE	CAD FILE NO. SH-034001-A.sch	SHEET 5 OF 5	

DWG NO. SH-034001-00 | SH 5 | REV A

REVISION				
REV	DESCRIPTION	EFF. DATE	CHK	APPROVED / DATE
A	PROD. RELEASE W/O CHANGE PER ECO 7929 MP	4–11–07	RB	DD
B	REVISED PER ECO 8093 MP	6–21–07		DD

5.3 PL380 Schematics

TABULATION BLOCK			
DASH NO.	W–1 (1)	J21 (2)	J22
–00 (120V)	INSTALLED	N/A	INSTALLED
–01 (100V)	INSTALLED	N/A	INSTALLED
–02 (230V)	N/A	INSTALLED	N/A

8. ZENER TOLERANCE IS 5%
7. SMT CAPACITOR VOLTAGE IS 50V
6. SMT RESISTOR WATTAGE RATING IS 0.1W
5. RESISTOR WATTAGE RATING IS 1/4W
   FOR RESISTOR WATTAGE RATINGS GREATER THAN 1W, TOLERANCE IS 5%
   FOR RESISTOR WATTAGE RATINGS LESS THAN 1/2W, TOLERANCE IS 1%
4. THROUGH–HOLE FILM AND CERAMIC CAPACITOR TOLERANCE IS 10%, VOLTAGE IS 100V
3. ELECTROLYTIC CAPACITOR TOLERANCE IS 20%
2. COMPONENTS WITH VALUE PREFIXED WITH A "^" REPRESENT SMT COMPONENTS.
1. THIS DRAWING USED IN CONJUNCTION WITH ASSEMBLY WP–038001–XX.

NOTES: UNLESS OTHERWISE SPECIFIED

PL380 schematic notes

QTY	ITEM NO.	PART NO.	DESCRIPTION	VENDOR

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
DIMENSIONS PER ANSI Y14.5–1982
TOLERANCES ARE:
DECIMALS .XX ± DECIMALS .XXX ± ANGLES °
DEBURR EDGES .XXX R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN PAT QUILTER	03–15–07
CHECKED RANDY B.	03–15–07
ISSUED DENISE D.	04–11–07
CAD SEED FILE NO.	PLOT DATE: Mon Jul 16, 2007

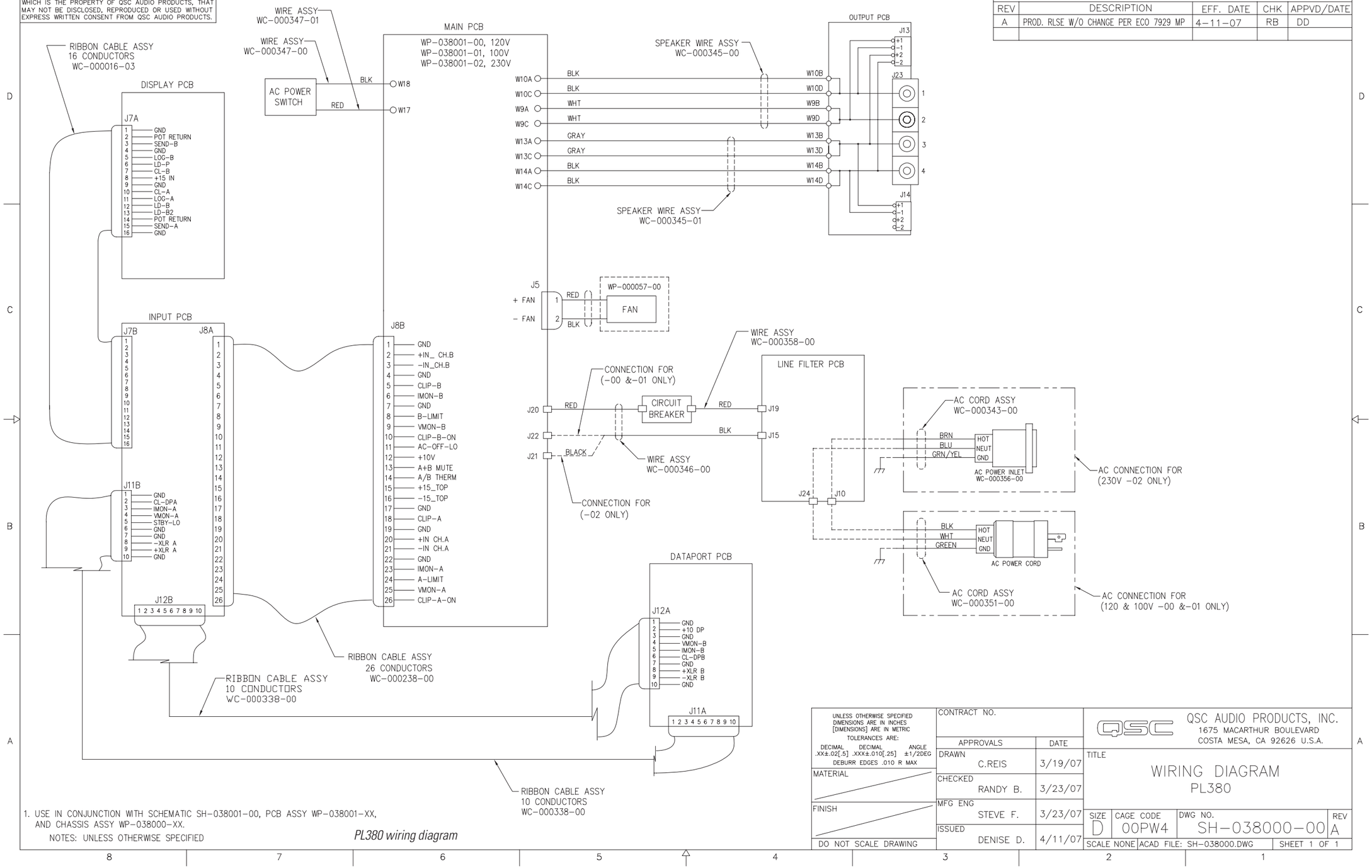
QSC AUDIO PRODUCTS, INC.
COSTA MESA, CALIFORNIA

SCHEMATIC DIAGRAM
PL380

SIZE D | FSCM NO. | DWG NO. SH–038001–00 | REV B
SCALE NONE | CAD FILE NO. SH–038001–B.SCH | SHEET 1 OF 7

B REV | 1 SH | SH–038001–00 DWG NO.

REVISIONS				
REV	DESCRIPTION	EFF. DATE	CHK	APPVD/DATE
A	PROD. RLSE W/O CHANGE PER ECO 7929 MP	4-11-07	RB	DD



1. USE IN CONJUNCTION WITH SCHEMATIC SH-038001-00, PCB ASSY WP-038001-XX, AND CHASSIS ASSY WP-038000-XX.

NOTES: UNLESS OTHERWISE SPECIFIED

PL380 wiring diagram

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES [DIMENSIONS] ARE IN METRIC
TOLERANCES ARE:
DECIMAL .XX±.02[.5] DECIMAL .XXX±.010[.25] ANGLE ±1/2DEG
DEBURR EDGES .010 R MAX
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN C.REIS	3/19/07
CHECKED RANDY B.	3/23/07
MFG ENG STEVE F.	3/23/07
ISSUED DENISE D.	4/11/07

QSC AUDIO PRODUCTS, INC.
1675 MACARTHUR BOULEVARD
COSTA MESA, CA 92626 U.S.A.

TITLE
WIRING DIAGRAM
PL380

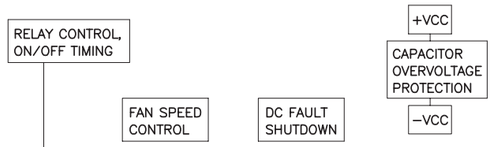
SIZE	CAGE CODE	DWG NO.	REV
D	00PW4	SH-038000-00	A

SCALE NONE | ACAD FILE: SH-038000.DWG | SHEET 1 OF 1

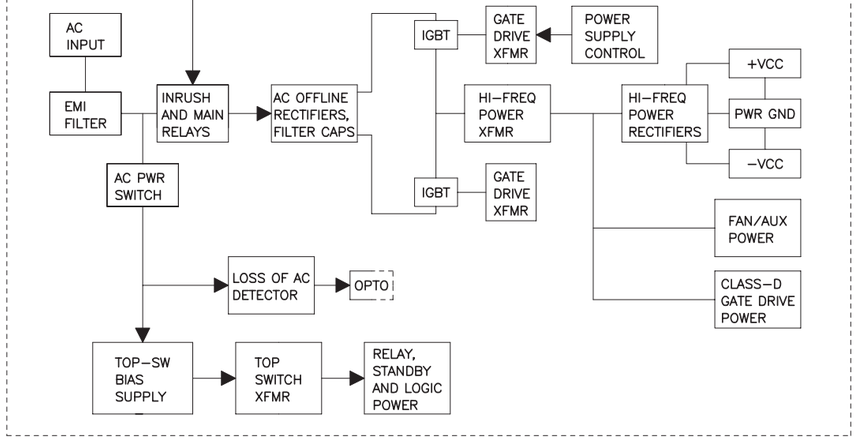
BLOCK DIAGRAM AND GUIDE TO SCHEMATIC SHEETS

ITEMS SHOWN BELOW APPEAR IN SIMILAR LOCATIONS ON THEIR RESPECTIVE SHEETS

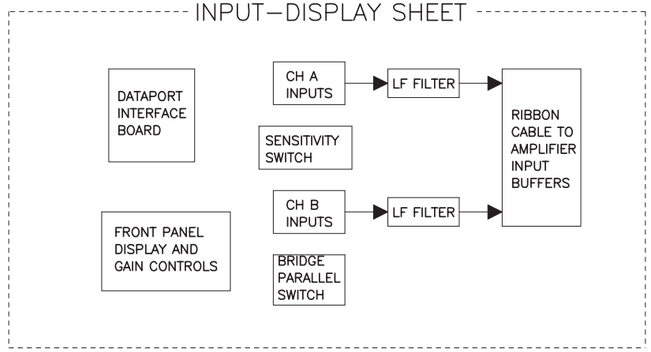
PROTECTION/CONTROL SHEET



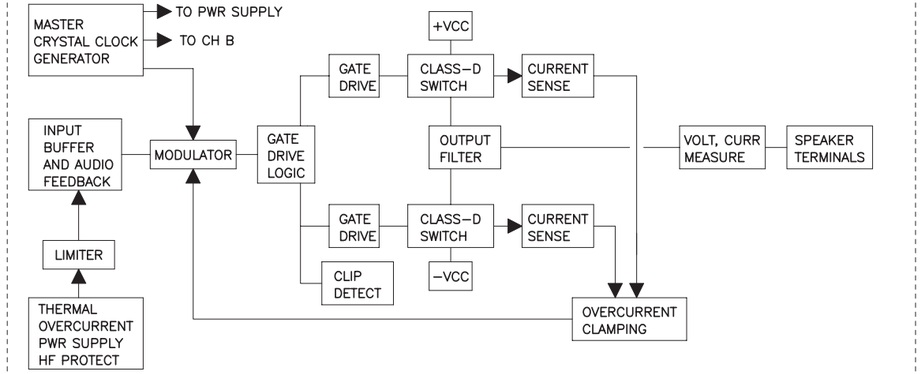
POWER SUPPLY SHEET



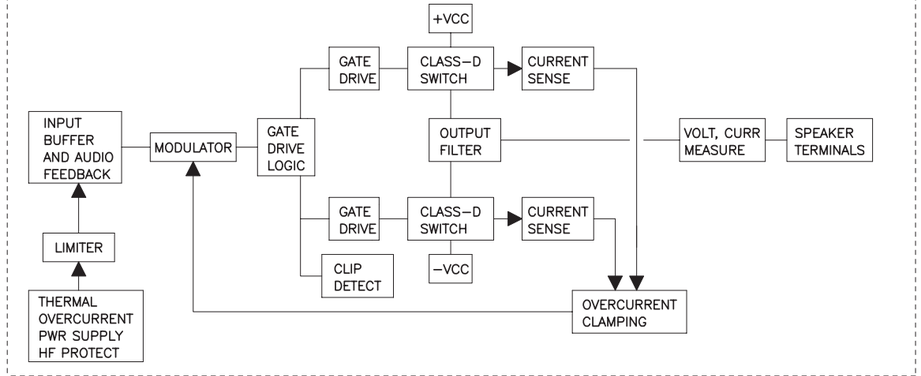
INPUT–DISPLAY SHEET



AMP CH–A SHEET



AMP CH–B SHEET



PL380 schematic guide

SIZE	FSCM NO.	DWG NO.	REV
D		SH–038001–00	B
SCALE	CAD FILE NO.	SHEET AMPOUTLINE	

DWG NO. SH–038001–00 REV B SH 2

Signal Path (linear)

Signal Path (PWM)

CRYSTAL–DIVIDER CLOCK CIRCUIT

A–CLOCK

FEEDBACK COMPENSATION

PROTECTION LIMITER

LIMITER CONTROL SYSTEM

THERMAL SENSOR

OUTPUT INDUCTOR

SWITCHING FREQ TRAP AND IMON CURRENT SENSOR

OVERCURRENT FEEDBACK

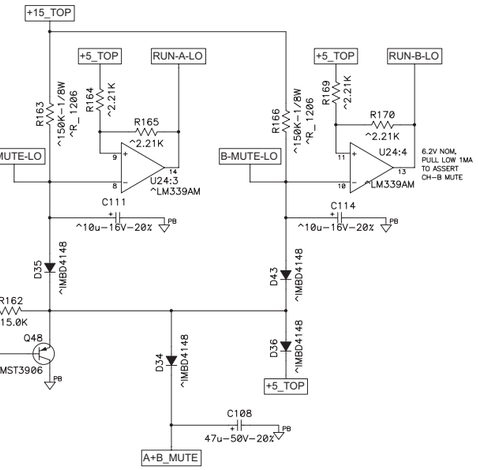
Schematic sheet AMP CH-A, PL380 through January 2008

SIZE	FSCM NO.	DWG NO.	REV
D	NONE	SH–038001–00	B
SCALE	CAD FILE NO.	SHEET	AMP CH–A

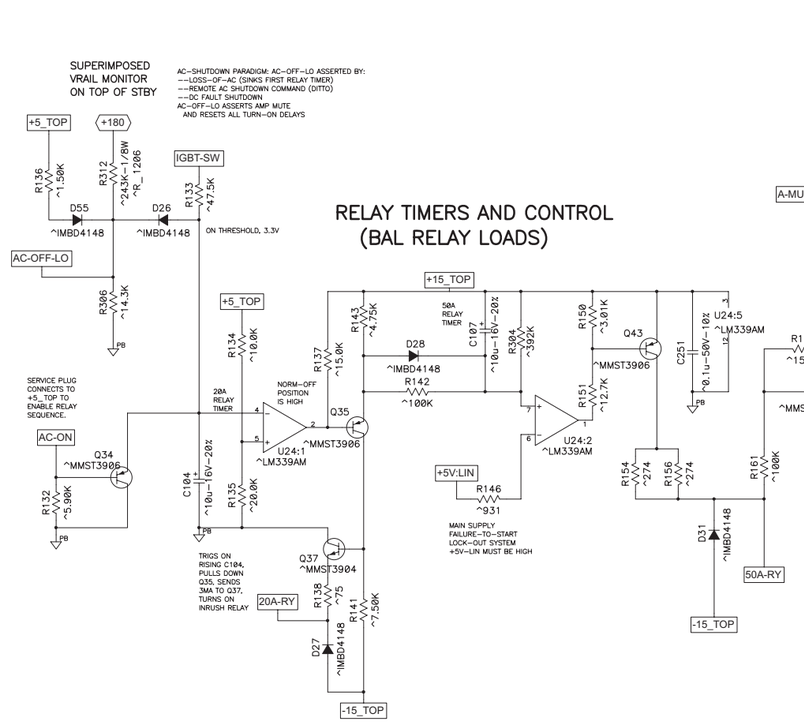
Mon Jul 16, 2007

B_REV 3_SH SH–038001–00_DWG NO.

MUTING DELAYS AND CONTROL, BOTH CH

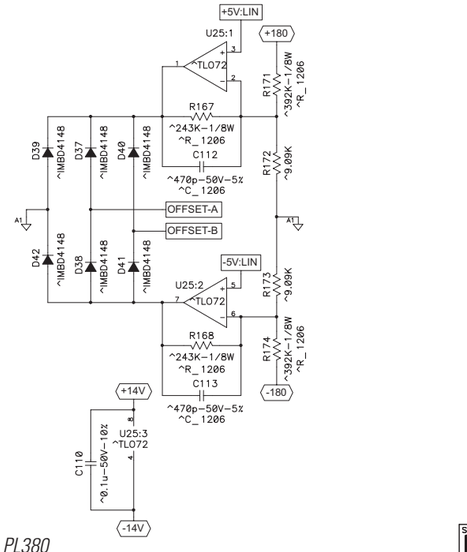


RELAY TIMERS AND CONTROL (BAL RELAY LOADS)

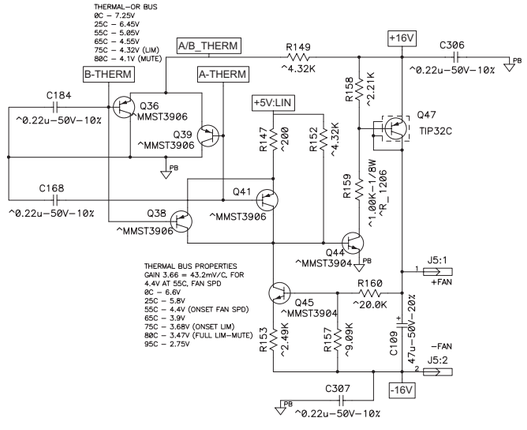


CAPACITOR OVERVOLTAGE PROTECTION

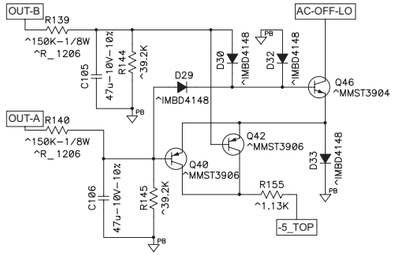
VCC VOLTAGES EXCEEDING 225V TRIGGER POS OR NEG CLAMP CONNECTED TO INPUT SIGNAL ON EACH CHANNEL.



FAN SPEED CONTROL



DC SHUTDOWN SYSTEM



Schematic sheet PROTECT/CONTROL, PL380

SIZE	FSCM NO.	DWG NO.	REV
D		SH-038001-00	B
SCALE	CAD FILE NO.	SHEET	PROT/CNTRL

DWG NO. SH-038001-00 REV B SH 4

Signal Path (linear)
Signal Path (PWM)

TEMPERATURE COMPENSATED MODULATOR CLAMP REFERENCE

FEEDBACK COMPENSATION

PROTECTION LIMITER

LIMITER CONTROL SYSTEM

THERMAL SENSE

OUTPUT INDUCTOR

OVERCURRENT FEEDBACK

Schematic sheet AMP CH-B, PL380 through January 2008

SIZE	FSCM NO.	DWG NO.	REV
D	NONE	SH-038001-00	B
SCALE	CAD FILE NO. SH-038001-B.sch	SHEET AMP CH-B	

LINE FILTER

MAIN POWER SUPPLY

TOP–SWITCH KEEP–ALIVE SUPPLY, 15W

DATAPORT SUPPLY SEMI REGULATED 9–10V

SECONDARY 15V, 5V KEEPALIVE –WITH 15 V REGULATORS–

AUX SUPPLY – FAN AND AUDIO

CLEAN 15V AUDIO PWR (MAIN PS)

CLEAN 5V PWR (MAIN SUPPLY)

LO–SIDE GATE–A

LO–SIDE GATE–B

HI–SIDE GATE–A

HI–SIDE GATE–B

AC DETECTOR WITH HYSTERESIS

TEST PORT–A

SERVICE PLUG–IN

PROVIDES 18V DC TO OPERATE ALL TOP–SWITCH 15V AND 5V FUNCTIONS. STRAPS AC–ON HIGH TO ENABLE RELAY SEQUENCE AND PERMIT RAMPING UP MAIN SUPPLY WITH VARIAC.

TEST PORT–B

REMOVE JUMPERS TO INSTALL TEST PLUG WITH 15V 125KHZ OSCILLATOR TO OPERATE AUDIO, FAN, AND CLASS–D GATE DRIVES. REPLACE JUMPERS TO USE NORMALLY.

GROUND SERV–1 VIA SERVICE FIXTURE TO ENABLE 3525 FOR TESTING

SYNC PULSE HI, 2MA AT 3.5V

SHUTDOWN=5 RUN=0V

Power Supply, PL380

SIZE	FSCM NO.	DWG NO.	REV
D		SH–038001–00	B
SCALE NONE	CAD FILE NO. SH–038001–B.sch	SHEET SUPPLY	

Schematic sheet POWER SUPPLY, PL380 through January 2008

CH B INP

CH A INP

DATAPORT

DATAPORT SIGNALS.
1. –INA, 3V NOM
2. STBY, SINK 5V BELOW 2V, SUPERPOSE VRAIL 5–12V
3. VMON–A, BMF FLAG.
4. IMON–A, TH–A
5. CLIP A (LIMITER ZONE)
6. CHAS GND
7. +IN A
8. +IN B
9. +15V
10. D–REF
11. –IN B
12. IDR
13. VMON–B, STBY/RUN FLAG
14. IMON B, TH B
15 CLIP B (LIMITER ZONE).

IDR VALUES
PL–325 = 5.23K
PL–340 = 5.62K
PL–380 = 5.90K

BMF FLAG VOLTAGES
BR = 1.6V
ST = 0.95V
PAR = 0.38V

BMF FLAG VMON–A

CH B INPUT

CH A INPUT

3–POS SENS SW BOTH CH

1.2V–32dB–26dB

VM–B FLAG VOLTAGES
0.5V, ORG, 26dB
0.93V GRN, 32dB
1.41V, YEL, 1.2V

LF FILT CH B OFF–33–50 HZ

LF FILT CH A OFF–33–50 HZ

CLIP LIM–B ON OFF

CLIP LIM–A ON OFF

GROUNDING DISABLES CLIP LIM

BR MONO RETURN

CH–B POT BUFFER

CH–A POT BUFFER

CLIP FLAG NORMALLY REMAINS ABOVE 2V, HOLDS Q32 ON, HOLDS Q31 AND CLIP BUS LOW.

LED DRIVER LOG AMP

15K PULLS TO GND DURING CLIP/MUTE >2V NO–CLIP

GROUNDING DISABLES CLIP LIM

COUPLES VRAIL SIGNAL, APPROX 4V IN STBY 5–12V IN RUN.

5V NOM, PULL LOW 1MA TO ASSERT A+B MUTE

+5V = NO LIMITING
ZERO VOLTS INDICATES AMP IS ABOUT TO MUTE (SEE CLIP INDICATOR)

NOTE THAT +5V STAYS HI WHEN MAIN POWER IS OFF, SO CLIP LED INDICATES STANDBY (AND MUTING)

GAIN–LED PCB (CH B SECTION)

GAIN–LED PCB (CH A SECTION)

16–PIN RIBBON FROM INPUT TO GAIN BOARD

LED–SWITCH ASSIGNMENT TABLE.
SENSITIVITY SWITCH:
LEFT = 26DB (ORG),
CNTR = 32DB (GRN)
RIGHT = 1.2V (YEL)
BRIDGE MONO SWITCH:
LEFT= BR MONO (YEL)
CNTR = STEREO (GRN),
RIGHT = PAR (ORG)
CLIP LIM (EA CH)
BOTTOM, OFF–NONE, ON–YEL
HIPASS (EA CH)
BOTTOM, OFF–NONE, 38HZ–YEL, 50HZ–ORG

Signal Path

Schematic sheet INPUT, PL380 through January 2008

SIZE	FSCM NO.	DWG NO.	REV
D		SH–038001–00	B
SCALE	CAD FILE NO.	SHEET	INP–DISPL

DWG NO. SH–038001–00 REV B SH 7

Signal Path (linear)

Signal Path (PWM)

CRYSTAL–DIVIDER CLOCK CIRCUIT

A–CLOCK

FEEDBACK COMPENSATION

PROTECTION LIMITER

LIMITER CONTROL SYSTEM

THERMAL SENSOR

OUTPUT INDUCTOR

SWITCHING FREQ TRAP AND IMON CURRENT SENSOR

OVERCURRENT FEEDBACK

Schematic sheet AMP CH-A, PL380 from February 2008–

Components changed since prior version are highlighted in yellow.

SIZE	FSCM NO.	DWG NO.	REV
D	NONE	SH–038001–00	D
SCALE	CAD FILE NO.	SHEET	AMP CH–A

Fri Mar 28, 2008

Signal Path (linear)
Signal Path (PWM)

TEMPERATURE COMPENSATED MODULATOR CLAMP REFERENCE

FEEDBACK COMPENSATION

PROTECTION LIMITER

LIMITER CONTROL SYSTEM

THERMAL SENSE

OUTPUT INDUCTOR

OVERCURRENT FEEDBACK

Components changed since prior version are highlighted in yellow.

Schematic sheet AMP CH-B, PL380 from February 2008–

SIZE D | FSCM NO. NONE | DWG NO. SH–038001–00 | REV D
SCALE | CAD FILE NO. SH–038001–D.sch | SHEET AMP CH–B

DWG NO. SH–038001–00 REV D SH 5

LINE FILTER

MAIN POWER SUPPLY

TOP–SWITCH KEEP–ALIVE SUPPLY, 15W

DATAPORT SUPPLY SEMI REGULATED 9–10V

SECONDARY 15V, 5V KEEPALIVE –WITH 15 V REGULATORS–

AUX SUPPLY – FAN AND AUDIO

CLEAN 15V AUDIO PWR (MAIN PS)

CLEAN 5V PWR (MAIN SUPPLY)

LO–SIDE GATE–A

LO–SIDE GATE–B

HI–SIDE GATE–A

HI–SIDE GATE–B

AC DETECTOR WITH HYSTERESIS

TEST PORT–A

SERVICE PLUG–IN

PROVIDES 18V DC TO OPERATE ALL TOP–SWITCH 15V AND 5V FUNCTIONS. STRAPS AC–ON HIGH TO ENABLE RELAY SEQUENCE AND PERMIT RAMPING UP MAIN SUPPLY WITH VARIAC.

TEST PORT–B

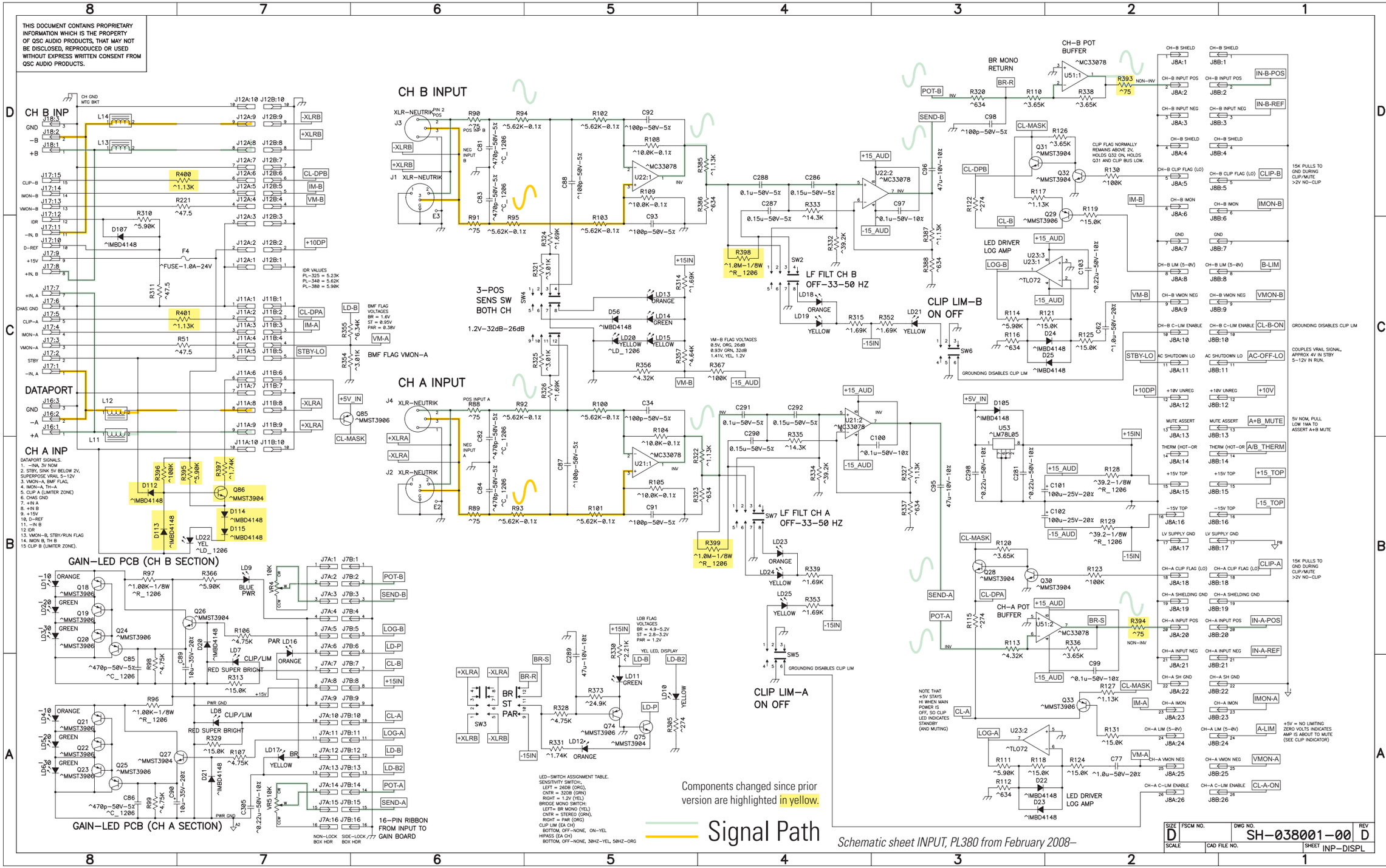
REMOVE JUMPERS TO INSTALL TEST PLUG WITH 15V 125KHZ OSCILLATOR TO OPERATE AUDIO, FAN, AND CLASS–D GATE DRIVES. REPLACE JUMPERS TO USE NORMALLY.

GROUND SERV–1 VIA SERVICE FIXTURE TO ENABLE 3525 FOR TESTING

Components changed since prior version are highlighted in yellow.

SIZE	FSCM NO.	DWG NO.	REV
D		SH–038001–00	D
SCALE NONE	CAD FILE NO. SH–038001–D.sch	SHEET SUPPLY	

Schematic sheet POWER SUPPLY, PL380 from February 2008–



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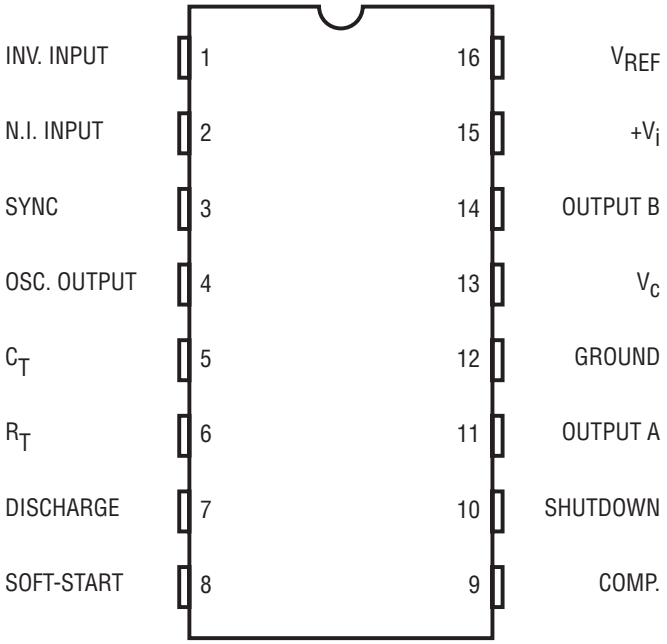
6. Replacement parts

6.1 Semiconductor package descriptions and pinouts

Legend: A = anode; **B** = base; **C** = collector; **D** = drain; **G** = gate; **K** = cathode; **S** = source

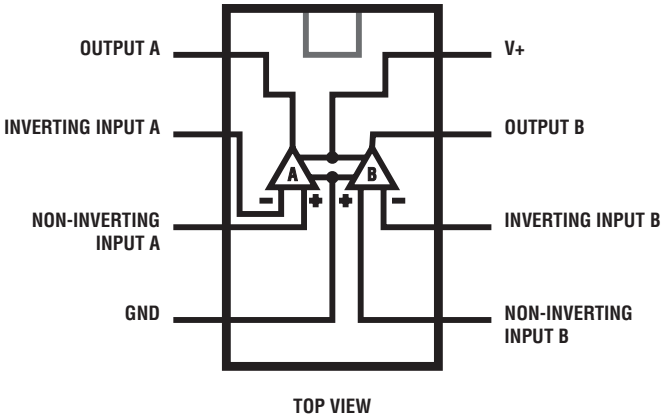
IC-000024-00

PWM controller, SG3525AN



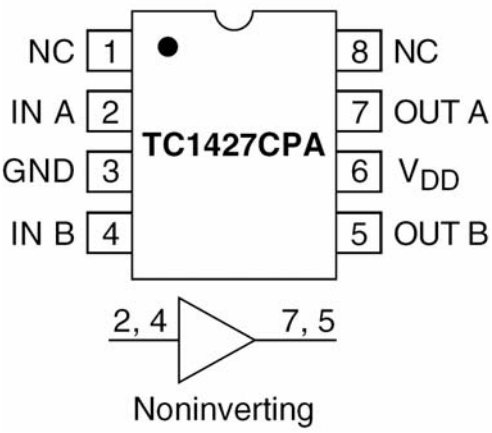
IC-000047-30

COMPARATOR, DUAL, LM393, SMT



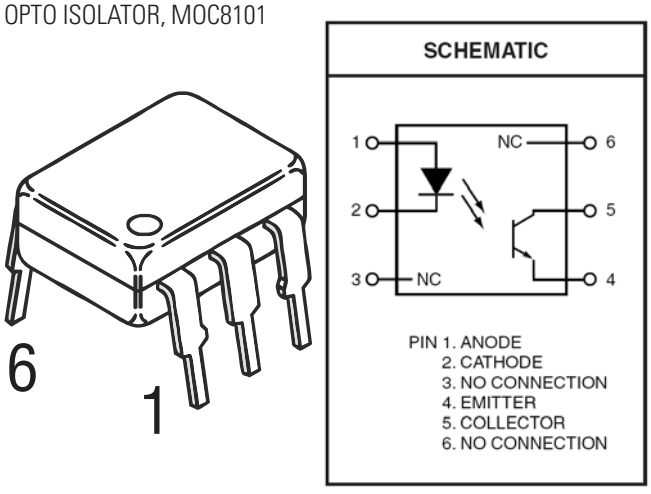
IC-000025-00

MOSFET DRIVER, TC1427CPA



IC-000051-00

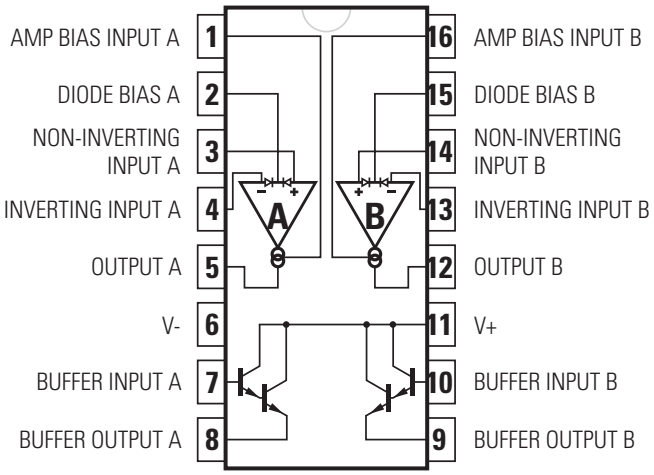
OPTO ISOLATOR, MOC8101



6.1 Semiconductor package descriptions and pinouts (continued)

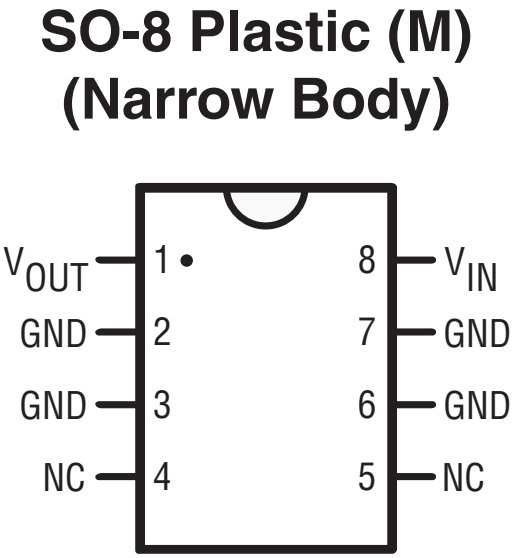
IC-000073-30

Dual transconductance op amp, LM13600M



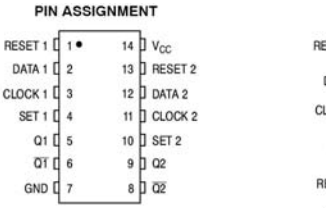
IC-000128-00

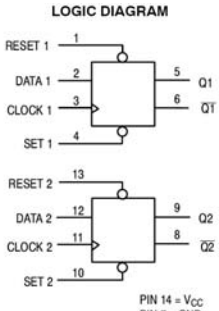
+5 V voltage regulator, LM78L05



IC-000106-30

D FLIP FLOP, DUAL, 74HC74, SMT





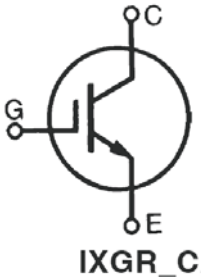
FUNCTION TABLE

Inputs				Outputs	
Set	Reset	Clock	Data	Q	Q̄
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H*	H*
H	H	↑	H	H	L
H	H	↑	L	L	H
H	H	L	X	No Change	
H	H	H	X	No Change	
H	H	↓	X	No Change	

*Both outputs will remain high as long as Set and Reset are low, but the output states are unpredictable if Set and Reset go high simultaneously.

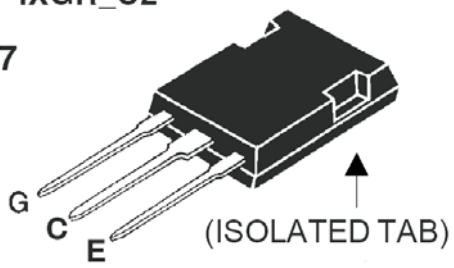
QD-000315-00

600V 75A IGBT, 250W, IXGR60N60C2, TO-247



IXGR_C2

ISOPLUS247
(IXGR)

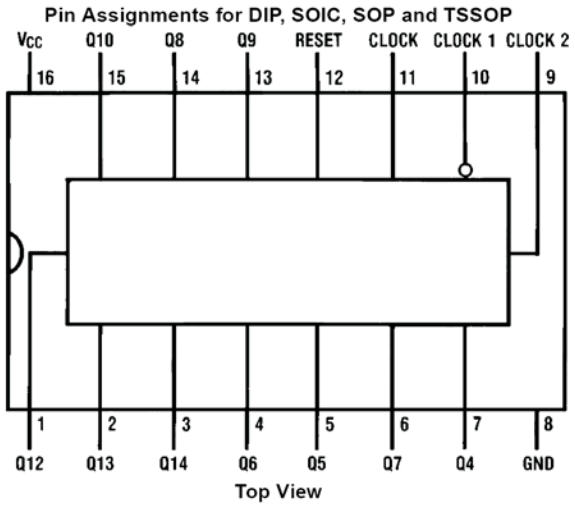


G = Gate C = Collector
E = Emitter

6.1 Semiconductor package descriptions and pinouts (continued)

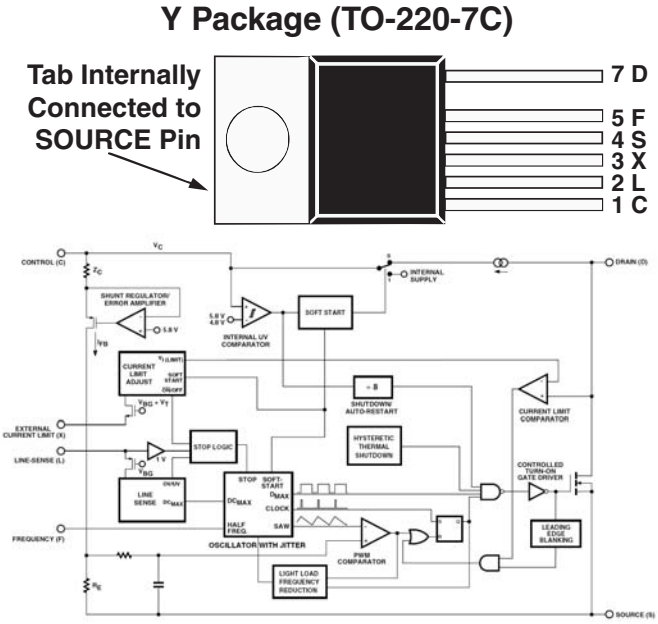
IC-000316-00

Counter, 14 stage, 74HC4060, SMT



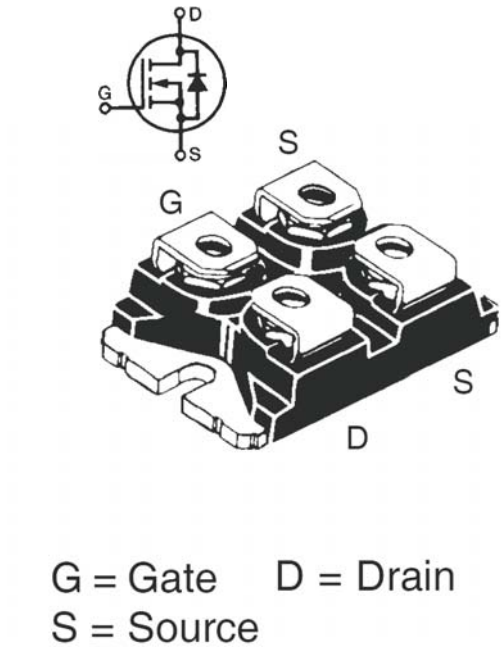
IC-000342-00

TOP SWITCH, TOP244YN



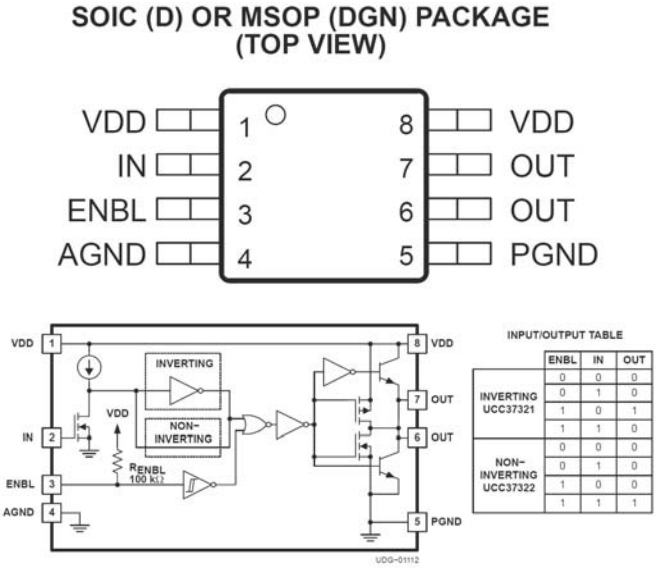
QD-000318-00

N-channel MOSFET 500V 85A, IXFN80N50Q2, SOT-227B package



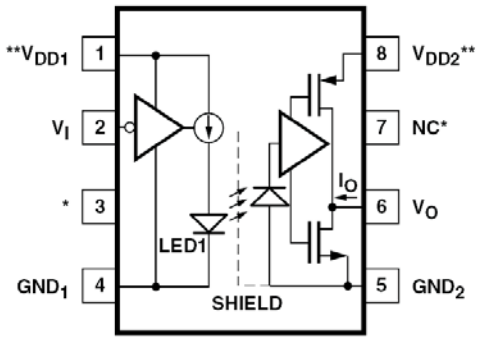
IC-000371-30

MOSFET DRIVER, UCC37321D, SMT



IC-000446-30

OPTO COUPLER, , HCPL-0723, SMT



* PIN 3 IS THE ANODE OF THE INTERNAL LED AND MUST BE LEFT UNCONNECTED FOR GUARANTEED DATASHEET PERFORMANCE. PIN 7 IS NOT CONNECTED INTERNALLY.

** A 0.1 µF BYPASS CAPACITOR MUST BE CONNECTED BETWEEN PINS 1 AND 4, AND 5 AND 8.

TRUTH TABLE
(POSITIVE LOGIC)

V_I, INPUT	LED1	V_O, OUTPUT
H	OFF	H
L	ON	L

6.2 PL325 parts and assemblies

PL325 Power Amplifier (120V) (QSC part # FG-032500-00)

QSC Part #	Description	Qty.	Reference	Comments
CH-000579-00	COVER, BOTTOM, , PL3,	1		
LB-000209-00	AGENCY, CERTIFICATION, CLASS B, , FCC	1		
LB-000437-00	LABEL, WARNING, RAIN & MOISTURE, ,	1		
PM-000309-00	INSERT, SHIPPING, , PL380, ,	2		
PM-001401-00	BAG, SHIPPING, POLYPROPYLENE, SERIES 1, 20.5" X 12.5" X 24",	1		
PM-001601-00	CARTON, SHIPPING, , PL380, 23.2" X 21.2" X 5.5",	1		
PM-004001-00	PAD, SHIPPING, , EX/MXA, 21.2" X 23.2",	1		
RD-000001-00	LABEL, SHIPG CRTN , THERMAL	0		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	11		
TD-000235-00	OWNERS MANUAL, PL3 SERIES,	1		
TD-000254-00	MANUAL INSERT, CHINA ROHS, AMPLIFIERS,	1		
TS-000004-WR	3 YEARS WARRANTY	3		
WC-000341-00	AC CORD, POWERCON, 14 AWG, 3 CONDUCTOR, PL340, 72", 120V	1		
WP-000001-00	ASSEMBLY, CATALOG KIT, , ,	1		
WP-000952-00	SHIP KIT, , PL3, ,	1		
WP-032500-00	CHASSIS ASSY, , PL325, 120V,	1		
WP-032501-00	PCB ASSY, , PL325, 120V,	1		

PL325 Power Amplifier (100V) (QSC part # FG-032500-01)

QSC Part #	Description	Qty.	Reference	Comments
CH-000579-00	COVER, BOTTOM, , PL3,	1		
LB-000437-00	LABEL, WARNING, RAIN & MOISTURE, ,	1		
PM-000309-00	INSERT, SHIPPING, , PL380, ,	2		
PM-001401-00	BAG, SHIPPING, POLYPROPYLENE, SERIES 1, 20.5" X 12.5" X 24",	1		
PM-001601-00	CARTON, SHIPPING, , PL380, 23.2" X 21.2" X 5.5",	1		
PM-004001-00	PAD, SHIPPING, , EX/MXA, 21.2" X 23.2",	1		
RD-000001-00	LABEL, SHIPG CRTN , THERMAL	0		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	11		
TD-000235-00	OWNERS MANUAL, PL3 SERIES,	1		
TD-000254-00	MANUAL INSERT, CHINA ROHS, AMPLIFIERS,	1		
TS-000004-WR	3 YEARS WARRANTY	3		
WC-000341-00	AC CORD, POWERCON, 14 AWG, 3 CONDUCTOR, PL340, 72", 120V	1		
WP-000952-00	SHIP KIT, , PL3, ,	1		
WP-032500-01	CHASSIS ASSY, , PL325, 100V,	1		
WP-032501-01	PCB ASSY, , PL325, 100V,	1		

PL325 Power Amplifier (230V) (QSC part # FG-032500-02)

QSC Part #	Description	Qty.	Reference	Comments
CH-000579-00	COVER, BOTTOM, , PL3,	1		
LB-000437-00	LABEL, WARNING, RAIN & MOISTURE, ,	1		
PM-000309-00	INSERT, SHIPPING, , PL380, ,	2		
PM-001401-00	BAG, SHIPPING, POLYPROPYLENE, SERIES 1, 20.5" X 12.5" X 24",	1		
PM-001601-00	CARTON, SHIPPING, , PL380, 23.2" X 21.2" X 5.5",	1		
PM-004001-00	PAD, SHIPPING, , EX/MXA, 21.2" X 23.2",	1		
RD-000001-00	LABEL, SHIPG CRTN , THERMAL	0		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	11		
TD-000235-00	OWNERS MANUAL, PL3 SERIES,	1		
TD-000254-00	MANUAL INSERT, CHINA ROHS, AMPLIFIERS,	1		
TS-000004-WR	3 YEARS WARRANTY	3		
WC-000356-00	AC CORD ASSY, POWERCONN, 1.5MM2, 3 CONDUCTOR, PL3 SERIES, 100", 250VAC	1		
WP-000952-00	SHIP KIT, , PL3, ,	1		
WP-032500-02	CHASSIS ASSY, , PL325, 230V,	1		
WP-032501-02	PCB ASSY, , PL325, 230V,	1		

Chassis Assembly PL325 (120V) (QSC part # WP-032500-00)

QSC Part #	Description	Qty.	Reference	Comments
CH-000118-00	RACK EAR, FRONT, , CX902,	2		
CH-000693-00	SHIELD, LINE FILTER, , PL340,	1		
CH-000694-00	CHASSIS, MAIN, , PL340,	1		
CO-000320-00	AC INLET, FLANGE MOUNT, 3 POS, FEMALE, POWERCON A-TYPE	1		

Chassis Assembly PL325 (120V) continued

QSC Part #	Description	Qty.	Reference	Comments
HW-040001-00	BRACKET, ANGLE, #4-40, 0.375" L, ZINC PLATED STEEL,	2		
HW-060090-SO	STANDOFF, 0.250" HEX, #6-32, 0.563" L, ALUMINUM, FEMALE	2		
LB-000053-00	FUSE, REPLACEMENT, FRENCH, ,	1		
LB-000077-00	WARNING, HIGH ENERGY, , PL 3RU,	1		
LB-000409-00	AGENCY, 68FA LISTING, HORIZONTAL, , UL/CUL	1		
LB-000439-00	LABEL, WIRE CLASS 2 AND 3, , ,	1		
LB-000652-00	PRODUCT, FACEPLATE, , PL3,	1		
LB-000653-00	PRODUCT, FACEPLATE, , PL325,	1		
LB-000673-50	LABEL, CHINA ROHS, 50 YEARS, , SMALL	1		
LB-160226-05	FUSE, 25A, 125V, , UL	1		
NW-060010-IT	LOCK WASHER, #6, INTERNAL TOOTH, , CR111	4		
PL-000054-00	KNOB, , PLX, POLYPROPYLENE/SANTOPRENE, BLACK,	2		
PL-000066-00	CLIP, CHRISTMAS TREE, , NYLON, BLACK,	2		
PL-000095-00	FAN INTERFACE, , PLX 2RU, POLYPROPYLENE, BLACK,	1		
PL-000144-00	INSULATOR, FAN DUCT, PL2/2A, FISH PAPER, ,	1		
PL-000515-00	INSULATOR, FAN DUCT, PL3 SERIES, FISH PAPER, ,	1		
RD-000003-XX	LABEL, SERIAL NUMBER, PLX/DCA/PL/PL2A/CM16A/PL/DCM	0		
SC-025000-PP	PHILLIPS, PANHEAD, M2.5, 6MM, BLACK, THREAD FORMING, CR111	8		
SC-040041-PP	PHILLIPS, PANHEAD, #4-40, 0.25" L, BLACK, CR111	4		
SC-060042-PP	PHILLIPS, PANHEAD SEMS INTERNAL TOOTH, #6-32, 0.25" L, BLK, ZINC, CR111	2		
SC-060060-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #6-32, 0.375" L, ZINC, CR111	3		
SC-063081-PO	PHILLIPS, OVALHEAD, #6-20, 0.5 “L, BLACK, ZINC W/6107 LUBE, SELF TAPPING, CR111	2		
SC-080122-HC	HEX, CAP, #8-32, 0.75" L, BLACK, CR111	2		
SC-080127-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #8-32, 0.75" L, ZINC, CR111	2		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	14		
SW-000037-00	AC SWITCH, DPST, 20A, 125VAC,	1		
WC-000160-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, PL2A, 9" L,	2		
WC-000312-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, DCM-3, 10" L,	1		
WC-000343-00	CABLE ASSY, AC, 16 AWG, 3 CONDUCTOR, PL3, 5" L,	1		
WC-000344-00	CABLE ASSY, INPUT POWER, 22 AWG, 3 CONDUCTOR, PL3, 14" L,	1		
WP-000057-00	FAN ASSY, , PLC, ,	1		
WP-032502-00	PCB ASSY, INPUT, PL325, ,	1		

Chassis Assembly PL325 (100V) (QSC part # WP-032500-01)

QSC Part #	Description	Qty.	Reference	Comments
CH-000118-00	RACK EAR, FRONT, , CX902,	2		
CH-000693-00	SHIELD, LINE FILTER, , PL340,	1		
CH-000694-00	CHASSIS, MAIN, , PL340,	1		
CO-000320-00	AC INLET, FLANGE MOUNT, 3 POS, FEMALE, POWERCON A-TYPE	1		
HW-040001-00	BRACKET, ANGLE, #4-40, 0.375" L, ZINC PLATED STEEL,	2		
HW-060090-SO	STANDOFF, 0.250" HEX, #6-32, 0.563" L, ALUMINUM, FEMALE	2		
LB-000077-00	WARNING, HIGH ENERGY, , PL 3RU,	1		
LB-000439-00	LABEL, WIRE CLASS 2 AND 3, , ,	1		
LB-000652-00	PRODUCT, FACEPLATE, , PL3,	1		
LB-000653-00	PRODUCT, FACEPLATE, , PL325,	1		
LB-000673-50	LABEL, CHINA ROHS, 50 YEARS, , SMALL	1		
LB-160226-00	FUSE, 30A, 125V, , UL	1		
NW-060010-IT	LOCK WASHER, #6, INTERNAL TOOTH, , CR111	4		
PL-000054-00	KNOB, , PLX, POLYPROPYLENE/SANTOPRENE, BLACK,	2		
PL-000066-00	CLIP, CHRISTMAS TREE, , NYLON, BLACK,	2		
PL-000095-00	FAN INTERFACE, , PLX 2RU, POLYPROPYLENE, BLACK,	1		
PL-000144-00	INSULATOR, FAN DUCT, PL2/2A, FISH PAPER, ,	1		
PL-000515-00	INSULATOR, FAN DUCT, PL3 SERIES, FISH PAPER, ,	1		
RD-000003-XX	LABEL, SERIAL NUMBER, PLX/DCA/PL/PL2A/CM16A/PL/DCM	0		
SC-025000-PP	PHILLIPS, PANHEAD, M2.5, 6MM, BLACK, THREAD FORMING, CR111	8		
SC-040041-PP	PHILLIPS, PANHEAD, #4-40, 0.25" L, BLACK, CR111	4		
SC-060042-PP	PHILLIPS, PANHEAD SEMS INTERNAL TOOTH, #6-32, 0.25" L, BLK, ZINC, CR111	2		
SC-060060-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #6-32, 0.375" L, ZINC, CR111	3		
SC-063081-PO	PHILLIPS, OVALHEAD, #6-20, 0.5 “L, BLACK, ZINC W/6107 LUBE, SELF TAPPING, CR111	2		
SC-080122-HC	HEX, CAP, #8-32, 0.75" L, BLACK, CR111	2		
SC-080127-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #8-32, 0.75" L, ZINC, CR111	2		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	14		
SW-000037-00	AC SWITCH, DPST, 20A, 125VAC,	1		

Chassis Assembly PL325 (100V) continued

QSC Part #	Description	Qty.	Reference	Comments
WC-000160-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, PL2A, 9" L,	2		
WC-000312-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, DCM-3, 10" L,	1		
WC-000343-00	CABLE ASSY, AC, 16 AWG, 3 CONDUCTOR, PL3, 5" L,	1		
WC-000344-00	CABLE ASSY, INPUT POWER, 22 AWG, 3 CONDUCTOR, PL3, 14" L,	1		
WP-000057-00	FAN ASSY, , PLC, ,	1		
WP-032502-00	PCB ASSY, INPUT, PL325, ,	1		

Chassis Assembly PL325 (230V) (QSC part # WP-032500-02)

QSC Part #	Description	Qty.	Reference	Comments
CH-000118-00	RACK EAR, FRONT, , CX902,	2		
CH-000693-00	SHIELD, LINE FILTER, , PL340,	1		
CH-000694-00	CHASSIS, MAIN, , PL340,	1		
CO-000320-00	AC INLET, FLANGE MOUNT, 3 POS, FEMALE, POWERCON A-TYPE	1		
HW-040001-00	BRACKET, ANGLE, #4-40, 0.375" L, ZINC PLATED STEEL,	2		
HW-060090-S0	STANDOFF, 0.250" HEX, #6-32, 0.563" L, ALUMINUM, FEMALE	2		
LB-000053-00	FUSE, REPLACEMENT, FRENCH, ,	1		
LB-000077-00	WARNING, HIGH ENERGY, , PL 3RU,	1		
LB-000099-01	AGENCY, LISTING, , , CE	1		
LB-000439-00	LABEL, WIRE CLASS 2 AND 3, , ,	1		
LB-000652-00	PRODUCT, FACEPLATE, , PL3,	1		
LB-000653-00	PRODUCT, FACEPLATE, , PL325,	1		
LB-000673-50	LABEL, CHINA ROHS, 50 YEARS, , SMALL	1		
LB-160226-01	FUSE, 15A, 250V, , UL	1		
NW-060010-IT	LOCK WASHER, #6, INTERNAL TOOTH, , CR111	4		
PL-000054-00	KNOB, , PLX, POLYPROPYLENE/SANTOPRENE, BLACK,	2		
PL-000055-00	PLUG, BINDING POST, , POLYPROPYLENE, RED,	2		
PL-000056-00	PLUG, BINDING POST, , POLYPROPYLENE, BLACK,	2		
PL-000066-00	CLIP, CHRISTMAS TREE, , NYLON, BLACK,	2		
PL-000095-00	FAN INTERFACE, , PLX 2RU, POLYPROPYLENE, BLACK,	1		
PL-000144-00	INSULATOR, FAN DUCT, PL2/2A, FISH PAPER, ,	1		
PL-000515-00	INSULATOR, FAN DUCT, PL3 SERIES, FISH PAPER, ,	1		
RD-000003-XX	LABEL, SERIAL NUMBER, PLX/DCA/PL/PL2A/CM16A/PL/DCM	0		
SC-025000-PP	PHILLIPS, PANHEAD, M2.5, 6MM, BLACK, THREAD FORMING, CR111	8		
SC-040041-PP	PHILLIPS, PANHEAD, #4-40, 0.25" L, BLACK, CR111	4		
SC-060042-PP	PHILLIPS, PANHEAD SEMS INTERNAL TOOTH, #6-32, 0.25" L, BLK, ZINC, CR111	2		
SC-060060-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #6-32, 0.375" L, ZINC, CR111	3		
SC-063081-PO	PHILLIPS, OVALHEAD, #6-20, 0.5 “L, BLACK, ZINC W/6107 LUBE, SELF TAPPING, CR111	2		
SC-080122-HC	HEX, CAP, #8-32, 0.75" L, BLACK, CR111	2		
SC-080127-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #8-32, 0.75" L, ZINC, CR111	2		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	14		
SW-000037-00	AC SWITCH, DPST, 20A, 125VAC,	1		
WC-000160-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, PL2A, 9" L,	2		
WC-000312-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, DCM-3, 10" L,	1		
WC-000343-00	CABLE ASSY, AC, 16 AWG, 3 CONDUCTOR, PL3, 5" L,	1		
WC-000344-00	CABLE ASSY, INPUT POWER, 22 AWG, 3 CONDUCTOR, PL3, 14" L,	1		
WP-000057-00	FAN ASSY, , PLC, ,	1		
WP-032502-00	PCB ASSY, INPUT, PL325, ,	1		

PCB Assembly PL325 (120V) (QSC part # WP-032501-00)

QSC Part #	Description	Qty.	Reference	Comments
CA-010002-30	10PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C14, C49	
CA-015002-10	15PF, 10 PCNT, 500V, CERAMIC SL, DISC,	2	C16, C50	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C64, C65, C99, C100, C187, C193	
CA-110001-10	100PF, 5 PCNT, 500V, MICA, DIPPED,	1	C147	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C5, C6, C9, C18, C40, C41, C43, C53	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	2	C145, C146	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C4, C17, C26, C52, C61, C119, C148, C181, C182, C186, C188	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C25, C60	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	9	C75, C81, C85, C93–C96, C120, C124	
CA-222001-00	0.0022UF, 20 PCNT, 125VAC, CERAMIC Y5U, DISC, YCAP	2	C122, C127	
CA-227001-30	0.0027UF, 10 PCNT, 100V, CERAMIC X7R, 0805,	11	C20, C23, C24, C55, C58, C59, C68, C98, C108, C109, C128	
CA-233001-10	0.0033UF, 10 PCNT, 100V, FILM, DIPPED,	1	C113	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	2	C115, C118	

PCB Assembly PL325 (120V) continued

QSC Part #	Description	Qty.	Reference	Comments
CA-322001-10	0.022UF, 10 PCNT, 100V, FILM, DIPPED,	2	C27, C62	
CA-410001-00	0.1UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C126	
CA-410002-10	0.1UF, 5 PCNT, 100V, FILM, DIPPED,	4	C8, C12, C44, C47	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	13	C28, C34, C35, C63, C69, C70, C84, C87, C90, C129, C134, C156, C157	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	19	C19, C54, C88, C116, C125, C135, C155, C162, C163, C177–C180, C183, C185, C189–C191, C194	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	2	C107, C123	
CA-422001-10	0.22UF, 5 PCNT, 50V, FILM, DIPPED, LOW PROFILE	2	C10, C45	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C39, C121	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C117	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	1	C144	
CA-510003-10	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, ,	1	C80	
CA-510005-30	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, SMT,	2	C13, C48	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C110, C112	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	7	C3, C31, C38, C66, C86, C114, C192	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C184	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	11	C7, C11, C42, C46, C71, C91, C92, C102, C104–C106	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	5	C21, C22, C56, C57, C89	
CA-710002-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, ,	11	C15, C32, C33, C51, C67, C72, C78, C79, C139, C142, C143	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	3	C138, C149, C150	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	7	C73, C74, C76, C77, C83, C82, C131	
CA-810003-00	1000UF, 20 PCNT, 90V, ELECTROLYTIC, ,	10	C152, C153, C159, C160, C165, C166, C169, C170, C173, C174	
CA-810004-00	1000UF, 20 PCNT, 55V, ELECTROLYTIC, ,	10	C151, C154, C158, C161, C164, C167, C168, C171, C172, C175	
CA-822200-AE	2200UF, 20 PCNT, 200V, ELECTROLYTIC, ,	6	C132, C133, C136, C137, C140, C141	
CH-000102-00	HEAT SINK, AUDIO, , PLX3002,	4		
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	9		
CH-000104-00	HEAT SINK, PS, , PLX3002,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	4		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	3	J19–J21	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J7, J8	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J13	
CO-000193-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, BOX	1	J5A	
CO-000194-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, LATCHING BOX	3	J3B, J5B, J14A	
CO-000196-00	HEADER, 0.1" CENTERS, 3 POS (1X3), MALE, RAMP LOCK	1	J11	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2	REF: F1	
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U19	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	2	U11, U12	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U10	
IC-000048-30	OPAMP, DUAL, MC33078, ,	2	U1, U6	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	2	U15, U17	
IC-000053-30	TIMER, DUAL, LM556, ,	1	U14	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U13	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	1	U3	
IC-000133-30	COMPARATOR, SINGLE, LM311, SMT,	4	U4, U5, U8, U9	
IC-000134-00	DRIVER, MOSFET, IR2110, ,	1	U18	
IC-000135-00	TOP SWITCH, , TOP210, ,	1	U16	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U2, U7	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1	REF: Q91	
MS-000112-00	FUSE, 25A, 125V, 0.25" X 1.25", NORMAL-BLO	1	F1	
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	1	R314	
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD3, LD4, LD8, LD9	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD6	
PA-000043-00	PLATE ASSY, PLX, OUTPUT, ,	1	J12	
PC-003606-00	MAIN, PL2/PL2A, , , (ECO IN PROCESS)	1		
PL-000098-00	INSULATOR, TRANSISTOR, 0.85" X 1.09", THERMALLY CONDUCTIVE, TO-220,	4		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	2		
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	9		
PL-000128-00	SPACER, T-1 3/4 LED, 0.276", PLASTIC, BLACK,	2	REF: R30, R155	
PL-000135-00	INSULATOR, TRANSISTOR, 1.25" X 1.75", MICA, ,	1	REF: Q96, Q97	
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6	REF: LD1, LD2, LD5, LD7, LD10, LD11	
PT-150000-AT	TRIM, 500, 20 PCNT, 0.15W, ,	2	VR43, VR166	
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR2, VR121	

PCB Assembly PL325 (120V) continued

QSC Part #	Description	Qty.	Reference	Comments
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	8	D21, D22, D46, D47, D74, D75, D80, D81	
QD-000021-QD	DIODE ZENER, 10V, , 1W, 1N4740A, DO-41,	3	D7, D32, D88	
QD-000031-QD	MOSFET N-CHANNEL, 60V, 50A, 150W, MTP45N06, TO-220,	4	Q38, Q41, Q83, Q86	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D70, D71	
QD-000062-10	TRANSISTOR NPN, 40V, 0.2A, 1.5W, 2N3904, TO-92,	2	Q20, Q65	
QD-000063-10	TRANSISTOR PNP, 40V, 0.2A, 1.5W, 2N3906, TO-92,	2	Q21, Q66	
QD-000076-00	TRANSISTOR NPN, 250V, 8A, 50W, MJE15032, TO-220,	2	Q27, Q72	
QD-000077-00	TRANSISTOR PNP, 250V, 8A, 50W, MJE15033, TO-220,	2	Q26, Q71	
QD-000080-20	DIODE ZENER, 11V, , 1W, 1N4741A, DO-41,	2	D95, D96	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	46	D1–D5, D8–D12, D14, D15, D17, D18, D23–D30, D33–D37, D39, D40, D42, D43, D48–D52, D55, D59, D63–D65, D67, D69, D89–D91	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	24	Q5, Q8, Q9, Q13, Q15, Q18, Q25, Q30, Q32, Q49, Q50, Q53, Q54, Q58, Q60, Q63, Q70, Q75, Q77, Q89, Q90, Q92, Q93, Q95	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	34	Q1–Q4, Q6, Q10–Q12, Q14, Q23, Q24, Q31, Q33, Q42–Q48, Q51, Q55–Q57, Q59, Q68, Q69, Q76, Q78, Q87, Q88, Q94, Q98, Q99	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q7, Q16, Q52, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	2	Q17, Q62	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	8	D13, D16, D38, D41, D61, D68, D78, D79	
QD-000110-30	DIODE ZENER, 6.2V, , 0.3W, BZX84C6V2, SOT-23,	1	D56	
QD-000113-30	DIODE ZENER, 10V, , 0.3W, BZX84C10, SOT-23,	1	D66	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	3	D58, D60, D86	
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	5	D62, D76, D77, D82, D83	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D57	
QD-000153-00	DIODE RECTIFIER ULTRAFAST, 400V, 30A, , APT30D40B, TO-247AD, 70NS	4	D72, D73, D84, D85	
QD-000154-00	TRANSISTOR NPN, 230V, 1A, 20W, 2SC4793, TO-220,	2	Q19, Q64	
QD-000155-00	TRANSISTOR PNP, 230V, 1A, 20W, 2SA1837, TO-220,	2	Q22, Q67	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q91	
QD-000169-00	IGBT, 600V, 55A, 200W, IRG4PC50U, TO-247,	2	Q96, Q97	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD2, LD7	
QD-000187-00	LED BLUE, , , , , T-1,	1	LD11	
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD10, LD5	
QD-000287-10	DIODE ZENER, 3.9V, 5 PCNT, 0.25W, DO-35, ,	2	D31, D6	
QD-001943-PN	TRANSISTOR PNP, 230V, 15A, 150W, 2SA1943-R, TO-264,	8	Q28, Q34, Q36, Q39, Q73, Q79, Q81, Q84	
QD-004744-ZA	DIODE ZENER, 15V, 5 PCNT, 3W, , ,	3	D53, D54, D87	
QD-005200-NP	TRANSISTOR NPN, 230V, 15A, 150W, 2SC5200, TO-264,	8	Q29, Q35, Q37, Q40, Q74, Q80, Q82, Q85	
QD-005402-DX	DIODE, 200V, 3A, , 1N5402, DO-27,	4	D19, D20, D44, D45	
RE-.04703-10	0.47, 5 PCNT, 2W, METAL OXIDE FP, MINI,	32	R88, R89, R91, R92, R94, R95, R97, R99, R102, R103, R107, R108, R111–R114, R211, R212, R214, R215, R217, R218, R220, R222, R225, R226, R230, R231, R234–R237	
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	5	R115, R116, R238, R239, R269	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R80, R98, R203, R221, R354, R355, R373	
RE-000210-NR	NTC, 10 OHMS, 15 AMPS, , , INRUSH LIMIT	1	R324	
RE-000230-NR	NTC, 10K, , 15 PCNT, , -4.4 PCNT PER C	2	R30, R155	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R353, R356, R358, R359	
RE-001502-10	15, 5 PCNT, 2W, METAL OXIDE FP, MINI,	13	R85–R87, R90, R93, R208–R210, R213, R216, R350, R367, R368	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R246–R249, R349, R357	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R100, R110, R223, R233, R309, R312, R313, R308	
RE-005605-EM	56, 5 PCNT, 2W, METAL OXIDE, ,	1	R372	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R5, R6, R70, R71, R123, R124, R193, R194	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R21, R27, R144, R150, R334, R364, R381–R384	
RE-015007-00	150, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R256, R278	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R81, R82, R204, R205	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R67, R68, R190, R191	
RE-038301-30	383, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R44, R167, R254, R255	
RE-047002-00	470, 5 PCNT, 2W, METAL OXIDE FP, ,	5	R274–R277, R279	
RE-047502-30	475, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R28, R37, R151, R160	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R22, R146, R302, R361, R374, R377	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R379	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	11	R1, R7, R42, R117, R118, R128, R165, R232, R250, R252, R369	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	16	R23, R32, R34, R35, R39, R41, R101, R109, R147, R154, R157, R158, R162, R164, R270, R273	
RE-116002-00	1.6K, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R257, R378	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R48, R171	

PCB Assembly PL325 (120V) continued

QSC Part #	Description	Qty.	Reference	Comments
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	16	R47, R72, R75, R84, R170, R195, R198, R207, R240, R264, R265, R267, R306, R307, R347, R348	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R79, R202, R290, R293	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	1	R370	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R297–R300	
RE-145302-30	4.53K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R11, R137	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	27	R3, R4, R10, R17, R40, R55, R56, R59, R62–R64, R125, R126, R131, R138, R163, R178, R179, R182, R185–R187, R282, R287, R327, R330, R362	
RE-151002-00	5.1K, 5 PCNT, 2W, METAL OXIDE FP, ,	5	R96, R105, R219, R228, R251	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R8, R9, R12, R13, R29, R78, R83, R129, R130, R135, R136, R152, R201, R206, R281	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R15, R38, R120, R132, R140, R161	
RE-178701-30	7.87K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R360	
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R127, R258, R266, R272	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R253, R295, R336, R338, R363, R366, R375, R376	
RE-211303-30	11.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R122	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	19	R14, R19, R36, R46, R65, R104, R106, R133, R134, R142, R159, R169, R188, R227, R241, R245, R259, R329, R337	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R25, R45, R148, R168, R262, R365	
RE-216501-CM	16.5K, 1 PCNT, 1/2W, METAL FILM, ,	2	R31, R153	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R18, R141, R229, R242, R244, R271, R291, R294, R331, R346	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R16, R139, R325	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R351, R352	
RE-230102-30	30.1K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R49, R50, R172, R173	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R20, R60, R61, R76, R77, R143, R183, R184, R199, R200, R243, R261, R323	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R2, R26, R43, R149, R343	
RE-269801-30	69.8K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R283–R286	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R33, R119, R156, R224, R332	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R51, R53, R73, R74, R174, R176, R196, R197, R268, R288, R344, R345	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R52, R54, R57, R58, R175, R177, R180, R181, R333, R335, R341, R342	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R24, R66, R69, R145, R189, R192, R260, R263, R340	
RE-348702-30	487K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R321, R322, R326, R328	
RE-375005-BM	750K, 5 PCNT, 1/2W, METAL FILM, ,	2	R339, R371	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R289, R292	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	20		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	8		
SW-000104-00	RELAY, SPDT, 24VDC COIL, 20A, 125VAC, T90 STYLE (FOR PLC MODELS)	1	K1	
WC-0.5018-JW	JUMPER, TEFLON INSULATION, 18 AWG SOLID, 1 CONDUCTOR, , 0.5" L,	1	W120	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W1, W2	
WC-000113-10	JUMPER, 0.8" TEFLON INSULATION, 22 AWG, 1 CONDUCTOR, , 0.9" L, AUTO INSERTABLE	1	R280	
WC-000115-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 14" L, BLACK	1	W7	TO SWITCH
WC-000115-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 7" L, RED	1	W6	TO SWITCH
WC-000117-04	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 10.50" L, BLACK	1	W12	W12A-B
WC-000117-05	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, WHITE	1	W9	W9A-B
WC-000117-06	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 11.00" L, GREY	1	W11	W11A-B
WC-000117-07	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, BLACK	1	W10	W10A-B
WC-000118-00	WIRE ASSY, , 16 AWG, 1 CONDUCTOR, PLC, 12.5" L, BLACK	1	W5	W5A-B
WC-000118-01	WIRE ASSY, , 16 AWG, 1 CONDUCTOR, PLC, 10.5" L, RED	1	W8	W8A-B
XF-000005-00	BEAD, 100MHZ, 271 OHM,	6	L7–L12	
XF-000023-00	INDUCTOR, COMMON MODE, , 2MH, , ,	2	L3, L4	
XF-000061-00	INDUCTOR, 2 COUPLED WINDINGS, TOROID, 1.9UH, PL/DCA/CX, 230V,	1	L6	
XF-000064-00	TRANSFORMER, HOUSEKEEPING, , , , PLC, ,	1	T1	
XF-000066-00	INDUCTOR, ZOBEL CURRENT SENSE, , 2UH, PLC, ,	2	L1, L2	
XF-000179-00	TRANSFORMER, SWITCHING, 115KHZ, E55, 1500W, DCA1222, 120V/230V,	1	T2	

PCB Assembly PL325 (100V) (QSC part # WP-032501-01)

QSC Part #	Description	Qty.	Reference	Comments
CA-010002-30	10PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C14, C49	
CA-015002-10	15PF, 10 PCNT, 500V, CERAMIC SL, DISC,	2	C16, C50	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C64, C65, C99, C100, C187, C193	
CA-110001-10	100PF, 5 PCNT, 500V, MICA, DIPPED,	1	C147	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C5, C6, C9, C18, C40, C41, C43, C53	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	2	C145, C146	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C4, C17, C26, C52, C61, C119, C148, C181, C182, C186, C188	

PCB Assembly PL325 (100V) continued

QSC Part #	Description	Qty.	Reference	Comments
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C25, C60	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	9	C75, C81, C85, C93–C96, C120, C124	
CA-222001-00	0.0022UF, 20 PCNT, 125VAC, CERAMIC Y5U, DISC, YCAP	2	C122, C127	
CA-227001-30	0.0027UF, 10 PCNT, 100V, CERAMIC X7R, 0805,	11	C20, C23, C24, C55, C58, C59, C68, C98, C108, C109, C128	
CA-233001-10	0.0033UF, 10 PCNT, 100V, FILM, DIPPED,	1	C113	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	2	C115, C118	
CA-322001-10	0.022UF, 10 PCNT, 100V, FILM, DIPPED,	2	C27, C62	
CA-410001-00	0.1UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C126	
CA-410002-10	0.1UF, 5 PCNT, 100V, FILM, DIPPED,	4	C8, C12, C44, C47	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	13	C28, C34, C35, C63, C69, C70, C84, C87, C90, C129, C134, C156, C157	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	19	C19, C54, C88, C116, C125, C135, C155, C162, C163, C177–C180, C183, C185, C189, C190, C191, C194	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	2	C107, C123	
CA-422001-10	0.22UF, 5 PCNT, 50V, FILM, DIPPED, LOW PROFILE	2	C10, C45	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C39, C121	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C117	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	1	C144	
CA-510003-10	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, ,	1	C80	
CA-510005-30	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, SMT,	2	C13, C48	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C110, C112	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	7	C3, C31, C38, C66, C86, C114, C192	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C184	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	11	C7, C11, C42, C46, C71, C91, C92, C102, C104–C106	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	5	C21, C22, C56, C57, C89	
CA-710002-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, ,	11	C15, C32, C33, C51, C67, C72, C78, C79, C139, C142, C143	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	3	C138, C149, C150	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	7	C73, C74, C76, C77, C82, C83, C131	
CA-810003-00	1000UF, 20 PCNT, 90V, ELECTROLYTIC, ,	10	C152, C153, C159, C160, C165, C166, C169, C170, C173, C174	
CA-810004-00	1000UF, 20 PCNT, 55V, ELECTROLYTIC, ,	10	C151, C154, C158, C161, C164, C167, C168, C171, C172, C175	
CA-822200-AE	2200UF, 20 PCNT, 200V, ELECTROLYTIC, ,	6	C132, C133, C136, C137, C140, C141	
CH-000102-00	HEAT SINK, AUDIO, , PLX3002,	4		
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	9		
CH-000104-00	HEAT SINK, PS, , PLX3002,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	4		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	3	J19–J21	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J7, J8	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J13	
CO-000193-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, BOX	1	J5A	
CO-000194-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, LATCHING BOX	3	J14A, J3B, J5B	
CO-000196-00	HEADER, 0.1" CENTERS, 3 POS (1X3), MALE, RAMP LOCK	1	J11	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U19	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	2	U11, U12	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U10	
IC-000048-30	OPAMP, DUAL, MC33078, ,	2	U1, U6	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	2	U15, U17	
IC-000053-30	TIMER, DUAL, LM556, ,	1	U14	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U13	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	1	U3	
IC-000133-30	COMPARATOR, SINGLE, LM311, SMT,	4	U4, U5, U8, U9	
IC-000134-00	DRIVER, MOSFET, IR2110, ,	1	U18	
IC-000135-00	TOP SWITCH, , TOP210, ,	1	U16	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U2, U7	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		Q91
MS-000055-MS	FUSE, 30A, 125V, 0.25" X 1.25", FAST	1	F1	
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	1	R314	
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD3, LD4, LD8, LD9	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD6	
PA-000043-00	PLATE ASSY, PLX, OUTPUT, ,	1	J12	
PC-003606-00	MAIN, PL2/PL2A, , , (ECO IN PROCESS)	1		
PL-000098-00	INSULATOR, TRANSISTOR, 0.85" X 1.09", THERMALLY CONDUCTIVE, TO-220,	4		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	2		
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		

PCB Assembly PL325 (100V) continued

QSC Part #	Description	Qty.	Reference	Comments
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	9		
PL-000128-00	SPACER, T-1 3/4 LED, 0.276", PLASTIC, BLACK,	2		REF: R30,R155
PL-000135-00	INSULATOR, TRANSISTOR, 1.25" X 1.75", MICA, ,	1		REF: Q96, Q97
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		REF: LD1, LD2, LD5, LD7, LD10, LD11
PT-150000-AT	TRIM, 500, 20 PCNT, 0.15W, ,	2	VR43, VR166	
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR2, VR121	
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	8	D21, D22, D46, D47, D74, D75, D80, D81	
QD-000021-QD	DIODE ZENER, 10V, , 1W, 1N4740A, DO-41,	3	D7, D32, D88	
QD-000031-QD	MOSFET N-CHANNEL, 60V, 50A, 150W, MTP45N06, TO-220,	4	Q38, Q41, Q83, Q86	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D70, D71	
QD-000062-10	TRANSISTOR NPN, 40V, 0.2A, 1.5W, 2N3904, TO-92,	2	Q20, Q65	
QD-000063-10	TRANSISTOR PNP, 40V, 0.2A, 1.5W, 2N3906, TO-92,	2	Q21, Q66	
QD-000076-00	TRANSISTOR NPN, 250V, 8A, 50W, MJE15032, TO-220,	2	Q27, Q72	
QD-000077-00	TRANSISTOR PNP, 250V, 8A, 50W, MJE15033, TO-220,	2	Q26, Q71	
QD-000080-20	DIODE ZENER, 11V, , 1W, 1N4741A, DO-41,	2	D95, D96	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	46	D1–D5, D8–D12, D14, D15, D17, D18, D23–D30, D33–D37, D39, D40, D42, D43, D48–D52, D55, D59, D63–D65, D67, D69, D89–D91	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	24	Q5, Q8, Q9, Q13, Q15, Q18, Q25, Q30, Q32, Q49, Q50, Q53, Q54, Q58, Q60, Q63, Q70, Q75, Q77, Q89, Q90, Q92, Q93, Q95	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	34	Q1–Q4, Q6, Q10–Q12, Q14, Q23, Q24, Q31, Q33, Q42–Q48, Q51, Q55, Q56, Q57, Q59, Q68, Q69, Q76, Q78, Q87, Q88, Q94, Q98, Q99	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q7, Q16, Q52, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	2	Q17, Q62	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	8	D13, D16, D38, D41, D61, D68, D78, D79	
QD-000110-30	DIODE ZENER, 6.2V, , 0.3W, BZX84C6V2, SOT-23,	1	D56	
QD-000113-30	DIODE ZENER, 10V, , 0.3W, BZX84C10, SOT-23,	1	D66	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	3	D58, D60, D86	
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	5	D62, D76, D77, D82, D83	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D57	
QD-000153-00	DIODE RECTIFIER ULTRAFAST, 400V, 30A, , APT30D40B, TO-247AD, 70NS	4	D72, D73, D84, D85	
QD-000154-00	TRANSISTOR NPN, 230V, 1A, 20W, 2SC4793, TO-220,	2	Q19, Q64	
QD-000155-00	TRANSISTOR PNP, 230V, 1A, 20W, 2SA1837, TO-220,	2	Q22, Q67	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q91	
QD-000169-00	IGBT, 600V, 55A, 200W, IRG4PC50U, TO-247,	2	Q96, Q97	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD2, LD7	
QD-000187-00	LED BLUE, , , , , T-1,	1	LD11	
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD5, LD10	
QD-000287-10	DIODE ZENER, 3.9V, 5 PCNT, 0.25W, DO-35, ,	2	D6, D31	
QD-001943-PN	TRANSISTOR PNP, 230V, 15A, 150W, 2SA1943-R, TO-264,	8	Q28, Q34, Q36, Q39, Q73, Q79, Q81, Q84	
QD-004744-ZA	DIODE ZENER, 15V, 5 PCNT, 3W, , ,	3	D53, D54, D87	
QD-005200-NP	TRANSISTOR NPN, 230V, 15A, 150W, 2SC5200, TO-264,	8	Q29, Q35, Q37, Q40, Q74, Q80, Q82, Q85	
QD-005402-DX	DIODE, 200V, 3A, , 1N5402, DO-27,	4	D19, D20, D44, D45	
RE-.04703-10	0.47, 5 PCNT, 2W, METAL OXIDE FP, MINI,	32	R88, R89, R91, R92, R94, R95, R97, R99, R102, R103, R107, R108, R111–R114, R211, R212, R214, R215, R217, R218, R220, R222, R225, R226, R230, R231, R234–R237,	
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	5	R115, R116, R238, R239, R269	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R80, R98, R203, R221, R354, R355, R373	
RE-000210-NR	NTC, 10 OHMS, 15 AMPS, , , INRUSH LIMIT	1	R324	
RE-000230-NR	NTC, 10K, , 15 PCNT, , -4.4 PCNT PER C	2	R30, R155	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R353, R356, R358, R359	
RE-001502-10	15, 5 PCNT, 2W, METAL OXIDE FP, MINI,	13	R85–R87, R90, R93, R208–R210, R213, R216, R350, R367, R368	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R246–R249, R349, R357	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R100, R110, R223, R233, R308, R309, R312, R313	
RE-005605-EM	56, 5 PCNT, 2W, METAL OXIDE, ,	1	R372	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R5, R6, R70, R71, R123, R124, R193, R194	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R21, R27, R144, R150, R334, R364, R381–R384	
RE-015007-00	150, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R256, R278	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R81, R82, R204, R205	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R67, R68, R190, R191	
RE-038301-30	383, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R44, R167, R254, R255	
RE-047002-00	470, 5 PCNT, 2W, METAL OXIDE FP, ,	5	R274–R277, R279	
RE-047502-30	475, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R28, R37, R151, R160	

PCB Assembly PL325 (100V) continued

QSC Part #	Description	Qty.	Reference	Comments
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R22, R146, R302, R361, R374, R377	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R379	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	11	R1, R7, R42, R117, R118, R128, R165, R232, R250, R252, R369	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	16	R23, R32, R34, R35, R39, R41, R101, R109, R147, R154, R157, R158, R162, R164, R270, R273	
RE-116002-00	1.6K, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R257, R378	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R48, R171	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	16	R47, R72, R75, R84, R170, R195, R198, R207, R240, R264, R265, R267, R306, R307, R347, R348	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R79, R202, R290, R293	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	1	R370	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R297–R300	
RE-145302-30	4.53K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R11, R137	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	27	R3, R4, R10, R17, R40, R55, R56, R59, R62–R64, R125, R126, R131, R138, R163, R178, R179, R182, R185–R187, R282, R287, R327, R330, R362	
RE-151002-00	5.1K, 5 PCNT, 2W, METAL OXIDE FP, ,	5	R96, R105, R219, R228, R251	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R8, R9, R12, R13, R29, R78, R83, R129, R130, R135, R136, R152, R201, R206, R281	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R15, R38, R120, R132, R140, R161	
RE-178701-30	7.87K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R360	
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R127, R258, R266, R272	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R253, R295, R336, R338, R363, R366, R375, R376	
RE-211303-30	11.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R122	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	19	R14, R19, R36, R46, R65, R104, R106, R133, R134, R142, R159, R169, R188, R227, R241, R245, R259, R329, R337	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R25, R45, R148, R168, R262, R365	
RE-216501-CM	16.5K, 1 PCNT, 1/2W, METAL FILM, ,	2	R31, R153	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R18, R141, R229, R242, R244, R271, R291, R294, R331, R346	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R16, R139, R325	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R351, R352	
RE-230102-30	30.1K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R49, R50, R172, R173	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R20, R60, R61, R76, R77, R143, R183, R184, R199, R200, R243, R261, R323	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R2, R26, R43, R149, R343	
RE-269801-30	69.8K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R283–R286	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R33, R119, R156, R224, R332	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R51, R53, R73, R74, R174, R176, R196, R197, R268, R288, R344, R345	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R52, R54, R57, R58, R175, R177, R180, R181, R333, R335, R341, R342	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R24, R66, R69, R145, R189, R192, R260, R263, R340	
RE-339202-30	392K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R321, R322, R326, R328	
RE-375005-BM	750K, 5 PCNT, 1/2W, METAL FILM, ,	2	R339, R371	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R289, R292	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	20		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	8		
SW-000104-00	RELAY, SPDT, 24VDC COIL, 20A, 125VAC, T90 STYLE (FOR PLC MODELS)	1	K1	
WC-0.5018-JW	JUMPER, TEFLON INSULATION, 18 AWG SOLID, 1 CONDUCTOR, , 0.5" L,	1	W120	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W1, W2	
WC-000113-10	JUMPER, 0.8" TEFLON INSULATION, 22 AWG, 1 CONDUCTOR, , 0.9" L, AUTO INSERTABLE	1	R280	
WC-000115-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 14" L, BLACK	1	W7	TO SWITCH
WC-000115-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 7" L, RED	1	W6	TO SWITCH
WC-000117-04	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 10.50" L, BLACK	1	W12	W12A-B
WC-000117-05	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, WHITE	1	W9	W9A-B
WC-000117-06	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 11.00" L, GREY	1	W11	W11A-B
WC-000117-07	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, BLACK	1	W10	W10A-B
WC-000118-00	WIRE ASSY, , 16 AWG, 1 CONDUCTOR, PLC, 12.5" L, BLACK	1	W5	W5A-B
WC-000118-01	WIRE ASSY, , 16 AWG, 1 CONDUCTOR, PLC, 10.5" L, RED	1	W8	W8A-B
XF-000005-00	BEAD, 100MHZ, 271 OHM,	6	L7–L12	
XF-000023-00	INDUCTOR, COMMON MODE, , 2MH, , ,	2	L3, L4	
XF-000061-00	INDUCTOR, 2 COUPLED WINDINGS, TOROID, 1.9UH, PL/DCA/CX, 230V,	1	L6	
XF-000064-00	TRANSFORMER, HOUSEKEEPING, , , , PLC, ,	1	T1	
XF-000066-00	INDUCTOR, ZOBEL CURRENT SENSE, , 2UH, PLC, ,	2	L1, L2	
XF-000185-00	TRANSFORMER, SWITCHING, 115KHZ, E55, 1500W, DCA1222, 100V,	1	T2	

PCB Assembly PL325 (230V) (QSC part # WP-032501-02)

QSC Part #	Description	Qty.	Reference	Comments
CA-010002-30	10PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C14, C49	
CA-015002-10	15PF, 10 PCNT, 500V, CERAMIC SL, DISC,	2	C16, C50	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C64, C65, C99, C100, C187, C193	
CA-110001-10	100PF, 5 PCNT, 500V, MICA, DIPPED,	1	C147	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C5, C6, C9, C18, C40, C41, C43, C53	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	2	C145, C146	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C4, C17, C26, C52, C61, C119, C148, C181, C182, C186, C188	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C25, C60	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	9	C75, C81, C85, C93, C94, C95, C96, C120, C124	
CA-222001-00	0.0022UF, 20 PCNT, 125VAC, CERAMIC Y5U, DISC, YCAP	2	C122, C127	
CA-227001-30	0.0027UF, 10 PCNT, 100V, CERAMIC X7R, 0805,	11	C20, C23, C24, C55, C58, C59, C68, C98, C108, C109, C128	
CA-233001-10	0.0033UF, 10 PCNT, 100V, FILM, DIPPED,	1	C113	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	2	C115, C118	
CA-322001-10	0.022UF, 10 PCNT, 100V, FILM, DIPPED,	2	C27, C62	
CA-410001-00	0.1UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C126	
CA-410002-10	0.1UF, 5 PCNT, 100V, FILM, DIPPED,	4	C8, C12, C44, C47	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	13	C28, C34, C35, C63, C69, C70, C84, C87, C90, C129, C134, C156, C157	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	19	C19, C54, C88, C116, C125, C135, C155, C162, C163, C177–C180, C183, C185, C189–C191, C194	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	2	C107, C123	
CA-422001-10	0.22UF, 5 PCNT, 50V, FILM, DIPPED, LOW PROFILE	2	C10, C45	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C121, C39	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C117	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	1	C144	
CA-510003-10	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, ,	1	C80	
CA-510005-30	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, SMT,	2	C13, C48	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C110, C112	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	7	C3, C31, C38, C66, C86, C114, C192	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C184	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	11	C7, C11, C42, C46, C71, C91, C92, C102, C104–C106	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	5	C21, C22, C56, C57, C89	
CA-710002-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, ,	11	C15, C32, C33, C51, C67, C72, C78, C79, C139, C142, C143	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	3	C138, C149, C150	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	7	C73, C74, C76, C77, C82, C83, C131	
CA-810003-00	1000UF, 20 PCNT, 90V, ELECTROLYTIC, ,	10	C152, C153, C159, C160, C165, C166, C169, C170, C173, C174	
CA-810004-00	1000UF, 20 PCNT, 55V, ELECTROLYTIC, ,	10	C151, C154, C158, C161, C164, C167, C168, C171, C172, C175	
CA-822200-AE	2200UF, 20 PCNT, 200V, ELECTROLYTIC, ,	6	C132, C133, C136, C137, C140, C141	
CH-000102-00	HEAT SINK, AUDIO, , PLX3002,	4		
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	9		
CH-000104-00	HEAT SINK, PS, , PLX3002,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	4		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	3	J19, J20, J21	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J7, J8	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J13	
CO-000193-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, BOX	1	J5A	
CO-000194-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, LATCHING BOX	3	J14A, J3B, J5B	
CO-000196-00	HEADER, 0.1" CENTERS, 3 POS (1X3), MALE, RAMP LOCK	1	J11	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		REF: F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U19	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	2	U11, U12	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U10	
IC-000048-30	OPAMP, DUAL, MC33078, ,	2	U1, U6	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	2	U15, U17	
IC-000053-30	TIMER, DUAL, LM556, ,	1	U14	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U13	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	1	U3	
IC-000133-30	COMPARATOR, SINGLE, LM311, SMT,	4	U4, U5, U8, U9	
IC-000134-00	DRIVER, MOSFET, IR2110, ,	1	U18	
IC-000135-00	TOP SWITCH, , TOP210, ,	1	U16	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U2, U7	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		REF: Q91
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	1	R314	
MS-150250-FU	FUSE, 15A, 250V, 0.25" X 1.25", FAST	1	F1	

PCB Assembly PL325 (230V) continued

QSC Part #	Description	Qty.	Reference	Comments
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD3, LD4, LD8, LD9	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD6	
PA-000043-00	PLATE ASSY, PLX, OUTPUT, ,	1	J12	
PC-003606-00	MAIN, PL2/PL2A, , , (ECO IN PROCESS)	1		
PL-000098-00	INSULATOR, TRANSISTOR, 0.85" X 1.09", THERMALLY CONDUCTIVE, TO-220,	4		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	2		
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	9		
PL-000128-00	SPACER, T-1 3/4 LED, 0.276", PLASTIC, BLACK,	2		REF: R30, R155
PL-000135-00	INSULATOR, TRANSISTOR, 1.25" X 1.75", MICA, ,	1		REF: Q96, Q97
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		REF: LD1, LD2, LD5, LD7, LD10, LD11
PT-150000-AT	TRIM, 500, 20 PCNT, 0.15W, ,	2	VR43, VR166	
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR2, VR121	
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	8	D21, D22, D46, D47, D74, D75, D80, D81	
QD-000021-QD	DIODE ZENER, 10V, , 1W, 1N4740A, DO-41,	3	D7, D32, D88	
QD-000031-QD	MOSFET N-CHANNEL, 60V, 50A, 150W, MTP45N06, TO-220,	4	Q38, Q41, Q83, Q86	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D70, D71	
QD-000062-10	TRANSISTOR NPN, 40V, 0.2A, 1.5W, 2N3904, TO-92,	2	Q20, Q65	
QD-000063-10	TRANSISTOR PNP, 40V, 0.2A, 1.5W, 2N3906, TO-92,	2	Q21, Q66	
QD-000076-00	TRANSISTOR NPN, 250V, 8A, 50W, MJE15032, TO-220,	2	Q27, Q72	
QD-000077-00	TRANSISTOR PNP, 250V, 8A, 50W, MJE15033, TO-220,	2	Q26, Q71	
QD-000080-20	DIODE ZENER, 11V, , 1W, 1N4741A, DO-41,	2	D95, D96	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	46	D1–D5, D8–D12, D14, D15, D17, D18, D23–D30, D33–D37, D39, D40, D42, D43, D48–D52, D55, D59, D63–D65, D67, D69, D89–D91	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	24	Q5, Q8, Q9, Q13, Q15, Q18, Q25, Q30, Q32, Q49, Q50, Q53, Q54, Q58, Q60, Q63, Q70, Q75, Q77, Q89, Q90, Q92, Q93, Q95	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	34	Q1–Q4, Q6, Q10–Q12, Q14, Q23, Q24, Q31, Q33, Q42–Q48, Q51, Q55–Q57, Q59, Q68, Q69, Q76, Q78, Q87, Q88, Q94, Q98, Q99	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q7, Q16, Q52, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	2	Q17, Q62	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	8	D13, D16, D38, D41, D61, D68, D78, D79	
QD-000110-30	DIODE ZENER, 6.2V, , 0.3W, BZX84C6V2, SOT-23,	1	D56	
QD-000113-30	DIODE ZENER, 10V, , 0.3W, BZX84C10, SOT-23,	1	D66	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	3	D58, D60, D86	
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	5	D62, D76, D77, D82, D83	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D57	
QD-000153-00	DIODE RECTIFIER ULTRAFAST, 400V, 30A, , APT30D40B, TO-247AD, 70NS	4	D72, D73, D84, D85	
QD-000154-00	TRANSISTOR NPN, 230V, 1A, 20W, 2SC4793, TO-220,	2	Q19, Q64	
QD-000155-00	TRANSISTOR PNP, 230V, 1A, 20W, 2SA1837, TO-220,	2	Q22, Q67	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q91	
QD-000169-00	IGBT, 600V, 55A, 200W, IRG4PC50U, TO-247,	2	Q96, Q97	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD2, LD7	
QD-000187-00	LED BLUE, , , , , T-1,	1	LD11	
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD5, LD10	
QD-000287-10	DIODE ZENER, 3.9V, 5 PCNT, 0.25W, DO-35, ,	2	D6, D31	
QD-001943-PN	TRANSISTOR PNP, 230V, 15A, 150W, 2SA1943-R, TO-264,	8	Q28, Q34, Q36, Q39, Q73, Q79, Q81, Q84	
QD-004744-ZA	DIODE ZENER, 15V, 5 PCNT, 3W, , ,	3	D53, D54, D87	
QD-005200-NP	TRANSISTOR NPN, 230V, 15A, 150W, 2SC5200, TO-264,	8	Q29, Q35, Q37, Q40, Q74, Q80, Q82, Q85	
QD-005402-DX	DIODE, 200V, 3A, , 1N5402, DO-27,	4	D19, D20, D44, D45	
RE-.04703-10	0.47, 5 PCNT, 2W, METAL OXIDE FP, MINI,	32	R88, R89, R91, R92, R94, R95, R97, R99, R102, R103, R107, R108, R111–R114, R211, R212, R214, R215, R217, R218, R220, R222, R225, R226, R230, R231, R234–R237	
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	5	R115, R116, R238, R239, R269	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R80, R98, R203, R221, R354, R355, R373	
RE-000210-NR	NTC, 10 OHMS, 15 AMPS, , , INRUSH LIMIT	1	R324	
RE-000230-NR	NTC, 10K, , 15 PCNT, , -4.4 PCNT PER C	2	R30, R155	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R353, R356, R358, R359	
RE-001502-10	15, 5 PCNT, 2W, METAL OXIDE FP, MINI,	13	R85, R86, R87, R90, R93, R208–R210, R213, R216, R350, R367, R368	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R246–R249, R349, R357	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R100, R110, R223, R233, R308, R309, R312, R313	
RE-005605-EM	56, 5 PCNT, 2W, METAL OXIDE, ,	1	R372	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R5, R6, R70, R71, R123, R124, R193, R194	

PCB Assembly PL325 (230V) continued

QSC Part #	Description	Qty.	Reference	Comments
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R21, R27, R144, R150, R334, R364, R381–R384	
RE-015007-00	150, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R256, R278	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R81, R82, R204, R205	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R67, R68, R190, R191	
RE-038301-30	383, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R44, R167, R254, R255	
RE-047002-00	470, 5 PCNT, 2W, METAL OXIDE FP, ,	5	R274–R277, R279	
RE-047502-30	475, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R28, R37, R151, R160	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R22, R146, R302, R361, R374, R377	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R379	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	11	R1, R7, R42, R117, R118, R128, R165, R232, R250, R252, R369	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	16	R23, R32, R34, R35, R39, R41, R101, R109, R147, R154, R157, R158, R162, R164, R270, R273	
RE-116002-00	1.6K, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R257, R378	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R48, R171	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	16	R47, R72, R75, R84, R170, R195, R198, R207, R240, R264, R265, R267, R306, R307, R347, R348	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R79, R202, R290, R293	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	1	R370	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R297–R300	
RE-145302-30	4.53K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R11, R137	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	27	R3, R4, R10, R17, R40, R55, R56, R59, R62–R64, R125, R126, R131, R138, R163, R178, R179, R182, R185–R187, R282, R287, R327, R330, R362	
RE-151002-00	5.1K, 5 PCNT, 2W, METAL OXIDE FP, ,	5	R96, R105, R219, R228, R251	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R8, R9, R12, R13, R29, R78, R83, R129, R130, R135, R136, R152, R201, R206, R281	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R15, R38, R120, R132, R140, R161	
RE-178701-30	7.87K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R360	
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R127, R258, R266, R272	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R253, R295, R336, R338, R363, R366, R375, R376	
RE-211303-30	11.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R122	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	19	R14, R19, R36, R46, R65, R104, R106, R133, R134, R142, R159, R169, R188, R227, R241, R245, R259, R329, R337	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R25, R45, R148, R168, R262, R365	
RE-216501-CM	16.5K, 1 PCNT, 1/2W, METAL FILM, ,	2	R31, R153	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R18, R141, R229, R242, R244, R271, R291, R294, R331, R346	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	RR16, 139, R325	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R351, R352	
RE-230102-30	30.1K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R49, R50, R172, R173	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R20, R60, R61, R76, R77, R143, R183, R184, R199, R200, R243, R261, R323	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R2, R26, R43, R149, R343	
RE-269801-30	69.8K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R283–R286	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R33, R119, R156, R224, R332	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R51, R53, R73, R74, R174, R176, R196, R197, R268, R288, R344, R345	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R52, R54, R57, R58, R175, R177, R180, R181, R333, R335, R341, R342	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R24, R66, R69, R145, R189, R192, R260, R263, R340	
RE-348702-30	487K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R321, R322, R326, R328	
RE-375005-BM	750K, 5 PCNT, 1/2W, METAL FILM, ,	2	R339, R371	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R289, R292	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	20		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	8		
SW-000104-00	RELAY, SPDT, 24VDC COIL, 20A, 125VAC, T90 STYLE (FOR PLC MODELS)	1	K1	
WC-0.5018-JW	JUMPER, TEFLON INSULATION, 18 AWG SOLID, 1 CONDUCTOR, , 0.5" L,	1	W240	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W1, W2	
WC-000113-10	JUMPER, 0.8" TEFLON INSULATION, 22 AWG, 1 CONDUCTOR, , 0.9" L, AUTO INSERTABLE	1	R280	
WC-000115-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 14" L, BLACK	1	W7	TO SWITCH
WC-000115-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 7" L, RED	1	W6	TO SWITCH
WC-000117-04	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 10.50" L, BLACK	1	W12	W12A-B
WC-000117-05	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, WHITE	1	W9	W9A-B
WC-000117-06	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 11.00" L, GREY	1	W11	W11A-B
WC-000117-07	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, BLACK	1	W10	W10A-B
WC-000118-00	WIRE ASSY, , 16 AWG, 1 CONDUCTOR, PLC, 12.5" L, BLACK	1	W5	W5A-B
XF-000005-00	BEAD, 100MHZ, 271 OHM,	6	L7–L12	
XF-000023-00	INDUCTOR, COMMON MODE, , 2MH, , ,	2	L3, L4	
XF-000061-00	INDUCTOR, 2 COUPLED WINDINGS, TOROID, 1.9UH, PL/DCA/CX, 230V,	1	L6	

PCB Assembly PL325 (230V) continued

QSC Part #	Description	Qty.	Reference	Comments
XF-000064-00	TRANSFORMER, HOUSEKEEPING, , , , PLC, ,	1	T1	
XF-000066-00	INDUCTOR, ZOBEL CURRENT SENSE, , 2UH, PLC, ,	2	L1, L2	
XF-000179-00	TRANSFORMER, SWITCHING, 115KHZ, E55, 1500W, DCA1222, 120V/230V,	1	T2	

Input Assembly PL325 (QSC part # WP-032502-00)

QSC Part #	Description	Qty.	Reference	Comments
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C409, C410	
CA-122003-30	220PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	4	C411–C414	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	5	C403–C406, C419	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C415, C416	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C417, C418	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	1	C401	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	3	C402, C407, C408	
CO-000106-00	JACK, HD15, 15 POS, FEMALE, RIGHT ANGLE SWAGED JACK SCREW	1	J402	
CO-000148-00	XLR, NEUTRIK, 3 POS, FEMALE, VERTICAL	2	J407, J408	
CO-000161-00	JACK, EURO, 3 POS, FEMALE, BLACK	2	J401, J403	
CO-000171-00	XLR, NEUTRIK, 3 POS, MALE, VERTICAL	2	J405, J406	
CO-000194-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, LATCHING BOX	2	J404, J410	
CO-000196-00	HEADER, 0.1" CENTERS, 3 POS (1X3), MALE, RAMP LOCK	1	J409	
CO-000329-00	WIRE HOLDER, RIBBON CABLE, 10 POS, FEMALE,	2		J411A, J411B
IC-000048-30	OPAMP, DUAL, MC33078, ,	2	U401, U402	
PA-000145-00	LED ASSY, GREEN, 0.850" SPACER, ,	2	LD402, LD404	
PA-000146-00	LED ASSY, YELLOW, 0.850" SPACER, ,	6	LD403, LD405, LD407, LD408, LD411, LD412	
PA-000147-00	LED ASSY, ORANGE, 0.850" SPACER, ,	4	LD401, LD406, LD409, LD410	
PC-034002-00	INPUT, PL3, , ,	1		
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	5	D401–D405	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	5	Q401–Q403, Q406, Q407	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	4	Q404, Q405, Q408, Q409	
QD-000297-30	LED YELLOW, , , , , 1206,	1	LD413	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R429, R430	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R407, R408	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R401–R404, R417–R420	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R467	
RE-076801-30	768, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R448–R453, R462, R463	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	1	R436	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R414	
RE-124301-30	2.43K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R442, R443	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R412	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R465	
RE-146401-30	4.64K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R464	
RE-152301-30	5.23K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R406	
RE-156202-30	5.62K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	12	R422, R424–R426, R431–R435, R437–R439	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R410, R411	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R440, R441	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R413, R427, R428	
RE-211303-30	11.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R444–R447	
RE-214300-30	14.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R454, R455, R460, R461	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R423	
RE-229402-30	29.4K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R416	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R415, R421, R466	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R456–R459	
SW-000111-00	SWITCH, DPDT, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW405, SW406	
SW-000112-00	SWITCH, DP3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW403, SW404	
SW-000113-00	SWITCH, 3P3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW401, SW402	
WC-000338-00	RIBBON CABLE, , 26 AWG, 10 CONDUCTOR, PL380, 4.0" L INSULATION,	1	J411	

6.3 PL340 parts and assemblies

PL340 Power Amplifier (120V) (QSC part # FG-034000-00)

QSC Part #	Description	Qty.	Reference	Comments
CH-000579-00	COVER, BOTTOM, , PL3,	1		
LB-000209-00	AGENCY, CERTIFICATION, CLASS B, , FCC	1		
LB-000437-00	LABEL, WARNING, RAIN & MOISTURE, ,	1		
PM-000309-00	INSERT, SHIPPING, , PL380, ,	2		
PM-001401-00	BAG, SHIPPING, POLYPROPYLENE, SERIES 1, 20.5" X 12.5" X 24",	1		
PM-001601-00	CARTON, SHIPPING, , PL380, 23.2" X 21.2" X 5.5",	1		
PM-004001-00	PAD, SHIPPING, , EX/MXA, 21.2" X 23.2",	1		
RD-000001-00	LABEL, SHIPG CRTN , THERMAL	0		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	11		
TD-000235-00	OWNERS MANUAL, PL3 SERIES,	1		
TD-000254-00	MANUAL INSERT, CHINA ROHS, AMPLIFIERS,	1		
TS-000004-WR	3 YEARS WARRANTY	3		
WC-000341-00	AC CORD, POWERCON, 14 AWG, 3 CONDUCTOR, PL340, 72", 120V	1		
WP-000001-00	ASSEMBLY, CATALOG KIT, , ,	1		
WP-000952-00	SHIP KIT, , PL3, ,	1		
WP-034000-00	CHASSIS ASSY, , PL340, 120V,	1		
WP-034001-00	PCB ASSY, , PL340, 120V,	1		

PL340 Power Amplifier (100V) (QSC part # FG-034000-01)

QSC Part #	Description	Qty.	Reference	Comments
CH-000579-00	COVER, BOTTOM, , PL3,	1		
LB-000437-00	LABEL, WARNING, RAIN & MOISTURE, ,	1		
PM-000309-00	INSERT, SHIPPING, , PL380, ,	2		
PM-001401-00	BAG, SHIPPING, POLYPROPYLENE, SERIES 1, 20.5" X 12.5" X 24",	1		
PM-001601-00	CARTON, SHIPPING, , PL380, 23.2" X 21.2" X 5.5",	1		
PM-004001-00	PAD, SHIPPING, , EX/MXA, 21.2" X 23.2",	1		
RD-000001-00	LABEL, SHIPG CRTN , THERMAL	0		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	11		
TD-000235-00	OWNERS MANUAL, PL3 SERIES,	1		
TD-000254-00	MANUAL INSERT, CHINA ROHS, AMPLIFIERS,	1		
TS-000004-WR	3 YEARS WARRANTY	3		
WC-000341-00	AC CORD, POWERCON, 14 AWG, 3 CONDUCTOR, PL340, 72", 120V	1		
WP-000952-00	SHIP KIT, , PL3, ,	1		
WP-034000-01	CHASSIS ASSY, , PL340, 100V,	1		
WP-034001-01	PCB ASSY, , PL340, 100V,	1		

PL340 Power Amplifier (230V) (QSC part # FG-034000-02)

QSC Part #	Description	Qty.	Reference	Comments
CH-000579-00	COVER, BOTTOM, , PL3,	1		
LB-000437-00	LABEL, WARNING, RAIN & MOISTURE, ,	1		
PM-000309-00	INSERT, SHIPPING, , PL380, ,	2		
PM-001401-00	BAG, SHIPPING, POLYPROPYLENE, SERIES 1, 20.5" X 12.5" X 24",	1		
PM-001601-00	CARTON, SHIPPING, , PL380, 23.2" X 21.2" X 5.5",	1		
PM-004001-00	PAD, SHIPPING, , EX/MXA, 21.2" X 23.2",	1		
RD-000001-00	LABEL, SHIPG CRTN , THERMAL	0		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	11		
TD-000235-00	OWNERS MANUAL, PL3 SERIES,	1		
TD-000254-00	MANUAL INSERT, CHINA ROHS, AMPLIFIERS,	1		
TS-000004-WR	3 YEARS WARRANTY	3		
WC-000356-00	AC CORD ASSY, POWERCONN, 1.5MM2, 3 CONDUCTOR, PL3 SERIES, 100", 250VAC	1		
WP-000952-00	SHIP KIT, , PL3, ,	1		
WP-034000-02	CHASSIS ASSY, , PL340, 230V,	1		
WP-034001-02	PCB ASSY, , PL340, 230V,	1		

Chassis Assembly PL340 (120V) (QSC part # WP-034000-00)

QSC Part #	Description	Qty.	Reference	Comments
CH-000118-00	RACK EAR, FRONT, , CX902,	2		
CH-000693-00	SHIELD, LINE FILTER, , PL340,	1		
CH-000694-00	CHASSIS, MAIN, , PL340,	1		
CO-000320-00	AC INLET, FLANGE MOUNT, 3 POS, FEMALE, POWERCON A-TYPE	1		
HW-040001-00	BRACKET, ANGLE, #4-40, 0.375" L, ZINC PLATED STEEL,	2		

Chassis Assembly PL340 (120V) continued

QSC Part #	Description	Qty.	Reference	Comments
HW-060090-SO	STANDOFF, 0.250" HEX, #6-32, 0.563" L, ALUMINUM, FEMALE	2		
LB-000053-00	FUSE, REPLACEMENT, FRENCH, ,	1		
LB-000077-00	WARNING, HIGH ENERGY, , PL 3RU,	1		
LB-000409-00	AGENCY, 68FA LISTING, HORIZONTAL, , UL/CUL	1		
LB-000439-00	LABEL, WIRE CLASS 2 AND 3, , ,	1		
LB-000652-00	PRODUCT, FACEPLATE, , PL3,	1		
LB-000654-00	PRODUCT, FACEPLATE, , PL340,	1		
LB-000673-50	LABEL, CHINA ROHS, 50 YEARS, , SMALL	1		
LB-160226-05	FUSE, 25A, 125V, , UL	1		
NW-060010-IT	LOCK WASHER, #6, INTERNAL TOOTH, , CR111	4		
PL-000054-00	KNOB, , PLX, POLYPROPYLENE/SANTOPRENE, BLACK,	2		
PL-000066-00	CLIP, CHRISTMAS TREE, , NYLON, BLACK,	2		
PL-000095-00	FAN INTERFACE, , PLX 2RU, POLYPROPYLENE, BLACK,	1		
PL-000144-00	INSULATOR, FAN DUCT, PL2/2A, FISH PAPER, ,	1		
PL-000515-00	INSULATOR, FAN DUCT, PL3 SERIES, FISH PAPER, ,	1		
RD-000003-XX	LABEL, SERIAL NUMBER, PLX/DCA/PL/PL2A/CM16A/PL/DCM	0		
SC-025000-PP	PHILLIPS, PANHEAD, M2.5, 6MM, BLACK, THREAD FORMING, CR111	8		
SC-040041-PP	PHILLIPS, PANHEAD, #4-40, 0.25" L, BLACK, CR111	4		
SC-060042-PP	PHILLIPS, PANHEAD SEMS INTERNAL TOOTH, #6-32, 0.25" L, BLK, ZINC, CR111	2		
SC-060060-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #6-32, 0.375" L, ZINC, CR111	3		
SC-063081-PO	PHILLIPS, OVALHEAD, #6-20, 0.5 "L, BLACK, ZINC W/6107 LUBE, SELF TAPPING, CR111	2		
SC-080122-HC	HEX, CAP, #8-32, 0.75" L, BLACK, CR111	2		
SC-080127-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #8-32, 0.75" L, ZINC, CR111	2		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	14		
SW-000037-00	AC SWITCH, DPST, 20A, 125VAC,	1		
WC-000160-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, PL2A, 9" L,	2		
WC-000312-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, DCM-3, 10" L,	1		
WC-000343-00	CABLE ASSY, AC, 16 AWG, 3 CONDUCTOR, PL3, 5" L,	1		
WC-000344-00	CABLE ASSY, INPUT POWER, 22 AWG, 3 CONDUCTOR, PL3, 14" L,	1		
WP-000057-00	FAN ASSY, , PLC, ,	1		
WP-034002-00	PCB ASSY, INPUT, PL340, ,	1		

Chassis Assembly PL340 (100V) (QSC part # WP-034000-01)

QSC Part #	Description	Qty.	Reference	Comments
CH-000118-00	RACK EAR, FRONT, , CX902,	2		
CH-000693-00	SHIELD, LINE FILTER, , PL340,	1		
CH-000694-00	CHASSIS, MAIN, , PL340,	1		
CO-000320-00	AC INLET, FLANGE MOUNT, 3 POS, FEMALE, POWERCON A-TYPE	1		
HW-040001-00	BRACKET, ANGLE, #4-40, 0.375" L, ZINC PLATED STEEL,	2		
HW-060090-SO	STANDOFF, 0.250" HEX, #6-32, 0.563" L, ALUMINUM, FEMALE	2		
LB-000077-00	WARNING, HIGH ENERGY, , PL 3RU,	1		
LB-000439-00	LABEL, WIRE CLASS 2 AND 3, , ,	1		
LB-000652-00	PRODUCT, FACEPLATE, , PL3,	1		
LB-000653-00	PRODUCT, FACEPLATE, , PL325,	1		
LB-000673-50	LABEL, CHINA ROHS, 50 YEARS, , SMALL	1		
LB-160226-00	FUSE, 30A, 125V, , UL	1		
NW-060010-IT	LOCK WASHER, #6, INTERNAL TOOTH, , CR111	4		
PL-000054-00	KNOB, , PLX, POLYPROPYLENE/SANTOPRENE, BLACK,	2		
PL-000066-00	CLIP, CHRISTMAS TREE, , NYLON, BLACK,	2		
PL-000095-00	FAN INTERFACE, , PLX 2RU, POLYPROPYLENE, BLACK,	1		
PL-000144-00	INSULATOR, FAN DUCT, PL2/2A, FISH PAPER, ,	1		
PL-000515-00	INSULATOR, FAN DUCT, PL3 SERIES, FISH PAPER, ,	1		
RD-000003-XX	LABEL, SERIAL NUMBER, PLX/DCA/PL/PL2A/CM16A/PL/DCM	0		
SC-025000-PP	PHILLIPS, PANHEAD, M2.5, 6MM, BLACK, THREAD FORMING, CR111	8		
SC-040041-PP	PHILLIPS, PANHEAD, #4-40, 0.25" L, BLACK, CR111	4		
SC-060042-PP	PHILLIPS, PANHEAD SEMS INTERNAL TOOTH, #6-32, 0.25" L, BLK, ZINC, CR111	2		
SC-060060-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #6-32, 0.375" L, ZINC, CR111	3		
SC-063081-PO	PHILLIPS, OVALHEAD, #6-20, 0.5 "L, BLACK, ZINC W/6107 LUBE, SELF TAPPING, CR111	2		
SC-080122-HC	HEX, CAP, #8-32, 0.75" L, BLACK, CR111	2		
SC-080127-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #8-32, 0.75" L, ZINC, CR111	2		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	14		
SW-000037-00	AC SWITCH, DPST, 20A, 125VAC,	1		
WC-000160-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, PL2A, 9" L,	2		

Chassis Assembly PL340 (120V) continued

QSC Part #	Description	Qty.	Reference	Comments
WC-000312-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, DCM-3, 10" L,	1		
WC-000343-00	CABLE ASSY, AC, 16 AWG, 3 CONDUCTOR, PL3, 5" L,	1		
WC-000344-00	CABLE ASSY, INPUT POWER, 22 AWG, 3 CONDUCTOR, PL3, 14" L,	1		
WP-000057-00	FAN ASSY, , PLC, ,	1		
WP-032502-00	PCB ASSY, INPUT, PL325, ,	1		

Chassis Assembly PL340 (230V) (QSC part # WP-034000-02)

QSC Part #	Description	Qty.	Reference	Comments
CH-000118-00	RACK EAR, FRONT, , CX902,	2		
CH-000693-00	SHIELD, LINE FILTER, , PL340,	1		
CH-000694-00	CHASSIS, MAIN, , PL340,	1		
CO-000320-00	AC INLET, FLANGE MOUNT, 3 POS, FEMALE, POWERCON A-TYPE	1		
HW-040001-00	BRACKET, ANGLE, #4-40, 0.375" L, ZINC PLATED STEEL,	2		
HW-060090-SO	STANDOFF, 0.250" HEX, #6-32, 0.563" L, ALUMINUM, FEMALE	2		
LB-000053-00	FUSE, REPLACEMENT, FRENCH, ,	1		
LB-000077-00	WARNING, HIGH ENERGY, , PL 3RU,	1		
LB-000099-01	AGENCY, LISTING, , , CE	1		
LB-000439-00	LABEL, WIRE CLASS 2 AND 3, , ,	1		
LB-000652-00	PRODUCT, FACEPLATE, , PL3,	1		
LB-000653-00	PRODUCT, FACEPLATE, , PL325,	1		
LB-000673-50	LABEL, CHINA ROHS, 50 YEARS, , SMALL	1		
LB-160226-01	FUSE, 15A, 250V, , UL	1		
NW-060010-IT	LOCK WASHER, #6, INTERNAL TOOTH, , CR111	4		
PL-000054-00	KNOB, , PLX, POLYPROPYLENE/SANTOPRENE, BLACK,	2		
PL-000055-00	PLUG, BINDING POST, , POLYPROPYLENE, RED,	2		
PL-000056-00	PLUG, BINDING POST, , POLYPROPYLENE, BLACK,	2		
PL-000066-00	CLIP, CHRISTMAS TREE, , NYLON, BLACK,	2		
PL-000095-00	FAN INTERFACE, , PLX 2RU, POLYPROPYLENE, BLACK,	1		
PL-000144-00	INSULATOR, FAN DUCT, PL2/2A, FISH PAPER, ,	1		
PL-000515-00	INSULATOR, FAN DUCT, PL3 SERIES, FISH PAPER, ,	1		
RD-000003-XX	LABEL, SERIAL NUMBER, PLX/DCA/PL/PL2A/CM16A/PL/DCM	0		
SC-025000-PP	PHILLIPS, PANHEAD, M2.5, 6MM, BLACK, THREAD FORMING, CR111	8		
SC-040041-PP	PHILLIPS, PANHEAD, #4-40, 0.25" L, BLACK, CR111	4		
SC-060042-PP	PHILLIPS, PANHEAD SEMS INTERNAL TOOTH, #6-32, 0.25" L, BLK, ZINC, CR111	2		
SC-060060-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #6-32, 0.375" L, ZINC, CR111	3		
SC-063081-PO	PHILLIPS, OVALHEAD, #6-20, 0.5 “L, BLACK, ZINC W/6107 LUBE, SELF TAPPING, CR111	2		
SC-080122-HC	HEX, CAP, #8-32, 0.75" L, BLACK, CR111	2		
SC-080127-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #8-32, 0.75" L, ZINC, CR111	2		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	14		
SW-000037-00	AC SWITCH, DPST, 20A, 125VAC,	1		
WC-000160-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, PL2A, 9" L,	2		
WC-000312-00	RIBBON CABLE ASSY, , 28 AWG, 20 CONDUCTOR, DCM-3, 10" L,	1		
WC-000343-00	CABLE ASSY, AC, 16 AWG, 3 CONDUCTOR, PL3, 5" L,	1		
WC-000344-00	CABLE ASSY, INPUT POWER, 22 AWG, 3 CONDUCTOR, PL3, 14" L,	1		
WP-000057-00	FAN ASSY, , PLC, ,	1		
WP-032502-00	PCB ASSY, INPUT, PL325, ,	1		

PCB Assembly PL340 (120V) (QSC part # WP-034001-00)

QSC Part #	Description	Qty.	Reference	Comments
CA-010002-30	10PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C14, C49	
CA-015002-10	15PF, 10 PCNT, 500V, CERAMIC SL, DISC,	2	C16, C50	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C64, C65, C99, C100, C187, C193	
CA-110001-10	100PF, 5 PCNT, 500V, MICA, DIPPED,	1	C147	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C5, C6, C9, C18, C40, C41, C43, C53	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	2	C145, C146	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C4, C17, C26, C52, C61, C119, C148, C181, C182, C186, C188	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C25, C60	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	9	C75, C81, C85, C93–C96, C120, C124	
CA-222001-00	0.0022UF, 20 PCNT, 125VAC, CERAMIC Y5U, DISC, YCAP	2	C122, C127	
CA-227001-30	0.0027UF, 10 PCNT, 100V, CERAMIC X7R, 0805,	11	C20, C23, C24, C55, C58, C59, C68, C98, C108, C109, C128	
CA-233001-10	0.0033UF, 10 PCNT, 100V, FILM, DIPPED,	1	C113	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	2	C115, C118	
CA-322001-10	0.022UF, 10 PCNT, 100V, FILM, DIPPED,	2	C27, C62	

PCB Assembly PL340 (120V) continued

QSC Part #	Description	Qty.	Reference	Comments
CA-410001-00	0.1UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C126	
CA-410002-10	0.1UF, 5 PCNT, 100V, FILM, DIPPED,	4	C8, C12, C44, C47	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	13	C28, C34, C35, C63, C69, C70, C84, C87, C90, C129, C134, C156, C157	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	19	C19, C54, C88, C116, C125, C135, C155, C162, C163, C177–C180, C183, C185, C189–C191, C194	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	2	C107, C123	
CA-422001-10	0.22UF, 5 PCNT, 50V, FILM, DIPPED, LOW PROFILE	2	C10, C45	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C39, C121	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C117	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	1	C144	
CA-510003-10	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, ,	1	C80	
CA-510005-30	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, SMT,	2	C13, C48	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C110, C112	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	7	C3, C31, C38, C66, C86, C114, C192	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C184	
CA-622006-10	22UF, 20 PCNT, 16V, ELECTROLYTIC, ,	4	C21, C22, C56, C57	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	11	C7, C11, C42, C46, C71, C91, C92, C102, C104, C105, C106	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	1	C89	
CA-710002-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, ,	11	C15, C32, C33, C51, C67, C72, C78, C79, C139, C142, C143	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	3	C150, C138, C149	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	7	C73, C74, C76, C77, C82, C83, C131	
CA-810003-00	1000UF, 20 PCNT, 90V, ELECTROLYTIC, ,	10	C152, C153, C159, C160, C165, C166, C169, C170, C173, C174	
CA-810004-00	1000UF, 20 PCNT, 55V, ELECTROLYTIC, ,	10	C151, C154, C158, C161, C164, C167, C168, C171, C172, C175	
CA-833005-00	3300UF, 20 PCNT, 200V, ELECTROLYTIC, ,	6	C132, C133, C136, C137, C140, C141	
CH-000102-00	HEAT SINK, AUDIO, , PLX3002,	4		
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	9		
CH-000104-00	HEAT SINK, PS, , PLX3002,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	4		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	3	J19–J21	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J7, J8	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J13	
CO-000193-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, BOX	1	J5A	
CO-000194-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, LATCHING BOX	3	J3B, J5B, J14A	
CO-000196-00	HEADER, 0.1" CENTERS, 3 POS (1X3), MALE, RAMP LOCK	1	J11	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U19	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	2	U11, U12	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U10	
IC-000048-30	OPAMP, DUAL, MC33078, ,	2	U1, U6	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	2	U15, U17	
IC-000053-30	TIMER, DUAL, LM556, ,	1	U14	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U13	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	1	U3	
IC-000133-30	COMPARATOR, SINGLE, LM311, SMT,	4	U4, U5, U8, U9	
IC-000134-00	DRIVER, MOSFET, IR2110, ,	1	U18	
IC-000135-00	TOP SWITCH, , TOP210, ,	1	U16	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U2, U7	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		Q91
MS-000112-00	FUSE, 25A, 125V, 0.25" X 1.25", NORMAL-BLO	1	F1	
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	1	R314	
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD3, LD4, LD8, LD9	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD6	
PA-000043-00	PLATE ASSY, PLX, OUTPUT, ,	1	J12	
PC-003606-00	MAIN, PL2/PL2A, , , (ECO IN PROCESS)	1		
PL-000098-00	INSULATOR, TRANSISTOR, 0.85" X 1.09", THERMALLY CONDUCTIVE, TO-220,	4		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	2		
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	9		
PL-000128-00	SPACER, T-1 3/4 LED, 0.276", PLASTIC, BLACK,	2		REF: R30, R155
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		REF: LD1, LD2, LD5 , LD7, LD10, LD11
PT-150000-AT	TRIM, 500, 20 PCNT, 0.15W, ,	2	VR43, VR166	
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR2, VR121	

PCB Assembly PL340 (120V) continued

QSC Part #	Description	Qty.	Reference	Comments
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	4	D21, D22, D46, D47	
QD-000021-QD	DIODE ZENER, 10V, , 1W, 1N4740A, DO-41,	2	D7, D32	
QD-000031-QD	MOSFET N-CHANNEL, 60V, 50A, 150W, MTP45N06, TO-220,	4	Q38, Q41, Q83, Q86	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D70, D71	
QD-000062-10	TRANSISTOR NPN, 40V, 0.2A, 1.5W, 2N3904, TO-92,	2	Q20, Q65	
QD-000063-10	TRANSISTOR PNP, 40V, 0.2A, 1.5W, 2N3906, TO-92,	2	Q21, Q66	
QD-000074-00	DIODE RECTIFIER ULTRAFAST, 400V, 15A, , MUR1540, TO-220, 50NS	4	D74, D75, D80, D81	
QD-000076-00	TRANSISTOR NPN, 250V, 8A, 50W, MJE15032, TO-220,	2	Q27, Q72	
QD-000077-00	TRANSISTOR PNP, 250V, 8A, 50W, MJE15033, TO-220,	2	Q26, Q71	
QD-000080-20	DIODE ZENER, 11V, , 1W, 1N4741A, DO-41,	2	D95, D96	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	46	D1–D5, D8–D12, D14, D15, D17, D18, D23–D30, D33–D37, D39, D40, D42, D43, D48–D52, D55, D59, D63–D65, D67, D69, D89–D91	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	24	Q5, Q8, Q9, Q13, Q15, Q18, Q25, Q30, Q32, Q49, Q50, Q53, Q54, Q58, Q60, Q63, Q70, Q75, Q77, Q89, Q92, Q93, Q95, Q90	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	34	Q1–Q4, Q6, Q10–Q12, Q14, Q23, Q24, Q31, Q33, Q42–Q48, Q51, Q55, Q56, Q57, Q59, Q68, Q69, Q76, Q78, Q87, Q88, Q94, Q98, Q99	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q7, Q16, Q52, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	2	Q17, Q62	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	8	D13, D16, D38, D41, D61, D68, D78, D79	
QD-000110-30	DIODE ZENER, 6.2V, , 0.3W, BZX84C6V2, SOT-23,	1	D56	
QD-000113-30	DIODE ZENER, 10V, , 0.3W, BZX84C10, SOT-23,	1	D66	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	3	D58, D60, D86	
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	5	D62, D76, D77, D82, D83	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D57	
QD-000153-00	DIODE RECTIFIER ULTRAFAST, 400V, 30A, , APT30D40B, TO-247AD, 70NS	4	D72, D73, D84, D85	
QD-000154-00	TRANSISTOR NPN, 230V, 1A, 20W, 2SC4793, TO-220,	2	Q19, Q64	
QD-000155-00	TRANSISTOR PNP, 230V, 1A, 20W, 2SA1837, TO-220,	2	Q22, Q67	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q91	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD2, LD7	
QD-000187-00	LED BLUE, , , , , T-1,	1	LD11	
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD5, LD10	
QD-000287-10	DIODE ZENER, 3.9V, 5 PCNT, 0.25W, DO-35, ,	2	D6, D31	
QD-000348-00	IGBT, 600V, 75A, 200W, IXGR50N60C2, TO-247,	2	Q96, Q97	
QD-001943-PN	TRANSISTOR PNP, 230V, 15A, 150W, 2SA1943-R, TO-264,	8	Q28, Q34, Q36, Q39, Q73, Q79, Q81, Q84	
QD-004744-ZA	DIODE ZENER, 15V, 5 PCNT, 3W, , ,	4	D53, D54, D87, D88	
QD-005200-NP	TRANSISTOR NPN, 230V, 15A, 150W, 2SC5200, TO-264,	8	Q29, Q35, Q37, Q40, Q74, Q80, Q82, Q85	
QD-005402-DX	DIODE, 200V, 3A, , 1N5402, DO-27,	4	D19, D20, D44, D45	
RE-.04703-10	0.47, 5 PCNT, 2W, METAL OXIDE FP, MINI,	32	R88, R89, R91, R92, R94, R95, R97, R99, R102, R103, R107, R108, R111–R114, R211, R212, R214, R215, R217, R218, R220, R222, R225, R226, R230, R231, R234–R237	
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	5	R115, R116, R238, R239, R269	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R80, R98, R203, R221, R354, R355, R373	
RE-000210-NR	NTC, 10 OHMS, 15 AMPS, , , INRUSH LIMIT	1	R324	
RE-000230-NR	NTC, 10K, , 15 PCNT, , -4.4 PCNT PER C	2	R30, R155	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R353, R356, R358, R359	
RE-001502-10	15, 5 PCNT, 2W, METAL OXIDE FP, MINI,	13	R85, R86, R87, R90, R93, R208–R210, R213, R216, R350, R367, R368	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R248, R246, R247, R249, R349, R357	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	12	R5, R6, R100, R110, R123, R124, R223, R233, R308, R309, R312, R313	
RE-005605-EM	56, 5 PCNT, 2W, METAL OXIDE, ,	1	R372	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R70, R71, R193, R194	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R21, R27, R144, R150, R334, R364, R381–R384	
RE-015007-00	150, 5 PCNT, 2W, METAL OXIDE FP, ,	1	R278	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R81, R82, R204, R205	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R67, R68, R190, R191	
RE-030003-00	300, 5 PCNT, 2W, METAL OXIDE FP, ,	1	R256	
RE-038301-30	383, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R44, R167, R254, R255	
RE-047002-00	470, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R279, R280	
RE-047502-30	475, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R28, R37, R151, R160	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R22, R146, R302, R361, R374, R377	
RE-068002-00	680, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R274, R275	
RE-082002-00	820, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R276, R277	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R379	

PCB Assembly PL340 (120V) continued

QSC Part #	Description	Qty.	Reference	Comments
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	10	R1, R7, R42, R117, R118, R128, R165, R232, R250, R369	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	16	R23, R32, R34, R35, R39, R41, R101, R109, R147, R154, R157, R158, R162, R164, R270, R273	
RE-116202-30	1.62K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R72, R75, R195, R198	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R48, R171	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	12	R47, R84, R170, R207, R240, R264, R265, R267, R306, R307, R347, R348	
RE-124005-EM	2.4K, 5 PCNT, 2W, METAL FILM, ,	2	R257, R378	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R202, R290, R293, R79	
RE-134802-30	3.48K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R11, R137	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R252, R370	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R59, R62, R182, R185	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	27	R3, R4, R10, R17, R40, R55, R56, R63, R64, R125, R126, R131, R138, R163, R178, R179, R186, R187, R282, R287, R297–R300, R327, R330, R362	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R8, R9, R12, R13, R29, R78, R83, R129, R130, R135, R136, R152, R201, R206, R281	
RE-163402-30	6.34K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R127	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R15, R38, R120, R132, R140, R161	
RE-178701-30	7.87K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R360	
RE-182005-EM	8.2K, 5 PCNT, 2W, METAL OXIDE FP, ,	5	R96, R105, R219, R228, R251	
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R258, R266, R272	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R253, R295, R336, R338, R363, R366, R375, R376	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	23	R14, R19, R36, R46, R65, R76, R77, R104, R106, R133, R134, R142, R159, R169, R188, R199, R200, R227, R241, R245, R259, R329, R337	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R25, R45, R122, R148, R168, R262, R365	
RE-216501-CM	16.5K, 1 PCNT, 1/2W, METAL FILM, ,	2	R31, R153	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R18, R141, R229, R242, R244, R271, R291, R294, R331, R346	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R16, R139, R325	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R351, R352	
RE-233201-30	33.2K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R49, R50, R172, R173	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R20, R60, R61, R143, R183, R184, R243, R261, R323	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R2, R26, R43, R149, R343	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R119, R156, R224, R33, R332	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	7	R73, R74, R196, R197, R268, R344, R345	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	21	R51–R54, R57, R58, R174–R177, R180, R181, R283–R286, R288, R333, R335, R341, R342	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R24, R66, R69, R145, R189, R192, R260, R263, R340	
RE-348702-30	487K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R321, R322, R326, R328	
RE-375005-BM	750K, 5 PCNT, 1/2W, METAL FILM, ,	2	R339, R371	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R289, R292	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	20		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	8		
SW-000104-00	RELAY, SPDT, 24VDC COIL, 20A, 125VAC, T90 STYLE (FOR PLC MODELS)	1	K1	
WC-0.5018-JW	JUMPER, TEFLON INSULATION, 18 AWG SOLID, 1 CONDUCTOR, , 0.5" L,	1	W120	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W1, W2	
WC-000115-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 14" L, BLACK	1	W7	TO SWITCH
WC-000115-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 7" L, RED	1	W6	TO SWITCH
WC-000117-04	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 10.50" L, BLACK	1	W12	W12A-B
WC-000117-05	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, WHITE	1	W9	W9A-B
WC-000117-06	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 11.00" L, GREY	1	W11	W11A-B
WC-000117-07	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, BLACK	1	W10	W10A-B
WC-000118-00	WIRE ASSY, , 16 AWG, 1 CONDUCTOR, PLC, 12.5" L, BLACK	1	W5	W5A-B
WC-000118-01	WIRE ASSY, , 16 AWG, 1 CONDUCTOR, PLC, 10.5" L, RED	1	W8	W8A-B
XF-000005-00	BEAD, 100MHZ, 271 OHM,	6	L10, L11, L12, L7, L8, L9	
XF-000023-00	INDUCTOR, COMMON MODE, , 2MH, , ,	2	L3, L4	
XF-000061-00	INDUCTOR, 2 COUPLED WINDINGS, TOROID, 1.9UH, PL/DCA/CX, 230V,	1	L6	
XF-000064-00	TRANSFORMER, HOUSEKEEPING, , , , PLC, ,	1	T1	
XF-000066-00	INDUCTOR, ZOBEL CURRENT SENSE, , 2UH, PLC, ,	2	L1, L2	
XF-000183-00	TRANSFORMER, SWITCHING, 115KHZ, E55, 150OW, DCA3422, 120V/230V,	1	T2	

PCB Assembly PL340 (100V) (QSC part # WP-034001-01)

QSC Part #	Description	Qty.	Reference	Comments
CA-010002-30	10PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C14, C49	
CA-015002-10	15PF, 10 PCNT, 500V, CERAMIC SL, DISC,	2	C16, C50	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C64, C65, C99, C100, C187, C193	
CA-110001-10	100PF, 5 PCNT, 500V, MICA, DIPPED,	1	C147	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C5, C6, C9, C18, C40, C41, C43, C53	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	2	C145, C146	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C4, C17, C26, C52, C61, C119, C148, C181, C182, C186, C188	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C25, C60	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	9	C75, C81, C85, C93–C96, C120, C124	
CA-222001-00	0.0022UF, 20 PCNT, 125VAC, CERAMIC Y5U, DISC, YCAP	2	C122, C127	
CA-227001-30	0.0027UF, 10 PCNT, 100V, CERAMIC X7R, 0805,	11	C20, C23, C24, C55, C58, C59, C68, C98, C108, C109, C128	
CA-233001-10	0.0033UF, 10 PCNT, 100V, FILM, DIPPED,	1	C113	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	2	C115, C118	
CA-322001-10	0.022UF, 10 PCNT, 100V, FILM, DIPPED,	2	C27, C62	
CA-410001-00	0.1UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C126	
CA-410002-10	0.1UF, 5 PCNT, 100V, FILM, DIPPED,	4	C8, C12, C44, C47	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	13	C28, C34, C35, C63, C69, C70, C84, C87, C90, C129, C134, C156, C157	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	19	C19, C54, C88, C116, C125, C135, C155, C162, C163, C177–C180, C183, C185, C189–C191, C194	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	2	C107, C123	
CA-422001-10	0.22UF, 5 PCNT, 50V, FILM, DIPPED, LOW PROFILE	2	C10, C45	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C39, C121	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C117	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	1	C144	
CA-510003-10	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, ,	1	C80	
CA-510005-30	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, SMT,	2	C13, C48	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C110, C112	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	7	C3, C31, C38, C66, C86, C114, C192	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C184	
CA-622006-10	22UF, 20 PCNT, 16V, ELECTROLYTIC, ,	4	C21, C22, C56, C57	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	11	C7, C11, C42, C46, C71, C91, C92, C102, C104–C106	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	1	C89	
CA-710002-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, ,	11	C15, C32, C33, C51, C67, C72, C78, C79, C139, C142, C143	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	3	C138, C149, C150	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	7	C73, C74, C76, C77, C82, C83, C131	
CA-810003-00	1000UF, 20 PCNT, 90V, ELECTROLYTIC, ,	10	C152, C153, C159, C160, C165, C166, C169, C170, C173, C174	
CA-810004-00	1000UF, 20 PCNT, 55V, ELECTROLYTIC, ,	10	C151, C154, C158, C161, C164, C167, C168, C171, C172, C175	
CA-833005-00	3300UF, 20 PCNT, 200V, ELECTROLYTIC, ,	6	C132, C133, C136, C137, C140, C141	
CH-000102-00	HEAT SINK, AUDIO, , PLX3002,	4		
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	9		
CH-000104-00	HEAT SINK, PS, , PLX3002,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	4		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	3	J19–J21	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J7, J8	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J13	
CO-000193-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, BOX	1	J5A	
CO-000194-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, LATCHING BOX	3	J3B, J5B, J14A	
CO-000196-00	HEADER, 0.1" CENTERS, 3 POS (1X3), MALE, RAMP LOCK	1	J11	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		REF: F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U19	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	2	U11, U12	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U10	
IC-000048-30	OPAMP, DUAL, MC33078, ,	2	U1, U6	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	2	U15, U17	
IC-000053-30	TIMER, DUAL, LM556, ,	1	U14	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U13	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	1	U3	
IC-000133-30	COMPARATOR, SINGLE, LM311, SMT,	4	U4, U5, U8, U9	
IC-000134-00	DRIVER, MOSFET, IR2110, ,	1	U18	
IC-000135-00	TOP SWITCH, , TOP210, ,	1	U16	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U2, U7	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		REF: Q91
MS-000055-MS	FUSE, 30A, 125V, 0.25" X 1.25", FAST	1	F1	
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	1	R314	

PCB Assembly PL340 (100V) continued

QSC Part #	Description	Qty.	Reference	Comments
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD3, LD4, LD8, LD9	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD6	
PA-000043-00	PLATE ASSY, PLX, OUTPUT, ,	1	J12	
PC-003606-00	MAIN, PL2/PL2A, , , (ECO IN PROCESS)	1		
PL-000098-00	INSULATOR, TRANSISTOR, 0.85" X 1.09", THERMALLY CONDUCTIVE, TO-220,	4		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	2		
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	9		
PL-000128-00	SPACER, T-1 3/4 LED, 0.276", PLASTIC, BLACK,	2		REF: R30, R155
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		REF: LD1, LD2, LD5 , LD7, LD10, LD11
PT-150000-AT	TRIM, 500, 20 PCNT, 0.15W, ,	2	VR43, VR166	
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR2, VR121	
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	4	D21, D22, D46, D47	
QD-000021-QD	DIODE ZENER, 10V, , 1W, 1N4740A, DO-41,	2	D7, D32	
QD-000031-QD	MOSFET N-CHANNEL, 60V, 50A, 150W, MTP45N06, TO-220,	4	Q38, Q41, Q83, Q86	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D70, D71	
QD-000062-10	TRANSISTOR NPN, 40V, 0.2A, 1.5W, 2N3904, TO-92,	2	Q20, Q65	
QD-000063-10	TRANSISTOR PNP, 40V, 0.2A, 1.5W, 2N3906, TO-92,	2	Q21, Q66	
QD-000074-00	DIODE RECTIFIER ULTRAFAST, 400V, 15A, , MUR1540, TO-220, 50NS	4	D74, D75, D80, D81	
QD-000076-00	TRANSISTOR NPN, 250V, 8A, 50W, MJE15032, TO-220,	2	Q27, Q72	
QD-000077-00	TRANSISTOR PNP, 250V, 8A, 50W, MJE15033, TO-220,	2	Q26, Q71	
QD-000080-20	DIODE ZENER, 11V, , 1W, 1N4741A, DO-41,	2	D95, D96	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	46	D1–D5, D8–D12, D14, D15, D17, D18, D23–D30, D33–D37, D39, D40, D42, D43, D48–D52, D55, D59, D63–D65, D67, D69, D89–D91	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	24	Q5, Q8, Q9, Q13, Q15, Q18, Q25, Q30, Q32, Q49, Q50, Q53, Q54, Q58, Q60, Q63, Q70, Q75, Q77, Q89, Q90, Q92, Q93, Q95	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	34	Q1–Q4, Q6, Q10–Q12, Q14, Q23, Q24, Q31, Q33, Q42–Q48, Q51, Q55–Q57, Q59, Q68, Q69, Q76, Q78, Q87, Q88, Q94, Q98, Q99	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q7, Q16, Q52, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	2	Q17, Q62	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	8	D13, D16, D38, D41, D61, D68, D78, D79	
QD-000110-30	DIODE ZENER, 6.2V, , 0.3W, BZX84C6V2, SOT-23,	1	D56	
QD-000113-30	DIODE ZENER, 10V, , 0.3W, BZX84C10, SOT-23,	1	D66	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	3	D58, D60, D86	
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	5	D62, D76, D77, D82, D83	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D57	
QD-000153-00	DIODE RECTIFIER ULTRAFAST, 400V, 30A, , APT30D40B, TO-247AD, 70NS	4	D72, D73, D84, D85	
QD-000154-00	TRANSISTOR NPN, 230V, 1A, 20W, 2SC4793, TO-220,	2	Q19, Q64	
QD-000155-00	TRANSISTOR PNP, 230V, 1A, 20W, 2SA1837, TO-220,	2	Q22, Q67	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q91	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD2, LD7	
QD-000187-00	LED BLUE, , , , , T-1,	1	LD11	
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD5, LD10	
QD-000287-10	DIODE ZENER, 3.9V, 5 PCNT, 0.25W, DO-35, ,	2	D6, D31	
QD-000348-00	IGBT, 600V, 75A, 200W, IXGR50N60C2, TO-247,	2	Q96, Q97	
QD-001943-PN	TRANSISTOR PNP, 230V, 15A, 150W, 2SA1943-R, TO-264,	8	Q28, Q34, Q36, Q39, Q73, Q79, Q81, Q84	
QD-004744-ZA	DIODE ZENER, 15V, 5 PCNT, 3W, , ,	4	D53, D54, D87, D88	
QD-005200-NP	TRANSISTOR NPN, 230V, 15A, 150W, 2SC5200, TO-264,	8	Q29, Q35, Q37, Q40, Q74, Q80, Q82, Q85	
QD-005402-DX	DIODE, 200V, 3A, , 1N5402, DO-27,	4	D19, D20, D44, D45	
RE-.04703-10	0.47, 5 PCNT, 2W, METAL OXIDE FP, MINI,	32	R88, R89, R91, R92, R94, R95, R97, R99, R102, R103, R107, R108, R111–R114, R211, R212, R214, R215, R217, R218, R220, R222, R225, R226, R230, R231, R234–R237	
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	5	R115, R116, R238, R239, R269	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R80, R98, R203, R221, R354, R355, R373	
RE-000210-NR	NTC, 10 OHMS, 15 AMPS, , , INRUSH LIMIT	1	R324	
RE-000230-NR	NTC, 10K, , 15 PCNT, , -4.4 PCNT PER C	2	R30, R155	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R353, R356, R358, R359	
RE-001502-10	15, 5 PCNT, 2W, METAL OXIDE FP, MINI,	13	R85–R87, R90, R93, R208–R210, R213, R216, R350, R367, R368	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R246–R249, R349, R357	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	12	R5, R6, R100, R110, R123, R124, R223, R233, R308, R309, R312, R313	
RE-005605-EM	56, 5 PCNT, 2W, METAL OXIDE, ,	1	R372	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R70, R71, R193, R194	

PCB Assembly PL340 (100V) continued

QSC Part #	Description	Qty.	Reference	Comments
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R21, R27, R144, R150, R334, R364, R381–R384	
RE-015007-00	150, 5 PCNT, 2W, METAL OXIDE FP, ,	1	R278	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R81, R82, R204, R205	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R67, R68, R190, R191	
RE-030003-00	300, 5 PCNT, 2W, METAL OXIDE FP, ,	1	R256	
RE-038301-30	383, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R44, R167, R254, R255	
RE-047002-00	470, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R279, R280	
RE-047502-30	475, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R28, R37, R151, R160	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R22, R146, R302, R361, R374, R377	
RE-068002-00	680, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R274, R275	
RE-082002-00	820, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R276, R277	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R379	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	10	R1, R7, R42, R117, R118, R128, R165, R232, R250, R369	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	16	R23, R32, R34, R35, R39, R41, R101, R109, R147, R154, R157, R158, R162, R164, R270, R273	
RE-116202-30	1.62K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R72, R75, R195, R198	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R48, R171	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	12	R47, R84, R170, R207, R240, R264, R265, R267, R306, R307, R347, R348	
RE-124005-EM	2.4K, 5 PCNT, 2W, METAL FILM, ,	2	R257, R378	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R79, R202, R290, R293	
RE-134802-30	3.48K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R11, R137	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R252, R370	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R59, R62, R182, R185	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	27	R3, R4, R10, R17, R40, R55, R56, R63, R64, R125, R126, R131, R138, R163, R178, R179, R186, R187, R282, R287, R297–R300, R327, R330, R362	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R8, R9, R12, R13, R29, R78, R83, R129, R130, R135, R136, R152, R201, R206, R281	
RE-163402-30	6.34K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R127	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R15, R38, R120, R132, R140, R161	
RE-178701-30	7.87K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R360	
RE-182005-EM	8.2K, 5 PCNT, 2W, METAL OXIDE FP, ,	5	R96, R105, R219, R228, R251	
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R258, R266, R272	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R253, R295, R336, R338, R363, R366, R375, R376	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	23	R14, R19, R36, R46, R65, R76, R77, R104, R106, R133, R134, R142, R159, R169, R188, R199, R200, R227, R241, R245, R259, R329, R337	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R25, R45, R122, R148, R168, R262, R365	
RE-216501-CM	16.5K, 1 PCNT, 1/2W, METAL FILM, ,	2	R31, R153	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R18, R141, R229, R242, R244, R271, R291, R294, R331, R346	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R16, R139, R325	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R351, R352	
RE-233201-30	33.2K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R49, R50, R172, R173	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R20, R60, R61, R143, R183, R184, R243, R261, R323	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R2, R26, R43, R149, R343	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R33, R119, R156, R224, R332	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	7	R73, R74, R196, R197, R268, R344, R345	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	21	R51–R54, R57, R58, R174–R177, R180, R181, R283–R286, R288, R333, R335, R341, R342	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R24, R66, R69, R145, R189, R192, R260, R263, R340	
RE-339202-30	392K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R321, R322, R326, R328	
RE-375005-BM	750K, 5 PCNT, 1/2W, METAL FILM, ,	2	R339, R371	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R289, R292	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	20		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	8		
SW-000104-00	RELAY, SPDT, 24VDC COIL, 20A, 125VAC, T90 STYLE (FOR PLC MODELS)	1	K1	
WC-0.5018-JW	JUMPER, TEFLON INSULATION, 18 AWG SOLID, 1 CONDUCTOR, , 0.5" L,	1	W120	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W1, W2	
WC-000115-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 14" L, BLACK	1	W7	TO SWITCH
WC-000115-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 7" L, RED	1	W6	TO SWITCH
WC-000117-04	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 10.50" L, BLACK	1	W12	W12A-B
WC-000117-05	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, WHITE	1	W9	W9A-B
WC-000117-06	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 11.00" L, GREY	1	W11	W11A-B
WC-000117-07	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, BLACK	1	W10	W10A-B
WC-000118-00	WIRE ASSY, , 16 AWG, 1 CONDUCTOR, PLC, 12.5" L, BLACK	1	W5	W5A-B
WC-000118-01	WIRE ASSY, , 16 AWG, 1 CONDUCTOR, PLC, 10.5" L, RED	1	W8	W8A-B

PCB Assembly PL340 (100V) continued

QSC Part #	Description	Qty.	Reference	Comments
XF-000005-00	BEAD, 100MHZ, 271 OHM,	6	L7–L12	
XF-000023-00	INDUCTOR, COMMON MODE, , 2MH, , ,	2	L3, L4	
XF-000061-00	INDUCTOR, 2 COUPLED WINDINGS, TOROID, 1.9UH, PL/DCA/CX, 230V,	1	L6	
XF-000064-00	TRANSFORMER, HOUSEKEEPING, , , , PLC, ,	1	T1	
XF-000066-00	INDUCTOR, ZOBEL CURRENT SENSE, , 2UH, PLC, ,	2	L1, L2	
XF-000188-00	TRANSFORMER, SWITCHING, 115KHZ, E55, 1500W, DCA3422, 100V,	1	T2	

PCB Assembly PL340 (230V) (QSC part # WP-034001-02)

QSC Part #	Description	Qty.	Reference	Comments
CA-010002-30	10PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C14, C49	
CA-015002-10	15PF, 10 PCNT, 500V, CERAMIC SL, DISC,	2	C16, C50	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C64, C65, C99, C100, C187, C193	
CA-110001-10	100PF, 5 PCNT, 500V, MICA, DIPPED,	1	C147	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C5, C6, C9, C18, C40, C41, C43, C53	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	2	C145, C146	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C4, C17, C26, C52, C61, C119, C148, C181, C182, C186, C188	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C25, C60	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	9	C75, C81, C85, C93–C96, C120, C124	
CA-222001-00	0.0022UF, 20 PCNT, 125VAC, CERAMIC Y5U, DISC, YCAP	2	C122, C127	
CA-227001-30	0.0027UF, 10 PCNT, 100V, CERAMIC X7R, 0805,	11	C20, C23, C24, C55, C58, C59, C68, C98, C108, C109, C128	
CA-233001-10	0.0033UF, 10 PCNT, 100V, FILM, DIPPED,	1	C113	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	2	C115, C118	
CA-322001-10	0.022UF, 10 PCNT, 100V, FILM, DIPPED,	2	C27, C62	
CA-410001-00	0.1UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C126	
CA-410002-10	0.1UF, 5 PCNT, 100V, FILM, DIPPED,	4	C8, C12, C44, C47	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	13	C28, C34, C35, C63, C69, C70, C84, C87, C90, C129, C134, C156, C157	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	19	C19, C54, C88, C116, C125, C135, C155, C162, C163, C177–C180, C183, C185, C189–C191, C194	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	2	C107, C123	
CA-422001-10	0.22UF, 5 PCNT, 50V, FILM, DIPPED, LOW PROFILE	2	C10, C45	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C121, C39	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C117	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	1	C144	
CA-510003-10	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, ,	1	C80	
CA-510005-30	1.0UF, 20 PCNT, 50V, ELECTROLYTIC, SMT,	2	C13, C48	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C110, C112	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	7	C3, C31, C38, C66, C86, C114, C192	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C184	
CA-622006-10	22UF, 20 PCNT, 16V, ELECTROLYTIC, ,	4	C21, C22, C56, C57	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	11	C7, C11, C42, C46, C71, C91, C92, C102, C104–C106	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	1	C89	
CA-710002-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, ,	11	C15, C32, C33, C51, C67, C72, C78, C79, C139, C142, C143	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	3	C138, C149, C150	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	7	C73, C74, C76, C77, C82, C83, C131	
CA-810003-00	1000UF, 20 PCNT, 90V, ELECTROLYTIC, ,	10	C152, C153, C159, C160, C165, C166, C169, C170, C173, C174	
CA-810004-00	1000UF, 20 PCNT, 55V, ELECTROLYTIC, ,	10	C151, C154, C158, C161, C164, C167, C168, C171, C172, C175	
CA-833005-00	3300UF, 20 PCNT, 200V, ELECTROLYTIC, ,	6	C132, C133, C136, C137, C140, C141	
CH-000102-00	HEAT SINK, AUDIO, , PLX3002,	4		
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	9		
CH-000104-00	HEAT SINK, PS, , PLX3002,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	4		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	3	J19–J21	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J7, J8	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J13	
CO-000193-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, BOX	1	J5A	
CO-000194-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, LATCHING BOX	3	J3B, J5B, J14A	
CO-000196-00	HEADER, 0.1" CENTERS, 3 POS (1X3), MALE, RAMP LOCK	1	J11	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U19	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	2	U11, U12	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U10	
IC-000048-30	OPAMP, DUAL, MC33078, ,	2	U1, U6	

PCB Assembly PL340 (230V) continued

QSC Part #	Description	Qty.	Reference	Comments
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	2	U15, U17	
IC-000053-30	TIMER, DUAL, LM556, ,	1	U14	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U13	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	1	U3	
IC-000133-30	COMPARATOR, SINGLE, LM311, SMT,	4	U4, U5, U8, U9	
IC-000134-00	DRIVER, MOSFET, IR2110, ,	1	U18	
IC-000135-00	TOP SWITCH, , TOP210, ,	1	U16	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U2, U7	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		Q91
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	1	R314	
MS-150250-FU	FUSE, 15A, 250V, 0.25" X 1.25", FAST	1	F1	
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD3, LD4, LD8, LD9	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD6	
PA-000043-00	PLATE ASSY, PLX, OUTPUT, ,	1	J12	
PC-003606-00	MAIN, PL2/PL2A, , , (ECO IN PROCESS)	1		
PL-000098-00	INSULATOR, TRANSISTOR, 0.85" X 1.09", THERMALLY CONDUCTIVE, TO-220,	4		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	2		
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	9		
PL-000128-00	SPACER, T-1 3/4 LED, 0.276", PLASTIC, BLACK,	2		REF: R30, R155
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		REF: LD1, LD2, LD5 , LD7, LD10, LD11
PT-150000-AT	TRIM, 500, 20 PCNT, 0.15W, ,	2	VR43, VR166	
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR2, VR121	
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	4	D21, D22, D46, D47	
QD-000021-QD	DIODE ZENER, 10V, , 1W, 1N4740A, DO-41,	2	D7, D32	
QD-000031-QD	MOSFET N-CHANNEL, 60V, 50A, 150W, MTP45N06, TO-220,	4	Q38, Q41, Q83, Q86	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D70, D71	
QD-000062-10	TRANSISTOR NPN, 40V, 0.2A, 1.5W, 2N3904, TO-92,	2	Q20, Q65	
QD-000063-10	TRANSISTOR PNP, 40V, 0.2A, 1.5W, 2N3906, TO-92,	2	Q21, Q66	
QD-000074-00	DIODE RECTIFIER ULTRAFAST, 400V, 15A, , MUR1540, TO-220, 50NS	4	D74, D75, D80, D81	
QD-000076-00	TRANSISTOR NPN, 250V, 8A, 50W, MJE15032, TO-220,	2	Q27, Q72	
QD-000077-00	TRANSISTOR PNP, 250V, 8A, 50W, MJE15033, TO-220,	2	Q26, Q71	
QD-000080-20	DIODE ZENER, 11V, , 1W, 1N4741A, DO-41,	2	D95, D96	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	46	D1–D5, D8, D9–D12, D14, D15, D17, D18, D23–D30, D33–D37, D39, D40, D42, D43, D48–D52, D55, D59, D63–D65, D67, D69, D89–D91	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	24	Q5, Q8, Q9, Q13, Q15, Q18, Q25, Q30, Q32, Q49, Q50, Q53, Q54, Q58, Q60, Q63, Q70, Q75, Q77, Q89, Q90, Q92, Q93, Q95	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	34	Q1–Q4, Q6, Q10–Q12, Q14, Q23, Q24, Q31, Q33, Q42–Q48, Q51, Q55–Q57, Q59, Q68, Q69, Q76, Q78, Q87, Q88, Q94, Q98, Q99	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q7, Q16, Q52, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	2	Q17, Q62	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	8	D13, D16, D38, D41, D61, D68, D78, D79	
QD-000110-30	DIODE ZENER, 6.2V, , 0.3W, BZX84C6V2, SOT-23,	1	D56	
QD-000113-30	DIODE ZENER, 10V, , 0.3W, BZX84C10, SOT-23,	1	D66	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	3	D58, D60, D86	
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	5	D62, D76, D77, D82, D83	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D57	
QD-000153-00	DIODE RECTIFIER ULTRAFAST, 400V, 30A, , APT30D40B, TO-247AD, 70NS	4	D72, D73, D84, D85	
QD-000154-00	TRANSISTOR NPN, 230V, 1A, 20W, 2SC4793, TO-220,	2	Q19, Q64	
QD-000155-00	TRANSISTOR PNP, 230V, 1A, 20W, 2SA1837, TO-220,	2	Q22, Q67	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q91	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD2, LD7	
QD-000187-00	LED BLUE, , , , , T-1,	1	LD11	
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD5, LD10	
QD-000287-10	DIODE ZENER, 3.9V, 5 PCNT, 0.25W, DO-35, ,	2	D6, D31	
QD-000348-00	IGBT, 600V, 75A, 200W, IXGR50N60C2, TO-247,	2	Q96, Q97	
QD-001943-PN	TRANSISTOR PNP, 230V, 15A, 150W, 2SA1943-R, TO-264,	8	Q28, Q34, Q36, Q39, Q73, Q79, Q81, Q84	
QD-004744-ZA	DIODE ZENER, 15V, 5 PCNT, 3W, , ,	4	D53, D54, D87, D88	
QD-005200-NP	TRANSISTOR NPN, 230V, 15A, 150W, 2SC5200, TO-264,	8	Q29, Q35, Q37, Q40, Q74, Q80, Q82, Q85	
QD-005402-DX	DIODE, 200V, 3A, , 1N5402, DO-27,	4	D19, D20, D44, D45	

PCB Assembly PL340 (230V) continued

QSC Part #	Description	Qty.	Reference	Comments
RE-.04703-10	0.47, 5 PCNT, 2W, METAL OXIDE FP, MINI,	32	R88, R89, R91, R92, R94, R95, R97, R99, R102, R103, R107, R108, R111–R114, R211, R212, R214, R215, R217, R218, R220, R222, R225, R226, R230, R231, R234–R237	
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	5	R115, R116, R238, R239, R269	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R80, R98, R203, R221, R354, R355, R373	
RE-000210-NR	NTC, 10 OHMS, 15 AMPS, , , INRUSH LIMIT	1	R324	
RE-000230-NR	NTC, 10K, , 15 PCNT, , -4.4 PCNT PER C	2	R30, R155	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R353, R356, R358, R359	
RE-001502-10	15, 5 PCNT, 2W, METAL OXIDE FP, MINI,	13	R85–R87, R90, R93, R208–R210, R213, R216, R350, R367, R368	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R246–R249, R349, R357	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	12	R5, R6, R100, R110, R123, R124, R223, R233, R308, R309, R312, R313	
RE-005605-EM	56, 5 PCNT, 2W, METAL OXIDE, ,	1	R372	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R70, R71, R193, R194	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R21, R27, R144, R150, R334, R364, R381–R384	
RE-015007-00	150, 5 PCNT, 2W, METAL OXIDE FP, ,	1	R278	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R81, R82, R204, R205	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R67, R68, R190, R191	
RE-030003-00	300, 5 PCNT, 2W, METAL OXIDE FP, ,	1	R256	
RE-038301-30	383, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R44, R167, R254, R255	
RE-047002-00	470, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R279, R280	
RE-047502-30	475, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R28, R37, R151, R160	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R22, R146, R302, R361, R374, R377	
RE-068002-00	680, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R274, R275	
RE-082002-00	820, 5 PCNT, 2W, METAL OXIDE FP, ,	2	R276, R277	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R379	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	10	R1, R7, R42, R117, R118, R128, R165, R232, R250, R369	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	16	R23, R32, R34, R35, R39, R41, R101, R109, R147, R154, R157, R158, R162, R164, R270, R273	
RE-116202-30	1.62K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R72, R75, R195, R198	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R48, R171	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	12	R47, R84, R170, R207, R240, R264, R265, R267, R306, R307, R347, R348	
RE-124005-EM	2.4K, 5 PCNT, 2W, METAL FILM, ,	2	R257, R378	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R79, R202, R290, R293	
RE-134802-30	3.48K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R11, R137	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R252, R370	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R59, R62, R182, R185	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	27	R3, R4, R10, R17, R40, R55, R56, R63, R64, R125, R126, R131, R138, R163, R178, R179, R186, R187, R282, R287, R297–R300, R327, R330, R362	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R8, R9, R12, R13, R29, R78, R83, R129, R130, R135, R136, R152, R201, R206, R281	
RE-163402-30	6.34K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R127	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R15, R38, R120, R132, R140, R161	
RE-178701-30	7.87K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R360	
RE-182005-EM	8.2K, 5 PCNT, 2W, METAL OXIDE FP, ,	5	R96, R105, R219, R228, R251	
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R258, R266, R272	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R253, R295, R336, R338, R363, R366, R375, R376	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	23	R14, R19, R36, R46, R65, R76, R77, R104, R106, R133, R134, R142, R159, R169, R188, R199, R200, R227, R241, R245, R259, R329, R337	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R25, R45, R122, R148, R168, R262, R365	
RE-216501-CM	16.5K, 1 PCNT, 1/2W, METAL FILM, ,	2	R31, R153	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	10	R18, R141, R229, R242, R244, R271, R291, R294, R331, R346	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R16, R139, R325	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R351, R352	
RE-233201-30	33.2K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R49, R50, R172, R173	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R20, R60, R61, R143, R183, R184, R243, R261, R323	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R2, R26, R43, R149, R343	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R33, R119, R156, R224, R332	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	7	R73, R74, R196, R197, R268, R344, R345	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	21	R51–R54, R57, R58, R174–R177, R180, R181, R283–R286, R288, R333, R335, R341, R342	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R24, R66, R69, R145, R189, R192, R260, R263, R340	
RE-348702-30	487K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R321, R322, R326, R328	

PCB Assembly PL340 (230V) continued

QSC Part #	Description	Qty.	Reference	Comments
RE-375005-BM	750K, 5 PCNT, 1/2W, METAL FILM, ,	2	R339, R371	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R289, R292	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	20		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	8		
SW-000104-00	RELAY, SPDT, 24VDC COIL, 20A, 125VAC, T90 STYLE (FOR PLC MODELS)	1	K1	
WC-0.5018-JW	JUMPER, TEFLON INSULATION, 18 AWG SOLID, 1 CONDUCTOR, , 0.5" L,	1	W240	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W1, W2	
WC-000115-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 14" L, BLACK	1	W7	TO SWITCH
WC-000115-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PLC, 7" L, RED	1	W6	TO SWITCH
WC-000117-04	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 10.50" L, BLACK	1	W12	W12A-B
WC-000117-05	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, WHITE	1	W9	W9A-B
WC-000117-06	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 11.00" L, GREY	1	W11	W11A-B
WC-000117-07	WIRE ASSY, SPEAKER, 16 AWG, 1 CONDUCTOR, PL3, 9.50" L, BLACK	1	W10	W10A-B
WC-000118-00	WIRE ASSY, , 16 AWG, 1 CONDUCTOR, PLC, 12.5" L, BLACK	1	W5	W5A-B
XF-000005-00	BEAD, 100MHZ, 271 OHM,	6	L7–L12	
XF-000023-00	INDUCTOR, COMMON MODE, , 2MH, , ,	2	L3, L4	
XF-000061-00	INDUCTOR, 2 COUPLED WINDINGS, TOROID, 1.9UH, PL/DCA/CX, 230V,	1	L6	
XF-000064-00	TRANSFORMER, HOUSEKEEPING, , , , PLC, ,	1	T1	
XF-000066-00	INDUCTOR, ZOBEL CURRENT SENSE, , 2UH, PLC, ,	2	L1, L2	
XF-000183-00	TRANSFORMER, SWITCHING, 115KHZ, E55, 1500W, DCA3422, 120V/230V,	1	T2	

Input Assembly PL340 (QSC part # WP-034002-00)

QSC Part #	Description	Qty.	Reference	Comments
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C409, C410	
CA-122003-30	220PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	4	C411, C412, C413, C414	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	5	C403, C404, C405, C406, C419	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C415, C416	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C417, C418	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	1	C401	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	3	C402, C407, C408	
CO-000106-00	JACK, HD15, 15 POS, FEMALE, RIGHT ANGLE SWAGED JACK SCREW	1	J402	
CO-000148-00	XLR, NEUTRIK, 3 POS, FEMALE, VERTICAL	2	J407, J408	
CO-000161-00	JACK, EURO, 3 POS, FEMALE, BLACK	2	J401, J403	
CO-000171-00	XLR, NEUTRIK, 3 POS, MALE, VERTICAL	2	J405, J406	
CO-000194-00	HEADER, 0.1" CENTERS, 20 POS (2X10), MALE, LATCHING BOX	2	J404, J410	
CO-000196-00	HEADER, 0.1" CENTERS, 3 POS (1X3), MALE, RAMP LOCK	1	J409	
CO-000329-00	WIRE HOLDER, RIBBON CABLE, 10 POS, FEMALE,	2		REF: J411A, J411B
IC-000048-30	OPAMP, DUAL, MC33078, ,	2	U401, U402	
PA-000145-00	LED ASSY, GREEN, 0.850" SPACER, ,	2	LD402, LD404	
PA-000146-00	LED ASSY, YELLOW, 0.850" SPACER, ,	6	LD403, LD405, LD407, LD408, LD411, LD412	
PA-000147-00	LED ASSY, ORANGE, 0.850" SPACER, ,	4	LD401, LD406, LD409, LD410	
PC-034002-00	INPUT, PL3, , ,	1		
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	5	D401, D402, D403, D404, D405	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	5	Q401, Q402, Q403, Q406, Q407	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	4	Q404, Q405, Q408, Q409	
QD-000297-30	LED YELLOW, , , , , 1206,	1	LD413	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R429, R430	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R407, R408	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R401, R402, R403, R404, R417, R418, R419, R420	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R467	
RE-076801-30	768, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R448, R449, R450, R451, R452, R453, R462, R463	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	1	R436	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R414	
RE-134802-30	3.48K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R442, R443	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R412	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R465	
RE-146401-30	4.64K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R464	
RE-152301-30	5.23K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R440, R441	
RE-156202-30	5.62K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R406, R422, R424, R425, R426, R431, R432, R433, R434, R435, R437, R438, R439	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R410, R411	
RE-178701-30	7.87K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R444, R445, R446, R447	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R413, R427, R428	

Input Assembly PL340 (230V) continued

QSC Part #	Description	Qty.	Reference	Comments
RE-214300-30	14.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R454, R455, R460, R461	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R423	
RE-229402-30	29.4K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R416	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R415, R421, R466	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R456, R457, R458, R459	
SW-000111-00	SWITCH, DPDT, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW405, SW406	
SW-000112-00	SWITCH, DP3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW403, SW404	
SW-000113-00	SWITCH, 3P3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW401, SW402	
WC-000338-00	RIBBON CABLE, , 26 AWG, 10 CONDUCTOR, PL380, 4.0" L INSULATION,	1	J411	

6.4 PL380 parts and assemblies

PL380 Power Amplifier (120V) (QSC part # FG-038000-00)

QSC Part #	Description	Qty.	Reference	Comments
CH-000579-00	COVER, BOTTOM, , PL3,	1		
LB-000208-00	AGENCY, CERTIFICATION, CLASS A, , FCC	1		
LB-000437-00	LABEL, WARNING, RAIN & MOISTURE, ,	1		
PM-000309-00	INSERT, SHIPPING, , PL380, ,	2		
PM-001401-00	BAG, SHIPPING, POLYPROPYLENE, SERIES 1, 20.5" X 12.5" X 24",	1		
PM-001601-00	CARTON, SHIPPING, , PL380, 23.2" X 21.2" X 5.5",	1		
PM-004001-00	PAD, SHIPPING, , EX/MXA, 21.2" X 23.2",	1		
RD-000001-00	LABEL, SHIPG CRTN , THERMAL	0		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	11		
TD-000235-00	OWNERS MANUAL, PL3 SERIES,	1		
TD-000254-00	MANUAL INSERT, CHINA ROHS, AMPLIFIERS,	1		
TS-000004-WR	3 YEARS WARRANTY	3		
WP-000001-00	ASSEMBLY, CATALOG KIT, , ,	1		
WP-000952-00	SHIP KIT, , PL3, ,	1		
WP-038000-00	CHASSIS ASSY, , PL380, 120V,	1		
WP-038001-00	PCB ASSY, , PL380, 120V,	1		

PL380 Power Amplifier (100V) (QSC part # FG-038000-01)

QSC Part #	Description	Qty.	Reference	Comments
CH-000579-00	COVER, BOTTOM, , PL3,	1		
LB-000437-00	LABEL, WARNING, RAIN & MOISTURE, ,	1		
PM-000309-00	INSERT, SHIPPING, , PL380, ,	2		
PM-001401-00	BAG, SHIPPING, POLYPROPYLENE, SERIES 1, 20.5" X 12.5" X 24",	1		
PM-001601-00	CARTON, SHIPPING, , PL380, 23.2" X 21.2" X 5.5",	1		
PM-004001-00	PAD, SHIPPING, , EX/MXA, 21.2" X 23.2",	1		
RD-000001-00	LABEL, SHIPG CRTN , THERMAL	0		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	11		
TD-000235-00	OWNERS MANUAL, PL3 SERIES,	1		
TD-000254-00	MANUAL INSERT, CHINA ROHS, AMPLIFIERS,	1		
TS-000004-WR	3 YEARS WARRANTY	3		
WP-000952-00	SHIP KIT, , PL3, ,	1		
WP-038000-01	CHASSIS ASSY, , PL380, 100V,	1		
WP-038001-01	PCB ASSY, , PL380, 100V,	1		

PL380 Power Amplifier (230V) (QSC part # FG-038000-02)

QSC Part #	Description	Qty.	Reference	Comments
CH-000579-00	COVER, BOTTOM, , PL3,	1		
LB-000437-00	LABEL, WARNING, RAIN & MOISTURE, ,	1		
PM-000309-00	INSERT, SHIPPING, , PL380, ,	2		
PM-001401-00	BAG, SHIPPING, POLYPROPYLENE, SERIES 1, 20.5" X 12.5" X 24",	1		
PM-001601-00	CARTON, SHIPPING, , PL380, 23.2" X 21.2" X 5.5",	1		
PM-004001-00	PAD, SHIPPING, , EX/MXA, 21.2" X 23.2",	1		
RD-000001-00	LABEL, SHIPG CRTN , THERMAL	0		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	11		
TD-000235-00	OWNERS MANUAL, PL3 SERIES,	1		
TD-000254-00	MANUAL INSERT, CHINA ROHS, AMPLIFIERS,	1		
TS-000004-WR	3 YEARS WARRANTY	3		
WC-000356-00	AC CORD ASSY, POWERCONN, 1.5MM2, 3 CONDUCTOR, PL3 SERIES, 100", 250VAC	1		
WP-000952-00	SHIP KIT, , PL3, ,	1		
WP-038000-02	CHASSIS ASSY, , PL380, 230V,	1		
WP-038001-02	PCB ASSY, , PL380, 230V,	1		

Chassis Assembly PL380 (120V) (QSC part # WP-038000-00)

QSC Part #	Description	Qty.	Reference	Comments
CH-000118-00	RACK EAR, FRONT, , CX902,	2		
CH-000496-00	CHASSIS, MAIN, , PL380,	1		
CH-000582-00	SHIELD, LINE FILTER, , PL380,	1		
CH-000696-00	BRACKET, STOP RING, AC, PL380,	1		
HW-040001-00	BRACKET, ANGLE, #4-40, 0.375" L, ZINC PLATED STEEL,	2		
HW-060090-SO	STANDOFF, 0.250" HEX, #6-32, 0.563" L, ALUMINUM, FEMALE	2		
LB-000077-00	WARNING, HIGH ENERGY, , PL 3RU,	1		

Chassis Assembly PL380 (120V) continued

QSC Part #	Description	Qty.	Reference	Comments
LB-000409-00	AGENCY, 68FA LISTING, HORIZONTAL, , UL/CUL	1		
LB-000439-00	LABEL, WIRE CLASS 2 AND 3, , ,	1		
LB-000652-00	PRODUCT, FACEPLATE, , PL3,	1		
LB-000655-00	PRODUCT, FACEPLATE, , PL380,	1		
LB-000673-50	LABEL, CHINA ROHS, 50 YEARS, , SMALL	1		
NW-000021-03	FLAT WASHER, 1.14", , STEEL, BLACK ZINC	1		
NW-000115-00	STEEL WASHER, 0.437" I.D., 0.628 O.D., STEEL 5702, ZINC PLATED CR3	1		
NW-060010-IT	LOCK WASHER, #6, INTERNAL TOOTH, , CR111	4		
PL-000054-00	KNOB, , PLX, POLYPROPYLENE/SANTOPRENE, BLACK,	2		
PL-000066-00	CLIP, CHRISTMAS TREE, , NYLON, BLACK,	2		
PL-000095-00	FAN INTERFACE, , PLX 2RU, POLYPROPYLENE, BLACK,	1		
PL-000514-00	INSULATOR, FAN DUCT, PL380, FISH PAPER, ,	1		
RD-000003-XX	LABEL, SERIAL NUMBER, PLX/DCA/PL/PL2A/CM16A/PL/DCM	0		
SC-025000-PP	PHILLIPS, PANHEAD, M2.5, 6MM, BLACK, THREAD FORMING, CR111	8		
SC-040041-PP	PHILLIPS, PANHEAD, #4-40, 0.25" L, BLACK, CR111	4		
SC-060042-PP	PHILLIPS, PANHEAD SEMS INTERNAL TOOTH, #6-32, 0.25" L, BLK, ZINC, CR111	2		
SC-060060-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #6-32, 0.375" L, ZINC, CR111	10		
SC-080122-HC	HEX, CAP, #8-32, 0.75" L, BLACK, CR111	2		
SC-080127-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #8-32, 0.75" L, ZINC, CR111	2		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	14		
SW-000037-00	AC SWITCH, DPST, 20A, 125VAC,	1		
SW-000158-00	CIRCUIT BREAKER, THERMAL, 30A, PL380 120V/100V	1		
WC-000016-03	RIBBON CABLE ASSY, , 28 AWG, 16 CONDUCTOR, PL 2RU, 15" L,	1		J7A TO J7B
WC-000238-00	RIBBON CABLE ASSY, , 28 AWG, 26 CONDUCTOR, , 7" L, AMP CORP ONLY	1		
WC-000346-00	WIRE ASSY, AC FILTER TO MAIN PCB, 12 AWG, 2 CONDUCTOR, PL380, 10.50" L, BLACK/RED	1		(BLACK: J15 TO J22), (RED: J19 TO J20)
WC-000351-00	AC CORD ASSY, 25 AMP 125V, 12 AWG, 3 CONDUCTOR, PL380, 65" L,	1		
WC-000358-00	WIRE ASSY, CIRCUIT BREAKER, 12AWG, 1 CONDUCTOR, PL380, 6" L, BLACK	1		
WP-000057-00	FAN ASSY, , PLC, ,	1		

Chassis Assembly PL380 (100V) (QSC part # WP-038000-01)

QSC Part #	Description	Qty.	Reference	Comments
CH-000118-00	RACK EAR, FRONT, , CX902,	2		
CH-000496-00	CHASSIS, MAIN, , PL380,	1		
CH-000582-00	SHIELD, LINE FILTER, , PL380,	1		
CH-000696-00	BRACKET, STOP RING, AC, PL380,	1		
HW-040001-00	BRACKET, ANGLE, #4-40, 0.375" L, ZINC PLATED STEEL,	2		
HW-060090-SO	STANDOFF, 0.250" HEX, #6-32, 0.563" L, ALUMINUM, FEMALE	2		
LB-000077-00	WARNING, HIGH ENERGY, , PL 3RU,	1		
LB-000439-00	LABEL, WIRE CLASS 2 AND 3, , ,	1		
LB-000652-00	PRODUCT, FACEPLATE, , PL3,	1		
LB-000655-00	PRODUCT, FACEPLATE, , PL380,	1		
LB-000673-50	LABEL, CHINA ROHS, 50 YEARS, , SMALL	1		
NW-000021-03	FLAT WASHER, 1.14", , STEEL, BLACK ZINC	1		
NW-000115-00	STEEL WASHER, 0.437" I.D., 0.628 O.D., STEEL 5702, ZINC PLATED CR3	1		
NW-060010-IT	LOCK WASHER, #6, INTERNAL TOOTH, , CR111	4		
PL-000054-00	KNOB, , PLX, POLYPROPYLENE/SANTOPRENE, BLACK,	2		
PL-000066-00	CLIP, CHRISTMAS TREE, , NYLON, BLACK,	2		
PL-000095-00	FAN INTERFACE, , PLX 2RU, POLYPROPYLENE, BLACK,	1		
PL-000514-00	INSULATOR, FAN DUCT, PL380, FISH PAPER, ,	1		
RD-000003-XX	LABEL, SERIAL NUMBER, PLX/DCA/PL/PL2A/CM16A/PL/DCM	0		
SC-025000-PP	PHILLIPS, PANHEAD, M2.5, 6MM, BLACK, THREAD FORMING, CR111	8		
SC-040041-PP	PHILLIPS, PANHEAD, #4-40, 0.25" L, BLACK, CR111	4		
SC-060042-PP	PHILLIPS, PANHEAD SEMS INTERNAL TOOTH, #6-32, 0.25" L, BLK, ZINC, CR111	2		
SC-060060-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #6-32, 0.375" L, ZINC, CR111	10		
SC-080122-HC	HEX, CAP, #8-32, 0.75" L, BLACK, CR111	2		
SC-080127-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #8-32, 0.75" L, ZINC, CR111	2		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	14		
SW-000037-00	AC SWITCH, DPST, 20A, 125VAC,	1		
SW-000158-00	CIRCUIT BREAKER, THERMAL, 30A, PL380 120V/100V	1		
WC-000016-03	RIBBON CABLE ASSY, , 28 AWG, 16 CONDUCTOR, PL 2RU, 15" L,	1		J7A TO J7B
WC-000238-00	RIBBON CABLE ASSY, , 28 AWG, 26 CONDUCTOR, , 7" L, AMP CORP ONLY	1		

Chassis Assembly PL380 (100V) continued

QSC Part #	Description	Qty.	Reference	Comments
WC-000346-00	WIRE ASSY, AC FILTER TO MAIN PCB, 12 AWG, 2 CONDUCTOR, PL380, 10.50" L, BLACK/RED	1		(BLACK: J15 TO J22), (RED: J19 TO J20)
WC-000351-00	AC CORD ASSY, 25 AMP 125V, 12 AWG, 3 CONDUCTOR, PL380, 65" L,	1		
WC-000358-00	WIRE ASSY, CIRCUIT BREAKER, 12AWG, 1 CONDUCTOR, PL380, 6" L, BLACK	1		
WP-000057-00	FAN ASSY, , PLC, ,	1		

Chassis Assembly PL380 (230V) (QSC part # WP-038000-02)

QSC Part #	Description	Qty.	Reference	Comments
CH-000118-00	RACK EAR, FRONT, , CX902,	2		
CH-000496-00	CHASSIS, MAIN, , PL380,	1		
CH-000582-00	SHIELD, LINE FILTER, , PL380,	1		
CH-000695-00	BRACKET, POWERCONN, , PL380,	1		
CO-000320-00	AC INLET, FLANGE MOUNT, 3 POS, FEMALE, POWERCON A-TYPE	1		
HW-040001-00	BRACKET, ANGLE, #4-40, 0.375" L, ZINC PLATED STEEL,	2		
HW-060090-SO	STANDOFF, 0.250" HEX, #6-32, 0.563" L, ALUMINUM, FEMALE	2		
LB-000077-00	WARNING, HIGH ENERGY, , PL 3RU,	1		
LB-000099-01	AGENCY, LISTING, , , CE	1		
LB-000439-00	LABEL, WIRE CLASS 2 AND 3, , ,	1		
LB-000652-00	PRODUCT, FACEPLATE, , PL3,	1		
LB-000655-00	PRODUCT, FACEPLATE, , PL380,	1		
LB-000673-50	LABEL, CHINA ROHS, 50 YEARS, , SMALL	1		
NW-000115-00	STEEL WASHER, 0.437" I.D., 0.628 O.D., STEEL 5702, ZINC PLATED CR3	1		
NW-060010-IT	LOCK WASHER, #6, INTERNAL TOOTH, , CR111	4		
PL-000054-00	KNOB, , PLX, POLYPROPYLENE/SANTOPRENE, BLACK,	2		
PL-000055-00	PLUG, BINDING POST, , POLYPROPYLENE, RED,	2		
PL-000056-00	PLUG, BINDING POST, , POLYPROPYLENE, BLACK,	2		
PL-000066-00	CLIP, CHRISTMAS TREE, , NYLON, BLACK,	2		
PL-000095-00	FAN INTERFACE, , PLX 2RU, POLYPROPYLENE, BLACK,	1		
PL-000514-00	INSULATOR, FAN DUCT, PL380, FISH PAPER, ,	1		
RD-000003-XX	LABEL, SERIAL NUMBER, PLX/DCA/PL/PL2A/CM16A/PL/DCM	0		
SC-025000-PP	PHILLIPS, PANHEAD, M2.5, 6MM, BLACK, THREAD FORMING, CR111	8		
SC-040041-PP	PHILLIPS, PANHEAD, #4-40, 0.25" L, BLACK, CR111	4		
SC-060042-PP	PHILLIPS, PANHEAD SEMS INTERNAL TOOTH, #6-32, 0.25" L, BLK, ZINC, CR111	2		
SC-060060-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #6-32, 0.375" L, ZINC, CR111	10		
SC-063081-PO	PHILLIPS, OVALHEAD, #6-20, 0.5 "L, BLACK, ZINC W/6107 LUBE, SELF TAPPING, CR111	2		
SC-080122-HC	HEX, CAP, #8-32, 0.75" L, BLACK, CR111	2		
SC-080127-PS	PHILLIPS, SEMS EXTERNAL TOOTH, #8-32, 0.75" L, ZINC, CR111	2		
SC-082051-PL	PHILLIPS, PANHEAD SERATED BASE, #8, 0.313" L, BLACK, CR111	16		
SW-000037-00	AC SWITCH, DPST, 20A, 125VAC,	1		
SW-000157-00	CIRCUIT BREAKER, THERMAL, 15A, PL380 230V	1		
WC-000016-03	RIBBON CABLE ASSY, , 28 AWG, 16 CONDUCTOR, PL 2RU, 15" L,	1		J7A TO J7B
WC-000238-00	RIBBON CABLE ASSY, , 28 AWG, 26 CONDUCTOR, , 7" L, AMP CORP ONLY	1		
WC-000343-00	CABLE ASSY, AC, 16 AWG, 3 CONDUCTOR, PL3, 5" L,	1		
WC-000346-00	WIRE ASSY, AC FILTER TO MAIN PCB, 12 AWG, 2 CONDUCTOR, PL380, 10.50" L, BLACK/RED	1		(BLACK: J15 TO J21), (RED: J19 TO J20)
WC-000358-00	WIRE ASSY, CIRCUIT BREAKER, 12AWG, 1 CONDUCTOR, PL380, 6" L, BLACK	1		
WP-000057-00	FAN ASSY, , PLC, ,	1		

PCB Assembly PL380 (120V) (QSC part # WP-038001-00) through January 2008

QSC Part #	Description	Qty.	Reference	Comments
CA-022004-30	22PF, 5 PCNT, 200V, CERAMIC NPO, 0805,	11	C3, C8, C13, C17, C79, C123, C125, C186, C224, C225, C310	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C38, C39, C137, C139, C145, C146	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	7	C34, C87, C88, C91–C93, C98	
CA-122003-30	220PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	3	C15, C16, C124	
CA-122009-00	220PF, 10 PCNT, 250VAC, CERAMIC CLASS X1/Y2, DISC, YCAP	3	C302, C303, C315	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	8	C58, C59, C94, C128, C141, C143, C150, C151	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	15	C10, C35, C37, C80–C86, C112, C113, C121, C142, C230	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	10	C25, C67, C68, C165, C166, C174, C175, C197–C199	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C2, C31, C36, C115, C138, C144, C200, C278, C304, C308, C309	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	3	C211, C234, C235	
CA-256001-30	0.0056UF, 10 PCNT, 200V, CERAMIC X7R, 1206,	16	C56, C57, C60, C163, C164, C167, C205, C237, C238, C252, C296, C297, C311, C313, C314, C316	
CA-310013-30	0.01UF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C21, C127	
CA-322008-30	0.022UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C55, C162	

PCB Assembly PL380 (120V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	7	C262, C263, C268, C269, C279, C317, C318	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	48	C1, C4–C7, C11, C14, C18, C22–C24, C26, C28, C33, C40, C41, C43–C45, C50, C52, C97, C99, C100, C110, C116–C119, C129–C134, C136, C140, C147, C148, C152, C157, C159, C188, C194, C251, C270, C271, C276	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	3	C20, C187, C221	
CA-410020-10	0.1UF, 5 PCNT, 50V, MYLAR, RADIAL,	2	C288, C291	
CA-410030-00	0.1UF, 10 PCNT, 250V, METALLIZED POLYESTER, DIPPED, MAX HEIGHT 0.433"	20	C63, C65, C66, C69, C70, C72–C76, C170, C172, C173, C176, C177, C179–C183	
CA-415002-10	0.15UF, 5 PCNT, 50V, FILM, DIPPED,	4	C286, C287, C290, C292	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	43	C27, C32, C42, C46, C53, C54, C103, C135, C149, C153, C160, C161, C168, C184, C189, C195, C196, C206, C207, C219, C220, C222, C223, C236, C241, C242, C245, C246, C255, C256, C261, C264–C267, C272–C274, C281, C298, C305–C307	
CA-422008-00	0.22UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C71, C178	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C293	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	2	C231, C232	
CA-447011-00	0.47UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C78, C185	
CA-510004-30	1.0UF, 20 PCNT, 50V, CERAMIC Z5U, 1210,	16	C49, C51, C62, C77, C156, C158, C226–C229, C257, C258, C282–C285	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C294, C295	
CA-515004-00	1.5UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C64, C171	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	2	C89, C90	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	13	C19, C47, C48, C104, C107, C111, C114, C126, C154, C155, C193, C275, C277	
CA-633001-00	33UF, 20 PCNT, 400V, ELECTROLYTIC, ,	2	C190, C191	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	9	C9, C61, C95, C96, C105, C106, C120, C169, C289	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	2	C108, C109	
CA-647007-30	47UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C192	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	18	C12, C101, C102, C122, C201–C204, C208, C212, C215, C218, C239, C240, C280, C299–C301	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	3	C243, C244, C312	
CA-833005-00	3300UF, 20 PCNT, 200V, ELECTROLYTIC, ,	14	C209, C210, C213, C214, C216, C217, C247–C250, C253, C254, C259, C260	
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	5		
CH-000104-01	HEAT SINK, PS, , PL380,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	3		
CH-000692-00	HEAT SINK, MAIN, , PL380,	1		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	6	J10, J15, J19, J20, J22, J24	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J13, J14	
CO-000056-CO	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, LATCHING BOX	1	J7B	
CO-000081-00	PIN JUMPER, SHUNT, 2 POS, ,	2		J9, SHORT PINS 3 & 4 AND PINS 5 & 6
CO-000092-00	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, BOX	1	J7A	
CO-000098-00	HEADER, 0.1" CENTERS, 26 POS (2X13), MALE, LATCHING BOX SHORT	2	J8A, J8B	
CO-000106-00	JACK, HD15, 15 POS, FEMALE, RIGHT ANGLE SWAGED JACK SCREW	1	J17	
CO-000148-00	XLR, NEUTRIK, 3 POS, FEMALE, VERTICAL	2	J3, J4	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J5	
CO-000161-00	JACK, EURO, 3 POS, FEMALE, BLACK	2	J16, J18	
CO-000171-00	XLR, NEUTRIK, 3 POS, MALE, VERTICAL	2	J1, J2	
CO-000232-00	HEADER, 0.1" CENTERS, 6 POS, MALE, RAMP LOCK	2	J6, J9	
CO-000329-00	WIRE HOLDER, RIBBON CABLE, 10 POS, FEMALE,	4		J11A, J11B, J12A, J12B
CY-000006-10	16.0000 MHZ, HC-49U, STRAIGHT LEAD PREP	1	Y1	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U49	
IC-000025-00	DRIVER, MOSFET, TC1427CPA, ,	1	U46	
IC-000040-00	VOLTAGE REGULATOR, -5V, MC7905CT, ,	1	U45	
IC-000041-00	VOLTAGE REGULATOR, +12V, MC7812CT, ,	4	U19, U20, U38, U39	
IC-000042-00	VOLTAGE REGULATOR, +5V, MC7805CT, ,	2	U44, U47	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	4	U16, U23, U25, U37	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U11	
IC-000048-30	OPAMP, DUAL, MC33078, ,	3	U21, U22, U51	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	1	U40	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U24	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	2	U2, U26	
IC-000088-30	NAND GATE, QUAD, 74AC00, SMT,	2	U9, U30	
IC-000106-30	D FLIP FLOP, DUAL, 74HC74, SMT,	2	U4, U7	
IC-000128-30	VOLTAGE REGULATOR, +5V, LM78L05, ,	5	U14, U15, U33, U34, U53	

PCB Assembly PL380 (120V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
IC-000130-30	VOLTAGE REGULATOR, -5V, LM79L05, ,	1	U48	
IC-000149-30	INVERTER, SCHMITT, HEX, 74LV14, SMT,	2	U5, U6	
IC-000229-00	VOLTAGE REGULATOR, +15V, LM7815CT, ,	1	U42	
IC-000230-00	VOLTAGE REGULATOR, -15V, LM7915CT, ,	1	U50	
IC-000315-00	SENSOR, TEMPERATURE, LM19CIZ, ,	2	U10, U29	
IC-000316-30	COUNTER, 14 STAGE, 74HC4060, SMT,	1	U1	
IC-000342-00	TOP SWITCH, , TOP244YN, ,	1	U41	
IC-000371-30	DRIVER, MOSFET, UCC37321D, SMT,	4	U17, U18, U35, U36	
IC-000446-30	OPTO COUPLER, HIGH SPEED CMOS, HCPL-0723, SMT,	4	U12, U13, U31, U32	
IC-000447-30	COMPARATOR, SINGLE, LT1016, SMT, HIGH SPEED	2	U8, U28	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U3, U27	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	1	F4	
MS-150250-FU	FUSE, 15A, 250V, 0.25" X 1.25", FAST	1	F1	
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD2, LD3, LD5, LD6	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD17	
PA-000043-00	PLATE ASSY, PLX, OUTPUT, ,	1	J23	
PA-000145-00	LED ASSY, GREEN, 0.850" SPACER, ,	2	LD11, LD14	
PA-000146-00	LED ASSY, YELLOW, 0.850" SPACER, ,	6	LD10, LD15, LD19, LD21, LD24, LD25	
PA-000147-00	LED ASSY, ORANGE, 0.850" SPACER, ,	4	LD12, LD13, LD18, LD23	
PC-038001-00	MAIN, PL380, , , (ECO 7962 IN PROCESS)	1		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	1		REF: D82, D83
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		REF: D84, D85
PL-000121-00	SPACER, LED/TO-92, 0.18", PVC, BLACK,	2		REF: U10, U29
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	5		
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		REF: LD1, LD4, LD7–LD9, LD16
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR4, VR5	
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	1	D65	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D86, D87	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	58	D1–D9, D20–D52, D55, D56, D63, D68, D72, D75–D77, D100, D101, D103, D105, D107–D110	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	30	Q1, Q3, Q15, Q16, Q26–Q28, Q30–Q32, Q37, Q44–Q46, Q49, Q51, Q63, Q64, Q66, Q67, Q70, Q71, Q75, Q77–Q79, Q81–Q84	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	39	Q2, Q4–Q7, Q14, Q17–Q25, Q29, Q33–Q36, Q38–Q43, Q48, Q50, Q52–Q55, Q62, Q65, Q72–Q74, Q76, Q80	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q8, Q13, Q56, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	4	Q9, Q12, Q57, Q60	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	23	D10, D11, D16–D19, D53, D54, D59–D62, D67, D88–D91, D94, D95, D98, D99, D102, D111	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	1	D66	
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	6	D69, D71, D78–D81	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D104	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q47	
QD-000157-10	DIODE, 1000V, 1.5A, , 1N5399, DO-15,	3	D64, D70, D106	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD4, LD16	(LD12,13,18,23 PL-000180-00: LD1,4,16; PL-000138-00)
QD-000187-00	LED BLUE, , , , , T-1,	1	LD9	(PL-000138-00)
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD7, LD8	(PL-000138-00)
QD-000244-30	DIODE SCHOTTKY, 40V, 2A, , MBRS2040LT3, SMB,	6	D73, D74, D92, D93, D96, D97	
QD-000297-30	LED YELLOW, , , , , 1206,	1	LD20	
QD-000315-00	IGBT, 600V, 75A, 250W, IXGR60N60C2, TO-247,	2	Q68, Q69	
QD-000316-00	DIODE SCHOTTKY, 80V, 35A, 190W, DSSS 35-008AR, TO-247AD,	2	D12, D13	
QD-000317-00	DIODE, 600V, 30A, 250W, DSEP30-06CR, TO-247 ISOL,	4	D14, D15, D57, D58	
QD-000318-00	MOSFET N-CHANNEL, 500V, 85A, 890W, IXFN80N50Q2, SOT-227B,	4	Q10, Q11, Q58, Q59	
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D82, D83	(TWO DIFF. PREP)
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D84, D85	(TWO DIFF. PREP)
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	8	R72, R73, R242, R243, R281, R288, R380, R381	
RE-.27001-10	2.7, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R295, R296	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	1	R283	
RE-000211-NR	NTC, 10 OHMS, 15 AMPS-250J, , , INRUSH LIMIT	2	R262, R266	

PCB Assembly PL380 (120V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	14	R60, R61, R63, R64, R230, R231, R233, R234, R269, R274, R275, R293, R294, R351	
RE-001008-10	10, 5 PCNT, 2W, METAL OXIDE FP, MINI,	4	R68, R69, R238, R239	
RE-002004-00	20.0, 20 PCNT, 100W, THICK FILM, TO-247,	4	R85, R86, R255, R256	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R128, R129, R287, R289, R292, R374	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R51, R221, R311	
RE-005606-10	56, 5 PCNT, 2W, METAL OXIDE FP, MINI,	6	R261, R263, R264, R267, R285, R286	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R62, R88–R91, R138, R232	
RE-010001-30	100, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R375, R376	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R11, R12, R20, R28, R83, R84, R183, R184, R191, R198, R253, R254, R302	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R65, R147, R235	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	11	R43, R44, R115, R122, R154, R156, R215, R217, R305, R370, R372	
RE-036501-30	365, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R297	Until June 2007
RE-047502-30	475,1 PCNT,1/10W,THICK FILM,0805,100V	1	R297	Beginning June 2007
RE-049901-30	499, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R46, R214	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R76, R77, R246, R247	
RE-063403-30	634, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R32, R112, R116, R202, R320, R323, R337, R386, R388	
RE-076801-30	768, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R148, R391	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R34, R74, R82, R146, R204, R244, R252, R392	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	7	R10, R96, R97, R159, R280, R282, R284	
RE-111301-30	1.13K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	27	R2, R14, R16, R31, R37–R39, R117, R127, R155, R175, R186, R188, R199, R206, R208, R209, R322, R327, R360, R363, R378, R379, R384, R385, R387, R389	
RE-114002-30	1.40K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R298	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R26, R136	
RE-116901-30	1.69K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R314, R315, R324, R326, R339, R352, R353, R369, R371	
RE-117401-30	1.74K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R41, R71, R211, R241, R331	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R13, R49, R50, R185, R219, R220	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R158, R164, R165, R169, R170, R330	
RE-124902-30	2.49K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R18, R153, R192	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R19, R21, R53, R54, R150, R190, R223, R224, R321, R325, R341, R343, R345, R347, R354	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R29, R201, R271	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R1, R3, R57, R58, R110, R120, R126, R176, R177, R227, R228, R336, R338	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R113, R149, R152, R301, R356	
RE-146401-30	4.64K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R357	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R9, R48, R98, R99, R106, R107, R143, R182, R218, R299, R328, R361, R362, R364, R365	
RE-152301-30	5.23K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R5, R178	
RE-156202-30	5.62K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R92–R95, R100–R103	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R111, R114, R132, R310, R366	
RE-163402-30	6.34K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R27, R197, R355	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R22, R30, R45, R80, R81, R141, R193, R200, R213, R250, R251, R317, R318	
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R7, R8, R15, R40, R157, R172, R173, R180, R181, R187, R210, R340, R342, R344, R346	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R134, R276, R277	
RE-210009-30	10.0K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R104, R105, R108, R109	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R25, R151, R196	
RE-214300-30	14.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R306, R333, R335	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R42, R52, R118, R119, R121, R124, R125, R131, R137, R162, R212, R222, R268, R313, R329	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R47, R66, R67, R135, R160, R216, R236, R237	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R78, R79, R87, R248, R249, R257, R260, R373	
RE-229402-30	29.4K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R300	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R75, R245, R278, R279, R303, R307, R308	
RE-230102-30	30.1K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R59, R229, R358, R359, R383, R390	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R23, R144, R145, R194, R332, R334, R377	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R6, R133, R179, R265, R316, R319	
RE-269801-30	69.8K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R270, R290, R291	
RE-275001-BM	75.0K, 1 PCNT, 1/4W, METAL FILM, ,	2	R24, R195	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R123, R130, R142, R161, R367	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	9	R33, R35, R36, R203, R205, R207, R348–R350	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R55, R56, R139, R140, R163, R166, R225, R226, R258, R259, R309, R368	
RE-324302-30	243K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R167, R168, R312	

PCB Assembly PL380 (120V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R17, R189, R304	
RE-339202-30	392K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R171, R174	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R70, R240, R272, R273	
RE-510001-30	10M, 1 PCNT, 1/8W, THK FLM, 1206, 200V	1	R4	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	12		
SC-080124-HC	HEX, CAP, #8-32, 0.375" L, BLACK, CR111	8		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	6		
SW-000105-00	RELAY, DPDT, 12VDC, 16A, 250VAC,	1	K2	
SW-000109-00	RELAY, DPST, 24VDC COIL, 30A, 250VAC,	1	K1	
SW-000111-00	SWITCH, DPDT, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW5, SW6	
SW-000112-00	SWITCH, DP3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW2, SW7	
SW-000113-00	SWITCH, 3P3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW3, SW4	
WC-0.3514-JW	JUMPER, BARE, 14 AWG SOLID, 1 CONDUCTOR, , 0.35" L,	1	W1	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W2, W5	
WC-000338-00	RIBBON CABLE, , 26 AWG, 10 CONDUCTOR, PL380, 4.0" L INSULATION,	2	J11, J12	J11A TO J11B, J12A TO J12B
WC-000345-00	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 9.00" L, BLACK/WHITE	1	W9, W10	WHITE: W9A-W9B & W9C-W9D, BLACK: W10A-W10B & W10C-W10D
WC-000345-01	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 14.00" L, BLACK/GREY	1	W13, W14	GREY: W13A-W13B & W13C-W13D, BLACK: W14A-W14B & W14C-W14D
WC-000347-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 14.00" L, BLACK	1	W18	W18-SWITCH
WC-000347-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 7.00" L, RED	1	W17	W17-SWITCH
XF-000108-30	BEAD, 100MHZ, 50 OHM, SMT	9	L5, L6, L8–L14	
XF-000204-00	HOUSEKEEPING, FLYBACK, , , , EVICTOR, ,	1	T1	
XF-000287-00	TRANSFORMER, GATE DRIVE, , TOROID, , , , P0584	2	T3, T4	
XF-000297-00	INDUCTOR, , TOROID, 40UH, PL380, ,	2	L1, L3	
XF-000298-00	TRANSFORMER, SWITCHING, 125KHZ, E55, 2000W, PL380, ,	1	T2	
XF-000306-00	INDUCTOR, COUPLED, , 1.8UH, PL380, ,	2	L2, L4	
XF-000307-00	INDUCTOR, COMMON MODE, TOROID, 3.2MH, PL380, ,	2	L15, L16	

PCB Assembly PL380 (100V) (QSC part # WP-038001-01) through January 2008

QSC Part #	Description	Qty.	Reference	Comments
CA-022004-30	22PF, 5 PCNT, 200V, CERAMIC NPO, 0805,	11	C3, C8, C13, C17, C79, C123, C125, C186, C224, C225, C310	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C38, C39, C137, C139, C145, C146	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	7	C34, C87, C88, C91–C93, C98	
CA-122003-30	220PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	3	C15, C16, C124	
CA-122009-00	220PF, 10 PCNT, 250VAC, CERAMIC CLASS X1/Y2, DISC, YCAP	3	C302, C303, C315	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	8	C58, C59, C94, C128, C141, C143, C150, C151	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	15	C10, C35, C37, C80–C86, C112, C113, C121, C142, C230	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	10	C25, C67, C68, C165, C166, C174, C175, C197–C199	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C2, C31, C36, C115, C138, C144, C200, C278, C304, C308, C309	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	3	C211, C234, C235	
CA-256001-30	0.0056UF, 10 PCNT, 200V, CERAMIC X7R, 1206,	16	C56, C57, C60, C163, C164, C167, C205, C237, C238, C252, C296, C297, C311, C313, C314, C316	
CA-310013-30	0.01UF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C21, C127	
CA-322008-30	0.022UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C55, C162	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	7	C262, C263, C268, C269, C279, C317, C318	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	48	C1, C4–C7, C11, C14, C18, C22–C24, C26, C28, C33, C40, C41, C43–C45, C50, C52, C97, C99, C100, C110, C116–C119, C129–C134, C136, C140, C147, C148, C152, C157, C159, C188, C194, C251, C270, C271, C276	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	3	C20, C187, C221	
CA-410020-10	0.1UF, 5 PCNT, 50V, MYLAR, RADIAL,	2	C288, C291	
CA-410030-00	0.1UF, 10 PCNT, 250V, METALLIZED POLYESTER, DIPPED, MAX HEIGHT 0.433"	20	C63, C65, C66, C69, C70, C72–C76, C170, C172, C173, C176, C177, C179–C183,	
CA-415002-10	0.15UF, 5 PCNT, 50V, FILM, DIPPED,	4	C286, C287, C290, C292	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	43	C27, C32, C42, C46, C53, C54, C103, C135, C149, C153, C160, C161, C168, C184, C189, C195, C196, C206, C207, C219, C220, C222, C223, C236, C241, C242, C245, C246, C255, C256, C261, C264–C267, C272–C274, C281, C298, C305–C307	
CA-422008-00	0.22UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C71, C178	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C293	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	2	C231, C232	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	1	C233	SPECIAL LEAD PREP: LEAD LENGTH = 0.90"

PCB Assembly PL380 (100V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
CA-447011-00	0.47UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C78, C185	
CA-510004-30	1.0UF, 20 PCNT, 50V, CERAMIC Z5U, 1210,	16	C49, C51, C62, C77, C156, C158, C226–C229, C257, C258, C282–C285	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C294, C295	
CA-515004-00	1.5UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C64, C171	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	2	C89, C90	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	13	C19, C47, C48, C104, C107, C111, C114, C126, C154, C155, C193, C275, C277	
CA-633001-00	33UF, 20 PCNT, 400V, ELECTROLYTIC, ,	2	C190, C191	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	9	C9, C61, C95, C96, C105, C106, C120, C169, C289	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	2	C108, C109	
CA-647007-30	47UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C192	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	18	C12, C101, C102, C122, C201–C204, C208, C212, C215, C218, C239, C240, C280, C299, C300, C301	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	3	C243, C244, C312	
CA-833005-00	3300UF, 20 PCNT, 200V, ELECTROLYTIC, ,	14	C209, C210, C213, C214, C216, C217, C247–C250, C253, C254, C259, C260	
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	5		
CH-000104-01	HEAT SINK, PS, , PL380,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	3		
CH-000692-00	HEAT SINK, MAIN, , PL380,	1		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	6	J10, J15, J19, J20, J22, J24	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J13, J14	
CO-000056-CO	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, LATCHING BOX	1	J7B	
CO-000081-00	PIN JUMPER, SHUNT, 2 POS, ,	2		J9, SHORT PINS 3 & 4 AND PINS 5 & 6
CO-000092-00	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, BOX	1	J7A	
CO-000098-00	HEADER, 0.1" CENTERS, 26 POS (2X13), MALE, LATCHING BOX SHORT	2	J8A, J8B	
CO-000106-00	JACK, HD15, 15 POS, FEMALE, RIGHT ANGLE SWAGED JACK SCREW	1	J17	
CO-000148-00	XLR, NEUTRIK, 3 POS, FEMALE, VERTICAL	2	J3, J4	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J5	
CO-000161-00	JACK, EURO, 3 POS, FEMALE, BLACK	2	J16, J18	
CO-000171-00	XLR, NEUTRIK, 3 POS, MALE, VERTICAL	2	J1, J2	
CO-000232-00	HEADER, 0.1" CENTERS, 6 POS, MALE, RAMP LOCK	2	J6, J9	
CO-000329-00	WIRE HOLDER, RIBBON CABLE, 10 POS, FEMALE,	4		J11A, J11B, J12A, J12B
CY-000006-10	16.0000 MHZ, HC-49U, STRAIGHT LEAD PREP	1	Y1	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U49	
IC-000025-00	DRIVER, MOSFET, TC1427CPA, ,	1	U46	
IC-000040-00	VOLTAGE REGULATOR, -5V, MC7905CT, ,	1	U45	
IC-000041-00	VOLTAGE REGULATOR, +12V, MC7812CT, ,	4	U19, U20, U38, U39	
IC-000042-00	VOLTAGE REGULATOR, +5V, MC7805CT, ,	2	U44, U47	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	4	U16, U23, U25, U37	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U11	
IC-000048-30	OPAMP, DUAL, MC33078, ,	3	U21, U22, U51	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	1	U40	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U24	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	2	U2, U26	
IC-000088-30	NAND GATE, QUAD, 74AC00, SMT,	2	U9, U30	
IC-000106-30	D FLIP FLOP, DUAL, 74HC74, SMT,	2	U4, U7	
IC-000128-30	VOLTAGE REGULATOR, +5V, LM78L05, ,	5	U14, U15, U33, U34, U53	
IC-000130-30	VOLTAGE REGULATOR, -5V, LM79L05, ,	1	U48	
IC-000149-30	INVERTER, SCHMITT, HEX, 74LV14, SMT,	2	U5, U6	
IC-000229-00	VOLTAGE REGULATOR, +15V, LM7815CT, ,	1	U42	
IC-000230-00	VOLTAGE REGULATOR, -15V, LM7915CT, ,	1	U50	
IC-000315-00	SENSOR, TEMPERATURE, LM19CIZ, ,	2	U10, U29	
IC-000316-30	COUNTER, 14 STAGE, 74HC4060, SMT,	1	U1	
IC-000342-00	TOP SWITCH, , TOP244YN, ,	1	U41	
IC-000371-30	DRIVER, MOSFET, UCC37321D, SMT,	4	U17, U18, U35, U36	
IC-000446-30	OPTO COUPLER, HIGH SPEED CMOS, HCPL-0723, SMT,	4	U12, U13, U31, U32	
IC-000447-30	COMPARATOR, SINGLE, LT1016, SMT, HIGH SPEED	2	U8, U28	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U3, U27	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	1	F4	
MS-150250-FU	FUSE, 15A, 250V, 0.25" X 1.25", FAST	1	F1	

PCB Assembly PL380 (100V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD2, LD3, LD5, LD6	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD17	
PA-000043-00	PLATE ASSY, PLX, OUTPUT, ,	1	J23	
PA-000145-00	LED ASSY, GREEN, 0.850" SPACER, ,	2	LD11, LD14	
PA-000146-00	LED ASSY, YELLOW, 0.850" SPACER, ,	6	LD10, LD15, LD19, LD21, LD24, LD25	
PA-000147-00	LED ASSY, ORANGE, 0.850" SPACER, ,	4	LD12, LD13, LD18, LD23	
PC-038001-00	MAIN, PL380, , , (ECO 7962 IN PROCESS)	1		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	1		REF: D82, D83
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		REF: D84, D85
PL-000121-00	SPACER, LED/TO-92, 0.18", PVC, BLACK,	2		REF: U10, U29
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	5		
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		REF: LD1, LD4, LD7–LD9, LD16
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR4, VR5	
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	1	D65	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D86, D87	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	58	D1–D9, D20–D52, D55, D56, D63, D68, D72, D75–D77, D100, D101, D103, D105, D107–D110	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	30	Q1, Q3, Q15, Q16, Q26–Q28, Q30–Q32, Q37, Q44–Q46, Q49, Q51, Q63, Q64, Q66, Q67, Q70, Q71, Q75, Q77–Q79, Q81–Q84	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	39	Q2, Q4–Q7, Q14, Q17–Q25, Q29, Q33–Q36, Q38–Q43, Q48, Q50, Q52–Q55, Q62, Q65, Q72–Q74, Q76, Q80	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q8, Q13, Q56, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	4	Q9, Q12, Q57, Q60	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	23	D10, D11, D16–D19, D53, D54, D59–D62, D67, D88–D91, D94, D95, D98, D99, D102, D111	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	1	D66	
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	6	D69, D71, D78–D81	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D104	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q47	
QD-000157-10	DIODE, 1000V, 1.5A, , 1N5399, DO-15,	3	D64, D70, D106	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD4, LD16	(LD12, LD13, LD18, LD23 PL-000180-00: LD1, LD4, LD16; PL-000138-00)
QD-000187-00	LED BLUE, , , , , T-1,	1	LD9	(PL-000138-00)
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD7, LD8	(PL-000138-00)
QD-000244-30	DIODE SCHOTTKY, 40V, 2A, , MBRS2040LT3, SMB,	6	D73, D74, D92, D93, D96, D97	
QD-000297-30	LED YELLOW, , , , , 1206,	1	LD20	
QD-000315-00	IGBT, 600V, 75A, 250W, IXGR60N60C2, TO-247,	2	Q68, Q69	
QD-000316-00	DIODE SCHOTTKY, 80V, 35A, 190W, DSSS 35-008AR, TO-247AD,	2	D12, D13	
QD-000317-00	DIODE, 600V, 30A, 250W, DSEP30-06CR, TO-247 ISOL,	4	D14, D15, D57, D58	
QD-000318-00	MOSFET N-CHANNEL, 500V, 85A, 890W, IXFN80N50Q2, SOT-227B,	4	Q10, Q11, Q58, Q59	
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D82, D83	(TWO DIFF. PREP)
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D84, D85	(TWO DIFF. PREP)
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	8	R72, R73, R242, R243, R281, R288, R380, R381	
RE-.27001-10	2.7, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R295, R296	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	1	R283	
RE-000211-NR	NTC, 10 OHMS, 15 AMPS-250J, , , INRUSH LIMIT	2	R262, R266	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	14	R60, R61, R63, R64, R230, R231, R233, R234, R269, R274, R275, R293, R294, R351	
RE-001008-10	10, 5 PCNT, 2W, METAL OXIDE FP, MINI,	4	R68, R69, R238, R239	
RE-002004-00	20.0, 20 PCNT, 100W, THICK FILM, TO-247,	4	R85, R86, R255, R256	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R128, R129, R287, R289, R292, R374	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R51, R221, R311	
RE-005606-10	56, 5 PCNT, 2W, METAL OXIDE FP, MINI,	6	R261, R263, R264, R267, R285, R286	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R62, R88–R91, R138, R232	
RE-010001-30	100, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R375, R376	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R11, R12, R20, R28, R83, R84, R183, R184, R191, R198, R253, R254, R302	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R65, R147, R235	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	11	R43, R44, R115, R122, R154, R156, R215, R217, R305, R370, R372	
RE-036501-30	365, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R297	Until June 2007
RE-047502-30	475,1 PCNT,1/10W,THICK FILM,0805,100V	1	R297	Beginning June 2007
RE-049901-30	499, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R46, R214	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R76, R77, R246, R247	

PCB Assembly PL380 (100V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
RE-063403-30	634, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R32, R112, R116, R202, R320, R323, R337, R386, R388	
RE-076801-30	768, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R148, R391	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R34, R74, R82, R146, R204, R244, R252, R392	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	7	R10, R96, R97, R159, R280, R282, R284	
RE-111301-30	1.13K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	27	R2, R14, R16, R31, R37–R39, R117, R127, R155, R175, R186, R188, R199, R206, R208, R209, R322, R327, R360, R363, R378, R379, R384, R385, R387, R389	
RE-114002-30	1.40K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R298	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R26, R136	
RE-116901-30	1.69K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R314, R315, R324, R326, R339, R352, R353, R369, R371	
RE-117401-30	1.74K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R41, R71, R211, R241, R331	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R13, R49, R50, R185, R219, R220	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R158, R164, R165, R169, R170, R330	
RE-124902-30	2.49K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R18, R153, R192	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R19, R21, R53, R54, R150, R190, R223, R224, R321, R325, R341, R343, R345, R347, R354	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R29, R201, R271	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R1, R3, R57, R58, R110, R120, R126, R176, R177, R227, R228, R336, R338	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R113, R149, R152, R301, R356	
RE-146401-30	4.64K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R357	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R9, R48, R98, R99, R106, R107, R143, R182, R218, R299, R328, R361, R362, R364, R365	
RE-152301-30	5.23K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R5, R178	
RE-156202-30	5.62K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R92–R95, R100–R103	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R111, R114, R132, R310, R366	
RE-163402-30	6.34K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R27, R197, R355	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R22, R30, R45, R80, R81, R141, R193, R200, R213, R250, R251, R317, R318	
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R7, R8, R15, R40, R157, R172, R173, R180, R181, R187, R210, R340, R342, R344, R346	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R134, R276, R277	
RE-210009-30	10.0K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R104, R105, R108, R109	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R25, R151, R196	
RE-214300-30	14.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R306, R333, R335	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R42, R52, R118, R119, R121, R124, R125, R131, R137, R162, R212, R222, R268, R313, R329	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R47, R66, R67, R135, R160, R216, R236, R237	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R78, R79, R87, R248, R249, R257, R260, R373	
RE-229402-30	29.4K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R300, R382	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R75, R245, R278, R279, R303, R307, R308	
RE-230102-30	30.1K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R59, R229, R358, R359, R383, R390	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R23, R144, R145, R332, R334, R194, R377	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R6, R133, R179, R265, R316, R319	
RE-269801-30	69.8K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R270, R290, R291	
RE-275001-BM	75.0K, 1 PCNT, 1/4W, METAL FILM, ,	2	R24, R195	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R123, R130, R142, R161, R367	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	9	R33, R35, R36, R203, R205, R207, R348–R350	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R55, R56, R139, R140, R163, R166, R225, R226, R258, R259, R309, R368	
RE-324302-30	243K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R167, R168, R312	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R17, R189, R304	
RE-339202-30	392K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R171, R174	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R70, R240, R272, R273	
RE-510001-30	10M, 1 PCNT, 1/8W, THK FLM, 1206, 200V	1	R4	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	12		
SC-080124-HC	HEX, CAP, #8-32, 0.375" L, BLACK, CR111	8		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	6		
SW-000105-00	RELAY, DPDT, 12VDC, 16A, 250VAC,	1	K2	
SW-000109-00	RELAY, DPST, 24VDC COIL, 30A, 250VAC,	1	K1	
SW-000111-00	SWITCH, DPDT, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW5, SW6	
SW-000112-00	SWITCH, DP3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW2, SW7	
SW-000113-00	SWITCH, 3P3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW3, SW4	
WC-0.3514-JW	JUMPER, BARE, 14 AWG SOLID, 1 CONDUCTOR, , 0.35" L,	1	W1	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W2, W5	
WC-000338-00	RIBBON CABLE, , 26 AWG, 10 CONDUCTOR, PL380, 4.0" L INSULATION,	2	J11, J12	J11A TO J11B, J12A TO J12B

PCB Assembly PL380 (100V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
WC-000345-00	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 9.00" L, BLACK/WHITE	1	W9, W10	WHITE: W9A-W9B & W9C-W9D, BLACK: W10A-W10B & W10C-W10D
WC-000345-01	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 14.00" L, BLACK/GREY	1	W13, W14	GREY: W13A-W13B & W13C-W13D, BLACK: W14A-W14B & W14C-W14D
WC-000347-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 14.00" L, BLACK	1	W18	W18-SWITCH
WC-000347-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 7.00" L, RED	1	W17	W17-SWITCH
XF-000108-30	BEAD, 100MHZ, 50 OHM, SMT	9	L5, L6, L8–L14	
XF-000204-00	HOUSEKEEPING, FLYBACK, , , , EVICTOR, ,	1	T1	
XF-000287-00	TRANSFORMER, GATE DRIVE, , TOROID, , , , P0584	2	T3, T4	
XF-000297-00	INDUCTOR, , TOROID, 40UH, PL380, ,	2	L1, L3	
XF-000306-00	INDUCTOR, COUPLED, , 1.8UH, PL380, ,	2	L2, L4	
XF-000307-00	INDUCTOR, COMMON MODE, TOROID, 3.2MH, PL380, ,	2	L15, L16	
XF-000338-00	TRANSFORMER, SWITCHING, 125KHZ, E55, 2000W, PL380, 100V,	1	T2	

PCB Assembly PL380 (230V) (QSC part # WP-038001-02) through January 2008

QSC Part #	Description	Qty.	Reference	Comments
CA-022004-30	22PF, 5 PCNT, 200V, CERAMIC NPO, 0805,	11	C3, C8, C13, C17, C79, C123, C125, C186, C224, C225, C310	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C38, C39, C137, C139, C145, C146	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	7	C34, C87, C88, C91–C93, C98	
CA-122003-30	220PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	3	C15, C16, C124	
CA-122009-00	220PF, 10 PCNT, 250VAC, CERAMIC CLASS X1/Y2, DISC, YCAP	3	C302, C303, C315	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	8	C58, C59, C94, C128, C141, C143, C150, C151	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	15	C10, C35, C37, C80–C86, C112, C113, C121, C142, C230	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	10	C25, C67, C68, C165, C166, C174, C175, C197–C199	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C2, C31, C36, C115, C138, C144, C200, C278, C304, C308, C309	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	3	C211, C234, C235	
CA-256001-30	0.0056UF, 10 PCNT, 200V, CERAMIC X7R, 1206,	16	C56, C57, C60, C163, C164, C167, C205, C237, C238, C252, C296, C297, C313, C314, C316, C311	
CA-310013-30	0.01UF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C21, C127	
CA-322008-30	0.022UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C55, C162	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	7	C262, C263, C268, C269, C279, C317, C318	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	48	C1, C4–C7, C11, C14, C18, C22–C24, C26, C28, C33, C40, C41, C43–C45, C50, C52, C97, C99, C100, C110, C116–C119, C129–C134, C136, C140, C147, C148, C152, C157, C159, C188, C194, C251, C270, C271, C276	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	3	C20, C187, C221	
CA-410020-10	0.1UF, 5 PCNT, 50V, MYLAR, RADIAL,	2	C288, C291	
CA-410030-00	0.1UF, 10 PCNT, 250V, METALLIZED POLYESTER, DIPPED, MAX HEIGHT 0.433"	20	C63, C65, C66, C69, C70, C72–C76, C170, C172, C173, C176, C177, C179–C183	
CA-415002-10	0.15UF, 5 PCNT, 50V, FILM, DIPPED,	4	C286, C287, C290, C292	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	43	C27, C32, C42, C46, C53, C54, C103, C135, C149, C153, C160, C161, C168, C184, C189, C195, C196, C206, C207, C219, C220, C222, C223, C236, C241, C242, C245, C246, C255, C256, C261, C264–C267, C272–C274, C281, C298, C305–C307	
CA-422008-00	0.22UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C71, C178	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C293	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	2	C231, C232	
CA-447011-00	0.47UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C78, C185	
CA-510004-30	1.0UF, 20 PCNT, 50V, CERAMIC Z5U, 1210,	16	C49, C51, C62, C77, C156, C158, C226–C229, C257, C258, C282–C285	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C294, C295	
CA-515004-00	1.5UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C64, C171	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	2	C89, C90	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	13	C19, C47, C48, C104, C107, C111, C114, C126, C154, C155, C193, C275, C277	
CA-633001-00	33UF, 20 PCNT, 400V, ELECTROLYTIC, ,	2	C190, C191	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	9	C9, C61, C95, C96, C105, C106, C120, C169, C289	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	2	C108, C109	
CA-647007-30	47UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C192	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	18	C12, C101, C102, C122, C201–C204, C208, C212, C215, C218, C239, C240, C280, C299, C300, C301	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	3	C243, C244, C312	
CA-833005-00	3300UF, 20 PCNT, 200V, ELECTROLYTIC, ,	14	C209, C210, C213, C214, C216, C217, C247–C250, C253, C254, C259, C260	
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	5		
CH-000104-01	HEAT SINK, PS, , PL380,	2		

PCB Assembly PL380 (230V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	3		
CH-000692-00	HEAT SINK, MAIN, , PL380,	1		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	6	J10, J15, J19, J20, J21, J24	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J13, J14	
CO-000056-CO	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, LATCHING BOX	1	J7B	
CO-000081-00	PIN JUMPER, SHUNT, 2 POS, ,	2		J9, SHORT PINS 3 & 4 AND PINS 5 & 6
CO-000092-00	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, BOX	1	J7A	
CO-000098-00	HEADER, 0.1" CENTERS, 26 POS (2X13), MALE, LATCHING BOX SHORT	2	J8A, J8B	
CO-000106-00	JACK, HD15, 15 POS, FEMALE, RIGHT ANGLE SWAGED JACK SCREW	1	J17	
CO-000148-00	XLR, NEUTRIK, 3 POS, FEMALE, VERTICAL	2	J3, J4	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J5	
CO-000161-00	JACK, EURO, 3 POS, FEMALE, BLACK	2	J16, J18	
CO-000171-00	XLR, NEUTRIK, 3 POS, MALE, VERTICAL	2	J1, J2	
CO-000232-00	HEADER, 0.1" CENTERS, 6 POS, MALE, RAMP LOCK	2	J9, J6	
CO-000329-00	WIRE HOLDER, RIBBON CABLE, 10 POS, FEMALE,	4		J11A, J11B, J12A, J12B
CY-000006-10	16.0000 MHZ, HC-49U, STRAIGHT LEAD PREP	1	Y1	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U49	
IC-000025-00	DRIVER, MOSFET, TC1427CPA, ,	1	U46	
IC-000040-00	VOLTAGE REGULATOR, -5V, MC7905CT, ,	1	U45	
IC-000041-00	VOLTAGE REGULATOR, +12V, MC7812CT, ,	4	U19, U20, U38, U39	
IC-000042-00	VOLTAGE REGULATOR, +5V, MC7805CT, ,	2	U44, U47	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	4	U16, U23, U25, U37	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U11	
IC-000048-30	OPAMP, DUAL, MC33078, ,	3	U21, U22, U51	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	1	U40	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U24	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	2	U2, U26	
IC-000088-30	NAND GATE, QUAD, 74AC00, SMT,	2	U30, U9	
IC-000106-30	D FLIP FLOP, DUAL, 74HC74, SMT,	2	U4, U7	
IC-000128-30	VOLTAGE REGULATOR, +5V, LM78L05, ,	5	U14, U15, U33, U34, U53	
IC-000130-30	VOLTAGE REGULATOR, -5V, LM79L05, ,	1	U48	
IC-000149-30	INVERTER, SCHMITT, HEX, 74LV14, SMT,	2	U5, U6	
IC-000229-00	VOLTAGE REGULATOR, +15V, LM7815CT, ,	1	U42	
IC-000230-00	VOLTAGE REGULATOR, -15V, LM7915CT, ,	1	U50	
IC-000315-00	SENSOR, TEMPERATURE, LM19CIZ, ,	2	U10, U29	
IC-000316-30	COUNTER, 14 STAGE, 74HC4060, SMT,	1	U1	
IC-000342-00	TOP SWITCH, , TOP244YN, ,	1	U41	
IC-000371-30	DRIVER, MOSFET, UCC37321D, SMT,	4	U17, U18, U35, U36	
IC-000446-30	OPTO COUPLER, HIGH SPEED CMOS, HCPL-0723, SMT,	4	U12, U13, U31, U32	
IC-000447-30	COMPARATOR, SINGLE, LT1016, SMT, HIGH SPEED	2	U28, U8	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U27, U3	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	1	F4	
MS-150250-FU	FUSE, 15A, 250V, 0.25" X 1.25", FAST	1	F1	
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD2, LD3, LD5, LD6	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD17	
PA-000043-00	PLATE ASSY, PLX, OUTPUT, ,	1	J23	
PA-000145-00	LED ASSY, GREEN, 0.850" SPACER, ,	2	LD11, LD14	
PA-000146-00	LED ASSY, YELLOW, 0.850" SPACER, ,	6	LD10, LD15, LD19, LD21, LD24, LD25	
PA-000147-00	LED ASSY, ORANGE, 0.850" SPACER, ,	4	LD12, LD13, LD18, LD23	
PC-038001-00	MAIN, PL380, , , (ECO 7962 IN PROCESS)	1		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	1		REF: D82, D83
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		REF: D84, D85
PL-000121-00	SPACER, LED/TO-92, 0.18", PVC, BLACK,	2		REF: U10, U29
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	5		
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		REF: LD1, LD4, LD7–LD9, LD16
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR4, VR5	
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	1	D65	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D86, D87	

PCB Assembly PL380 (230V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	58	D1–D9, D20–D52, D55, D56, D63, D68, D72, D75–D77, D100, D101, D103, D105, D107–D110	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	30	Q1, Q3, Q15, Q16, Q26–Q28, Q30–Q32, Q37, Q44–Q46, Q49, Q51, Q63, Q64, Q66, Q67, Q70, Q71, Q75, Q77–Q79, Q81–Q84	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	39	Q2, Q4–Q7, Q14, Q17–Q25, Q29, Q33–Q36, Q38–Q43, Q48, Q50, Q52–Q55, Q62, Q65, Q72–Q74, Q76, Q80	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q8, Q13, Q56, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	4	Q9, Q12, Q57, Q60	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	23	D10, D11, D16–D19, D53, D54, D59–D62, D67, D88–D91, D94, D95, D98, D99, D102, D111	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	1	D66	
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	6	D69, D71, D78–D81	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D104	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q47	
QD-000157-10	DIODE, 1000V, 1.5A, , 1N5399, DO-15,	3	D64, D70, D106	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD4, LD16	(LD12, LD13, LD18, LD23 PL-000180-00: LD1, LD4, LD16; PL-000138-00)
QD-000187-00	LED BLUE, , , , , T-1,	1	LD9	(PL-000138-00)
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD7, LD8	(PL-000138-00)
QD-000244-30	DIODE SCHOTTKY, 40V, 2A, , MBRS2040LT3, SMB,	6	D73, D74, D92, D93, D96, D97	
QD-000297-30	LED YELLOW, , , , , 1206,	1	LD20	
QD-000315-00	IGBT, 600V, 75A, 250W, IXGR60N60C2, TO-247,	2	Q68, Q69	
QD-000316-00	DIODE SCHOTTKY, 80V, 35A, 190W, DSSS 35-008AR, TO-247AD,	2	D12, D13	
QD-000317-00	DIODE, 600V, 30A, 250W, DSEP30-06CR, TO-247 ISOL,	4	D14, D15, D57, D58	
QD-000318-00	MOSFET N-CHANNEL, 500V, 85A, 890W, IXFN80N50Q2, SOT-227B,	4	Q10, Q11, Q58, Q59	
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D82, D83	(TWO DIFF. PREP)
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D84, D85	(TWO DIFF. PREP)
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	8	R72, R73, R242, R243, R281, R288, R380, R381	
RE-.27001-10	2.7, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R295, R296	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	1	R283	
RE-000211-NR	NTC, 10 OHMS, 15 AMPS-250J, , , INRUSH LIMIT	2	R262, R266	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	14	R60, R61, R63, R64, R230, R231, R233, R234, R269, R274, R275, R293, R294, R351	
RE-001008-10	10, 5 PCNT, 2W, METAL OXIDE FP, MINI,	4	R68, R69, R238, R239	
RE-002004-00	20.0, 20 PCNT, 100W, THICK FILM, TO-247,	4	R85, R86, R255, R256	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R128, R129, R287, R289, R292, R374	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R51, R221, R311	
RE-005606-10	56, 5 PCNT, 2W, METAL OXIDE FP, MINI,	6	R261, R263, R264, R267, R285, R286	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R62, R88, R89, R90, R91, R138, R232	
RE-010001-30	100, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R375, R376	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R11, R12, R20, R28, R83, R84, R183, R184, R191, R198, R253, R254, R302	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R65, R147, R235	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	11	R43, R44, R115, R122, R154, R156, R215, R217, R305, R370, R372	
RE-036501-30	365, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R297	Until June 2007
RE-047502-30	475,1 PCNT,1/10W,THICK FILM,0805,100V	1	R297	Beginning June 2007
RE-049901-30	499, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R46, R214	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R76, R77, R246, R247	
RE-063403-30	634, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R32, R112, R116, R202, R320, R323, R337, R386, R388	
RE-076801-30	768, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R148, R391	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R34, R74, R82, R146, R204, R244, R252, R392	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	7	R10, R96, R97, R159, R280, R282, R284	
RE-111301-30	1.13K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	27	R2, R14, R16, R31, R37–R39, R117, R127, R155, R175, R186, R188, R199, R206, R208, R209, R322, R327, R360, R363, R378, R379, R384, R385, R387, R389	
RE-114002-30	1.40K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R298	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R26, R136	
RE-116901-30	1.69K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R314, R315, R324, R326, R339, R352, R353, R369, R371	
RE-117401-30	1.74K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R41, R71, R211, R241, R331	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R13, R49, R50, R185, R219, R220	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R158, R164, R165, R169, R170, R330	
RE-124902-30	2.49K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R18, R153, R192	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R19, R21, R53, R54, R150, R190, R223, R224, R321, R325, R341, R343, R345, R347, R354	

PCB Assembly PL380 (230V) through January 2008, continued

QSC Part #	Description	Qty.	Reference	Comments
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R29, R201, R271	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R1, R3, R57, R58, R110, R120, R126, R176, R177, R227, R228, R336, R338	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R113, R149, R152, R301, R356	
RE-146401-30	4.64K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R357	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R9, R48, R98, R99, R106, R107, R143, R182, R218, R299, R328, R361, R362, R364, R365	
RE-152301-30	5.23K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R5, R178	
RE-156202-30	5.62K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R92–R95, R100–R103	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R111, R114, R132, R310, R366	
RE-163402-30	6.34K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R27, R197, R355	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R22, R30, R45, R80, R81, R141, R193, R200, R213, R250, R251, R317, R318	
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R7, R8, R15, R40, R157, R172, R173, R180, R181, R187, R210, R340, R342, R344, R346	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R134, R276, R277	
RE-210009-30	10.0K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R104, R105, R108, R109	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R25, R151, R196	
RE-214300-30	14.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R306, R333, R335	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R42, R52, R118, R119, R121, R124, R125, R131, R137, R162, R212, R222, R268, R313, R329	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R47, R66, R67, R135, R160, R216, R236, R237	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R78, R79, R87, R248, R249, R257, R260, R373	
RE-229402-30	29.4K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R300	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R75, R245, R278, R279, R303, R307, R308	
RE-230102-30	30.1K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R59, R229, R383, R390, R358, R359	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R23, R144, R145, R194, R332, R334, R377	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R6, R133, R179, R265, R316, R319	
RE-269801-30	69.8K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R270, R290, R291	
RE-275001-BM	75.0K, 1 PCNT, 1/4W, METAL FILM, ,	2	R24, R195	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R123, R130, R142, R161, R367	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	9	R33, R35, R36, R203, R205, R207, R348, R349, R350	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R55, R56, R139, R140, R163, R166, R225, R226, R258, R259, R309, R368	
RE-324302-30	243K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R167, R168, R312	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R17, R189, R304	
RE-339202-30	392K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R171, R174	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	4	R70, R240, R272, R273	
RE-510001-30	10M, 1 PCNT, 1/8W, THK FLM, 1206, 200V	1	R4	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	12		
SC-080124-HC	HEX, CAP, #8-32, 0.375" L, BLACK, CR111	8		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	6		
SW-000105-00	RELAY, DPDT, 12VDC, 16A, 250VAC,	1	K2	
SW-000109-00	RELAY, DPST, 24VDC COIL, 30A, 250VAC,	1	K1	
SW-000111-00	SWITCH, DPDT, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW5, SW6	
SW-000112-00	SWITCH, DP3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW2, SW7	
SW-000113-00	SWITCH, 3P3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW3, SW4	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W2, W5	
WC-000338-00	RIBBON CABLE, , 26 AWG, 10 CONDUCTOR, PL380, 4.0" L INSULATION,	2	J11, J12	J11A TO J11B, J12A TO J12B
WC-000345-00	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 9.00" L, BLACK/WHITE	1	W9, W10	WHITE: W9A-W9B & W9C-W9D, BLACK: W10A-W10B & W10C-W10D
WC-000345-01	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 14.00" L, BLACK/GREY	1	W13, W14	GREY: W13A-W13B & W13C-W13D, BLACK: W14A-W14B & W14C-W14D
WC-000347-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 14.00" L, BLACK	1	W18	W18-SWITCH
WC-000347-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 7.00" L, RED	1	W17	W17-SWITCH
XF-000108-30	BEAD, 100MHZ, 50 OHM, SMT	9	L5, L6, L8–L14	
XF-000204-00	HOUSEKEEPING, FLYBACK, , , , EVICTOR, ,	1	T1	
XF-000287-00	TRANSFORMER, GATE DRIVE, , TOROID, , , , P0584	2	T3, T4	
XF-000297-00	INDUCTOR, , TOROID, 40UH, PL380, ,	2	L1, L3	
XF-000298-00	TRANSFORMER, SWITCHING, 125KHZ, E55, 2000W, PL380, ,	1	T2	
XF-000306-00	INDUCTOR, COUPLED, , 1.8UH, PL380, ,	2	L2, L4	
XF-000307-00	INDUCTOR, COMMON MODE, TOROID, 3.2MH, PL380, ,	2	L15, L16	

PCB Assembly PL380 (120V) (QSC part # WP-038001-00) from February 2008–

Revision notes: This revision results in the following changes in performance or operation.

- The amplifier no longer goes into standby when the Basis unit shuts off.
- The clip LED indicators no longer stay lit when the amplifier is in standby.
- Channel 2 no longer exhibits slightly higher distortion than channel 1.
- High-frequency distortion in bridged mono is eliminated.
- EMI performance improves to comply with FCC Class B requirements.

Changed components, quantities, etc., are shown **in bold.**

QSC Part#	Description	Qty.	Reference	Comments
CA-022004-30	22PF, 5 PCNT, 200V, CERAMIC NPO, 0805,	**13**	C3, C8, C13, C17, C79, C123, C125, C186, C224, C225, C310, **C321, C322**	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C38, C39, C137, C139, C145, C146	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	7	C34, C87, C88, C91–C93, C98	
CA-122003-30	220PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	3	C15, C16, C124	
CA-122009-00	220PF, 10 PCNT, 250VAC, CERAMIC CLASS X1/Y2, DISC, YCAP	3	C302, C303, C315	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	8	C58, C59, C94, C128, C141, C143, C150, C151	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	15	C10, C35, C37, C80–C86, C112, C113, C121, C142, C230	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	10	C25, C67, C68, C165, C166, C174, C175, C197–C199	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C2, C31, C36, C115, C138, C144, C200, C278, C304, C308, C309	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	3	C211, C234, C235	
CA-256001-30	0.0056UF, 10 PCNT, 200V, CERAMIC X7R, 1206,	16	C56, C57, C60, C163, C164, C167, C205, C237, C238, C252, C296, C297, C311, C313, C314, C316	
CA-310013-30	0.01UF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C21, C127	
CA-322008-30	0.022UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C55, C162	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	**9**	C262, C263, C268, C269, C279, C317, C318, **C319, C320**	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	48	C1, C4–C7, C11, C14, C18, C22–C24, C26, C28, C33, C40, C41, C43–C45, C50, C52, C97, C99, C100, C110, C116–C119, C129–C134, C136, C140, C147, C148, C152, C157, C159, C188, C194, C251, C270, C271, C276	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	3	C20, C187, C221	
CA-410020-10	0.1UF, 5 PCNT, 50V, MYLAR, RADIAL,	2	C288, C291	
CA-410030-00	0.1UF, 10 PCNT, 250V, METALLIZED POLYESTER, DIPPED, MAX HEIGHT 0.433"	20	C63, C65, C66, C69, C70, C72–C76, C170, C172, C173, C176, C177, C179–C183	
CA-415002-10	0.15UF, 5 PCNT, 50V, FILM, DIPPED,	4	C286, C287, C290, C292	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	43	C27, C32, C42, C46, C53, C54, C103, C135, C149, C153, C160, C161, C168, C184, C189, C195, C196, C206, C207, C219, C220, C222, C223, C236, C241, C242, C245, C246, C255, C256, C261, C264–C267, C272, C273, C274, C281, C298, C305–C307	
CA-422008-00	0.22UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C71, C178	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C293	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	2	C231, C232	
CA-447011-00	0.47UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C78, C185	
CA-510004-30	1.0UF, 20 PCNT, 50V, CERAMIC Z5U, 1210,	16	C49, C51, C62, C77, C156, C158, C226–C229, C257, C258, C282–C285	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C294, C295	
CA-515004-00	1.5UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C64, C171	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	2	C89, C90	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	13	C19, C47, C48, C104, C107, C111, C114, C126, C154, C155, C193, C275, C277	
CA-633001-00	33UF, 20 PCNT, 400V, ELECTROLYTIC, ,	2	C190, C191	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	9	C9, C61, C95, C96, C105, C106, C120, C169, C289	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	2	C108, C109	
CA-647007-30	47UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C192	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	18	C12, C101, C102, C122, C201–C204, C208, C212, C215, C218, C239, C240, C280, C299–C301	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	3	C243, C244, C312	
CA-833005-00	3300UF, 20 PCNT, 200V, ELECTROLYTIC, ,	14	C209, C210, C213, C214, C216, C217, C247–C250, C253, C254, C259, C260	
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	**5**		
CH-000104-01	HEAT SINK, PS, , PL380,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	3		
CH-000692-00	HEAT SINK, MAIN, , PL380,	1		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	6	J10, J15, J19, J20, J22, J24	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J13, J14	
CO-000056-CO	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, LATCHING BOX	1	J7B	
CO-000081-00	PIN JUMPER, SHUNT, 2 POS, ,	2		J9, SHORT PINS 3 & 4 AND PINS 5 & 6
CO-000092-00	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, BOX	1	J7A	
CO-000098-00	HEADER, 0.1" CENTERS, 26 POS (2X13), MALE, LATCHING BOX SHORT	2	J8A, J8B	

PCB Assembly PL380 (120V) from February 2008–, continued

QSC Part #	Description	Qty.	Reference	Comments
CO-000106-00	JACK, HD15, 15 POS, FEMALE, RIGHT ANGLE SWAGED JACK SCREW	1	J17	
CO-000148-00	XLR, NEUTRIK, 3 POS, FEMALE, VERTICAL	2	J3, J4	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J5	
CO-000161-00	JACK, EURO, 3 POS, FEMALE, BLACK	2	J16, J18	
CO-000171-00	XLR, NEUTRIK, 3 POS, MALE, VERTICAL	2	J1, J2	
CO-000232-00	HEADER, 0.1" CENTERS, 6 POS, MALE, RAMP LOCK	2	J6, J9	
CO-000329-00	WIRE HOLDER, RIBBON CABLE, 10 POS, FEMALE,	4		J11A, J11B, J12A, J12B
CY-000006-10	16.0000 MHZ, HC-49U, STRAIGHT LEAD PREP	1	Y1	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U49	
IC-000025-00	DRIVER, MOSFET, TC1427CPA, ,	1	U46	
IC-000040-00	VOLTAGE REGULATOR, -5V, MC7905CT, ,	1	U45	
IC-000041-00	VOLTAGE REGULATOR, +12V, MC7812CT, ,	4	U19, U20, U38, U39	
IC-000042-00	VOLTAGE REGULATOR, +5V, MC7805CT, ,	2	U44, U47	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	4	U16, U23, U25, U37	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U11	
IC-000048-30	OPAMP, DUAL, MC33078, ,	3	U21, U22, U51	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	1	U40	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U24	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	2	U2, U26	
IC-000088-30	NAND GATE, QUAD, 74AC00, SMT,	2	U9, U30	
IC-000106-30	D FLIP FLOP, DUAL, 74HC74, SMT,	2	U4, U7	
IC-000128-30	VOLTAGE REGULATOR, +5V, LM78L05, ,	5	U14, U15, U33, U34, U53	
IC-000130-30	VOLTAGE REGULATOR, -5V, LM79L05, ,	1	U48	
IC-000149-30	INVERTER, SCHMITT, HEX, 74LV14, SMT,	2	U5, U6	
IC-000229-00	VOLTAGE REGULATOR, +15V, LM7815CT, ,	1	U42	
IC-000230-00	VOLTAGE REGULATOR, -15V, LM7915CT, ,	1	U50	
IC-000315-00	SENSOR, TEMPERATURE, LM19CIZ, ,	2	U10, U29	
IC-000316-30	COUNTER, 14 STAGE, 74HC4060, SMT,	1	U1	
IC-000342-00	TOP SWITCH, , TOP244YN, ,	1	U41	
IC-000371-30	DRIVER, MOSFET, UCC37321D, SMT,	4	U17, U18, U35, U36	
IC-000446-30	OPTO COUPLER, HIGH SPEED CMOS, HCPL-0723, SMT,	4	U12, U13, U31, U32	
IC-000447-30	COMPARATOR, SINGLE, LT1016, SMT, HIGH SPEED	2	U8, U28	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U3, U27	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	**3**	F4, **F5, F6**	
MS-000128-30	**FUSE, 5A, 24V, 1206,**	**2**	**F2, F3**	
MS-150250-FU	FUSE, 15A, 250V, 0.25" X 1.25", FAST	1	F1	
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD2, LD3, LD5, LD6	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD17	
PA-000043-00	PLATE ASSY, PLX/RMX, OUTPUT, ,	1	J23	
PA-000145-00	LED ASSY, GREEN, 0.850" SPACER, ,	2	LD11, LD14	
PA-000146-00	LED ASSY, YELLOW, 0.850" SPACER, ,	6	LD10, LD15, LD19, LD21, LD24, LD25	
PA-000147-00	LED ASSY, ORANGE, 0.850" SPACER, ,	4	LD12, LD13, LD18, LD23	
PC-038001-00	MAIN, PL380, , ,	1		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	1		D82, D83
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		D84, D85
PL-000121-00	SPACER, LED/TO-92, 0.18", PVC, BLACK,	2		U10,U29
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	5		
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		LD1, LD4, LD7–LD9, LD16
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR4, VR5	
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	1	D65	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D86, D87	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	**62**	D1–D9, D20–D52, D55, D56, D63, D68, D72, D75–D77, D100, D101, D103, D105, D107–D110, **D112–D115**	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	**31**	Q1, Q3, Q15, Q16, Q26–28, Q30–Q32, Q37, Q44–Q46, Q49, Q51, Q63, Q64, Q66, Q67, Q70, Q71, Q75, Q77–Q79, Q81–84, **Q86**	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	**40**	Q2, Q4–Q7, Q14, Q17–Q25, Q29, Q33–Q36, Q38–Q43, Q48, Q50, Q52–Q55, Q62, Q65, Q72–Q74, Q76, Q80, **Q85**	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q8, Q13, Q56, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	4	Q9, Q12, Q57, Q60	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	23	D10, D11, D16–D19, D53, D54, D59–D62, D67, D88–D91, D94, D95, D98, D99, D102, D111	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	1	D66	

PCB Assembly PL380 (120V) from February 2008–, continued

QSC Part #	Description	Qty.	Reference	Comments
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	6	D69, D71, D78–D81	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D104	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q47	
QD-000157-10	DIODE, 1000V, 1.5A, , 1N5399, DO-15,	3	D64, D70, D106	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD4, LD16	(PL-000138-00)
QD-000187-00	LED BLUE, , , , , T-1,	1	LD9	(PL-000138-00)
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD7, LD8	(PL-000138-00)
QD-000244-30	DIODE SCHOTTKY, 40V, 2A, , MBRS2040LT3, SMB,	6	D73, D74, D92, D93, D96, D97	
QD-000297-30	LED YELLOW, , , , , 1206,	**2**	LD20, **LD22**	
QD-000315-00	IGBT, 600V, 75A, 250W, IXGR60N60C2, TO-247,	2	Q68, Q69	
QD-000316-00	DIODE SCHOTTKY, 80V, 35A, 190W, DSSS 35-008AR, TO-247AD,	2	D12, D13	
QD-000317-00	DIODE, 600V, 30A, 250W, DSEP30-06CR, TO-247 ISOL,	4	D14, D15, D57, D58	
QD-000318-00	MOSFET N-CHANNEL, 500V, 85A, 890W, IXFN80N50Q2, SOT-227B,	4	Q10, Q11, Q58, Q59	
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D82, D83	(TWO DIFF. PREP)
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D84, D85	(TWO DIFF. PREP)
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	8	R72, R73, R242, R243, R281, R288, R380, R381	
RE-.27001-10	2.7, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R295, R296	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	1	R283	
RE-000211-NR	NTC, 10 OHMS, 15 AMPS-25OJ, , , INRUSH LIMIT	2	R262, R266	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	14	R60, R61, R63, R64, R230, R231, R233, R234, R269, R274, R275, R293, R294, R351	
RE-001008-10	10, 5 PCNT, 2W, METAL OXIDE FP, MINI,	4	R68, R69, R238, R239	
RE-002004-00	20.0, 20 PCNT, 100W, THICK FILM, TO-247,	4	R85, R86, R255, R256	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R128, R129, R287, R289, R292, R374	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R51, R221, R311	
RE-005606-10	56, 5 PCNT, 2W, METAL OXIDE FP, MINI,	6	R261, R263, R264, R267, R285, R286	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**9**	R62, R88, R89, R90, R91, R138, R232, **R393, R394**	
RE-010001-30	100, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R375, R376	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R11, R12, R20, R28, R83, R84, R183, R184, R191, R198, R253, R254, R302	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R65, R147, R235	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	11	R43, R44, R115, R122, R154, R156, R215, R217, R305, R370, R372	
RE-047502-30	**475, 1 PCNT, 1/10W, THICK FILM, 0805, 100V**	**1**	**R297**	(was RE-036501-30 or RE-047502-30)
RE-049901-30	499, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R46, R214	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R76, R77, R246, R247	
RE-063403-30	634, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R32, R112, R116, R202, R320, R323, R337, R386, R388	
RE-076801-30	768, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R148, R391	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R34, R74, R82, R146, R204, R244, R252, R392	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	7	R10, R96, R97, R159, R280, R282, R284	
RE-111301-30	1.13K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**29**	R2, R14, R16, R31, R37–R39, R117, R127, R155, R175, R186, R188, R199, R206, R208, R209, R322, R327, R360, R363, R378, R379, R384, R385, R387, R389, **R400, R401**	
RE-114002-30	1.40K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R298	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R26, R136	
RE-116901-30	1.69K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R314, R315, R324, R326, R339, R352, R353, R369, R371	
RE-117401-30	1.74K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	R41, R71, R211, R241, R331, **R397**	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R13, R49, R50, R185, R219, R220	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R158, R164, R165, R169, R170, R330	
RE-124902-30	2.49K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R18, R153, R192	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R19, R21, R53, R54, R150, R190, R223, R224, R321, R325, R341, R343, R345, R347, R354	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R29, R201, R271	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R1, R3, R57, R58, R110, R120, R126, R176, R177, R227, R228, R336, R338	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R113, R149, R152, R301, R356	
RE-146401-30	4.64K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R357	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**17**	R9, **R45,** R48, R98, R99, R106, R107, R143, R182, **R213,** R218, R299, R328, R361, R362, R364, R365	
RE-156202-30	5.62K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R92–R95, R100–R103	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	R111, R114, R132, R310, R366, **R395**	
RE-163402-30	6.34K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R27, R197, R355	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	**R5,** R22, R30, **(delete R45),** R80, R81, R141, **R178,** R193, R200, **(delete R213),** R250, R251, R317, R318	

PCB Assembly PL380 (120V) from February 2008–, continued

QSC Part #	Description	Qty.	Reference	Comments
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R7, R8, R15, R40, R157, R172, R173, R180, R181, R187, R210, R340, R342, R344, R346	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R134, R276, R277	
RE-210009-30	10.0K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R104, R105, R108, R109	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**5**	R25, **R47,** R151, R196, **R216**	
RE-214300-30	14.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R306, R333, R335	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R42, R52, R118, R119, R121, R124, R125, R131, R137, R162, R212, R222, R268, R313, R329	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	**(delete R47),** R66, R67, R135, R160, **(delete R216),** R236, R237	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R78, R79, R87, R248, R249, R257, R260, R373	
RE-229402-30	29.4K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**2**	R300, **R382**	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R75, R245, R278, R279, R303, R307, R308	
RE-230102-30	30.1K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R59, R229, R358, R359, R383, R390	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R23, R144, R145, R194, R332, R334, R377	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R6, R133, R179, R265, R316, R319	
RE-269801-30	69.8K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R270, R290, R291	
RE-275001-BM	75.0K, 1 PCNT, 1/4W, METAL FILM, ,	2	R24, R195	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	R123, R130, R142, R161, R367, **R396**	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	9	R33, R35, R36, R203, R205, R207, R348–R350	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R55, R56, R139, R140, R163, R166, R225, R226, R258, R259, R309, R368	
RE-324302-30	243K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R167, R168, R312	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R17, R189, R304	
RE-339202-30	392K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R171, R174	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R70, R240, R272, R273, **R398, R399**	
RE-510001-30	10M, 1 PCNT, 1/8W, THK FLM, 1206, 200V	1	R4	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	12		
SC-080124-HC	HEX, CAP, #8-32, 0.375" L, BLACK, CR111	8		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	6		
SW-000105-00	RELAY, DPDT, 12VDC COIL, 16A, 250VAC,	1	K2	
SW-000109-00	RELAY, DPST, 24VDC COIL, 30A, 250VAC,	1	K1	
SW-000111-00	SWITCH, DPDT, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW5, SW6	
SW-000112-00	SWITCH, DP3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW2, SW7	
SW-000113-00	SWITCH, 3P3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW3, SW4	
WC-0.3514-JW	JUMPER, BARE, 14 AWG SOLID, 1 CONDUCTOR, , 0.35" L,	1	W1	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W2, W5	
WC-000338-00	RIBBON CABLE, , 26 AWG, 10 CONDUCTOR, PL380, 4.0 IN INSULATION,	2	J11, J12	J11A TO J11B, J12A TO J12B
WC-000345-00	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 9.00" L, BLACK/WHITE	1	W10, W9	WHITE: W9A-W9B & W9C-W9D, BLACK: W10A-W10B & W10C-W10D
WC-000345-01	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 14.00" L, BLACK/GREY	1	W13, W14	GREY: W13A-W13B & W13C-W13D, BLACK: W14A-W14B & W14C-W14D
WC-000347-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 14.00" L, BLACK	1	W18	W18-SWITCH
WC-000347-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 7.00" L, RED	1	W17	W17-SWITCH
XF-000108-30	BEAD, 100MHZ, 50 OHM, SMT	9	L5, L6, L8–L14	
XF-000204-00	HOUSEKEEPING, FLYBACK, , , , EVICTOR, ,	1	T1	
XF-000287-00	TRANSFORMER, GATE DRIVE, , TOROID, , , , P0584	2	T3, T4	
XF-000297-00	INDUCTOR, , TOROID, 40UH, PL380, ,	2	L1, L3	
XF-000298-00	TRANSFORMER, SWITCHING, 125KHZ, E55, 2000W, PL380, ,	1	T2	
XF-000306-00	INDUCTOR, COUPLED, , 1.8UH, PL380, ,	2	L2, L4	
XF-000307-00	INDUCTOR, COMMON MODE, TOROID, 3.2MH, PL380, ,	2	L15, L16	

PCB Assembly PL380 (100V) (QSC part # WP-038001-01) from February 2008–

Revision notes: This revision results in the following changes in performance or operation.

- The amplifier no longer goes into standby when the Basis unit shuts off.
- The clip LED indicators no longer stay lit when the amplifier is in standby.
- Channel 2 no longer exhibits slightly higher distortion than channel 1.
- High-frequency distortion in bridged mono is eliminated.
- EMI performance improves to comply with FCC Class B requirements.

Changed components, quantities, etc., are shown **in bold.**

QSC Part#	Description	Qty.	Reference	Comments
CA-022004-30	22PF, 5 PCNT, 200V, CERAMIC NPO, 0805,	**13**	C3, C8, C13, C17, C79, C123, C125, C186, C224, C225, C310, **C321, C322**	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C38, C39, C137, C139, C145, C146	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	7	C34, C87, C88, C91, C92, C93, C98	
CA-122003-30	220PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	3	C15, C16, C124	
CA-122009-00	220PF, 10 PCNT, 250VAC, CERAMIC CLASS X1/Y2, DISC, YCAP	3	C302, C303, C315	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	8	C58, C59, C94, C128, C141, C143, C150, C151	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	15	C10, C35, C37, C80–C86, C112, C113, C121, C142, C230	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	10	C25, C67, C68, C165, C166, C174, C175, C197–C199	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C2, C31, C36, C115, C138, C144, C200, C278, C304, C308, C309	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	3	C211, C234, C235	
CA-256001-30	0.0056UF, 10 PCNT, 200V, CERAMIC X7R, 1206,	16	C56, C57, C60, C163, C164, C167, C205, C237, C238, C252, C296, C297, C311, C313, C314, C316	
CA-310013-30	0.01UF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C21, C127	
CA-322008-30	0.022UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C55, C162	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	**9**	C262, C263, C268, C269, C279, C317, C318, **C319, C320**	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	48	C1, C4–C7, C11, C14, C18, C22–C24, C26, C28, C33, C40, C41, C43–C45, C50, C52, C97, C99, C100, C110, C116–C119, C129–C134, C136, C140, C147, C148, C152, C157, C159, C188, C194, C251, C270, C271, C276	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	3	C20, C187, C221	
CA-410020-10	0.1UF, 5 PCNT, 50V, MYLAR, RADIAL,	2	C288, C291	
CA-410030-00	0.1UF, 10 PCNT, 250V, METALLIZED POLYESTER, DIPPED, MAX HEIGHT 0.433"	20	C63, C65, C66, C69, C70, C72–C76, C170, C172, C173, C176, C177, C179–C183	
CA-415002-10	0.15UF, 5 PCNT, 50V, FILM, DIPPED,	4	C286, C287, C290, C292	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	43	C27, C32, C42, C46, C53, C54, C103, C135, C149, C153, C160, C161, C168, C184, C189, C195, C196, C206, C207, C219, C220, C222, C223, C236, C241, C242, C245, C246, C255, C256, C261, C264–C267, C272, C273, C274, C281, C298, C305–C307	
CA-422008-00	0.22UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C71, C178	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C293	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	2	C231, C232	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	1	C233	SPECIAL LEAD PREP: LEAD LENGTH = 0.90"
CA-447011-00	0.47UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C78, C185	
CA-510004-30	1.0UF, 20 PCNT, 50V, CERAMIC Z5U, 1210,	16	C49, C51, C62, C77, C156, C158, C226–C229, C257, C258, C282–C285	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C294, C295	
CA-515004-00	1.5UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C64, C171	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	2	C89, C90	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	13	C19, C47, C48, C104, C107, C111, C114, C126, C154, C155, C193, C275, C277	
CA-633001-00	33UF, 20 PCNT, 400V, ELECTROLYTIC, ,	2	C190, C191	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	9	C9, C61, C95, C96, C105, C106, C120, C169, C289	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	2	C108, C109	
CA-647007-30	47UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C192	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	18	C12, C101, C102, C122, C201–C204, C208, C212, C215, C218, C239, C240, C280, C299–C301	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	3	C243, C244, C312	
CA-833005-00	3300UF, 20 PCNT, 200V, ELECTROLYTIC, ,	14	C209, C210, C213, C214, C216, C217, C247–C250, C253, C254, C259, C260	
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	5		
CH-000104-01	HEAT SINK, PS, , PL380,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	3		
CH-000692-00	HEAT SINK, MAIN, , PL380,	1		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	6	J10, J15, J19, J20, J22, J24	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J13, J14	
CO-000056-CO	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, LATCHING BOX	1	J7B	
CO-000081-00	PIN JUMPER, SHUNT, 2 POS, ,	2		J9, SHORT PINS 3 & 4 AND PINS 5 & 6
CO-000092-00	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, BOX	1	J7A	

PCB Assembly PL380 (100V) from February 2008–, continued

QSC Part #	Description	Qty.	Reference	Comments
CO-000098-00	HEADER, 0.1" CENTERS, 26 POS (2X13), MALE, LATCHING BOX SHORT	2	J8A, J8B	
CO-000106-00	JACK, HD15, 15 POS, FEMALE, RIGHT ANGLE SWAGED JACK SCREW	1	J17	
CO-000148-00	XLR, NEUTRIK, 3 POS, FEMALE, VERTICAL	2	J3, J4	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J5	
CO-000161-00	JACK, EURO, 3 POS, FEMALE, BLACK	2	J16, J18	
CO-000171-00	XLR, NEUTRIK, 3 POS, MALE, VERTICAL	2	J1, J2	
CO-000232-00	HEADER, 0.1" CENTERS, 6 POS, MALE, RAMP LOCK	2	J6, J9	
CO-000329-00	WIRE HOLDER, RIBBON CABLE, 10 POS, FEMALE,	4		J11A, J11B, J12A, J12B
CY-000006-10	16.0000 MHZ, HC-49U, STRAIGHT LEAD PREP	1	Y1	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U49	
IC-000025-00	DRIVER, MOSFET, TC1427CPA, ,	1	U46	
IC-000040-00	VOLTAGE REGULATOR, -5V, MC7905CT, ,	1	U45	
IC-000041-00	VOLTAGE REGULATOR, +12V, MC7812CT, ,	4	U19, U20, U38, U39	
IC-000042-00	VOLTAGE REGULATOR, +5V, MC7805CT, ,	2	U44, U47	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	4	U16, U23, U25, U37	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U11	
IC-000048-30	OPAMP, DUAL, MC33078, ,	3	U21, U22, U51	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	1	U40	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U24	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	2	U2, U26	
IC-000088-30	NAND GATE, QUAD, 74AC00, SMT,	2	U9, U30	
IC-000106-30	D FLIP FLOP, DUAL, 74HC74, SMT,	2	U4, U7	
IC-000128-30	VOLTAGE REGULATOR, +5V, LM78L05, ,	5	U14, U15, U33, U34, U53	
IC-000130-30	VOLTAGE REGULATOR, -5V, LM79L05, ,	1	U48	
IC-000149-30	INVERTER, SCHMITT, HEX, 74LV14, SMT,	2	U5, U6	
IC-000229-00	VOLTAGE REGULATOR, +15V, LM7815CT, ,	1	U42	
IC-000230-00	VOLTAGE REGULATOR, -15V, LM7915CT, ,	1	U50	
IC-000315-00	SENSOR, TEMPERATURE, LM19CIZ, ,	2	U10, U29	
IC-000316-30	COUNTER, 14 STAGE, 74HC4060, SMT,	1	U1	
IC-000342-00	TOP SWITCH, , TOP244YN, ,	1	U41	
IC-000371-30	DRIVER, MOSFET, UCC37321D, SMT,	4	U17, U18, U35, U36	
IC-000446-30	OPTO COUPLER, HIGH SPEED CMOS, HCPL-0723, SMT,	4	U12, U13, U31, U32	
IC-000447-30	COMPARATOR, SINGLE, LT1016, SMT, HIGH SPEED	2	U28, U8	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U27, U3	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	**3**	F4, **F5, F6**	
MS-000128-30	**FUSE, 5A, 24V, 1206,**	**2**	**F2, F3**	
MS-150250-FU	FUSE, 15A, 250V, 0.25" X 1.25", FAST	1	F1	
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD2, LD3, LD5, LD6	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD17	
PA-000043-00	PLATE ASSY, PLX/RMX, OUTPUT, ,	1	J23	
PA-000145-00	LED ASSY, GREEN, 0.850" SPACER, ,	2	LD11, LD14	
PA-000146-00	LED ASSY, YELLOW, 0.850" SPACER, ,	6	LD10, LD15, LD19, LD21, LD24, LD25	
PA-000147-00	LED ASSY, ORANGE, 0.850" SPACER, ,	4	LD12, LD13, LD18, LD23	
PC-038001-00	MAIN, PL380, , ,	1		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	1		D82, D83
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		D84, D85
PL-000121-00	SPACER, LED/TO-92, 0.18", PVC, BLACK,	2		U10,U29
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	5		
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		LD1, LD4, LD7–LD9, LD16
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR4, VR5	
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	1	D65	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D86, D87	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	**62**	D1–D9, D20–D52, D55, D56, D63, D68, D72, D75–D77, D100, D101, D103, D105, D107–D110, **D112–D115**	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	**31**	Q1, Q3, Q15, Q16, Q26–28, Q30–Q32, Q37, Q44–Q46, Q49, Q51, Q63, Q64, Q66, Q67, Q70, Q71, Q75, Q77–Q79, Q81–84, **Q86**	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	**40**	QQ2, Q4–Q7, Q14, Q17–Q25, Q29, Q33–Q36, Q38–Q43, Q48, Q50, Q52–Q55, Q62, Q65, Q72–Q74, Q76, Q80, **Q85**	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q8, Q13, Q56, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	4	Q9, Q12, Q57, Q60	

PCB Assembly PL380 (100V) from February 2008–, continued

QSC Part #	Description	Qty.	Reference	Comments
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	23	D10, D11, D16–D19, D53, D54, D59–D62, D67, D88–D91, D94, D95, D98, D99, D102, D111	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	1	D66	
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	6	D69, D71, D78–D81	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D104	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q47	
QD-000157-10	DIODE, 1000V, 1.5A, , 1N5399, DO-15,	3	D64, D70, D106	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD4, LD16	(PL-000138-00)
QD-000187-00	LED BLUE, , , , , T-1,	1	LD9	(PL-000138-00)
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD7, LD8	(PL-000138-00)
QD-000244-30	DIODE SCHOTTKY, 40V, 2A, , MBRS2040LT3, SMB,	6	D73, D74, D92, D93, D96, D97	
QD-000297-30	LED YELLOW, , , , , 1206,	**2**	LD20, **LD22**	
QD-000315-00	IGBT, 600V, 75A, 250W, IXGR60N60C2, TO-247,	2	Q68, Q69	
QD-000316-00	DIODE SCHOTTKY, 80V, 35A, 190W, DSSS 35-008AR, TO-247AD,	2	D12, D13	
QD-000317-00	DIODE, 600V, 30A, 250W, DSEP30-06CR, TO-247 ISOL,	4	D14, D15, D57, D58	
QD-000318-00	MOSFET N-CHANNEL, 500V, 85A, 890W, IXFN80N50Q2, SOT-227B,	4	Q10, Q11, Q58, Q59	
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D82, D83	(TWO DIFF. PREP)
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D84, D85	(TWO DIFF. PREP)
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	8	R242, R243, R281, R288, R380, R381, R72, R73	
RE-.27001-10	2.7, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R295, R296	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	1	R283	
RE-000211-NR	NTC, 10 OHMS, 15 AMPS-250J, , , INRUSH LIMIT	2	R262, R266	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	14	R60, R61, R63, R64, R230, R231, R233, R234, R269, R274, R275, R293, R294, R351	
RE-001008-10	10, 5 PCNT, 2W, METAL OXIDE FP, MINI,	4	R68, R69, R238, R239	
RE-002004-00	20.0, 20 PCNT, 100W, THICK FILM, TO-247,	4	R85, R86, R255, R256	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R128, R129, R287, R289, R292, R374	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R51, R221, R311	
RE-005606-10	56, 5 PCNT, 2W, METAL OXIDE FP, MINI,	6	R261, R263, R264, R267, R285, R286	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**9**	R62, R88, R89, R90, R91, R138, R232, **R393, R394**	
RE-010001-30	100, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R375, R376	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R11, R12, R20, R28, R83, R84, R183, R184, R191, R198, R253, R254, R302	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R65, R147, R235	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	11	R43, R44, R115, R122, R154, R156, R215, R217, R305, R370, R372	
RE-047502-30	**475, 1 PCNT, 1/10W, THICK FILM, 0805, 100V**	**1**	**R297**	(was RE-036501-30 or RE-047502-30)
RE-049901-30	499, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R214, R46	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R246, R247, R76, R77	
RE-063403-30	634, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R112, R116, R202, R32, R320, R323, R337, R386, R388	
RE-076801-30	768, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R148, R391	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R34, R74, R82, R146, R204, R244, R252, R392	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	7	R10, R96, R97, R159, R280, R282, R284	
RE-111301-30	1.13K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**29**	R2, R14, R16, R31, R37–R39, R117, R127, R155, R175, R186, R188, R199, R206, R208, R209, R322, R327, R360, R363, R378, R379, R384, R385, R387, R389, **R400, R401**	
RE-114002-30	1.40K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R298	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R26, R136	
RE-116901-30	1.69K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R314, R315, R324, R326, R339, R352, R353, R369, R371	
RE-117401-30	1.74K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	RR41, R71, R211, R241, R331, **R397**	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R13, R49, R50, R185, R219, R220	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R158, R164, R165, R169, R170, R330	
RE-124902-30	2.49K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R18, R153, R192	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R19, R21, R53, R54, R150, R190, R223, R224, R321, R325, R341, R343, R345, R347, R354	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R29, R201, R271	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R1, R3, R57, R58, R110, R120, R126, R176, R177, R227, R228, R336, R338	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R113, R149, R152, R301, R356	
RE-146401-30	4.64K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R357	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**17**	R9, **R45,** R48, R98, R99, R106, R107, R143, R182, **R213,** R218, R299, R328, R361, R362, R364, R365	
RE-156202-30	5.62K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R92–R95, R100–R103	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	R111, R114, R132, R310, R366, **R395**	
RE-163402-30	6.34K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R27, R197, R355	

PCB Assembly PL380 (100V) from February 2008–, continued

QSC Part #	Description	Qty.	Reference	Comments
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	**R5,** R22, R30, **(delete R45),** R80, R81, R141, **R178,** R193, R200, **(delete R213),** R250, R251, R317, R318	
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R7, R8, R15, R40, R157, R172, R173, R180, R181, R187, R210, R340, R342, R344, R346	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R134, R276, R277	
RE-210009-30	10.0K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R104, R105, R108, R109	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**5**	R25, **R47,** R151, R196, **R216**	
RE-214300-30	14.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R306, R333, R335	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R42, R52, R118, R119, R121, R124, R125, R131, R137, R162, R212, R222, R268, R313, R329	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	**(delete R47),** R66, R67, R135, R160, **(delete R216),** R236, R237	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R78, R79, R87, R248, R249, R257, R260, R373	
RE-229402-30	29.4K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R300, R382	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R75, R245, R278, R279, R303, R307, R308	
RE-230102-30	30.1K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R59, R229, R358, R359, R383, R390	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R23, R144, R145, R194, R332, R334, R377	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R6, R133, R179, R265, R316, R319	
RE-269801-30	69.8K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R270, R290, R291	
RE-275001-BM	75.0K, 1 PCNT, 1/4W, METAL FILM, ,	2	R24, R195	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	R123, R130, R142, R161, R367, **R396**	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	9	R33, R35, R36, R203, R205, R207, R348–R350	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R55, R56, R139, R140, R163, R166, R225, R226, R258, R259, R309, R368	
RE-324302-30	243K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R167, R168, R312	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R17, R189, R304	
RE-339202-30	392K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R171, R174	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	**6**	R70, R240, R272, R273, **R398, R399**	
RE-510001-30	10M, 1 PCNT, 1/8W, THK FLM, 1206, 200V	1	R4	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	12		
SC-080124-HC	HEX, CAP, #8-32, 0.375" L, BLACK, CR111	8		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	6		
SW-000105-00	RELAY, DPDT, 12VDC COIL, 16A, 250VAC,	1	K2	
SW-000109-00	RELAY, DPST, 24VDC COIL, 30A, 250VAC,	1	K1	
SW-000111-00	SWITCH, DPDT, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW5, SW6	
SW-000112-00	SWITCH, DP3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW2, SW7	
SW-000113-00	SWITCH, 3P3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW3, SW4	
WC-0.3514-JW	JUMPER, BARE, 14 AWG SOLID, 1 CONDUCTOR, , 0.35" L,	1	W1	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W2, W5	
WC-000338-00	RIBBON CABLE, , 26 AWG, 10 CONDUCTOR, PL380, 4.0 IN INSULATION,	2	J11, J12	J11A TO J11B, J12A TO J12B
WC-000345-00	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 9.00" L, BLACK/WHITE	1	W9, W10	WHITE: W9A-W9B & W9C-W9D, BLACK: W10A-W10B & W10C-W10D
WC-000345-01	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 14.00" L, BLACK/GREY	1	W13, W14	GREY: W13A-W13B & W13C-W13D, BLACK: W14A-W14B & W14C-W14D
WC-000347-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 14.00" L, BLACK	1	W18	W18-SWITCH
WC-000347-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 7.00" L, RED	1	W17	W17-SWITCH
XF-000108-30	BEAD, 100MHZ, 50 OHM, SMT	9	L5, L6, L8–L14	
XF-000204-00	HOUSEKEEPING, FLYBACK, , , , EVICTOR, ,	1	T1	
XF-000287-00	TRANSFORMER, GATE DRIVE, , TOROID, , , , P0584	2	T3, T4	
XF-000297-00	INDUCTOR, , TOROID, 40UH, PL380, ,	2	L1, L3	
XF-000306-00	INDUCTOR, COUPLED, , 1.8UH, PL380, ,	2	L2, L4	
XF-000307-00	INDUCTOR, COMMON MODE, TOROID, 3.2MH, PL380, ,	2	L15, L16	
XF-000338-00	TRANSFORMER, SWITCHING, 125KHZ, E55, 2000W, PL380, 100V,	1	T2	

PCB Assembly PL380 (230V) (QSC part # WP-038001-02) from February 2008–

Revision notes: This revision results in the following changes in performance or operation.

- The amplifier no longer goes into standby when the Basis unit shuts off.
- The clip LED indicators no longer stay lit when the amplifier is in standby.
- Channel 2 no longer exhibits slightly higher distortion than channel 1.
- High-frequency distortion in bridged mono is eliminated.
- EMI performance improves to comply with FCC Class B requirements.

Changed components, quantities, etc., are shown **in bold.**

QSC Part#	Description	Qty.	Reference	Comments
CA-022004-30	22PF, 5 PCNT, 200V, CERAMIC NPO, 0805,	**13**	C3, C8, C13, C17, C79, C123, C125, C186, C224, C225, C310, **C321, C322**	
CA-047002-30	47PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	8	C29, C30, C38, C39, C137, C139, C145, C146	
CA-110002-30	100PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	7	C34, C87, C88, C91–C93, C98	
CA-122003-30	220PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	3	C15, C16, C124	
CA-122009-00	220PF, 10 PCNT, 250VAC, CERAMIC CLASS X1/Y2, DISC, YCAP	3	C302, C303, C315	
CA-133001-10	330PF, 5 PCNT, 500V, MICA, DIPPED,	8	C58, C59, C94, C128, C141, C143, C150, C151	
CA-147003-30	470PF, 5 PCNT, 50V, CERAMIC NPO, 1206,	15	C10, C35, C37, C80–C86, C112, C113, C121, C142, C230	
CA-168003-30	680PF, 5 PCNT, 50V, CERAMIC NPO, 0805,	10	C25, C67, C68, C165, C166, C174, C175, C197–C199	
CA-210005-30	0.001UF, 5 PCNT, 50V, CERAMIC NPO, 1206,	11	C2, C31, C36, C115, C138, C144, C200, C278, C304, C308, C309	
CA-233002-00	0.0033UF, 20 PCNT, 125VAC, CERAMIC, DISC, YCAP	3	C211, C234, C235	
CA-256001-30	0.0056UF, 10 PCNT, 200V, CERAMIC X7R, 1206,	16	C56, C57, C60, C163, C164, C167, C205, C237, C238, C252, C296, C297, C311, C313, C314, C316	
CA-310013-30	0.01UF, 5 PCNT, 50V, CERAMIC NPO, 0805,	2	C21, C127	
CA-322008-30	0.022UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	2	C55, C162	
CA-410003-10	0.1UF, 10 PCNT, 250V, FILM, DIPPED,	**9**	C262, C263, C268, C269, C279, C317, C318, **C319, C320**	
CA-410006-30	0.1UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	48	C1, C4–C7, C11, C14, C18, C22–C24, C26, C28, C33, C40, C41, C43–C45, C50, C52, C97, C99, C100, C110, C116–C119, C129–C134, C136, C140, C147, C148, C152, C157, C159, C188, C194, C251, C270, C271, C276	
CA-410011-00	0.1UF, 10 PCNT, 400V, FILM, DIPPED,	3	C20, C187, C221	
CA-410020-10	0.1UF, 5 PCNT, 50V, MYLAR, RADIAL,	2	C288, C291	
CA-410030-00	0.1UF, 10 PCNT, 250V, METALLIZED POLYESTER, DIPPED, MAX HEIGHT 0.433"	20	C63, C65, C66, C69, C70, C72–C76, C170, C172, C173, C176, C177, C179–C183	
CA-415002-10	0.15UF, 5 PCNT, 50V, FILM, DIPPED,	4	C286, C287, C290, C292	
CA-422004-30	0.22UF, 10 PCNT, 50V, CERAMIC X7R, 1206,	43	C27, C32, C42, C46, C53, C54, C103, C135, C149, C153, C160, C161, C168, C184, C189, C195, C196, C206, C207, C219, C220, C222, C223, C236, C241, C242, C245, C246, C255, C256, C261, C264–C267, C272, C273, C274, C281, C298, C305–C307	
CA-422008-00	0.22UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C71, C178	
CA-447001-00	0.47UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	1	C293	
CA-447003-00	0.47UF, 10 PCNT, 400V, FILM, WRAPPED, PULSE	2	C231, C232	
CA-447011-00	0.47UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C78, C185	
CA-510004-30	1.0UF, 20 PCNT, 50V, CERAMIC Z5U, 1210,	16	C49, C51, C62, C77, C156, C158, C226–C229, C257, C258, C282–C285	
CA-510006-00	1.0UF, 20 PCNT, 250VAC, FILM, BOX STYLE, XCAP	2	C294, C295	
CA-515004-00	1.5UF, 5 PCNT, 400V, FILM, BOX STYLE,	2	C64, C171	
CA-610002-10	10UF, 20 PCNT, 35V, ELECTROLYTIC, ,	2	C89, C90	
CA-610006-30	10UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	13	C19, C47, C48, C104, C107, C111, C114, C126, C154, C155, C193, C275, C277	
CA-633001-00	33UF, 20 PCNT, 400V, ELECTROLYTIC, ,	2	C190, C191	
CA-647001-10	47UF, 10 PCNT, 10V, ELECTROLYTIC, , NON-POLAR	9	C9, C61, C95, C96, C105, C106, C120, C169, C289	
CA-647002-10	47UF, 20 PCNT, 50V, ELECTROLYTIC, , LOW PROFILE	2	C108, C109	
CA-647007-30	47UF, 20 PCNT, 16V, ELECTROLYTIC, SMT,	1	C192	
CA-710004-10	100UF, 20 PCNT, 25V, ELECTROLYTIC, , LOW ESR	18	C12, C101, C102, C122, C201–C204, C208, C212, C215, C218, C239, C240, C280, C299–C301	
CA-747001-10	470UF, 20 PCNT, 16V, ELECTROLYTIC, ,	3	C243, C244, C312	
CA-833005-00	3300UF, 20 PCNT, 200V, ELECTROLYTIC, ,	14	C209, C210, C213, C214, C216, C217, C247–C250, C253, C254, C259, C260	
CH-000103-00	CLAMP, TO-3PL, 22 GA, PLX3002,	5		
CH-000104-01	HEAT SINK, PS, , PL380,	2		
CH-000114-00	CLAMP, DIODE, 2 FINGER, PLX3002,	3		
CH-000692-00	HEAT SINK, MAIN, , PL380,	1		
CO-000009-ZT	ZTAB, 0.025" TAB, 1 POS, MALE, AUTO INSERTABLE	6	J10, J15, J19–21, J24	
CO-000036-CO	JACK, SPEAKON, 4 POS, FEMALE,	2	J13, J14	
CO-000056-CO	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, LATCHING BOX	1	J7B	
CO-000081-00	PIN JUMPER, SHUNT, 2 POS, ,	2		J9, SHORT PINS 3 & 4 AND PINS 5 & 6
CO-000092-00	HEADER, 0.1" CENTERS, 16 POS (2X8), MALE, BOX	1	J7A	
CO-000098-00	HEADER, 0.1" CENTERS, 26 POS (2X13), MALE, LATCHING BOX SHORT	2	J8A, J8B	

PCB Assembly PL380 (230V) from February 2008–, continued

QSC Part #	Description	Qty.	Reference	Comments
CO-000106-00	JACK, HD15, 15 POS, FEMALE, RIGHT ANGLE SWAGED JACK SCREW	1	J17	
CO-000148-00	XLR, NEUTRIK, 3 POS, FEMALE, VERTICAL	2	J3, J4	
CO-000155-00	HEADER, 0.1" CENTERS, 2 POS (1X2), MALE, RAMP LOCK	1	J5	
CO-000161-00	JACK, EURO, 3 POS, FEMALE, BLACK	2	J16, J18	
CO-000171-00	XLR, NEUTRIK, 3 POS, MALE, VERTICAL	2	J1, J2	
CO-000232-00	HEADER, 0.1" CENTERS, 6 POS, MALE, RAMP LOCK	2	J6, J9	
CO-000329-00	WIRE HOLDER, RIBBON CABLE, 10 POS, FEMALE,	4		J11A, J11B, J12A, J12B
CY-000006-10	16.0000 MHZ, HC-49U, STRAIGHT LEAD PREP	1	Y1	
HW-000001-FC	FUSE CLIP, PC MOUNT, , , TIN PLATED BRASS, 3AG	2		F1
IC-000024-00	CONTROLLER, PWM, SG3525AN, ,	1	U49	
IC-000025-00	DRIVER, MOSFET, TC1427CPA, ,	1	U46	
IC-000040-00	VOLTAGE REGULATOR, -5V, MC7905CT, ,	1	U45	
IC-000041-00	VOLTAGE REGULATOR, +12V, MC7812CT, ,	4	U19, U20, U38, U39	
IC-000042-00	VOLTAGE REGULATOR, +5V, MC7805CT, ,	2	U44, U47	
IC-000046-30	OPAMP, DUAL, TL072, SMT,	4	U16, U23, U25, U37	
IC-000047-30	COMPARATOR, DUAL, LM393, SMT,	1	U11	
IC-000048-30	OPAMP, DUAL, MC33078, ,	3	U21, U22, U51	
IC-000051-00	OPTO ISOLATOR, , MOC8101, ,	1	U40	
IC-000054-30	COMPARATOR, QUAD, LM339AM, SMT,	1	U24	
IC-000073-30	TRANSCONDUCTANCE OPAMP, DUAL, LM13600M, ,	2	U2, U26	
IC-000088-30	NAND GATE, QUAD, 74AC00, SMT,	2	U9, U30	
IC-000106-30	D FLIP FLOP, DUAL, 74HC74, SMT,	2	U4, U7	
IC-000128-30	VOLTAGE REGULATOR, +5V, LM78L05, ,	5	U14, U15, U33, U34, U53	
IC-000130-30	VOLTAGE REGULATOR, -5V, LM79L05, ,	1	U48	
IC-000149-30	INVERTER, SCHMITT, HEX, 74LV14, SMT,	2	U5, U6	
IC-000229-00	VOLTAGE REGULATOR, +15V, LM7815CT, ,	1	U42	
IC-000230-00	VOLTAGE REGULATOR, -15V, LM7915CT, ,	1	U50	
IC-000315-00	SENSOR, TEMPERATURE, LM19CIZ, ,	2	U10, U29	
IC-000316-30	COUNTER, 14 STAGE, 74HC4060, SMT,	1	U1	
IC-000342-00	TOP SWITCH, , TOP244YN, ,	1	U41	
IC-000371-30	DRIVER, MOSFET, UCC37321D, SMT,	4	U17, U18, U35, U36	
IC-000446-30	OPTO COUPLER, HIGH SPEED CMOS, HCPL-0723, SMT,	4	U12, U13, U31, U32	
IC-000447-30	COMPARATOR, SINGLE, LT1016, SMT, HIGH SPEED	2	U8 U28	
IC-005532-OP	OPAMP, DUAL, NE5532, ,	2	U3, U27	
MS-000048-HS	HEAT SINK, TO-220, 1.375" X 0.86" X 0.395", LONG TAB, PLUG-IN	1		
MS-000115-30	FUSE, 1.0A, 24V, 1206, SLO	**3**	F4, **F5, F6**	
MS-000128-30	**FUSE, 5A, 24V, 1206,**	**2**	**F2, F3**	
MS-150250-FU	FUSE, 15A, 250V, 0.25" X 1.25", FAST	1	F1	
PA-000017-00	LED ASSY, GREEN, SPACER, ,	4	LD2, LD3, LD5, LD6	
PA-000018-00	LED ASSY, YELLOW, SPACER, ,	1	LD17	
PA-000043-00	PLATE ASSY, PLX/RMX, OUTPUT, ,	1	J23	
PA-000145-00	LED ASSY, GREEN, 0.850" SPACER, ,	2	LD11, LD14	
PA-000146-00	LED ASSY, YELLOW, 0.850" SPACER, ,	6	LD10, LD15, LD19, LD21, LD24, LD25	
PA-000147-00	LED ASSY, ORANGE, 0.850" SPACER, ,	4	LD12, LD13, LD18, LD23	
PC-038001-00	MAIN, PL380, , ,	1		
PL-000114-00	INSULATOR, IGBT/RECTIFIER, 1.25" X 3.20", THERMALLY CONDUCTIVE, ,	1		D82, D83
PL-000117-00	INSULATOR, TRANSISTOR, , THERMALLY CONDUCTIVE, ,	1		D84, D85
PL-000121-00	SPACER, LED/TO-92, 0.18", PVC, BLACK,	2		U10,U29
PL-000126-00	SPRING SEAT, TRANSISTOR, PLX, NYLON, ,	5		
PL-000138-00	SPACER, T-1 LED, 0.52", PLASTIC, BLACK,	6		LD1, LD4, LD7–LD9, LD16
PT-310005-00	GAIN, 10K, 20 PCNT, 0.2W, 21 DETENT, 16MM LENGTH	2	VR4, VR5	
QD-000014-QD	DIODE RECTIFIER ULTRAFAST, 200V, 15A, , MUR1520, TO-220, 35NS	1	D65	
QD-000042-00	DIODE RECTIFIER ULTRAFAST, 400V, 3A, , MUR440, DO-201AD, 50NS	2	D86, D87	
QD-000102-30	DIODE, 75V, 0.075A, , IMBD4148, SOT-23, 4NS	**62**	D1–D9, D20–D52, D55, D56, D63, D68, D72, D75–D77, D100, D101, D103, D105, D107–D110, **D112–D115**	
QD-000103-30	TRANSISTOR NPN, 40V, 0.2A, 0.2W, MMST3904, SOT-23,	**31**	Q1, Q3, Q15, Q16, Q26–28, Q30–Q32, Q37, Q44–Q46, Q49, Q51, Q63, Q64, Q66, Q67, Q70, Q71, Q75, Q77–Q79, Q81–84, **Q86**	
QD-000104-30	TRANSISTOR PNP, 40V, 0.2A, 0.2W, MMST3906, SOT-23,	**40**	Q2, Q4–Q7, Q14, Q17–Q25, Q29, Q33–Q36, Q38–Q43, Q48, Q50, Q52–Q55, Q62, Q65, Q72–Q74, Q76, Q80, **Q85**	
QD-000105-30	TRANSISTOR NPN, 300V, 0.2A, 0.2W, MMBTA42, SOT-23,	4	Q8, Q13, Q56, Q61	
QD-000106-30	TRANSISTOR PNP, 300V, 0.2A, 0.2W, MMBTA92, SOT-23,	4	Q9, Q12, Q57, Q60	
QD-000108-30	DIODE, 200V, 0.2A, , BAS21, SOT-23, 50NS	23	D10, D11, D16–D19, D53, D54, D59–D62, D67, D88–D91, D94, D95, D98, D99, D102, D111	
QD-000115-30	DIODE RECTIFIER ULTRAFAST, 600V, 1A, , MURS160T3, SMB, 75NS	1	D66	

PCB Assembly PL380 (230V) from February 2008–, continued

QSC Part #	Description	Qty.	Reference	Comments
QD-000116-30	DIODE RECTIFIER ULTRAFAST, 200V, 1A, , MURS120, SMB, 35NS	6	D69, D71, D78–D81	
QD-000152-10	DIODE ZENER, 12V, , 1W, 1N4742A, DO-41,	1	D104	
QD-000156-00	TRANSISTOR PNP, 100V, 3A, 40W, TIP32C, TO-220,	1	Q47	
QD-000157-10	DIODE, 1000V, 1.5A, , 1N5399, DO-15,	3	D64, D70, D106	
QD-000170-00	BRIDGE RECTIFIER, , , , 600V 50A, , IN-LINE	1	BR1	
QD-000184-00	LED ORANGE, , , , , T-1,	3	LD1, LD4, LD16	(PL-000138-00)
QD-000187-00	LED BLUE, , , , , T-1,	1	LD9	(PL-000138-00)
QD-000191-00	LED RED SUPER BRIGHT, , , , , T-1,	2	LD7, LD8	(PL-000138-00)
QD-000244-30	DIODE SCHOTTKY, 40V, 2A, , MBRS2040LT3, SMB,	6	D73, D74, D92, D93, D96, D97	
QD-000297-30	LED YELLOW, , , , , 1206,	**2**	LD20, **LD22**	
QD-000315-00	IGBT, 600V, 75A, 250W, IXGR60N60C2, TO-247,	2	Q68, Q69	
QD-000316-00	DIODE SCHOTTKY, 80V, 35A, 190W, DSSS 35-008AR, TO-247AD,	2	D12, D13	
QD-000317-00	DIODE, 600V, 30A, 250W, DSEP30-06CR, TO-247 ISOL,	4	D14, D15, D57, D58	
QD-000318-00	MOSFET N-CHANNEL, 500V, 85A, 890W, IXFN80N50Q2, SOT-227B,	4	Q10, Q11, Q58, Q59	
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D82, D83	(TWO DIFF. PREP)
QD-000343-00	DIODE HYPERFAST, 600V, 30A, , 30EPH06PBF, TO-247,	2	D84, D85	(TWO DIFF. PREP)
RE-.15002-10	1.5, 5 PCNT, 2W, METAL OXIDE FP, MINI,	8	R72, R73, R242, R243, R281, R288, R380, R381	
RE-.27001-10	2.7, 5 PCNT, 2W, METAL OXIDE FP, MINI,	2	R295, R296	
RE-.56002-10	5.6, 5 PCNT, 2W, METAL OXIDE FP, MINI,	1	R283	
RE-000211-NR	NTC, 10 OHMS, 15 AMPS-25OJ, , , INRUSH LIMIT	2	R262, R266	
RE-001003-30	10, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	14	R60, R61, R63, R64, R230, R231, R233, R234, R269, R274, R275, R293, R294, R351	
RE-001008-10	10, 5 PCNT, 2W, METAL OXIDE FP, MINI,	4	R68, R69, R238, R239	
RE-002004-00	20.0, 20 PCNT, 100W, THICK FILM, TO-247,	4	R85, R86, R255, R256	
RE-003921-30	39.2, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R128, R129, R287, R289, R292, R374	
RE-004752-30	47.5, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R51, R221, R311	
RE-005606-10	56, 5 PCNT, 2W, METAL OXIDE FP, MINI,	6	R261, R263, R264, R267, R285, R286	
RE-007502-30	75, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**9**	R62, R88, R89, R90, R91, R138, R232, **R393, R394**	
RE-010001-30	100, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R375, R376	
RE-010002-30	100, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R11, R12, R20, R28, R83, R84, R183, R184, R191, R198, R253, R254, R302	
RE-020002-30	200, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R65, R147, R235	
RE-027401-30	274, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	11	R43, R44, R115, R122, R154, R156, R215, R217, R305, R370, R372	
RE-047502-30	**475, 1 PCNT, 1/10W, THICK FILM, 0805, 100V**	**1**	**R297**	(was RE-036501-30 or RE-047502-30)
RE-049901-30	499, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R46, R214	
RE-053602-30	536, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R76, R77, R246, R247	
RE-063403-30	634, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R32, R112, R116, R202, R320, R323, R337, R386, R388	
RE-076801-30	768, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R148, R391	
RE-093101-30	931, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R34, R74, R82, R146, R204, R244, R252, R392	
RE-110006-30	1.00K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	7	R10, R96, R97, R159, R280, R282, R284	
RE-111301-30	1.13K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**29**	R2, R14, R16, R31, R37–R39, R117, R127, R155, R175, R186, R188, R199, R206, R208, R209, R322, R327, R360, R363, R378, R379, R384, R385, R387, R389, **R400, R401**	
RE-114002-30	1.40K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R298	
RE-115002-30	1.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	2	R26, R136	
RE-116901-30	1.69K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	9	R314, R315, R324, R326, R339, R352, R353, R369, R371	
RE-117401-30	1.74K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	R41, R71, R211, R241, R331, **R397**	
RE-120002-30	2.00K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R13, R49, R50, R185, R219, R220	
RE-122103-30	2.21K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R158, R164, R165, R169, R170, R330	
RE-124902-30	2.49K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R18, R153, R192	
RE-130102-30	3.01K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R19, R21, R53, R54, R150, R190, R223, R224, R321, R325, R341, R343, R345, R347, R354	
RE-134803-30	3.48K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R29, R201, R271	
RE-136502-30	3.65K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	R1, R3, R57, R58, R110, R120, R126, R176, R177, R227, R228, R336, R338	
RE-143201-30	4.32K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	5	R113, R149, R152, R301, R356	
RE-146401-30	4.64K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	1	R357	
RE-147502-30	4.75K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**17**	R9, **R45,** R48, R98, R99, R106, R107, R143, R182, **R213,** R218, R299, R328, R361, R362, R364, R365	
RE-156202-30	5.62K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R92–R95, R100–R103	
RE-159002-30	5.90K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	R111, R114, R132, R310, R366, **R395**	
RE-163402-30	6.34K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R197, R27, R355	
RE-175002-30	7.50K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	13	**R5,** R22, R30, **(delete R45),** R80, R81, R141, **R178,** R193, R200, **(delete R213),** R250, R251, R317, R318	

PCB Assembly PL380 (230V) from February 2008–, continued

QSC Part #	Description	Qty.	Reference	Comments
RE-190902-30	9.09K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R7, R8, R15, R40, R157, R172, R173, R180, R181, R187, R210, R340, R342, R344, R346	
RE-210003-30	10.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R134, R276, R277	
RE-210009-30	10.0K, 0.1 PCNT, 1/10W, THICK FILM, 0805, 100V	4	R104, R105, R108, R109	
RE-212702-30	12.7K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**5**	R25, **R47,** R151, R196, **R216**	
RE-214300-30	14.3K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R306, R333, R335	
RE-215002-30	15.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	15	R42, R52, R118, R119, R121, R124, R125, R131, R137, R162, R212, R222, R268, R313, R329	
RE-220002-30	20.0K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	**(delete R47),** R66, R67, R135, R160, **(delete R216),** R236, R237	
RE-224901-30	24.9K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	8	R78, R79, R87, R248, R249, R257, R260, R373	
RE-229402-30	29.4K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**2**	R300, **R382**	
RE-230002-10	30K, 5 PCNT, 2W, METAL OXIDE FP, MINI,	7	R75, R245, R278, R279, R303, R307, R308	
RE-230102-30	30.1K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	6	R59, R229, R358, R359, R383, R390	
RE-239202-30	39.2K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	7	R23, R144, R145, R194, R332, R334, R377	
RE-247503-30	47.5K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	6	R6, R133, R179, R265, R316, R319	
RE-269801-30	69.8K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R270, R290, R291	
RE-275001-BM	75.0K, 1 PCNT, 1/4W, METAL FILM, ,	2	R24, R195	
RE-310002-30	100K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	**6**	R123, R130, R142, R161, R367, **R396**	
RE-310003-30	100K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	9	R33, R35, R36, R203, R205, R207, R348–R350	
RE-315002-30	150K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	12	R55, R56, R139, R140, R163, R166, R225, R226, R258, R259, R309, R368	
RE-324302-30	243K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	3	R167, R168, R312	
RE-339201-30	392K, 1 PCNT, 1/10W, THICK FILM, 0805, 100V	3	R17, R189, R304	
RE-339202-30	392K, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	2	R171, R174	
RE-410001-30	1.0M, 1 PCNT, 1/8W, THICK FILM, 1206, 200V	**6**	R70, R240, R272, R273, **R398, R399**	
RE-510001-30	10M, 1 PCNT, 1/8W, THK FLM, 1206, 200V	1	R4	
SC-063100-PP	PHILLIPS, PANHEAD, #6-20, 0.625" L, ZINC, TYPE AB, CR111	12		
SC-080124-HC	HEX, CAP, #8-32, 0.375" L, BLACK, CR111	8		
SC-081101-SP	PHILLIPS, PANHEAD SERATED BASE, #8-18, 0.625" L, BLACK WAXED, TYPE AB, CR111	6		
SW-000105-00	RELAY, DPDT, 12VDC COIL, 16A, 250VAC,	1	K2	
SW-000109-00	RELAY, DPST, 24VDC COIL, 30A, 250VAC,	1	K1	
SW-000111-00	SWITCH, DPDT, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW5, SW6	
SW-000112-00	SWITCH, DP3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW2, SW7	
SW-000113-00	SWITCH, 3P3POS, SLIDE, PCB MOUNT 0.805" TERMINALS	2	SW3, SW4	
WC-000002-10	JUMPER, BARE, 22 AWG SOLID, 1 CONDUCTOR, , VARIABLE LENGTH, AUTO INSERTABLE	2	W2, W5	
WC-000338-00	RIBBON CABLE, , 26 AWG, 10 CONDUCTOR, PL380, 4.0 IN INSULATION,	2	J11, J12	J11A TO J11B, J12A TO J12B
WC-000345-00	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 9.00" L, BLACK/WHITE	1	W9, W10	WHITE: W9A-W9B & W9C-W9D, BLACK: W10A-W10B & W10C-W10D
WC-000345-01	WIRE ASSY, SPEAKER, 16 AWG, 2 CONDUCTOR, PL380, 14.00" L, BLACK/GREY	1	W13, W14	GREY: W13A-W13B & W13C-W13D, BLACK: W14A-W14B & W14C-W14D
WC-000347-00	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 14.00" L, BLACK	1	W18	W18-SWITCH
WC-000347-01	WIRE ASSY, AC SWITCH, 16 AWG, 1 CONDUCTOR, PL380, 7.00" L, RED	1	W17	W17-SWITCH
XF-000108-30	BEAD, 100MHZ, 50 OHM, SMT	9	L5, L6, L8–L14	
XF-000204-00	HOUSEKEEPING, FLYBACK, , , , EVICTOR, ,	1	T1	
XF-000287-00	TRANSFORMER, GATE DRIVE, , TOROID, , , , P0584	2	T3, T4	
XF-000297-00	INDUCTOR, , TOROID, 40UH, PL380, ,	2	L1, L3	
XF-000298-00	TRANSFORMER, SWITCHING, 125KHZ, E55, 2000W, PL380, ,	1	T2	
XF-000306-00	INDUCTOR, COUPLED, , 1.8UH, PL380, ,	2	L2, L4	
XF-000307-00	INDUCTOR, COMMON MODE, TOROID, 3.2MH, PL380, ,	2	L15, L16	

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