# 5 UNIT DESCRIPTIONS

## 5.1 SIGNAL UNIT A1

### 5.1.1 Description A1

#### *5.1.1.1 Introduction*

With the exception of the final stages, unit A1 incorporates the vertical channels, the triggering, the time bases and the intensity (Z) control. The unit A1 description is split into the following chapters:
- Input attenuators and calibrator.
- Preamplifiers.
- Y-functions and delay line driver.
- Triggering.
- Main and delayed time base.

The complete signal unit is divided over 18 circuit diagrams. These diagrams and their main interconnections are listed in the table.
Diagram 11 includes the circuitry that controls the functions in the vertical channels.
Diagram 18 shows the connectors that make contact with other units in the oscilloscope via the connector board. These units are:
- The final amplifier unit A2: horizontal deflection signal and intensity control.
- The microprocessor unit A3: control signals and potentiometer functions.
- The power supply unit A6: supply voltages and line trigger signal.

| Diagram | Description | Input signal coming from | Output signal going to | Control signal coming from |
|---|---|---|---|---|
| 1,2,3,4 | Attenuator ch.1,2,3,4 | input 1,2,3,4 | diagr.6,7 | diagr.5,11 |
| 5 | Attenuator control | diagr.1,2,3,4 | diagr.1,2,3,4,18 | diagr.11 |
| 6 | Preamplifier ch.1,2 | diagram 1,2 | diagr.8 | diagr.11,18 |
| 7 | Preamplifier ch.3,4 | diagram 3,4 | diagr.8 | diagr.11,18 |
| 8 | Y-functions | diagram 6,7 | diagr.9 | diagr.10,11,18 |
| 9 | Delay line driver | diagram 8 | delay line | diagr.10,18 |
| 10 | Display + trigg control | diagram 18 | diagr.8,9 | diagr.18 |
| 11 | Control circuits | diagram 18 | diagr. 1,2,3,4,5,6,7,8 | diagr.18 |
| 12 | MTB trigger | diagram 8 | diagr.13,15 | diagr.12,18 |
| 13 | TV/line trigger | diagram 12,18 | diagr.12,14 | diagr.12,14 |
| 14 | DTB trigger | diagram 8 | diagr.15,17 | diagr.14,18 |
| 15 | Time base logic | diagram 12,14 | diagr.16,17,18 | diagr.15,18 |
| 16 | Main time base | diagram 15 | diagr.17 | diagr.18 |
| 17 | Delayed time base | diagram 15 | diagr.18 | diagr.18 |

### *5.1.1.2 Input attenuators and calibrator*

## Diagram 1, 2, 3, 4

The attenuators of channels 1, 2, 3 and 4 are identical, therefore only channel 1 is explained. Every attenuator basically consists of four sections. These sections are:

- The input circuit with 50Ω termination resistor and AC/DC input coupling circuit.
- The high impedance attenuator with divide by 1, divide by 10 and divide by 100 sections.
- The impedance converter. This is the active stage.
- The low impedance attenuator that can give an additional divide by 2.5.

The attenuator sections are switched by voltage pulse operated relays. This reduces power dissipation. Every relay has two change-over contacts. After a pulse the contacts stay in the selected position. One side of each relay coil is connected to the common potential AT12REP;
the other side to a voltage that differs per relay.
Setting a relay in the position as drawn in the diagram (rest position) is achieved by a positive 10 ms pulse on common line AT12REP while the other control line stays at 0 V level. The other side of the relay coils that must not switch are applied to the already mentioned 10 ms positive pulse. Switching a relay to the position opposite to the one in the diagram (activated position) is achieved by a 10 ms positive pulse at the other side of the relay while AT12REP is kept at 0 V. This principle is demonstrated in figure 5.1 where the /1 relay is switched to the rest position and the /10 relay is activated.

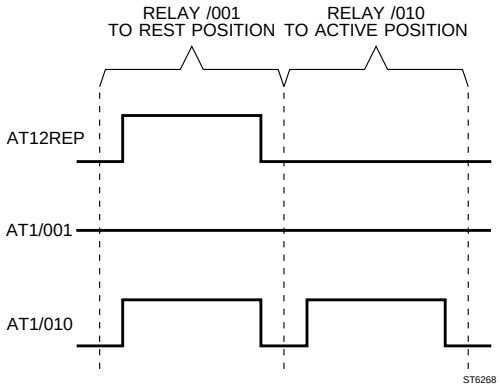



*Figure 5.1 Switching pulses for relay*

***Input circuit***

The 50Ω termination resistor is formed by the resistors R1006/R1007. It is switched by relay contact K1001. The NTC resistor R1011 is placed between R1006 and R1007 and measures the temperature of these resistors. This information is routed to the microprocessor on unit A3. If necessary the 50Ω position is switched off.
The DC blocking capacitor is C1001. In DC position the capacitor is not used and discharged via R1002. The signal path is via K1002.

***High impedance attenuator***

The divide by one section (/1) is switched via the relay contacts K1003. It switches the input signal through without further attenuation.
The divide by ten section (/10) is present between the relay contacts K1004. The /10 is accomplished by R1016, R1027, R1031 and R1032.
The divide by hundred section (/100) is present between the relay contacts K1006 and K1004/6,4. The /100 is accomplished by R1021 and R1023.
LF square wave calibration is achieved via the dual varicap diode V1002. Influence of the signal on the capacitance value is eliminated by two diodes with opposite polarization. The compensation factor and consequently the voltages AT1LFCOR1 and AT1LFCOR0 are depending on the selected attenuator position.

The signal ATCAL is applied to /33 attenuator R1008/R1009. ATCAL can supply several accurate voltages that are used for vertical calibrations.

***Impedance converter***
This active stage consists of three sections with different frequency ranges. The sections partly make use of the same components:
- The HF section for frequencies above 5 kHz. It is formed by C1021, FET V1006 and the two emitter followers V1008 and V1009. The FETs V1004 and V1005 are used for input protection. V1007 is a current source.
- The LF section for frequencies 30 Hz to 5 kHz. It is formed by operational amplifier N1001 (gain 2x) that receives the LF input signal via divide-by-two attenuator R1031/R1032. The capacitors C1023 and C1025 are frequency determining components in the N1001 feedback loop. The N1001 output signal is routed via R1034, V1006 and the emitter followers V1008 and V1009.
- The DC section for frequencies DC to 30 Hz. It is formed by operational amplifier N1001 (gain 2x) that receives the input signal via divide-by-two attenuator R1031/R1032. Via feedback resistor R1037 the voltage at the output of the impedance converter is compared with the input level via the + and inputs of N1001. This keeps the DC output value of the impedance converter exactly at the required value. This compensates for DC drift. Part of the feedback loop is V1001 that determines the low-frequency gain. The N1001 output signal is routed via R1034, V1006 and the emitter followers V1008 and V1009.

The low impedance attenuator is formed by R1072 and R1073. Switching is accomplished by V1012 and V1013. V1012 conducts in the /1 position and V1013 in the /2,5 position. The attenuator output signal is an unbalanced signal. The unbalanced output signal is applied to the succeeding stage via R1071 and via R1074.

## Diagram 5

***Probe indication circuit***
There are four identical circuits of which the one for channel 1 is described. The resistor in the indication ring of the probe is present between X1002 and ground potential. The resistance value is measured by the microprocessor on unit A3.
The temperature of the 50Ω termination resistors on diagram 1 is measured by NTC resistor R1011. This resistor is placed in between the two termination resistors. If the temperature gets too high, the + input of N1101 becomes lower than the input. This makes output 13 of N1101 low and 0 volt is detected by the microprocessor via the probe indication line PROBE1. This is the sign for the microprocessor that the 50Ω resistor is too hot and it is switched off.

***LF square wave calibration***
This circuit produces the voltages for the varicap diodes V1002. The diodes require control voltages with opposite polarity. There are four identical circuits for the four vertical channels. The input signal AT1LFCAL is produced by a DAC and has the range 0 ... 10 volt. This is converted via the operational amplifiers N1102, N1103 into two signals that range from -5 ... -15 volt (AT1LFCOR0) and +5 ... +15 volt (AT1LFCOR1) respectively.

***Amplitude Calibrator***
This circuit consists of 8-position multiplexer D1152 and operational amplifier N1104. It can supply 8 accurate voltages of 10V, 5V, 2V, 1V, 500mV, 200mV and 0V. They are supplied to the vertical channels 1, 2, 3 and 4 for calibration voltages. The voltages are derived from a voltage divider with precision resistors R1192 through R1197. The divider is supplied with an accurate 10 V reference voltage. Under control of a three bit address ATCAL0 ... ATCAL2 one of the outputs of the voltage divider is selected via D1152. This signal is routed to the vertical channels via buffer N1104.

***Loop gain calibration***
The output voltage range of a digital-to-analog converter (DAC) is changed via resistor network R1112, R1113 and R1114. The output voltage is applied to V1001 that determines the low-frequency gain in the channel 1 attenuator.

***Calibrator***

This circuit is used for probe adjustment. It is built up around triple analog multiplexer D1151. The sections D1151/1,2,10,15 and D1151/3,4,5,9 form a 2 kHz oscillator. The third section D1151/11,12,13,14 switches in the 2 kHz rate of the oscillator. The oscillation principle is now explained with the simplified diagram in the figure.

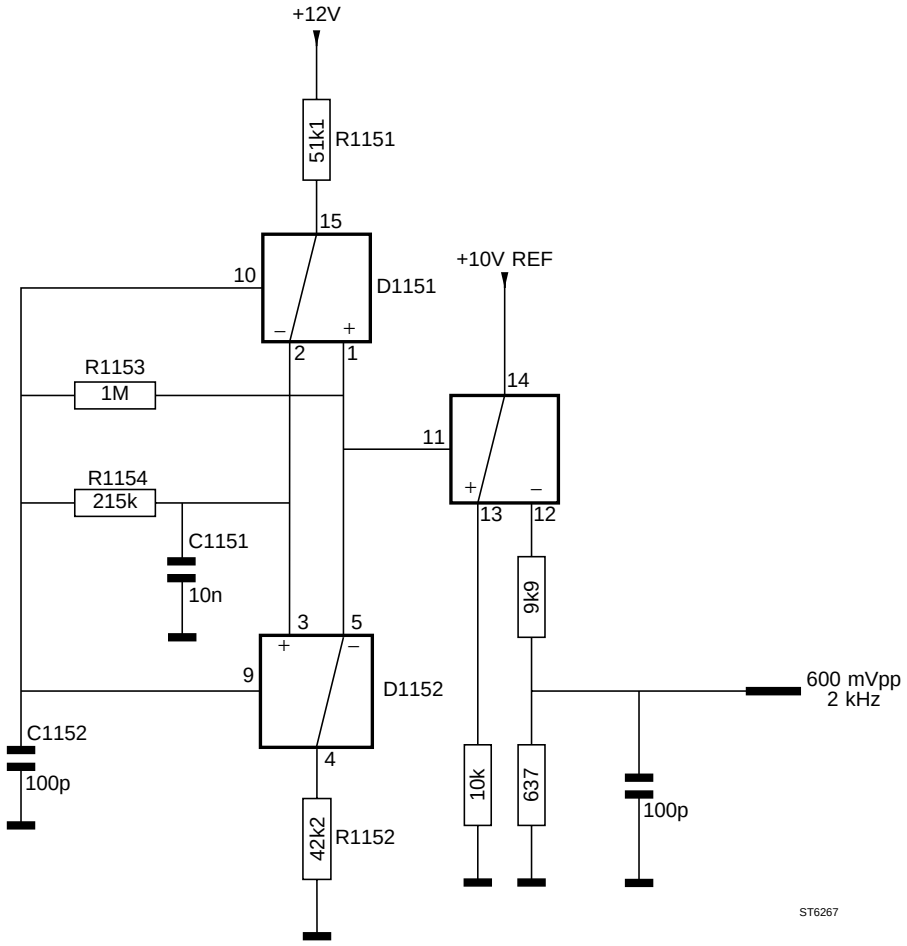



*Figure 5.2 Simplified diagram of CAL generator*

The start is in the situation as given in the figure. C1151 charges from +12V via R1151 and the switch contacts 15 and 2. After some time the voltage across C1151 reaches the digital "High" level and the switch contacts go to the opposite position. This causes C1151 to discharge to 0V via switch contacts 3 and 4 and R1152. Via switch contacts 15 and 1 and R1153 a gap is created between the switching moments. The charging/discharging process makes pin 11 high and low at a 2 kHz rate. This connects voltage divider R1156/R1157 and R1158, R1159 with + 10VREF or leaves it floating in the 2 kHz rate.

### *5.1.1.3 Preamplifiers*

## Diagram 6, 7

The preamplifiers for channel 1 and 2 and associated current sources are given in diagram 6. Diagram 7 gives this for channel 3 and 4. Channel 1, 2, 3 and 4 are identical, therefore only channel 1 is explained.

The output signals AT1OUT1 and AT1OUT0 from the channel 1 attenuator are applied to pin 3 and 5 of amplifier IC D1201. The balanced output signal of this IC is available at pin 18 and 19. This signal is routed to the Y-functions section via the level shifters V1201 and V1202.

The amplifier D1201 can be switched to a number of attenuation/gain positions that are dependent on the channel 1 AMPL position. The gain x1 position is determined by R1205/R1206/C1205 that are present across pin 6 and 7. The x1 is switched by control signal PA1X1.
The attenuation /2 is determined by R1207 and switched by PA1/2.
The gain x5 is determined by R1208/R1210/R1215/C1210 and switched by PA1X5. Continuous gain control is determined by DAC output signal VAR1 that is applied to pin 20. This signal comes from microprocessor unit A3. It is used for front panel gain control in fine steps and also for gain calibration.

The complete range of the channel 1 input sensitivities is controlled via front panel control AMPL. It is accomplished by the combination of input attenuator positions and the x1, /2, x5 and the VAR1 functions.

Offset control is achieved via the DAC output signal PA1OFFSET that is applied to the D1201 input pin 13. The DAC signal PA1OFFSTRG gives an offset signal in the current sources V1208 (PA1LSA) and V1209 (PA1LSB). PA1LSA and PA1LSB are applied to level shifters V1201/V1202. This is used to compensate for offset in the trigger path and also influences the offset in the vertical channel. This in turn is compensated via the POS1 signal in the Y-functions section.

The circuit in the bottom half of the diagram includes a number of current sources for the channel 1 and 2 preamplifiers. The reference for all these current sources is PAVREF that is present at N1251/pin 3. This is converted in a reference voltage at the collector of V1252 that is applied to the current sources. The currents for channel 1 are PA1ICL, PA1ISY, PA1LSA and PA1LSB. The currents for channel 2 are PA2ICL, PA2ISY, PA2LSA and PA2LSB. PA2LSA and PA2LSB are adjustable via DAC output signal PA2OFFSTRG.

#### *5.1.1.4 Y functions and delay line driver*

### Diagram 8

This diagram shows the channel 1, 2, 3 and 4 function circuits D1301, D2301, D3301 and D4301. The balanced output signals of each cicuit are available at pin 7 and 8. They are all applied to the resistance network R1313 through R4314 that is shown on the next diagram. The output of this network feeds the delay line driver.

The four function circuits are almost identical. Compared with channel 1 and 3, channels 2 and 4 have additional invert functions. For this reason, only the channel 2 circuit is explained. Here the balanced input signal is applied to pin 25 and 26 of D2301. The balanced output signal at pin 7 and 8 is switched by control signal CNT2CH-HX. The balanced output signals FNC2MTR0 and FNC2MTR1 that are available at pin 13 and 14 are used for triggering the main time base. This is switched via control signal CNT2MT-HT. The balanced output signals FNC2DTR0 and FNC2DTR1 that are available at pin 1 and 2 are used for triggering the delayed time base. This is switched via control signal CNT2DT-HT.

Channel 2 position control is achieved via an adjustable analog DAC voltage POS2 from the microprocessor unit A3. This voltage is applied to input 9 of operational amplifier N2202. This IC converts the DAC voltage POS2 (1 ... 4 V) into a voltage between -8 and +8 V. This voltage is converted into a current via resistor R2311, because pin 12 of D2301 is a virtual ground.

The balanced output signals FNCYOP0 and FNCYOP1 at pin 5 and 6 of D2301 of the channel 1 can be used to provide signals for the Y-out option. The (optional) Y-out circuit (present in channel 1 only) is located on an additional unit that is connected via the connectors X1303 through X1310. This is switched via control signal YOP-HX at pin 4. If no option installed, the signal is switched off by a low level supplied via R1312. If the option is present the switching is achieved by a signal coming from the additional unit.

The balanced output signals FNC1DPO0 and FNC1DPO1 at pin 9 and 10 can be used to provide signals for digital signal storage. The signals are routed via the coaxial sockets X1301 and X1302 to the sockets X8001 and X8002 on digitizer unit A8. This is present on all 4 channels. Biasing current for these outputs is provided via V1302, V1313 and R1307. The capacitor C1301 determines the cut-off frequency if the bandwidth limiter is active. The limiter is switched via signal FNCBWL.

The following table summarizes the functions and related pin numbers of the IC's used in the circuit diagram:

| Output (pin) | On/Off (pin) | Invert (pin) | Bandw. Lim. (pin) | Pos (pin) |
|---|---|---|---|---|
| MTB Trig (13,14) | 20 | 19 | -- | -- |
| DTB Trig (1,2) | 24 | 23 | -- | -- |
| Y-out (5,6) | 4 | 3 | 28 | -- |
| Digital out (9,10) | -- | 3 | 28 | 12 |
| Chann. out (7,8) | 11 | 3 | 28 | 12 |

## Diagram 9

This diagram shows the delay line driver and associated circuitry. The delay line driver itself consists of the balanced amplifier branches V5003/V5006/V5008 and V5004/V5007/V5009. These amplifiers serve as a 9x amplifier and level shifter. V5011/V5012/V5013/V5014 clamp the input signal in order to reduce the output voltage swing applied to the delay line. The balanced input current (100 uA/div) signals from channel 1, 2, 3 and 4 are FNC1OUT0/FNC2OUT0/FNC3OUT0/FNC4OUT0 and FNC1OUT1/FNC2OUT1/FNC3OUT1/FNC4OUT1. The output voltage (45 mV/div when connected to the delay line, 90 mV/div when open) signals DLDOUT0 and DLDOUT1 supply the delay line. The resistors R5051 and R5052 give correct 50Ω termination impedance.

The Y-offset control part is supplied with the DAC output signal DLDOFFSET (delay line driver offset) that is used for instrument calibration. The DAC output signal TRASEP gives trace separation between main and delayed time base display in alternate time base mode. TRASEP is passed through via analog switch D5001/6,8,9 if control signal TRASEP-HC is high.

Operational amplifier N5001/5,6,7 makes a stable +4 V reference voltage.
Operational amplifier N5001/2,3,1 keeps DLDDCLEVEL0 and DLDDCLEVEL1 at equal level by influencing the level at DLDDCCORR.

## Diagram 10

This diagram comprises the circuitry that controls the vertical channels 1, 2, 3 and 4 and the main (MTR) and delayed (DTR) trigger sources. The heart is formed by IC D9009. The IC is loaded with information about the control functions that must be executed. This happens via the input lines SCL (Serial CLock) and SDA (Serial DAta) that come from the microprocessor unit A3. At turn-on D9009 gets a reset at pin 17. This occurs via V5506 which is controlled by output D9004/11 on the next diagram.

The channels 1, 2, 3 and 4 are switched via the output pins 2, 3, 4 and 5 of D9009. The main time base trigger (MTR) source of channel 1, 2, 3 and 4 is switched via the control signals that are available at pin 2, 12, 1 and 13 of multiplexer D5501. This multiplexer is supplied with 3 lines that come from pin 25, 26 and 27 of D9009. The signal CNT2MTI-HT that is present at pin 11 of AND gate

D5503 gives the necessary inversion of the main trigger path if channel 2 is in the inverted mode. The signal CNT4MTI-HT that is present at pin 4 of AND gate D5503 gives inversion of the main trigger path if channel 4 is in the inverted mode.

The delayed time base trigger (DTR) source of channel 1, 2, 3 and 4 is switched via the control signals that are available at pin 2, 12, 1 and 13 of multiplexer D5502. This multiplexer is supplied with 3 lines that come from pin 22, 23 and 24 of D9009. The signal CNT2DTI-HT that is present at pin 10 of AND gate D5503 gives the necessary inversion of the delayed trigger path if channel 2 is in the inverted mode. The signal CNT4DTI-HT that is present at pin 3 of and-gate D5503 gives inversion of the main trigger path if channel 4 is in the inverted mode.

The input pin 9 ALTCLN of D9009 gives channel/trigger source switching in the alternate display mode. The circuit with V5503 converts the current input signal ALTCLK (ALTernate CLock) from the time base logic into a voltage signal. The input pin 17 PUDML gives D9009 a preset when switching the oscilloscope on.

For the chopped display mode a chopper oscillator V5501/V5502 is present. It is switched on when control signal CHSW (CHopper SWitch) is high. The output signal of the oscillator is applied to pin 7 of D9009. The signal CHBLANK gives display blanking when switching between one channel to another.

The D9009 output signal TRASEP-HC activates the trace separation control in alternate time base mode. This signal is high if the delayed time base is active and low for the main time base. The output signal TBSEL controls the choice between main time base (high) and delayed time base (low) for horizontal deflection.

## Diagram 11

This diagram includes the generation of control signals for the channel 1, 2, 3 and 4 attenuators, preamplifiers, Y-function and delay line driver circuits. The names of the control signals indicate exactly which circuit part is controlled:

- The signals starting with AT1, AT2, AT3 and AT4 control the ATtenuators of respectively channels 1, 2, 3 and 4. The attenuators and associated signal name lists are indicated in the description belonging to figures 1, 2, 3 and 4.
- The signals starting with PA1, PA2, PA3 and PA4 control the PreAmplifiers of respectively channels 1, 2, 3 and 4. The preamplifiers and associated signal name lists are indicated in the description belonging to figures 6 and 7.
- The signals starting with FNC1, FNC2, FNC3 and FNC4 control the Y- FuNCtion (channel and trigger source switching) of respectively channels 1, 2, 3 and 4. The Y-function blocks and associated signal name lists are indicated in the description for diagram 8.
- The signals starting with DLD control the Delay Line Driver. This circuit part and associated signal name list are indicated in the description for diagram 9.

A part of the control functions are simple on/off functions; e.g. the switching of a certain attenuator section. Other control functions consist of an adjustable DC voltage; e.g. the DC voltage that determines the gain of an amplifier section.

D9001 and D9002 have outputs that are able to drive the relays in the attenuator sections of channels 1, 2, 3 and 4. The IC’s are controlled by the microprocessor on unit A3. This happens via the data signal SDA (Serial DAta) and the synchronization signal SCL (Serial CLock). The enable signals

DLEN0-HT (Data Latch ENable) and DLEN1-HT determine if D9001 or D9002 reacts on the SDA/SCL signals. The figure below indicates the relation between SDA and SCL.

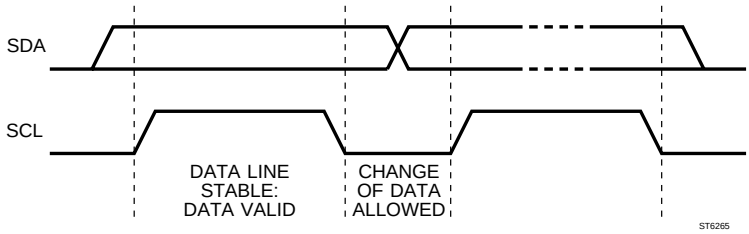



*Figure 5.3 Relation of serial bus signals SDA and SCL*

D9003 and D9004 have outputs that control a number of on/off functions in the preamplifier. The IC's are connected in cascade as a shift register. The IC's are controlled by the microprocessor on unit A3. This happens via the data signal SDA (Serial DAta) and the synchronization signal SCL (Serial CLock). The enable signal STROBE0-HT in relation with SCL and SDA is indicated in the figure below. New data can be clocked into the shift register if STROBE0-HT is low. The new data becomes available at the outputs at the low-to-high transition of STROBE0-HT.

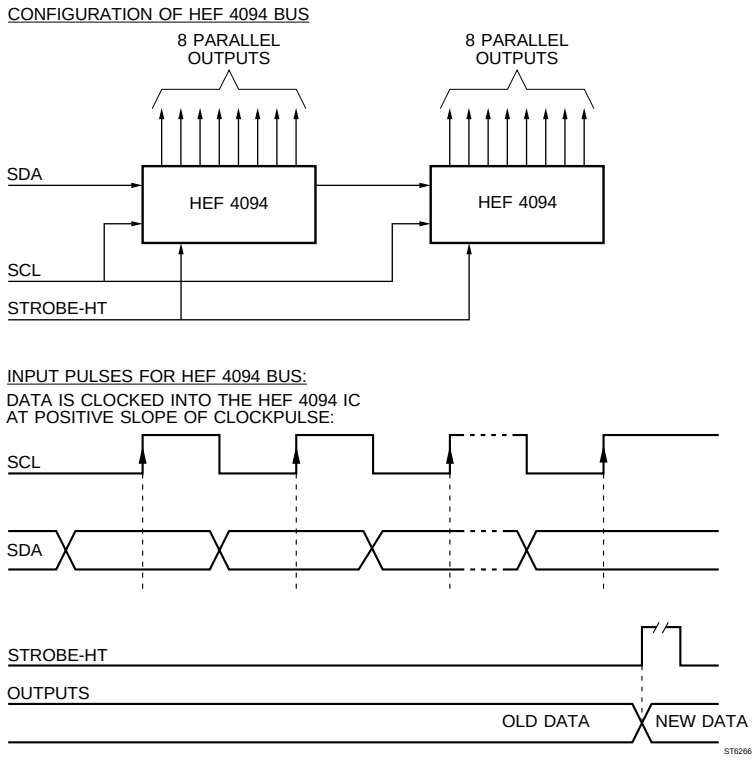



*Figure 5.4 Configuration of serial control bus*

N9001, N9002 and N9003 are octal digital-to-analog converters (DAC's). Each IC has 8 outputs capable of delivering a DC voltage that is adjustable between 0.5 and 9.5 V. This is controlled by the microprocessor on unit A3 via 6 bits of information that allow 64 adjustment steps. This happens via the data signal SDA (Serial DAta) and the synchronization signal SCL (Serial CLock). The data bits are preceeded by address bits that are compared with the fixed address A0/A1/A2 applied to pin 7, 8 and 9. This determines if N9001, N9002 or N9003 reacts on the bitstream.

*Note: a solder pad is present in the SDA and SCL input lines of every IC. This gives the possibility to isolate a suspected IC from the other in case a fault is suspected.*

#### *5.1.1.5 Main and delayed time base triggering*

## Diagram 12

The main time base triggering (MTR) is mainly formed by IC D6541. The other IC D6621 is the peak-peak detector for the trigger level. The balanced input signal for triggering on vertical channels 1, 2, 3 or 4 is applied to pin 7 and 8. This signal can originate from one of the 4 vertical preamplifier sections where the source selection is also done. The dc biasing currents come from the circuit with V6506, V6507 and V6532. This circuit is also supplied with the line trigger sinewave signal MTRLINE that comes from the power supply. This signal can be used for mains/line triggering and is selected on the next diagram.
The output signal of D6541 is available at pin 19 and 20. This signal is routed to the main time base (MTB) via the level shifters V6573 and V6574. The signal MTRVIDEO from output pin 2 of D6541 is routed to the TV trigger circuit.

The IC D6541 incorporates the filters for HF reject (external capacitor C6549), LF reject (external capacitor C6551) and AC (external capacitors C6559, C6561, C6562). These filter modes are switched with the control signals MTRLF-HD (pin 3) and MTRHF-HD (pin 14). Positive/negative slope and video are switched with the control signals MTRSLOPE (pin 21) and MTRTVSEL-HD (pin 4). The logic levels of these control signals are indicated in two tables on the diagram. The signal MTRSEN is a DAC output voltage that determines the gain of the trigger amplifier.

A balanced current signal leaves D6541 at pins 26 and 27. This signal is converted into a voltage signal via V6604 and V6606. The voltage signal is applied to pins 3 and 7 of the peak-peak detector D6621. This IC detects the positive and negative peak values of the trigger signal. It reduces in the peak-peak trigger mode (switched with MTRPPLEV-HD) the range of the level (LEVMTB) to just within the peak-peak signal value.

The output of the peak-peak detector is present at pin 14 and 15 and routed to level input pin 22 and 23 of D6541, via the level shifter with V6667, V6668, V6686 and V6687. At this point a level offset correction is also introduced via DAC signal MTRBAL. The level is fixed in TV trigger mode by giving signal LEVMTB a predefined fixed level. The output pulse MTRTVSYNC from the TV synchronization separator circuit (see next diagram) is applied to the base of V6687. This signal is interrupted if the TV trigger mode is off.

The series parallel converter D9011 has outputs that control a number of on/off functions in the MTB triggering. D9011 is controlled by the microprocessor on unit A3. This happens via the data signal SDA (Serial DAta) and the synchronization signal SCL (Serial CLock). The enable signal is STROBE1-HT.

## Diagram 13

This diagram shows the TV trigger circuit. The signal MTRVIDEO from pin 2 of MTR circuit D6541 is applied to the input of the TV CLAMP circuit V6754/V6757/V6759/V6763/V6768. The peak level of the synchronization pulses is detected via V6757 and C6758. The TV signal at the base of V6768 is kept at a constant level via V6759 and V6754. Diode V6761 cuts off the video information so that only synchronization pulses are applied to input pin 2 of N6771.

The TV synchronization separator N6771 is able to decode three different types of sync pulses. The analog control signal MTRTVMODE at pin 6 can have 3 different values that determine the TV standard in which the circuit will work. The standards and respective control voltages are indicated in a table.

N6771 separates the TV synchronization pulses. The following signals are available at its outputs:
- Pin 1 carries negative going line (MTRTVL) pulses. These pulses can be applied to the MTB trigger (MTR) section via multiplexer D6781. Via multiplexer D7711/3,4,5,9 they are applied to the delayed trigger (DTR) section.
- Pin 3 carries the negative going field pulses (MTRTVFR) that appear at the beginning of field 1 and field 2.
- Pin 7. The signal is high during field 1 and low during field 2. Field 1 and Field 2 together form one frame.

The set/reset flipflops D6779 make the field 1 (MTRTVFLD1) and field 2 (MTRTVFLD2) pulses. As input signals are used the output signals at pin 7 and 3 of N6771.

The multiplexers D6781 and D7771 select the TV and line trigger sources for MTR and DTR:
- The MTB TV trigger signal is MTRTVSYNC. It originates from D6781/14.
- The DTB TV trigger signal is DTRTVL. It originates from D7711/15.
- The signal VSYNC from D6781/4 is not used: it will be used for extensions such as digital signal storage.
- The MTB mains/line trigger signal is MTRLINE. It is switched via D5001/10,11,12.
- The DTB mains/line trigger signal is DTRLINE. It originates from D7711/13.
- Signal VSYNC carries the selected TV field 1 or TV field 2 pulse. This signal is used on the digitizer unit A8. It is routed via socket X6794 on unit A1 to X8505 on unit A8.

## Diagram 14

This diagram shows the DTB trigger (DTR) circuits. This circuit is build up around D7541. It is a simplified replica of the main trigger circuit. This because of the fact that the DTR is not equipped with peak-peak trigger facility. The level signal LEVDTB is applied almost directly to pin 22 and 23 of D7541. The transistors V7686 and V7687 are used to convert an asymmetrical LEVDTB signal into a symmetrical signal. At this point the TV line synchronization pulses (DTRTVL) are applied to the delayed trigger section when required.

The XDEFL CIRCUIT is used for X-DEFLection via the balanced X deflection signals DTRXDEF1 and DTRXDEF0 (pin 15 and 16 of D7541). The outputs of the circuit are TBXOUT1/TBXOUT0 and are applied to the time base section. It is there where the selection is done between X- deflection signal, MTB sawtooth and DTB sawtooth. Position control is achieved by signal DTRXPOS which is derived from LEVDTB via switch D7711/4,9,3. This switch is indicated on the preceding circuit diagram.

D9013 is used to determine the modification state of the unit A1. This is important in connection with the microprocessor hardware. The 8 outputs of D9013 are made high one by one after the oscilloscope is turned on. Via output diodes V7801 ... V7808 the high level is passed through. Depending on the modification state of the unit, one or more diodes are inserted into the p.c.b.. This gives the possibility to program 256 different modification levels.

#### *5.1.1.6 Main and delayed time base and control logic*

## Diagram 15

This diagram incorporates the control logic for the main and delayed time base. This logic consists mainly of IC D8004. Also the input signal for the final Z-amplifier is generated on this diagram and occurs in D8003.

The selected trigger signals for the main time base are MTRIG0/MTRIG1 and are applied to pin 7 and pin 6 of D8004. This results via output pin 24 and V8013/V8014 into signal MTBGATE that starts the main time base (MTB). Signal STRCALM-HT is used to start the MTB via V8003. This occurs during autocalibration of the MTB.

The signal ALTCLK is derived here via V8018. This signal is used for display switching in ALTernate display mode. This happens in D9009 in the section that controls the display and trigger sources.

The selected trigger signals for delayed time base (DTB) are DTRIG0/DTRIG1 and are applied to pin 9 and pin 8 of D8004. This results via output pin 18 and V8012/V8011 into signal DTBGATE that starts the DTB. Signal STRCALD-HT is used to start the DTB via V8007. This occurs during autocalibration of the DTB.

D8004 has inputs and outputs with the following functions:
- TBEOHO-LX goes low at the end of the hold-off period.
- TBAUTO-LD is low if auto free run mode is active.
- TBEOM-HX goes high at the end of the MTB sweep.
- TBSTD-LX goes low to start the DTB sweep.
- TBEOD-HX goes high at the end of the delayed sweep.

- TBNOTTR-HT goes high if the MTB is not triggered.
- TBSEL selects MTB if high and DTB if low.
- TBSSG-HT goes high at the end of a single sweep.
- DSOM (pin 2) goes high if a MTB trigger occurs. The connected circuit with V8023/8024 generates signal DSOMOUT that is routed via coax socket X8011 to socket X8503 on digitizer unit A8.
- DSOD (pin 14) goes high if a DTB trigger occurs. The connected circuit with V8029/V8031 generates signal DSODOUT that is routed via coax socket X8014 to socket X8501 on digitizer unit A8.
- DSODGATE from V8012/V8011 informs the digitizer on unit A8 that the analog delayed sweep is on. The signal is routed from coax socket X8013 to socket X8502.
- TVHOLD-LD is generated on the digitizer and can extend the hold off time of the main time base. This is used in TV trigger mode. The signal is routed from X8504 on unit A8 to X6010 on unit A1.
- TBHOTXT informs the digitizer A8 about the presence of the hold off period of the analog time base. The signal is routed to X8101/A12 on unit A8 via the connector board A10.

V8061/V8062/V8063/V8066 form the "V peak-peak circuit". It plays a role as the automatic positioning of the cursors on the top and bottom of the signal (Vpp mode). This function works via the DTB trigger circuit and is mainly software based. V8062/V8063 form a set-reset flipflop with inputs with hysteresis. The flipflop is set with the DSOD pulse that goes high at the moment that a DTB trigger pulse is detected. This is signalled to the microprocessor via V8066 which makes the TTL signal VPPTEST-LD. The shape of the waveform is scanned by the microprocessor by monitoring the signal VPPTEST-LD at different DTB trigger LEVEL positions. The flipflop is reset by the microprocessor via signal STRCALD-HT.

The balanced output signals ZTRA0 and ZTRA1 from pin 10 and 11 of D8003 are applied to the final Z-amplifier in order to control the intensity on the CRT screen. An important input signal is TBZB from D8004/19. This signal is high if the MTB sweep is on and during this time the light on the CRT is on. The intensified part during the time that the DTB sweep is on is switched on if signal TBZA is high. TBZA originates from D8004/20.
The signal CHBL that is applied to D8003/15 is influenced from the chopper blanking signal CHBLANK-HX and from the external Z-MODulation signal. The DAC output signals TBINTRAT-XA (pin 3) and INTTRA respectively influence the intensity ratio between MTB and DTB display and the total intensity on the CRT.
The signal TBXDEFL-LD (pin 6) switches the light continuously on if it is low. This happens in the X-DEFLection mode.

The circuit with V8002/V8006 is used for Z-MODulation via the BNC socket at the rear of the oscilloscope. The output signal of the circuit is TBZEXT and it is applied to D8003/16.

D9008 has outputs that control a number of on/off functions. The IC's of this type are connected in cascade as a shift register. The IC's are controlled by the microprocessor on unit A3. This happens via the data signal TBD01 (from the preceding D9011); the synchronization signal TBSCL (Time Base Serial CLock). The enable signal is STROBE1-HT. New data can be clocked into the shift register if STROBE1-HT is low. The new data becomes available at the outputs at the low-to-high transition of STROBE1-HT.

N8005 is an octal digital-to-analog converter. The IC has 8 outputs that can deliver a DC voltage that is adjustable between 0.5 and 9.5 V. This is controlled by the microprocessor on unit A3 via 6 bits of information that allow 64 adjustment steps. This happens via the data signal SDA (Serial DAta) and the synchronization signal SCL (Serial CLock). The data bits are preceeded by address bits that are compared with the fixed address A0/A1/A2 applied to pin 7, 8 and 9. This determines if N8005 or similar IC's in the instrument will react on the bitstream.

*Note: a solder pad is present in the SDA and SCL input lines of each IC. This gives the possibility to isolate one IC from the others in case a fault is suspected.*

## Diagram 16

This diagram indicates the timing circuits for the MTB. The principle of the time base is that a capacitor is charged with a constant current. This gives a time-linear voltage across the capacitor; the so- called sawtooth or sweep signal. The timing capacitance consists of C6011 that is always in circuit and C6012, C6013 that are activated via the switching transistors V6016 and V6019. The MTB control is done in IC D6011.

The constant current is supplied via transistor V6003 and V6005. The current source consists of voltage divider R6002 through R6007 with precision resistors. The voltage across this divider can be influenced by DAC output voltage MTBVAR via N6007/5,6,7 and V6001. This is necessary for continuous time/div control (VAR) and calibration. The voltage on a tap of the voltage divider can be selected via multiplexer D6001. This voltage (MCSCONTROL) is applied to the base of V6003 and V6004. This occurs via operational amplifier N6006. Via multiplexer D6002 two different emitter resistance values can be selected for V6003 and another two for V6004. The resistance values differ by a factor of 10: the emitter resistance for V6003 is switchable between R6014 (time base magnifier x10) and R6013 (magnifier x1). The emitter resistance for V6004 is switchable between R6016 (time base magnifier x10) and R6015 (magnifier x1).

The current from V6004 is applied to pin 16 of D6011 and is used as a reference. The sawtooth that is generated across the timing capacitor(s) is applied to pin 18 of D6011. Inside this IC is the time base switching transistor. The start of the sawtooth is initiated by signal MTBGATE that is applied to pin 20 of D6011. The sawtooth is also applied to pin 17 and converted into a balanced output signal that is available pin 12 and 13. The MTB sweep pickoff circuit consists of Source follower V6013 (and matching V6014) and emitter follower V6012. Horizontal position control is achieved via DAC output signal TBXPOS at pin 14.

Input signal TBCALREF at D6011/28 and output signal MTBCALTST at D6011/24 provide autocalibration of the time base. The sweep is switched on via STRCALM-HT and MTBGATE and compared with reference voltage TBCALREF. Via switching of output signal MTBCALTST, the microprocessor knows if the current source delivers the correct current. In case of inaccuracies the microprocessor makes corrections.

The start of the DTB is initiated by a low level of signal TBSTD-LX at pin 1 of D6011. The signal is generated via comparison of the MTB sawtooth signal and the adjustable DC voltage DTBM (delay time multiplier). The DTBM signal is coming from DAC output N6014/6 via operational amplifier N6008/5,6,7.

The signal TBEOM-HX at pin 4 of D6011 becomes high at the end of the MTB sweep. The signal TBEOHO-LX at pin 5 of D6011 becomes low at the end of the hold off period. The length of the hold off period is determined by the DAC output voltage HOLDOFF that is applied to D6011/7.

The MTB is switched on by making MTBONOFF (D6011/11) high. This signal is derived from control signal TBSEL. TBSEL is high during X deflection by the MTB and low during DTB. The MTB is also off in external X- deflection mode.

V6006 is on during the fast time base positions. It activates a stabilizing circuit that is connected with D6011/21.

The circuit with V6042 and C6033 assures that the hold off time in the fastest time base positions will never become shorter than 3 us. The circuit with C6035, V6002, C6017, V6008 and C6415 is responsable for the hold off timing. C6035 is always in circuit and C6017 and C6415 are activated by switching transistors. The capacitors are charged in parallel with the MTB timing capacitors. During the hold-off time that follows they are discharged by a current source inside D6011. The hold- off time can be varied by varying the discharging current.

The table shows the active main time base sections as a function of time/div setting:

| main time base | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Time | Current source | | | | Charge | Timing caps | | Hold off caps | |
| /div | MTBI2 | .I1 | .I0 | .I10 | Current V6005/c | C6012 MTBC2 | C6013 MTBC3 | C6415 HONAN | C6017 HOMU |
| 0.5s | L | L | L | L | 8uA | L | H | H | H |
| 0.2s | L | L | H | L | 18uA | L | H | H | H |
| 0.1s | L | H | L | L | 35uA | L | H | H | H |
| 50ms | L | L | L | H | 70uA | L | H | H | H |
| 20ms | L | L | H | H | 175uA | L | H | H | H |
| 10ms | L | H | L | H | 350uA | L | H | H | L |
| 5ms | L | H | H | H | 700uA | L | H | H | L |
| 2ms | H | L | L | H | 1.75mA | L | H | H | L |
| 1ms | H | L | H | H | 3.5mA | L | H | H | L |
| .5ms | L | L | L | L | 8uA | H | L | H | L |
| .2ms | L | L | H | L | 18uA | H | L | H | L |
| .1ms | L | H | L | L | 35uA | H | L | L | L |
| 50us | L | L | L | H | 70uA | H | L | L | L |
| 20us | L | L | H | H | 175uA | H | L | L | L |
| 10us | L | H | L | H | 350uA | H | L | L | L |
| 5us | L | H | H | H | 700uA | H | L | L | L |
| 2us | H | L | L | H | 1.75mA | H | L | L | L |
| 1us | H | L | H | H | 3.5mA | H | L | L | L |
| .5us | L | L | L | H | 70uA | L | L | L | L |
| .2us | L | L | H | H | 175uA | L | L | L | L |
| .1us | L | H | L | H | 350uA | L | L | L | L |
| 50ns | L | H | H | H | 700uA | L | L | L | L |
| 20ns | H | L | L | H | 1.75mA | L | L | L | L |

## Diagram 17

This diagram indicates the timing circuits for the DTB. It is basically identical to the diagram of the MTB. For a description refer to the explanation of the corresponding circuit parts in diagram 16. The additional parts in this diagram are explained below.

The point where the input signals for the final X amplifier are applied is present on this diagram. This point is formed by the emitters of V7031 and V7032. The balanced signals that are applied are the combined MTB and DTB outputs TBXOUT0/TBXOUT1 and the external X-DEFLection signals TBXOUT0-XA/TBXOUT1-XA.

The circuit with N7016 makes an accurate voltage +15TBREF for the MTB and DTB timing circuits. Also the TBCALREF voltage for time base calibration is made here. As a reference for this circuit the +10VREF is used.

The circuit with D7005 converts the 5 digital 0V/5V signals into one analog signal with 32 possible levels. This signal can be read by an analog input of the microprocessor.

The circuit with multiplexer D7004 selects accurate voltages that come from a divider network with precision resistors R7064 through R7067. Operational amplifier N7014/2,3,6 is supplied with these voltages in order to calibrate the X-path from the MTB.
Operational amplifier N7015/2,3,6 does the same for DTB. Voltage DSW (present at the DTB output) is made equal to the selected voltage from the voltage divider R7064 through R7067. This occurs via feedback signal DCLOOP. This gives a defined input voltage for the X-path (including the D7011

output stage). The output voltage XCAL at the horizontal deflection plates of the CRT is measured and horizontal calibrations are performed. During normal oscilloscope functioning the multiplexer connects pin 3 + 4 and pin 13 + 11. This switches V7093 and V7094 on and the feedback paths for MTB and DTB are interrupted.

The table shows the active delayed time base sections as a function of time/div setting:

| delayed time base | | | | | | |
|---|---|---|---|---|---|---|
| Time | Current source | | | | Charge | Timing capacitor |
| /div | DTBI2 | .I1 | .I0 | .I10 | Current V7005/c | C7012 DTBC2 |
| .5ms | L | L | L | L | 8uA | H |
| .2ms | L | L | H | L | 18uA | H |
| .1ms | L | H | L | L | 35uA | H |
| 50us | L | L | L | H | 70uA | H |
| 20us | L | L | H | H | 175uA | H |
| 10us | L | H | L | H | 350uA | H |
| 5us | L | H | H | H | 700uA | H |
| 2us | H | L | L | H | 1.75mA | H |
| 1us | H | L | H | H | 3.5mA | H |
| .5us | L | L | L | H | 70uA | L |
| .2us | L | L | H | H | 175uA | L |
| .1us | L | H | L | H | 350uA | L |
| 50ns | L | H | H | H | 700uA | L |
| 20ns | H | L | L | H | 1.75mA | L |

## 5.1.2 Signal name list

*Note: In the signal name list you find the itemnumber of the component that is source or destination. Behind this itemnumber (separated by ":") you find the number of the diagram where the source/destination can be found.*

| NAME | MEANING | SOURCE | DESTINATION |
|---|---|---|---|
| ALTCLK | ALTERNATE DISPLAY MODE CLOCK | V8018:15 | V5503:10 |
| ATCAL | SIGNAL FOR GAIN CALIBRATION | N1104:05 | R1008:01<br>R2008:02<br>R3008:03<br>R4008:04 |
| AT1AC/DC | AC/DC INPUT COUPLING SELECTION CH1 | D9001:11 | K1002:01 |
| AT1LFCAL | LF CORRECTION CONTROL SIGNAL CH1 | N9001:11 | R1102:05 |
| AT1LFCOR0 | LF CORRECTION 0 CH1 | N1102:05 | R1029:01 |
| AT1LFCOR1 | LF CORRECTION 1 CH1 | N1103:05 | R1028:01 |
| AT1LOOPCAL | LF GAIN CONTROL CH1 | N9001:11 | R1113:05 |
| AT1LOOPCOR | LF GAIN CONTROL IN FEEDBACK LOOP CH1 | R1113:05 | V1001:01 |
| AT1OFFSET | OFFSET CONTROL SIGNAL CH1 | N9001:11 | R1039:01 |
| AT1OUT0 | ATTENUATOR 1 OUTPUT 0 CH1 | R1074:01 | D1201:06 |
| AT1OUT1 | ATTENUATOR 1 OUTPUT 1 CH1 | V1013:01 | D1201:06 |
| AT1PROBE | PROBE DETECTION SIGNAL CH1 | X1002:01 | R1096:05 |
| AT1PROT | 50Ω PROTECTION CH1 | R1011:01 | N1101:05 |
| AT1.50E | 50Ω INPUT IMPEDANCE SELECTION CH1 | D9001:11 | K1001:01 |

| | | | |
|---|---|---|---|
| AT1/001 | /1 ATTENUATOR SELECTION CH1 | D9001:11 | K1003:01 |
| AT1/010 | /10 ATTENUATOR SELECTION CH1 | D9001:11 | K1004:01 |
| AT1/100 | /100 ATTENUATOR SELECTION CH1 | D9001:11 | K1006:01 |
| AT1/2.5 | /2.5 ATTENUATOR SELECTION CH1 | D9001:11 | V1017:01 |
| AT12REP | COMMON FOR ALL RELAIS CH 1, 2 | D9001:11 | K1001... K1006:01 K2001... K2006:02 |
| AT2AC/DC | AC/DC INPUT COUPLING SELECTION CH2 | D9001:11 | K2002:02 |
| AT2LFCAL | LF CORRECTION CONTROL SIGNAL CH2 | N9001:11 | R2102:05 |
| AT2LFCOR0 | LF CORRECTION 0 CH2 | N1102:05 | R2029:02 |
| AT2LFCOR1 | LF CORRECTION 1 CH2 | N1103:05 | R2028:02 |
| AT2LOOPCAL | LF GAIN CONTROL CH2 | N9001:11 | R2113:05 |
| AT2LOOPCOR | LF GAIN CONTROL IN FEEDBACK LOOP CH2 | R2113:05 | V2001:02 |
| AT2OFFSET | OFFSET CONTROL SIGNAL CH2 | N9002:11 | R2039:02 |
| AT2OUT0 | ATTENUATOR 2 OUTPUT 0 CH2 | R2074:02 | D2201:06 |
| AT2OUT1 | ATTENUATOR 2 OUTPUT 1 CH2 | V2113:02 | D2201:06 |
| AT2PROBE | PROBE DETECTION SIGNAL CH2 | X2002:02 | R2096:05 |
| AT2PROT | 50Ω PROTECTION CH2 | R2011:02 | N1101:05 |
| AT2.50E | 50Ω INPUT IMPEDANCE SELECTION CH2 | D9001:11 | K2001:02 |
| AT2/001 | /1 ATTENUATOR SELECTION CH2 | D9001:11 | K2003:02 |
| AT2/010 | /10 ATTENUATOR SELECTION CH2 | D9001:11 | K2004:02 |
| AT2/100 | /100 ATTENUATOR SELECTION CH2 | D9001:11 | K2006:02 |
| AT2/2.5 | /2.5 ATTENUATOR SELECTION CH2 | D9001:11 | V2017:02 |
| AT3AC/DC | AC/DC INPUT COUPLING SELECTION CH3 | D9002:11 | K3002:03 |
| AT3LFCAL | LF CORRECTION CONTROL SIGNAL CH3 | N9003:11 | R3102:05 |
| AT3LFCOR0 | LF CORRECTION 0 CH3 | N3102:05 | R3029:03 |
| AT3LFCOR1 | LF CORRECTION 1 CH3 | N3103:05 | R3028:03 |
| AT3LOOPCAL | LF GAIN CONTROL CH3 | N9003:11 | R3113:05 |
| AT3LOOPCOR | LF GAIN CONTROL IN FEEDBACK LOOP CH3 | R3113:05 | V3001:03 |
| AT3OFFSET | OFFSET CONTROL SIGNAL CH3 | N9002:11 | R3039:03 |
| AT3OUT0 | ATTENUATOR 3 OUTPUT 0 CH3 | R3074:03 | D3201:07 |
| AT3OUT1 | ATTENUATOR 3 OUTPUT 1 CH3 | V3013:03 | D3201:07 |
| AT3PROBE | PROBE DETECTION SIGNAL CH3 | X3002:03 | R3096:05 |
| AT3PROT | 50Ω PROTECTION CH3 | R3011:03 | N1101:05 |
| AT3.50E | 50Ω INPUT IMPEDANCE SELECTION CH3 | D9002:11 | K3001:03 |
| AT3/001 | /1 ATTENUATOR SELECTION CH3 | D9002:11 | K3003:03 |
| AT3/010 | /10 ATTENUATOR SELECTION CH3 | D9002:11 | K3004:03 |
| AT3/100 | /100 ATTENUATOR SELECTION CH3 | D9002:11 | K3006:03 |
| AT3/2.5 | /2.5 ATTENUATOR SELECTION CH3 | D9002:11 | V3016:03 |
| AT34REP | COMMON FOR ALL RELAIS CH 3, 4 | D9002:11 | K3001... K3006:03 K4001... K4006:04 |
| AT4AC/DC | AC/DC INPUT COUPLING SELECTION CH4 | D9002:11 | K4002:04 |
| AT4LFCAL | LF CORRECTION CONTROL SIGNAL CH4 | N9003:11 | R4102:05 |
| AT4LFCOR0 | LF CORRECTION 0 CH4 | N3102:05 | R4029:04 |
| AT4LFCOR1 | LF CORRECTION 1 CH4 | N3103:05 | R4028:04 |
| AT4LOOPCAL | LF GAIN CONTROL CH4 | N9003:11 | R4113:05 |
| AT4LOOPCOR | LF GAIN CONTROL IN FEEDBACK LOOP CH4 | R4113:05 | V4001:04 |
| AT4OFFSET | OFFSET CONTROL SIGNAL CH4 | N9003:11 | R4039:04 |
| AT4OUT0 | ATTENUATOR 4 OUTPUT 0 CH4 | R4074:04 | D4201:07 |
| AT4OUT1 | ATTENUATOR 4 OUTPUT 1 CH4 | R4013:04 | D4201:07 |

| | | | |
|---|---|---|---|
| AT4PROBE | PROBE DETECTION SIGNAL CH4 | X4002:04 | R4096:05 |
| AT4PROT | 50Ω PROTECTION CH4 | R4011:04 | N1101:05 |
| AT4.50E | 50Ω INPUT IMPEDANCE SELECTION CH4 | D9002:11 | K4001:04 |
| AT4/001 | /1 ATTENUATOR SELECTION CH4 | D9002:11 | K4003:04 |
| AT4/010 | /10 ATTENUATOR SELECTION CH4 | D9002:11 | K4004:04 |
| AT4/100 | /100 ATTENUATOR SELECTION CH4 | D9002:11 | K4006:04 |
| AT4/2.5 | /2.5 ATTENUATOR SELECTION CH4 | D9002:11 | V4017:04 |
| | | | |
| CNT1CH-HX | CHANNEL 1 ON/OFF SIGNAL | R5559:10 | D1301:08 |
| CNT1DT-HT | DTB TRIGGER ON CH1 ON/OFF | D5502:10 | D1301:08 |
| CNT1MT-HT | MTB TRIGGER ON CH1 ON/OFF | D5501:10 | D1301:08 |
| CNT2CH-HX | CHANNEL 2 ON/OFF SIGNAL | R5558:10 | D2301:08 |
| CNT2DT-HT | DTB TRIGGER ON CH2 ON/OFF | D5502:10 | D2301:08 |
| CNT2MT-HT | MTB TRIGGER ON CH2 ON/OFF | D5501:10 | D2301:08 |
| CNT3CH-HX | CHANNEL 3 ON/OFF SIGNAL | R5557:10 | D3301:08 |
| CNT3DT-HT | DTB TRIGGER ON CH3 ON/OFF | D5502:10 | D3301:08 |
| CNT3MT-HT | MTB TRIGGER ON CH3 ON/OFF | D5501:10 | D3301:08 |
| CNT4CH-HX | CHANNEL 4 ON/OFF SIGNAL | R5556:10 | D4301:08 |
| CNT4DT-HT | DTB TRIGGER ON CH4 ON/OFF | D5502:10 | D4301:08 |
| CNT4MT-HT | MTB TRIGGER ON CH4 ON/OFF | D5501:10 | D4301:08 |
| CPBLANK-HX | CHOPPER BLANKING SIGNAL | R5517:10 | C8002:15 |
| | | | |
| DLDOFFSET | DELAY LINE DRIVER OFFSET | N9003:11 | R5018:09 |
| DLDOUT0 | DELAY LINE DRIVER OUTPUT 0 | R5063:09 | DELAY LINE |
| DLDOUT1 | DELAY LINE DRIVER OUTPUT 1 | R5062:09 | DELAY LINE |
| DLEN0-HT | DATA LATCH ENABLE 0 | X9001:18 | D9001:11 |
| DLEN1-HT | DATA LATCH ENABLE 1 | X9001:18 | D9002:11 |
| DLEN2-HT | DATA LATCH ENABLE 2 | X9001:18 | D9006:16 |
| DSOD | SET OF FLIPFLOP AUTOPOS Y-CURSOR | D8004:15 | R8057:15 |
| DTBCALTST | DTB CAL TEST SIGNAL | D7011:17 | D7005:17 |
| DTBVAR | DTB VARIABLE CONTROL SIGNAL | N8005:15 | R7009:17 |
| DTBGATE | DTB GATE SIGNAL | V8011:15 | D7011:17 |
| | | | |
| DTRHF-HD | DELAYED TRIGGER HF FILTER SWITCH | D9012:14 | R7544:14 |
| DTRIG0 | DELAYED TRIGGER OUTPUT SIGNAL 0 | V7574:14 | D8004:15 |
| DTRIG1 | DELAYED TRIGGER OUTPUT SIGNAL 1 | V7573:14 | D8004:15 |
| DTRLF-HD | DELAYED TRIGGER LF FILTER SWITCH | D9007:17 | R7542:14 |
| DTRLINE | X-DEFLECTION VIA LINE SIGNAL | D7711:13 | V7506:14 |
| DTRLINESW-HD | X-DEFLECTION VIA LINE SWITCHING | D9012:14 | D7711:13 |
| DTRSEN | DELAYED TRIGGER SENSITIVITY CONTROL | N8005:15 | R7554:14 |
| DTRSLOPE | DELAYED TRIGGER SLOPE CONTROL | D9007:17 | R7547:14 |
| DTRTVL | DELAYED TRIGGER TV LINE TRIG SIGNAL | D7711:13 | R7696:14 |
| DTRTVSEL-HD | DELAYED TV TRIGGER SELECTION | R7543:14 | D7711:13 |
| DTRXDEF0 | DELAYED TRIGGER X DEFLECTION SIGNAL 0 | D7541:14 | R7754:14 |
| DTRXDEF1 | DELAYED TRIGGER X DEFLECTION SIGNAL 1 | D7541:14 | R7753:14 |
| DTRXDSEL-HD | DELAYED TRIGGER X DEFLECTION SELECTION | D9012:14 | R7546:14 |
| | | | |
| FNCBWL | BANDWIDTH LIMITER ON/OFF | D9003:11 | D1301:08<br>D2301:08<br>D3301:08<br>D4301:08 |
| FNC1DTR0 | DTB TRIGGER ON CH1 OUTPUT SIGNAL 0 | D1301:08 | R7522:14 |
| FNC1DTR1 | DTB TRIGGER ON CH1 OUTPUT SIGNAL 1 | D1301:08 | R7521:14 |
| FNC1MTR0 | MTB TRIGGER ON CH1 OUTPUT SIGNAL 0 | D1301:08 | R6522:12 |
| FNC1MTR1 | MTR TRIGGER ON CH1 OUTPUT SIGNAL 1 | D1301:08 | R6521:12 |
| FNC1OUT0 | CHANNEL 1 OUTPUT SIGNAL 0 | D1301:08 | R1313:09 |
| FNC1OUT1 | CHANNEL 1 OUTPUT SIGNAL 1 | D1301:08 | R1314:09 |

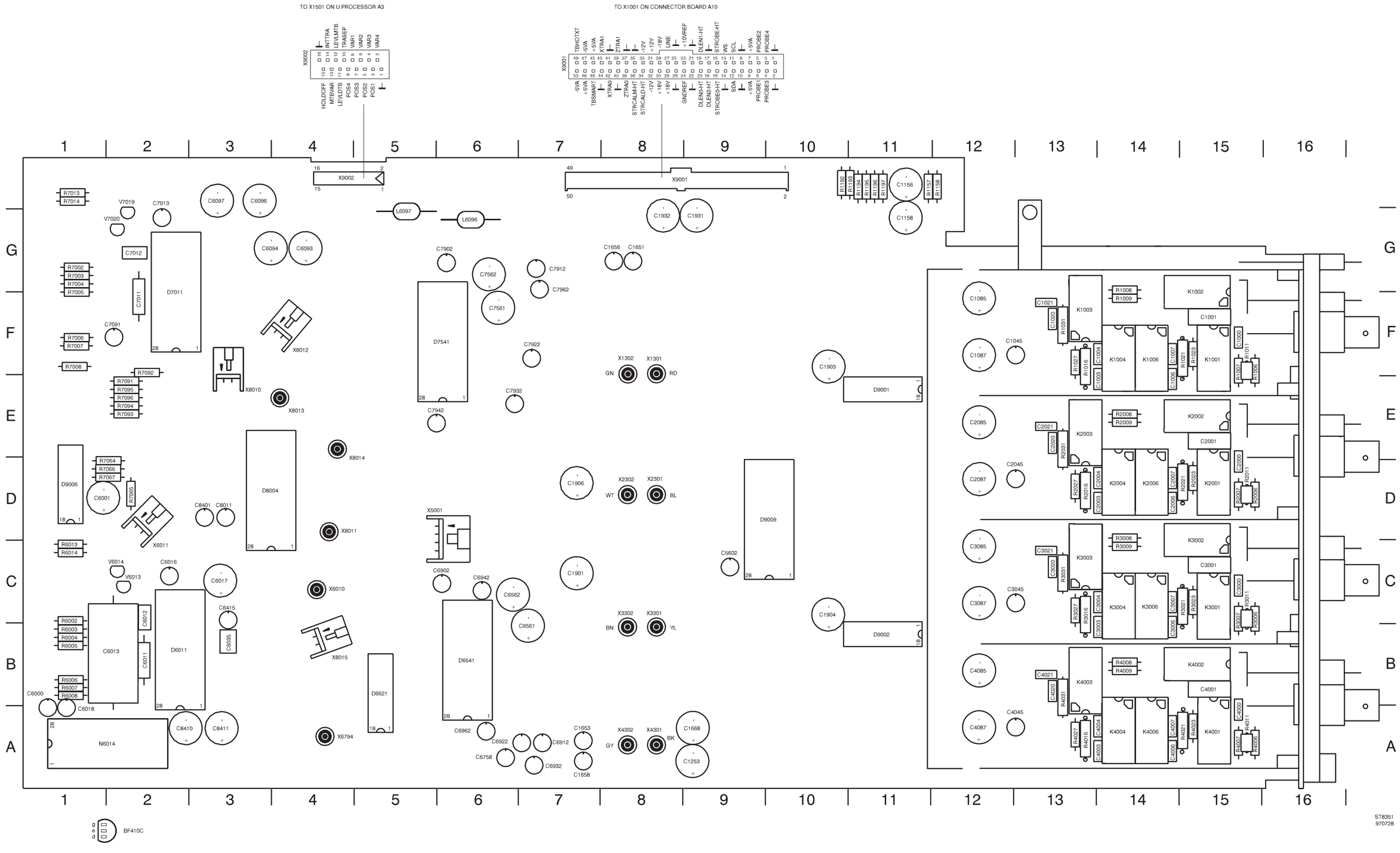
| | | | |
|---|---|---|---|
| FNC2DTR0 | DTB TRIGGER ON CH2 OUTPUT SIGNAL 0 | D2301:08 | R7524:14 |
| FNC2DTR1 | DTB TRIGGER ON CH2 OUTPUT SIGNAL 1 | D2301:08 | R7523:14 |
| FNC2MTR0 | MTB TRIGGER ON CH2 OUTPUT SIGNAL 0 | D2301:08 | R6524:12 |
| FNC2MTR1 | MTR TRIGGER ON CH2 OUTPUT SIGNAL 1 | D2301:08 | R6523:12 |
| FNC2OUT0 | CHANNEL 2 OUTPUT SIGNAL 0 | D2301:08 | R2313:09 |
| FNC2OUT1 | CHANNEL 2 OUTPUT SIGNAL 1 | D2301:08 | R2314:09 |
| | | | |
| FNC3DTR0 | DTB TRIGGER ON CH3 OUTPUT SIGNAL 0 | D3301:08 | R7527:14 |
| FNC3DTR1 | DTB TRIGGER ON CH3 OUTPUT SIGNAL 1 | D3301:08 | R7526:14 |
| FNC3MTR0 | MTB TRIGGER ON CH3 OUTPUT SIGNAL 0 | D3301:08 | R6527:12 |
| FNC3MTR1 | MTR TRIGGER ON CH3 OUTPUT SIGNAL 1 | D3301:08 | R6526:12 |
| FNC3OUT0 | CHANNEL 3 OUTPUT SIGNAL 0 | D3301:08 | R3313:09 |
| FNC3OUT1 | CHANNEL 3 OUTPUT SIGNAL 1 | D3301:08 | R3314:09 |
| | | | |
| FNC4DTR0 | DTB TRIGGER ON CH4 OUTPUT SIGNAL 0 | D4301:08 | R7529:14 |
| FNC4DTR1 | DTB TRIGGER ON CH4 OUTPUT SIGNAL 1 | D4301:08 | R7528:14 |
| FNC4MTR0 | MTB TRIGGER ON CH4 OUTPUT SIGNAL 0 | D4301:08 | R6529:12 |
| FNC4MTR1 | MTR TRIGGER ON CH4 OUTPUT SIGNAL 1 | D4301:08 | R6528:12 |
| FNC4OUT0 | CHANNEL 4 OUTPUT SIGNAL 0 | D4301:08 | R4313:09 |
| FNC4OUT1 | CHANNEL 4 OUTPUT SIGNAL 1 | D4301:08 | R4314:09 |
| | | | |
| FNCYOP0 | Y-OUT OPTION SIGNAL 0 | D1301:08 | Y-option |
| FNCYOP1 | Y-OUT OPTION SIGNAL 1 | D1301:08 | Y-option |
| | | | |
| HOLDOFF | HOLD OFF CONTROL SIGNAL | X9002:18 | R6032:16 |
| | | | |
| INTTRA | TRACE INTENSITY CONTROL | X9002:18 | R8049:15 |
| | | | |
| LEVDTB | DELAYED TRIGGER LEVEL CONTROL | X9002:18 | R7681:14 |
| LEVMTB | MAIN TRIGGER LEVEL CONTROL | X9002:18 | R6622:12 |
| LINE | LINE TRIGGER SIGNAL | X9001:18 | R7711:13 |
| | | | |
| MTBCALTST | MTB CAL TEST SIGNAL | D6011:16 | D7005:17 |
| MTBGATE | MTB GATE SIGNAL | V8014:15 | D6011:16 |
| MTBVAR | MTB VARIABLE CONTROL SIGNAL | X9002:18 | R6009:16 |
| MTRBAL | MAIN TRIGGER BALANCE | N8005:15 | R6709:12 |
| MTRHF-HD | MAIN TRIGGER HF FILTER SWITCH | D9008:15 | R6544:12 |
| MTRIG0 | MAIN TRIGGER OUTPUT SIGNAL 0 | V6574:12 | D8004:15 |
| MTRIG1 | MAIN TRIGGER OUTPUT SIGNAL 1 | V6573:12 | D8004:15 |
| MTRLF-HD | MAIN TRIGGER LF FILTER SWITCH | D9011:12 | R6542:12 |
| MTRLINE | MAIN TRIGGER LINE TRIGGER SIGNAL | D5001:13 | V6506:12 |
| MTRPPLEV-HD | MAIN TRIGGERING AUTO PP OFF | D9011:12 | V6628:12 |
| MTRSEN | MAIN TRIGGER SENSITIVITY CONTROL | N8005:15 | R6554:12 |
| MTRSLOPE | MAIN TRIGGER SLOPE CONTROL | D9011:12 | R6547:12 |
| MTRTVMODE | MAIN TRIGGER TV SYSTEM SELECTION | N8005:15 | R6772:13 |
| MTRTVSEL-HD | MAIN TV TRIGGER SELECTION | D9011:12 | V6757:13 |
| MTRVIDEO | MAIN TV TRIGGER INPUT SIGNAL | D6541:12 | V6754:13 |
| | | | |
| PA1/2 | ATTENUATION /2 CONTROL CH1 | D9003:11 | D1201:06 |
| PA1ICL | CLAMP LEVEL CURRENT CH1 | V1206:06 | D1201:06 |
| PA1ISY | SUPPLY CURRENT CH1 | V1207:06 | D1201:06 |
| PA1LSA | LEVEL SHIFT A CH1 | V1208:06 | R1216:06 |
| PA1LSB | LEVEL SHIFT B CH1 | V1209:06 | R1217:06 |
| PA1OFFSET | OFFSET INPUT CIRCUIT CH1 | N9001:11 | R1203:06 |
| PA1OFFSTRG | OFFSET LEVEL SHIFTER CH1 | N9001:11 | R1229:06 |
| PA1OUT0 | OUTPUT SIGNAL 0 CH1 | V1202:06 | R1301:08 |

| | | | |
|---|---|---|---|
| PA1OUT1 | OUTPUT SIGNAL 1 CH1 | V1201:06 | R1302:08 |
| PA1X1 | GAIN X1 CONTROL CH1 | D9003:11 | D1201:06 |
| PA1X5 | GAIN X5 CONTROL CH1 | D9003:11 | D1201:06 |
| PAVREF | PREAMPL REFERENCE VOLTAGE | N1251:06 | R1200:06 |
| | | | R2200:06 |
| | | | R3200:07 |
| | | | R4200:07 |
| PA2/2 | ATTENUATION /2 CONTROL CH2 | D9003:11 | D2201:06 |
| PA2ICL | CLAMP LEVEL CURRENT CH2 | V2206:06 | D2201:06 |
| PA2ISY | SUPPLY CURRENT CH2 | V2207:06 | D2201:06 |
| PA2LSA | LEVEL SHIFT A CH2 | V2208:06 | R2216:06 |
| PA2LSB | LEVEL SHIFT B CH2 | V2209:06 | R2217:06 |
| PA2OFFSET | OFFSET INPUT CIRCUIT CH2 | N9002:11 | R2203:06 |
| PA2OFFSTRG | OFFSET LEVEL SHIFTER CH2 | N9002:11 | R2229:06 |
| PA2OUT0 | OUTPUT SIGNAL 0 CH2 | V2202:06 | R2301:08 |
| PA2OUT1 | OUTPUT SIGNAL 1 CH2 | V2201:06 | R2302:08 |
| PA2X1 | GAIN X1 CONTROL CH2 | D9003:11 | D2201:06 |
| PA2X5 | GAIN X5 CONTROL CH2 | D9003:11 | D2201:06 |
| PA3/2 | ATTENUATION /2 CONTROL CH3 | D9004:11 | D3201:07 |
| PA3ICL | CLAMP LEVEL CURRENT CH3 | V3206:07 | D3201:07 |
| PA3ISY | SUPPLY CURRENT CH3 | V3207:07 | D3201:07 |
| PA3LSA | LEVEL SHIFT A CH3 | V3208:07 | R3216:07 |
| PA3LSB | LEVEL SHIFT B CH3 | V3209:07 | R3217:07 |
| PA3OFFSET | OFFSET INPUT CIRCUIT CH3 | N9003:11 | R3203:07 |
| PA3OFFSTRG | OFFSET LEVEL SHIFTER CH3 | N9003:11 | R3229:07 |
| PA3OUT0 | OUTPUT SIGNAL 0 CH3 | V3202:07 | R3301:08 |
| PA3OUT1 | OUTPUT SIGNAL 1 CH3 | V3201:07 | R3302:08 |
| PA3X1 | GAIN X1 CONTROL CH3 | D9004:11 | D3201:07 |
| PA3X5 | GAIN X5 CONTROL CH3 | D9004:11 | D3201:07 |
| PA4/2 | ATTENUATION /2 CONTROL CH4 | D9004:11 | D4201:07 |
| PA4ICL | CLAMP LEVEL CURRENT CH4 | V4206:07 | D4201:07 |
| PA4ISY | SUPPLY CURRENT CH4 | V4207:07 | D4201:07 |
| PA4LSA | LEVEL SHIFT A CH4 | V4208:07 | R4216:07 |
| PA4LSB | LEVEL SHIFT B CH4 | V4209:07 | R4217:07 |
| PA4OFFSET | OFFSET INPUT CIRCUIT CH4 | N9003:11 | R4203:07 |
| PA4OFFSTRG | OFFSET LEVEL SHIFTER CH4 | N9003:11 | R4229:07 |
| PA4OUT0 | OUTPUT SIGNAL 0 CH4 | V4202:07 | R4301:08 |
| PA4OUT1 | OUTPUT SIGNAL 1 CH4 | V4201:07 | R4302:08 |
| PA4X1 | GAIN X1 CONTROL CH4 | D9004:11 | D4201:07 |
| PA4X5 | GAIN X5 CONTROL CH4 | D9004:11 | D4201:07 |
| POS1 | POSITION CONTROL CH1 | X9002:18 | R1308:08 |
| POS2 | POSITION CONTROL CH2 | X9002:18 | R2308:08 |
| POS3 | POSITION CONTROL CH3 | X9002:18 | R3308:08 |
| POS4 | POSITION CONTROL CH4 | X9002:18 | R4308:08 |
| PROBE1 | PROBE DETECTION/50Ω PROTECTION CH1 | R1093:05 | X9001:18 |
| PROBE2 | PROBE DETECTION/50Ω PROTECTION CH2 | R2093:05 | X9001:18 |
| PROBE3 | PROBE DETECTION/50Ω PROTECTION CH3 | R3093:05 | X9001:18 |
| PROBE4 | PROBE DETECTION/50Ω PROTECTION CH4 | R4093:05 | X9001:18 |

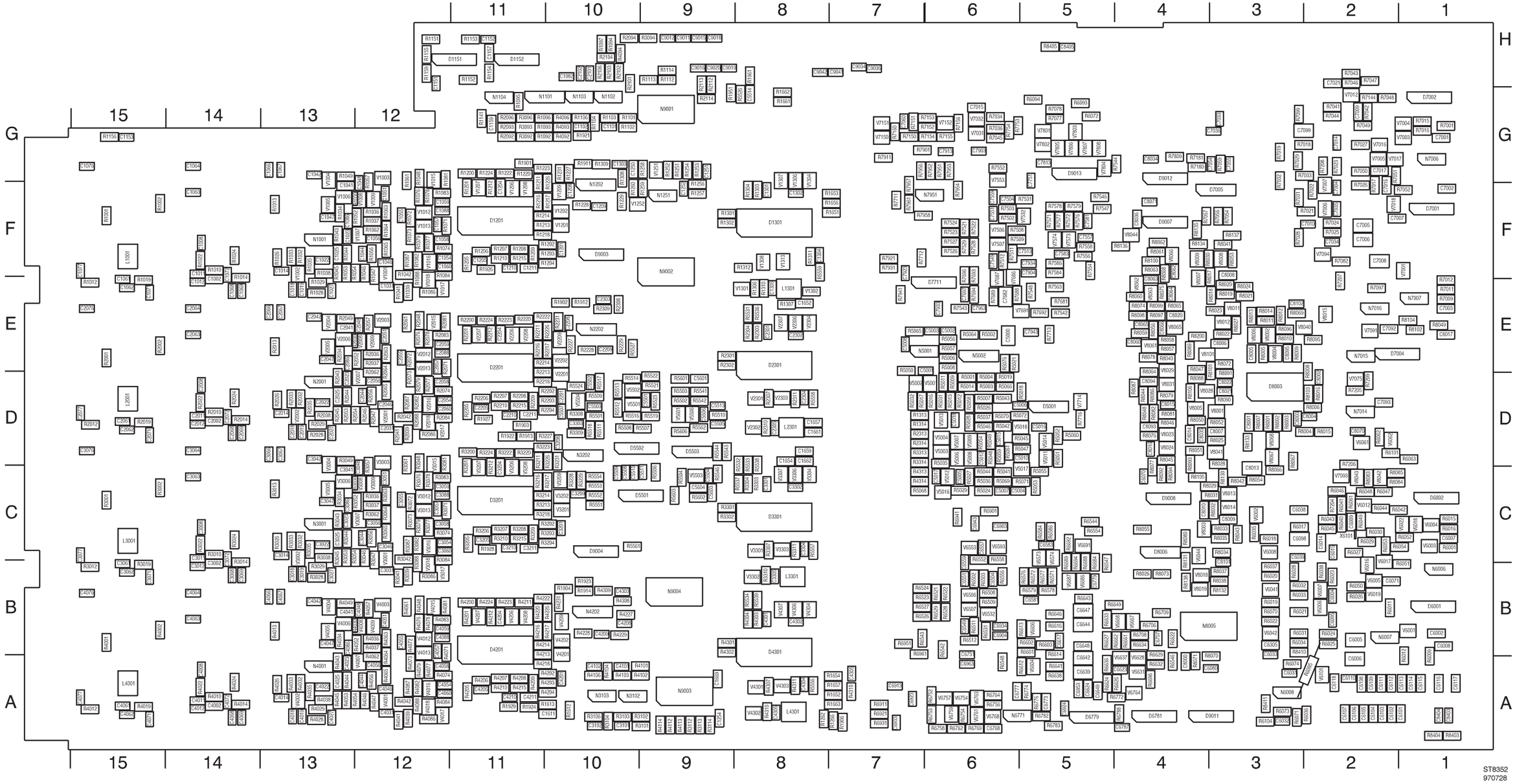
| | | | |
|---|---|---|---|
| SCL | SERIAL CLOCK | X9001:18 | D9009:10 |
| | | | D9001:11 |
| | | | D9002:11 |
| | | | D9003:11 |
| | | | D9004:11 |
| | | | D9006:16 |
| | | | D9007:17 |
| | | | D9008:15 |
| | | | D9011:12 |
| | | | D9012:14 |
| | | | N8005:15 |
| | | | N9001:11 |
| | | | N9002:11 |
| | | | N9003:11 |
| | | | R8403:16 |
| SDA | SERIAL DATA | X9001:18 | D9009:10 |
| | | | D9001:11 |
| | | | D9002:11 |
| | | | D9003:11 |
| | | | D9004:11 |
| | | | D9006:16 |
| | | | D9011:12 |
| | | | N8005:15 |
| | | | N9001:11 |
| | | | N9002:11 |
| | | | N9003:11 |
| | | | R8404:16 |
| STRCALD-HT | RESET FLIPFLOP AUTOPOS Y-CURSOR | X9001:18 | V8065:15 |
| | | | V8007:15 |
| STROBE0-HT | STROBE/ENABLE SIGNAL 0 | X9001:18 | D9003:11 |
| | | | D9004:11 |
| STROBE1-HT | STROBE/ENABLE SIGNAL 1 | X9001:18 | D9007:17 |
| | | | D9008:15 |
| | | | D9011:12 |
| | | | D9012:14 |
| TBAUTO-LD | TIME BASE AUTO FREE RUN CONTROL | D9007:17 | D8004:15 |
| TBCALREF | TIME BASE CALIBRATION REFERENCE | V7011:17 | D6011:16 |
| | | | D7011:17 |
| TBD01 | TIME BASE SERIAL DATA 01 | D9011:12 | D9008:15 |
| TBD02 | TIME BASE SERIAL DATA 02 | D9008:15 | D9007:17 |
| TBD03 | TIME BASE SERIAL DATA 03 | D9007:17 | D9012:14 |
| TBEOM-HX | TIME BASE END OF MAIN SWEEP | D6011:16 | D8004:15 |
| TBEOD-HX | TIME BASE END OF DELAYED SWEEP | D7011:17 | D8004:15 |
| TBEOHO-LX | TIME BASE END OF HOLD OFF | D6011:16 | D8004:15 |
| TBHOTXT | TIME BASE HOLD OFF FOR TEXT DISPLAY | R8026:15 | X9001:18 |
| TBINTRAT-XA | INTENS RATIO CONTROL SIGNAL | N8005:15 | R8007:15 |
| TBNOTTR-HT | TIME BASE NOT TRIGGERED SIGNAL | D8004:15 | D7005:17 |
| TDADA | TIME BASE SERIAL DATA | R8404:16 | N6014:16 |
| TDACL | TIME BASE SERIAL CLOCK | R8403:16 | D9006:16 |
| | | | D9007:17 |
| | | | D9008:15 |
| | | | D9011:12 |
| | | | D9012:14 |
| | | | N6013:16 |
| | | | N8005:15 |

| | | | |
|---|---|---|---|
| TBSEL | TIME BASE MTB/DTB SELECTION | R5501:10 | R6018:16<br>R7028:17<br>R8072:15 |
| TBSTD-LX | TIME BASE START OF DTB | D6011:16 | D8004:15 |
| TBSSG-HT | TIME BASE END OF SINGLE SWEEP | D8004:15 | D7005:17 |
| TBSMART | TIME BASE TEST SIGNALS | C7054:17 | X9001:18 |
| TBXDEFL-LD | X DEFLECTION CONTROL SIGNAL | D9012:14 | V8015:15<br>R7772: |
| TBXOUT0 | TIME BASE OUTPUT 0 | D6011:16<br>D7011:17 | R7077:17 |
| TBXOUT0-XA | X DEFLECTION OUTPUT 0 | R7754:14 | V7031:17 |
| TBXOUT1 | TIME BASE OUTPUT 1 | D6011:16<br>D7011:17 | R7078:17 |
| TBXOUT1-XA | X DEFLECTION OUTPUT 1 | R7753:14 | V7032:17 |
| TBXPOS | TIME X POSITION | R8411:16 | R6017:16<br>R7099:17 |
| TRASEP | ANALOG TRACE SEPARATION SIGNAL | X9002:18 | R5021:09 |
| TRASEP-HC | DIGITAL TRACE SEPARATION CONTROL | R5524:10 | D5001:09 |
| VAR1 | VARIABLE GAIN CONTROL CH1 | X9002:18 | R1211:06 |
| VAR2 | VARIABLE GAIN CONTROL CH2 | X9002:18 | R2211:06 |
| VAR3 | VARIABLE GAIN CONTROL CH3 | X9002:18 | R3211:07 |
| VAR4 | VARIABLE GAIN CONTROL CH4 | X9002:18 | R4211:07 |
| VPPTEST-LD | VOLT PP TEST AUTOPOS Y-CURSOR | V8066:15 | D7005:17 |
| XTRA0 | X DEFLECTION OUTPUT SIGNAL 0 | V7150:17 | X9001:18 |
| XTRA1 | X DEFLECTION OUTPUT SIGNAL 1 | V7151:17 | X9001:18 |
| ZTRA0 | INTENSITY OUTPUT SIGNAL 0 | D8003:15 | X9001:18 |
| ZTRA1 | INTENSITY OUTPUT SIGNAL 1 | D8003:15 | X9001:18 |

## 5.1.3 Unit lay-outs




Lay-out 1 - Large component side of signal unit A1



ST8352
970728

a1 a2 c1 c2 BAS28 : JTp BBY62 : S3p

s d g BFR31

nc a c BAT17 BZX84-C2V4 : Z1t BZX84-C3V0 : Z1t BZX84-C4V7 : Z1p BZX84-C5V6 : Z3p BZX84-C6V2 : Z4p BZX84-C6V8 : Z5p

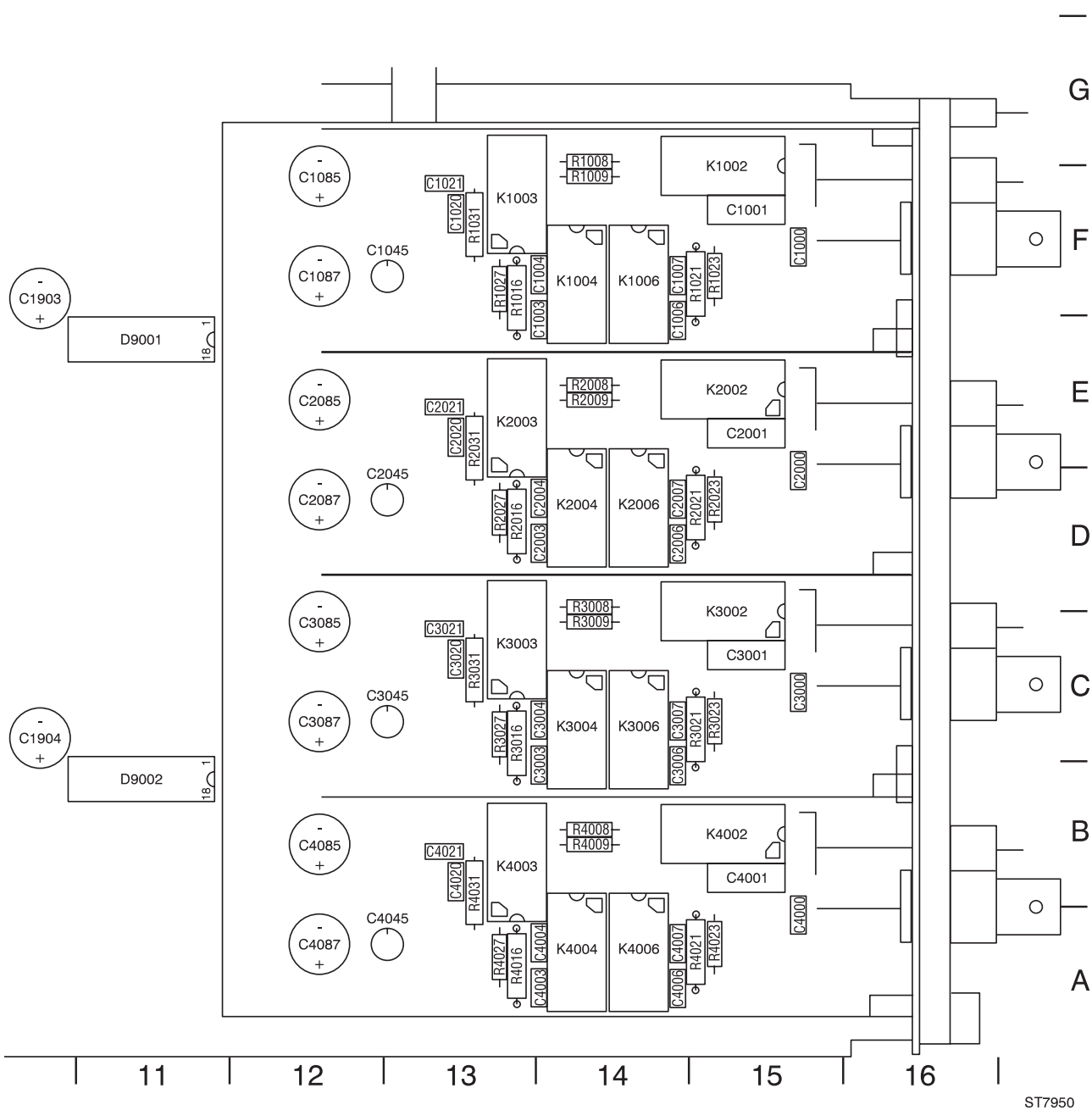
g d sub s M74 BSS83

g1 g2 s d M87 BF990A

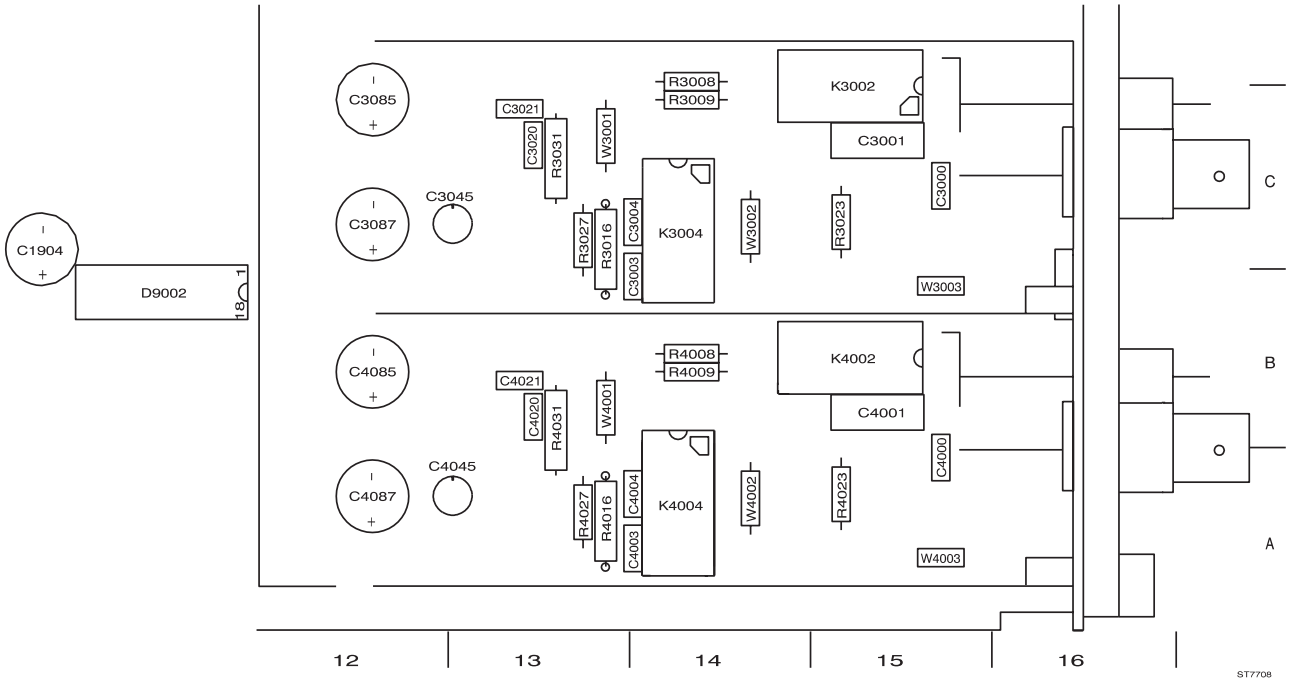
e b c BC848C : 1Lp BC858C : 3Lp BF579 : LJp BFR53 : N1p BFR54 : P8p BFR92 : P1p BFS20 : G1p BFT92 : W1p BSV52 : B2p

c1 a1 a1,c1 A7p BAV99

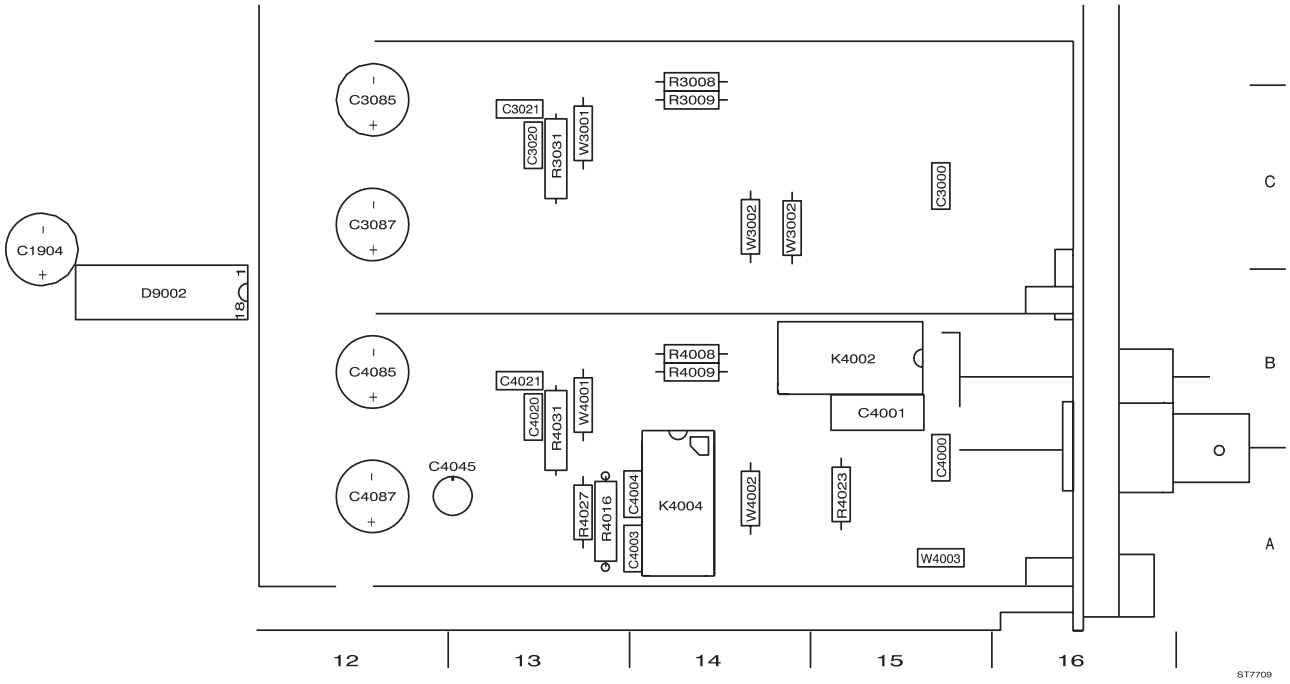
Lay-out 2 - Small component side of signal unit A1




Lay-out 1a - Large component side detail of signal unit A1 for PM3384B




Lay-out 1b - Large component side detail of signal unit A1 for PM3382B/92B




Lay-out 1c - Large component side detail of signal unit A1 for PM3370B/80B/90B

## 5.1.4 Location list Signal Unit A1

'-L' means that the component is located on the side with the large components. Otherwise the component is located on the side with small components (SMD's: surface mounted devices)

C1000 F15-L
C1001 F15-L
C1002 F14
C1003 F14-L
C1004 F14-L
C1005 F15
C1006 F14-L
C1007 F14-L
C1008 F14
C1011 F14
C1012 F14
C1014 F13
C1018 E13
C1019 E13
C1020 F13-L
C1021 F13-L
C1022 F13
C1023 F13
C1025 F13
C1027 E13
C1031 E12
C1041 G13
C1042 G13
C1044 F12
C1045 F13-L
C1046 F12
C1047 F13
C1048 G12
C1049 G13
C1051 F12
C1054 F12
C1055 F12
C1056 F12
C1057 F12
C1058 F12
C1059 F12
C1060 F12
C1061 F15
C1062 E15
C1063 F14
C1064 G14
C1066 G13
C1067 G13
C1068 E14
C1069 E14
C1071 E15
C1076 G15
C1077 F15
C1082 H10
C1085 G12-L
C1086 F13
C1087 F12-L
C1088 F12
C1101 G10
C1102 G10
C1151 H12
C1152 H11
C1153 G15
C1156 H11-L
C1157 H11
C1158 H11-L
C1159 G11
C1201 F10
C1204 G11
C1205 F11
C1208 F10
C1209 F10
C1210 F11
C1211 F11
C1250 G10
C1251 G9
C1252 G9
C1253 A8-L
C1254 A9
C1301 F8
C1302 F8
C1303 G10
C1304 F8
C1305 F8
C1611 A11
C1651 G8-L
C1652 G8
C1653 A7-L
C1654 D8
C1656 G8-L
C1657 D8
C1658 A7-L
C1659 D8
C1661 D8
C1662 D8
C1668 A9-L
C1669 A9
C1901 C7-L
C1903 F10-L
C1904 C10-L
C1906 D7-L
C1931 H8-L
C1932 H8-L
C2000 D15-L
C2001 E15-L
C2002 D14
C2003 D14-L
C2004 D14-L
C2005 D15
C2006 D14-L
C2007 D14-L
C2008 D14
C2011 D14
C2012 D14
C2014 D13
C2018 D13
C2019 D13
C2020 D13-L
C2021 E13-L
C2022 D13
C2023 D13
C2025 D13
C2027 D13
C2031 D12
C2041 E13
C2042 E13
C2044 D12
C2045 D13-L
C2046 D12
C2047 E13
C2048 E12
C2051 E12
C2054 D12
C2055 E12
C2056 D12
C2057 E12
C2058 D12
C2059 E12
C2060 D12
C2061 D15
C2062 D15
C2063 E14
C2064 E14
C2066 E13
C2067 E13
C2068 D14
C2069 D14
C2071 D15
C2072 D14
C2076 E15
C2077 D15
C2085 E12-L
C2086 E13
C2087 D12-L
C2088 E12
C2101 H10
C2102 H10
C2201 D10
C2204 E11
C2205 D11
C2208 E10
C2209 E10
C2210 D11
C2211 D11
C2301 E8
C2302 E8
C2303 E10
C2304 D8
C2305 D8
C3000 C15-L
C3001 C15-L
C3002 B14
C3003 B14-L
C3004 C14-L
C3005 C15
C3006 D14-L
C3007 C14-L
C3008 C14
C3011 C14
C3012 B14
C3014 C13
C3018 B13
C3019 B13
C3020 C13-L
C3021 C13-L
C3022 C13
C3023 C13
C3025 C13
C3027 B13
C3031 B12
C3041 D13
C3042 D13
C3044 C12
C3045 C13-L
C3046 C12
C3047 C13
C3048 D12
C3051 C12
C3054 C12
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C3056 C12
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C3058 C12
C3059 C12
C3060 C12
C3061 C15
C3062 B15
C3063 C14
C3064 D14

C3066 D13
C3067 D13
C3068 B14
C3069 B14
C3071 B15
C3072 C14
C3076 D15
C3077 C15
C3085 C12-L
C3086 C13
C3087 C12-L
C3088 C12
C3101 A10
C3102 A10
C3201 C10
C3204 D11
C3205 C11
C3208 D10
C3209 C10
C3210 C11
C3211 C11
C3301 C8
C3302 C8
C3303 D10
C3304 C8
C3305 C8
C4000 A15-L
C4001 B15-L
C4002 A14
C4003 A14-L
C4004 A14-L
C4005 A15
C4006 A14-L
C4007 A14-L
C4008 A14
C4011 A14
C4012 A14
C4014 A13
C4018 A13
C4019 A13
C4020 A13-L
C4021 B13-L
C4022 A13
C4023 A13
C4025 A13
C4027 A13
C4031 A12
C4041 B13
C4042 B13
C4044 A12
C4045 A13-L
C4046 A12
C4047 B13
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C4055 B12
C4056 A12
C4057 B12
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C4059 B12
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C4068 A14
C4069 A14
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C4072 A14
C4076 B15
C4077 A15
C4085 B12-L
C4086 B13
C4087 A12-L
C4088 B12
C4101 A10
C4102 A10
C4201 A10
C4204 B11
C4205 A11
C4208 B10
C4209 B10
C4210 A11
C4211 A11
C4301 B8
C4302 B8
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C4304 A8
C4305 A8
C5000 E5
C5001 E7
C5002 E6
C5003 E6
C5004 C6
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C5505 D9
C5506 D9
C5507 D10
C5508 C10
C5509 C10
C5510 C10
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C5514 E9
C5513 D9
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C5602 C9-L
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C6012 C2-L
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C6016 C2-L
C6017 C3-L
C6018 B1-L
C6031 A3
C6032 A3
C6033 B3
C6035 B3-L
C6038 C3
C6039 C3
C6062 D2
C6070 C4
C6071 B2
C6080 A4
C6093 G4-L
C6094 G4-L
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C6097 H3-L
C6098 C3
C6101 A2
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C6104 A2
C6105 A2
C6106 A2
C6107 A2
C6108 A2
C6109 A2
C6110 A2
C6111 A2
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C6113 A2
C6114 A1
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C6116 A1
C6117 A1
C6118 A2
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C6639 A5
C6642 A5
C6644 B5
C6647 B5
C6648 B5
C6649 A5
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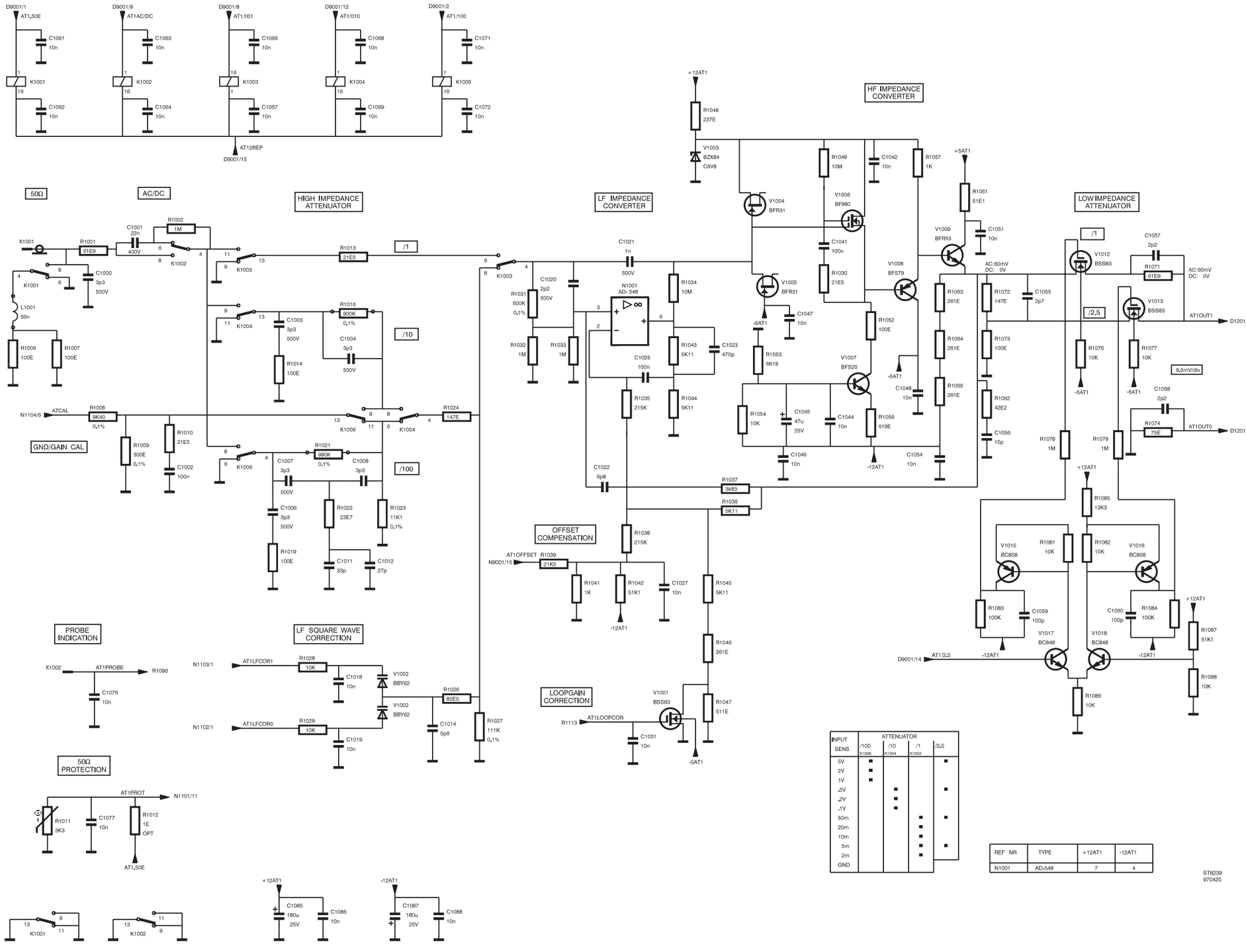
R7694 E6
R7696 F6
R7711 F7
R7712 F7

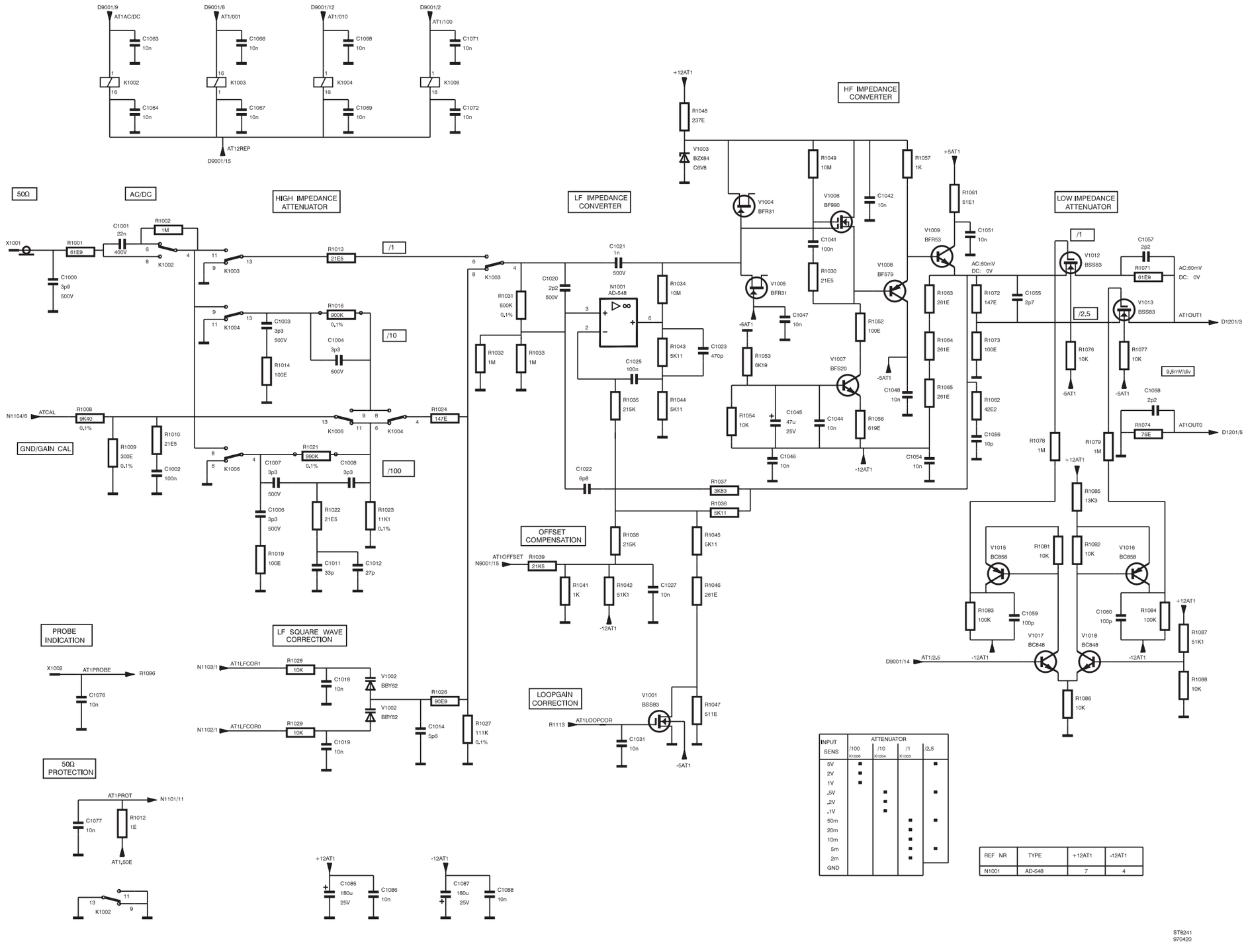
R7713 E5
R7716 D5
R7753 G6
R7754 G6
R7809 G4
R7901 G7
R7911 G7
R7921 F7
R7931 F7
R7941 E7
R7951 G6
R7952 G6
R7953 G6
R7954 F6
R7956 G7
R7957 F7
R7958 F7
R7961 F7
R8001 D3
R8002 D3
R8003 D3
R8004 D3
R8005 E3
R8006 D2
R8007 D3
R8008 D2
R8009 E3
R8010 E3
R8011 E3
R8012 E3
R8013 E3
R8014 E3
R8015 D2
R8016 D2
R8017 F4
R8018 E4
R8019 E3
R8020 E3
R8021 E3
R8022 E3
R8023 E4
R8024 E3
R8025 D4
R8026 B4
R8027 E3
R8028 D4
R8029 C4
R8030 F4
R8031 C4
R8033 C3
R8034 C3
R8035 C3
R8037 B3
R8038 B3
R8040 E4
R8041 F3
R8042 C3
R8043 C3
R8044 D4
R8045 D4
R8046 D4
R8047 D4
R8048 D4
R8049 E1
R8050 D4
R8051 D4
R8052 D4
R8053 F3
R8054 C3
R8055 C4
R8056 E4
R8057 E4
R8058 E4
R8059 E4
R8060 E4
R8061 F4
R8062 F4
R8063 F4
R8064 E4
R8065 E4
R8066 D3
R8067 D3
R8068 F4
R8069 E3
R8070 B3
R8071 A4
R8072 E3
R8073 B4
R8074 E4
R8075 E4
R8076 D4
R8077 C4
R8078 E4
R8079 D4
R8080 C4
R8081 D4
R8082 D4
R8083 C2
R8084 C2
R8085 C2
R8086 D4
R8087 D4
R8088 E4
R8089 E4
R8090 D3
R8091 D3
R8092 C4
R8093 C4
R8094 C4
R8095 E3
R8096 E3
R8097 E4
R8098 E4
R8099 E4
R8100 F4
R8101 D3
R8102 E1
R8103 D2
R8104 E1
R8105 C4
R8106 D4
R8130 C3
R8131 C4
R8132 B3
R8133 D3
R8134 F4
R8135 F4
R8136 F4
R8137 F3
R8138 B4
R8200 E4
R8403 A1
R8404 A1
R8405 H5
R8410 B3
R8411 A3
V1001 F12
V1002 F13
V1003 G12
V1004 F13
V1005 F13
V1006 F13
V1007 F12
V1008 F12
V1009 F12
V1012 F12
V1013 F12
V1015 G12
V1016 F12
V1017 E12
V1018 F12
V1201 F10
V1202 F10
V1206 G11
V1207 G11
V1208 G11
V1209 F10
V1251 G9
V1252 F10
V1301 E8
V1302 E8
V1304 G8
V1306 G8
V1307 G8
V1308 F8
V1313 F8
V2001 D12
V2002 D13
V2003 E12
V2004 E13
V2005 E13
V2006 E13
V2007 D12
V2008 E12
V2009 E12
V2012 E12
V2013 E12
V2015 E12
V2016 D12
V2017 D12
V2018 D12
V2201 E10
V2202 E10
V2206 E11
V2207 E11
V2208 E11
V2209 E10
V2301 D8
V2302 D8
V2303 D8
V2304 E8
V2306 E8
V2307 E8
V3001 C12
V3002 C13
V3003 D12
V3004 C13
V3005 C13
V3006 C13
V3007 C12
V3008 C12
V3009 C12
V3012 C12
V3013 C12
V3015 D12
V3016 C12
V3017 B12
V3201 C10
V3202 C10
V3206 D11
V3207 D11
V3208 D11
V3209 C10
V3301 C8
V3302 B8
V3303 C8
V3304 C8
V3306 C8
V3307 C8
V4001 A12
V4002 A13
V4003 B12
V4004 B13
V4005 B13

V4006 B13
V4007 A12
V4008 B12
V4009 B12
V4012 B12
V4013 B12
V4015 B12
V4016 A12
V4017 A12
V4018 A12
V4201 B10
V4202 B10
V4206 B11
V4207 B11
V4208 B11
V4209 B10
V4301 A8
V4302 A8
V4303 A8
V4304 B8
V4306 B8
V4307 B8
V5001 D7
V5002 D7
V5003 D6
V5004 D6
V5006 D6
V5007 D6
V5008 D6
V5009 D6
V5011 D5
V5012 C6
V5013 D6
V5014 D5
V5016 C6
V5017 C6
V5018 D6
V5501 D10
V5502 D10
V5503 C9
V5504 D10
V5506 D9
V5601 D9
V6001 B1
V6002 C3
V6003 C1
V6004 C1
V6005 B2
V6006 B2
V6007 B2
V6008 C3
V6012 C2
V6013 C2-L
V6014 C2-L
V6016 B2
V6017 B2
V6018 C1
V6019 B2
V6022 C2
V6041 B3
V6042 B3
V6044 C4
V6061 D2
V6062 D2
V6101 A2
V6506 B6
V6507 B6
V6532 B6
V6553 C6
V6573 C5
V6574 C5
V6593 C6
V6604 A5
V6606 B5
V6628 A4
V6631 A4
V6637 A4
V6667 B4
V6668 B5
V6686 B5
V6687 B5
V6691 C5
V6754 A6
V6757 A6
V6759 A6
V6761 A6
V6763 A6
V6764 A4
V6768 A6
V6784 A5
V7001 F2
V7003 G2
V7004 G2
V7005 G2
V7006 F2
V7007 F2
V7012 G2
V7016 G2
V7017 G2
V7018 F2
V7019 H2-L
V7020 G2-L
V7031 G6
V7032 G6
V7075 D2
V7091 E2
V7093 C2
V7094 F2
V7150 G7
V7151 G7
V7152 G6
V7506 F6
V7507 F6
V7532 F6
V7553 G6
V7573 F5
V7574 F5
V7686 F6
V7687 F6
V7691 E6
V7714 D5
V7801 G5
V7802 G5
V7803 G5
V7804 G5
V7805 G5
V7806 G5
V7807 G5
V7808 G5
V8001 D3
V8002 E3
V8003 C4
V8004 E3
V8005 D4
V8006 E3
V8007 F4
V8008 F3
V8009 F4
V8011 E3
V8012 E3
V8013 C3
V8014 C3
V8015 E2
V8018 B4
V8019 B4
V8023 D4
V8024 D4
V8025 D4
V8028 D4
V8029 E4
V8031 D4
V8032 D4
V8040 E3
V8041 D4
V8042 C2
V8043 C2
V8044 F4
V8061 E4
V8062 E4
V8063 E4
V8065 E4
V8066 F4
V8067 D3
V8068 D3
V8101 E4
W3001 C13-L
W3002 C14-L
W3003 B15-L
W4001 B13-L
W4002 A14-L
W4003 A15-L
X1301 E8
X1302 E8
X2301 D8
X2302 D8
X3301 C8
X3302 C8
X4301 A8
X4302 A8
X5001 D6-L
X6010 C4
X6011 D2
X6794 A4
X8010 E3
X8011 D4
X8012 F4
X8013 E4
X8014 E4
X8015 B4
X9001 H8-L
X9002 H4-L

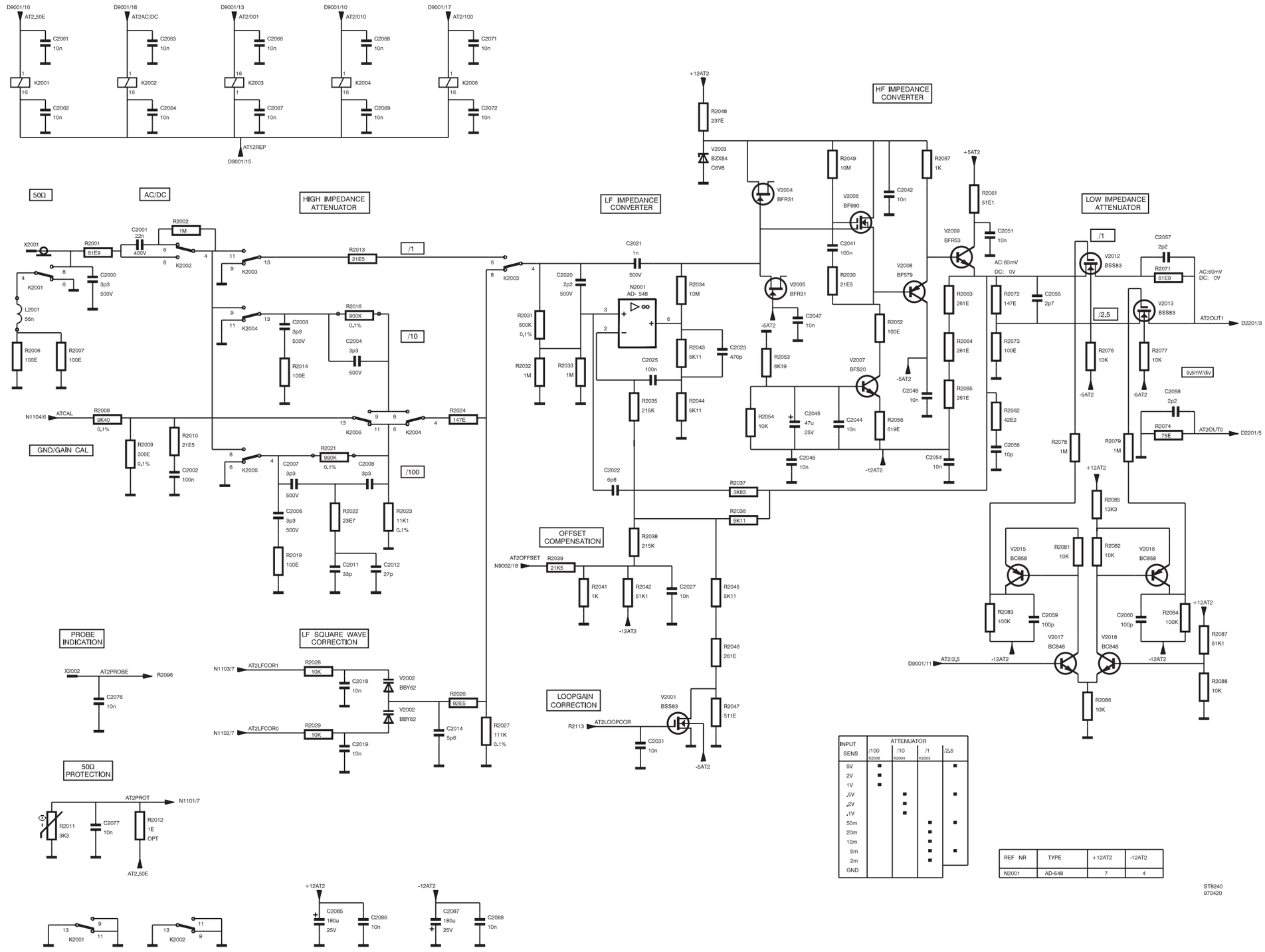
## 5.1.5 Circuit diagrams




A1; Diagram 1 - Attenuator CH1 (PM3394B/90B)




A1; Diagram 1a - Attenuator CH1 (PM3384B/80B/70B)




| INPUT SENS | ATTENUATOR /100 K2006 | /10 K2004 | /1 K2003 | /2,5 |
|---|---|---|---|---|
| 5V | ■ | | | ■ |
| 2V | ■ | | | |
| 1V | ■ | | | ■ |
| ,5V | | ■ | | |
| ,2V | | ■ | | ■ |
| ,1V | | ■ | | |
| 50m | | | ■ | ■ |
| 20m | | | ■ | |
| 10m | | | ■ | ■ |
| 5m | | | ■ | |
| 2m | | | ■ | ■ |
| GND | | | ■ | |

| REF NR | TYPE | +12AT2 | -12AT2 |
|---|---|---|---|
| N2001 | AD-548 | 7 | 4 |

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A1; Diagram 2 - Attenuator CH2 (PM3394B/90B)

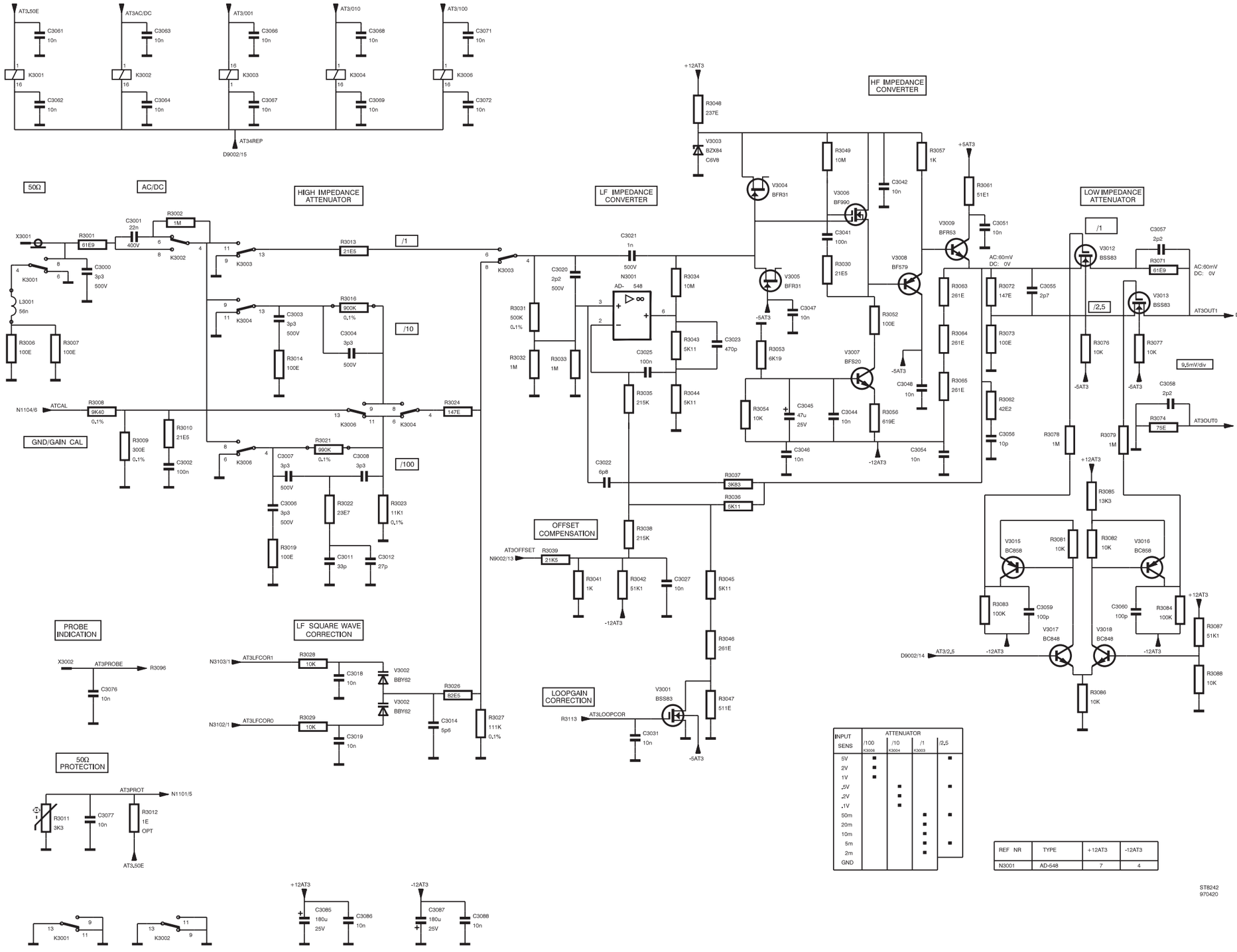
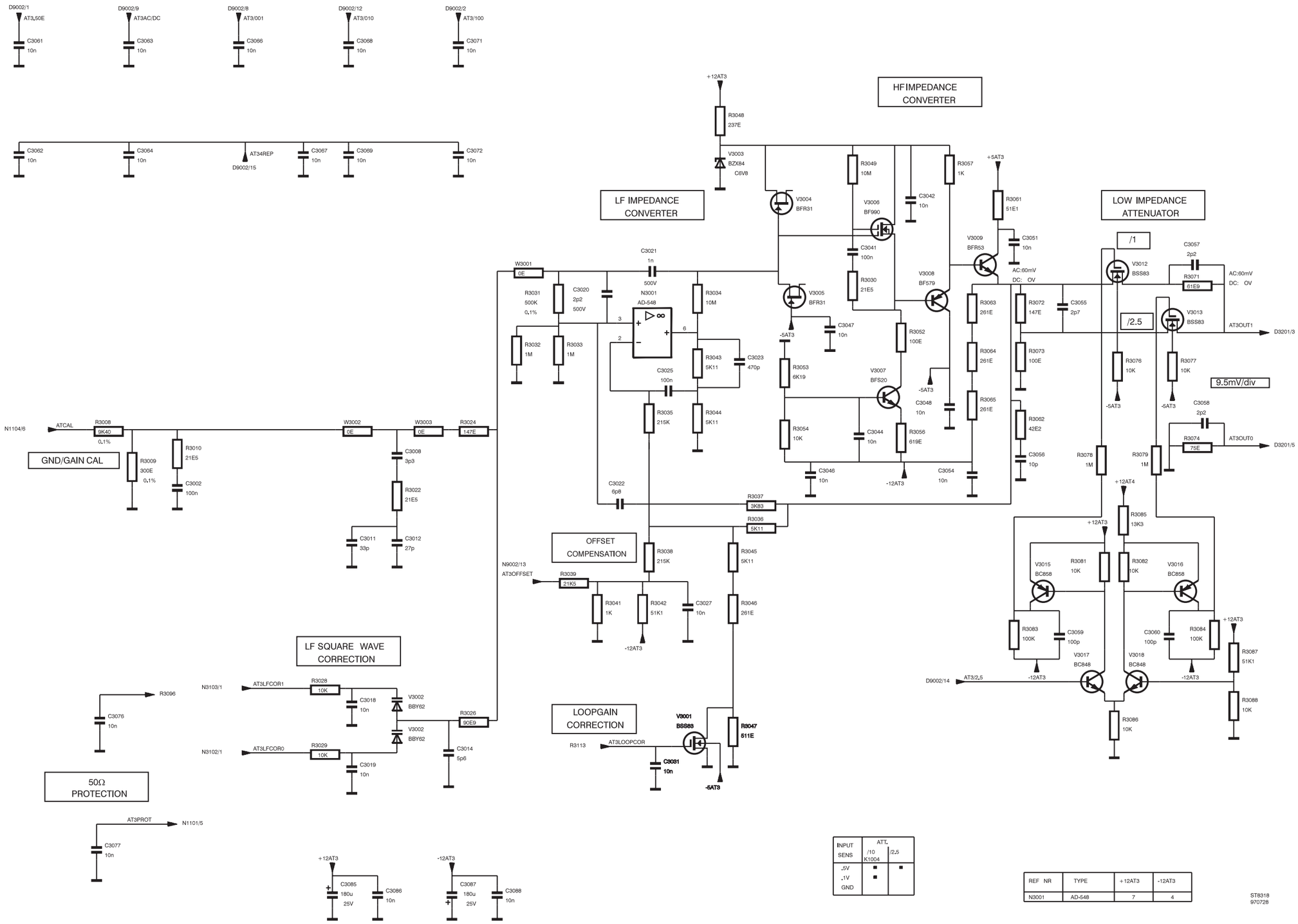



Diagram 3 - Attenuator CH3 (PM3394B)




| INPUT SENS | ATT. /10 K1004 | ATT. /2,5 |
|---|---|---|
| ,5V | ■ | ■ |
| ,1V | ■ | |
| GND | | |

| REF NR | TYPE | +12AT3 | -12AT3 |
|---|---|---|---|
| N3001 | AD-548 | 7 | 4 |

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Diagram 3a - Attenuator CH3 (PM3380B/70B)

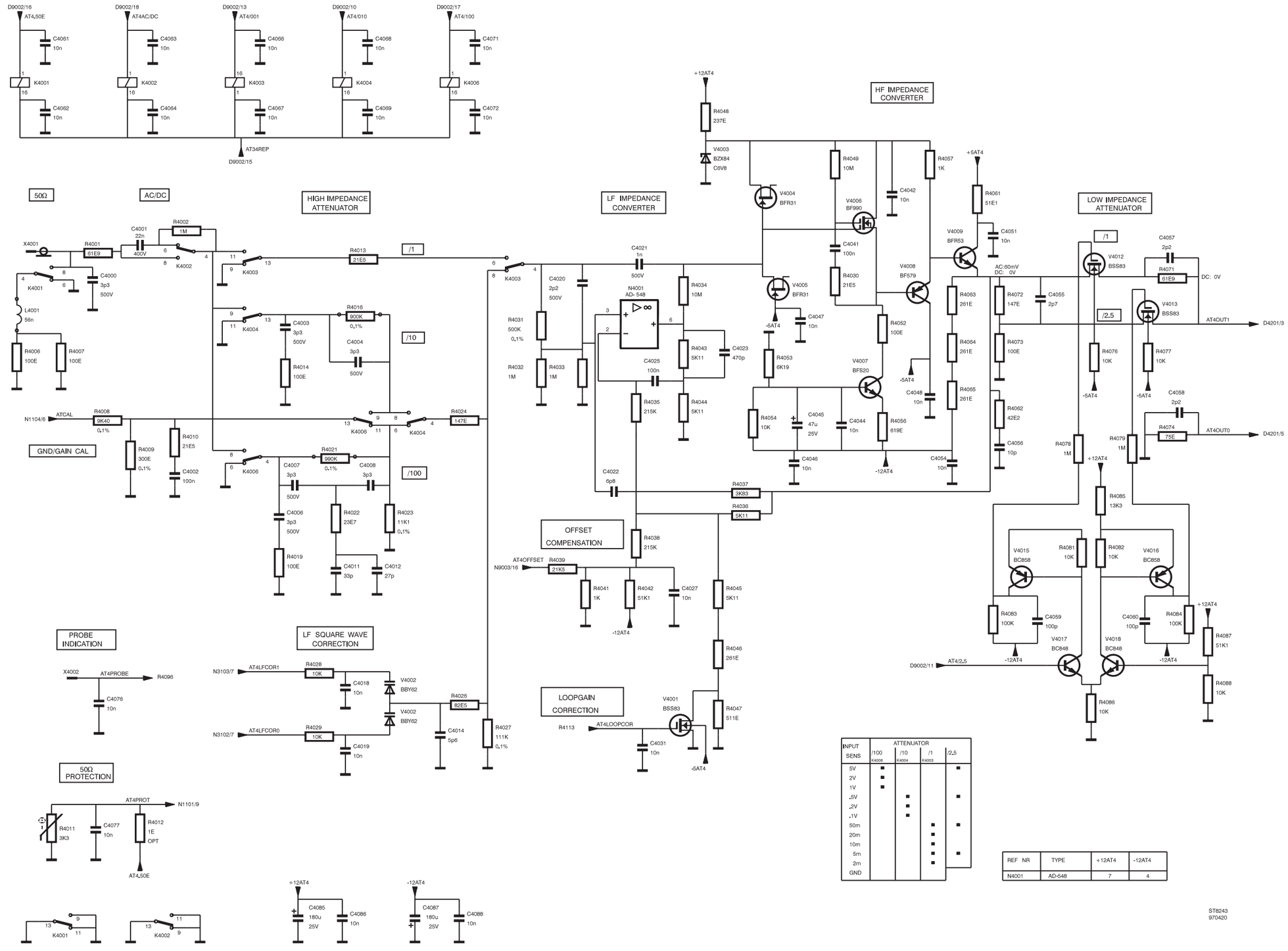
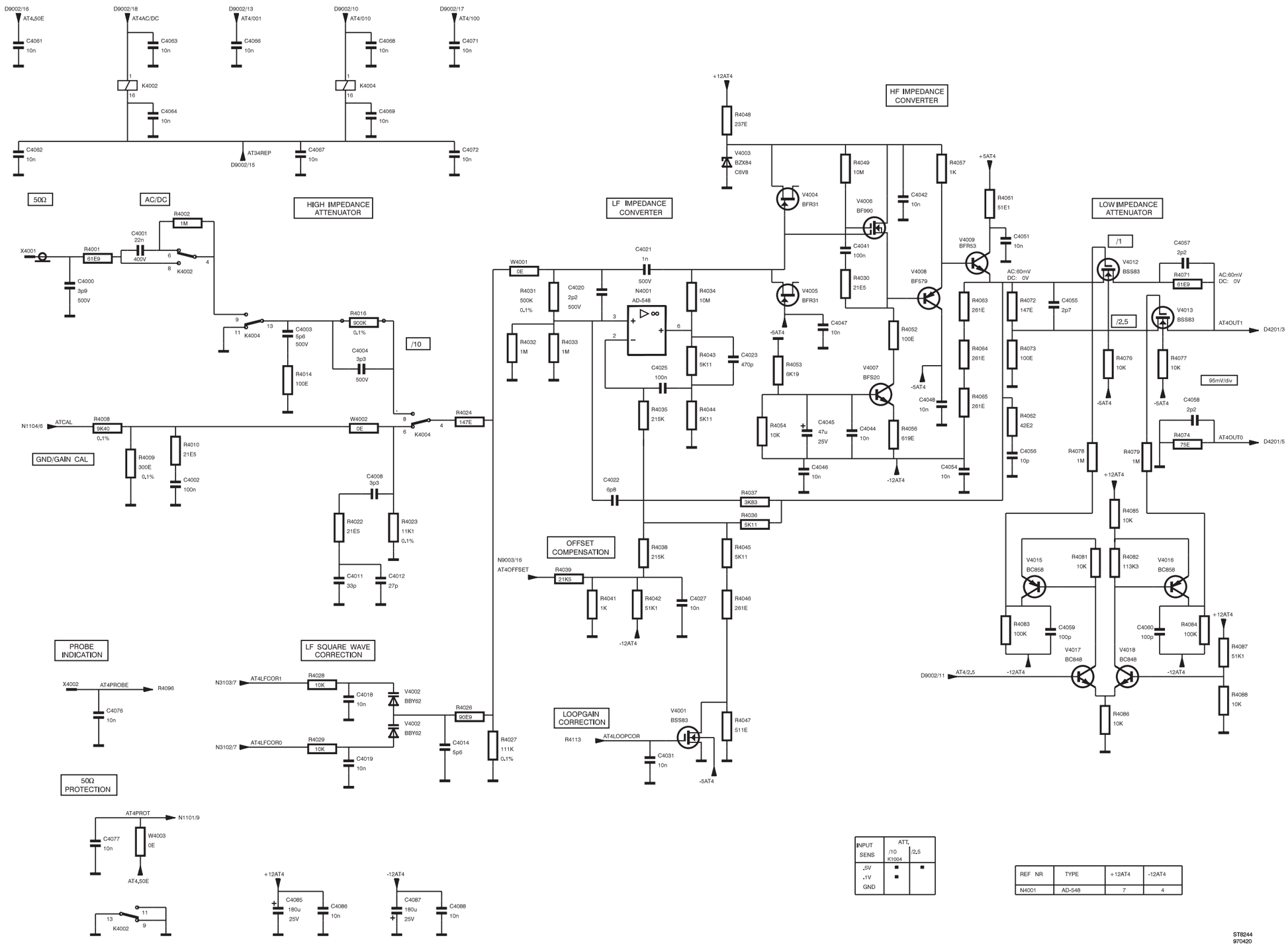



Diagram 4 - Attenuator CH4 (PM3394B)




| INPUT SENS | ATT. /10 K1004 | ATT. /2,5 |
|---|---|---|
| .5V | ■ | ■ |
| .1V | ■ | |
| GND | | |

| REF NR | TYPE | +12AT4 | -12AT4 |
|---|---|---|---|
| N4001 | AD-548 | 7 | 4 |

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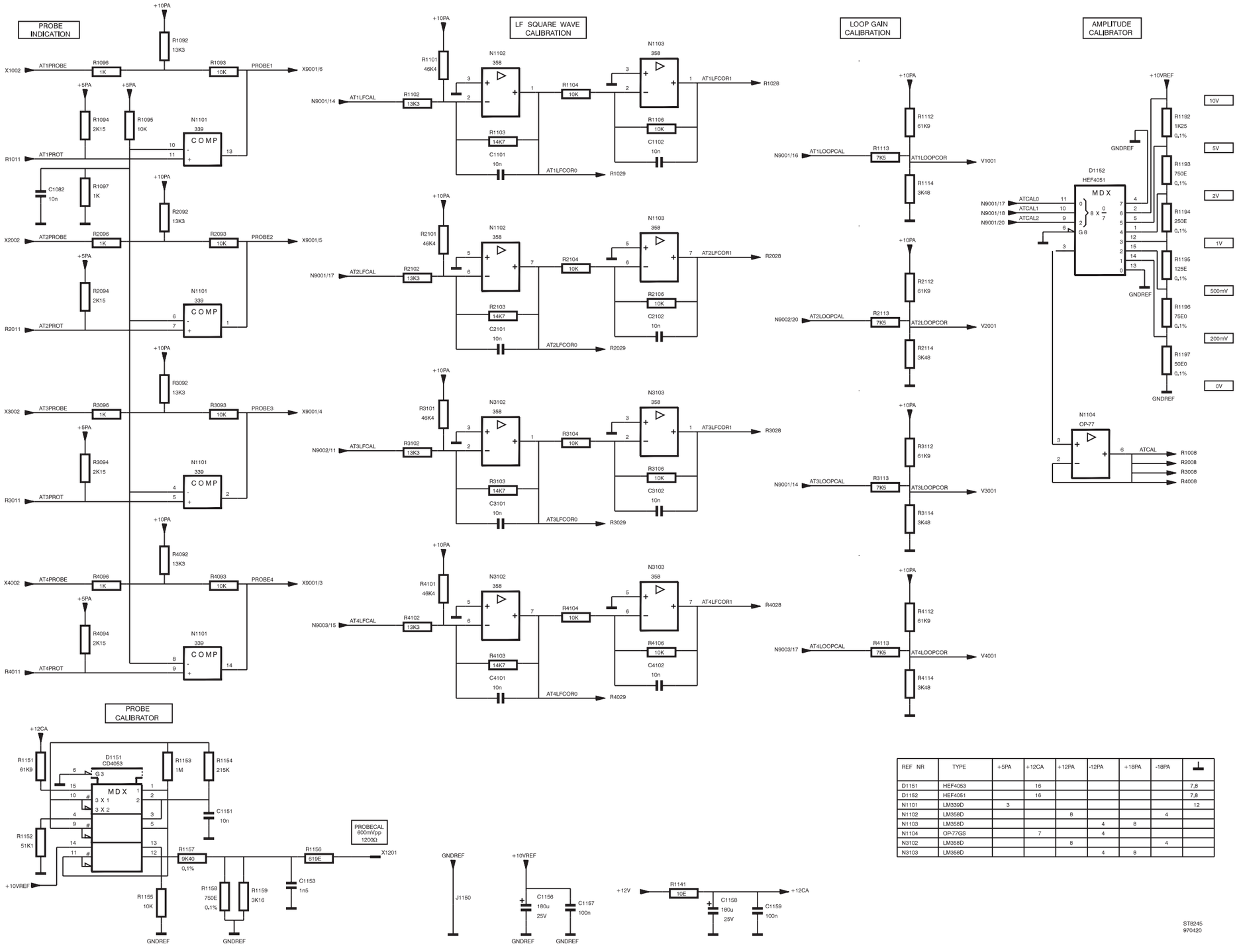
Diagram 4a - Attenuator CH4 (PM3380B/70B)




| REF NR | TYPE | +5PA | +12CA | +12PA | -12PA | +18PA | -18PA | ⏚ |
|---|---|---|---|---|---|---|---|---|
| D1151 | HEF4053 | | 16 | | | | | 7,8 |
| D1152 | HEF4051 | | 16 | | | | | 7,8 |
| N1101 | LM339D | 3 | | | | | | 12 |
| N1102 | LM358D | | | 8 | | | 4 | |
| N1103 | LM358D | | | | 4 | 8 | | |
| N1104 | OP-77GS | | 7 | | 4 | | | |
| N3102 | LM358D | | | 8 | | | 4 | |
| N3103 | LM358D | | | | 4 | 8 | | |

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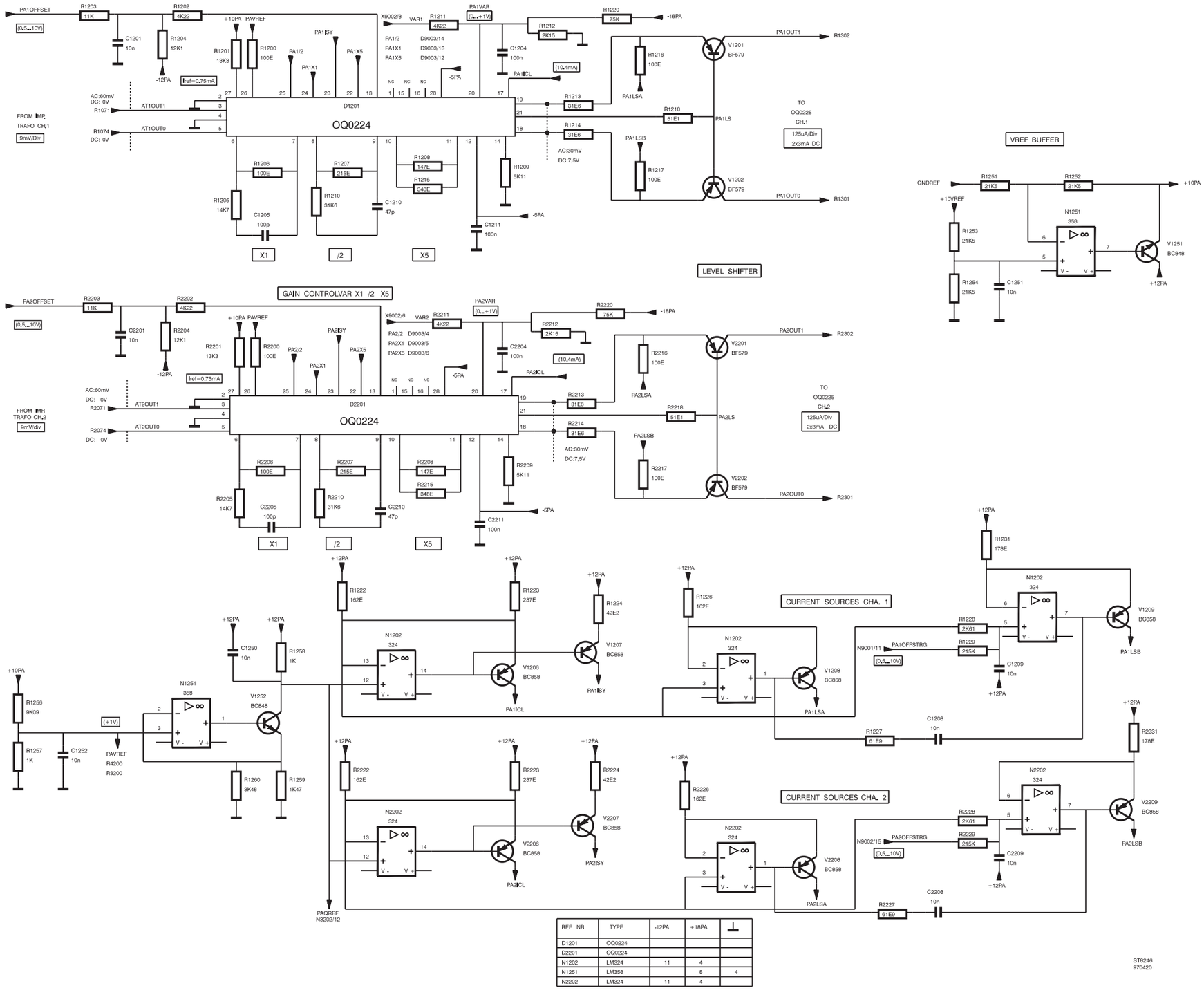
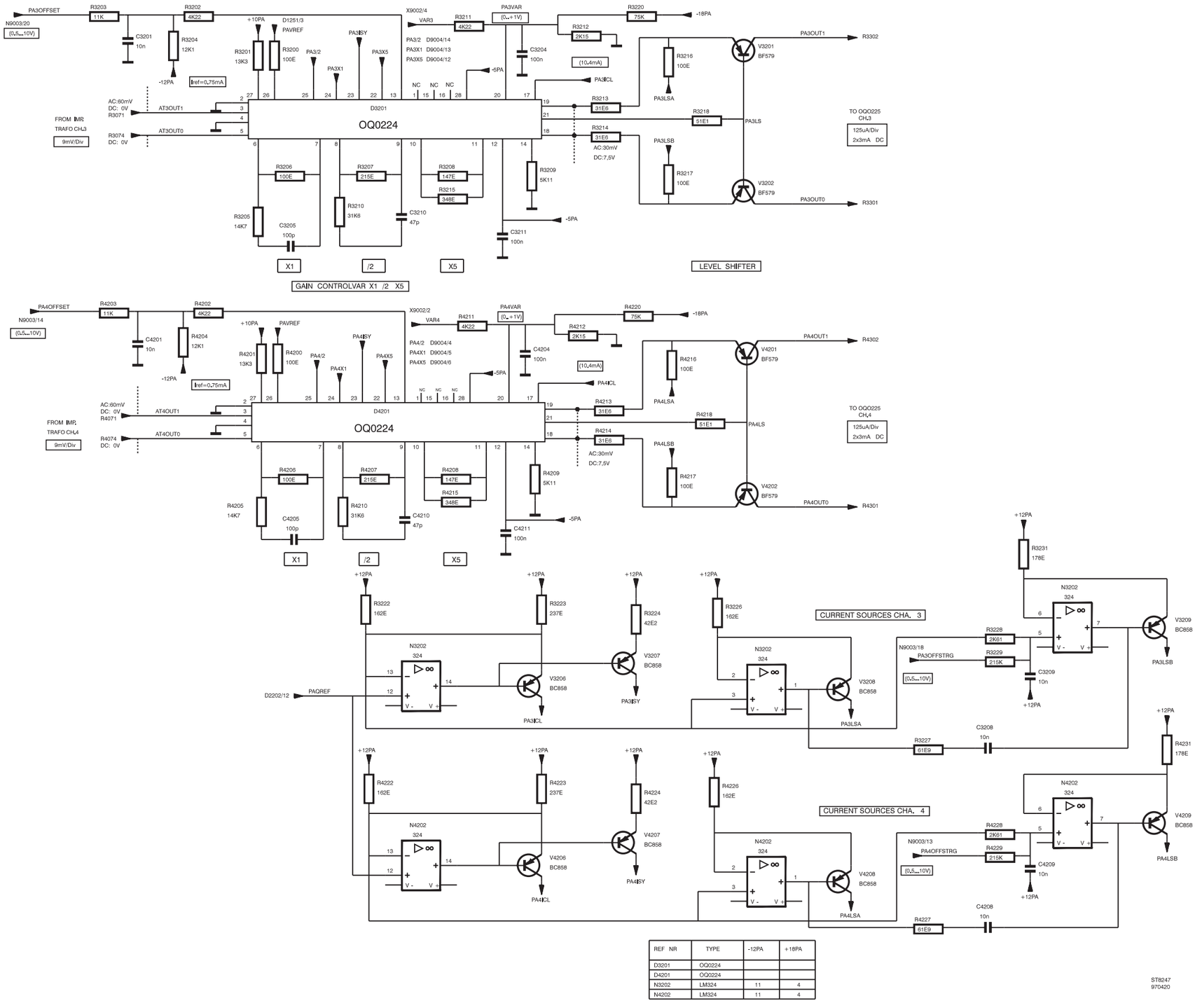
Diagram 5 - Attenuator control + CAL generator



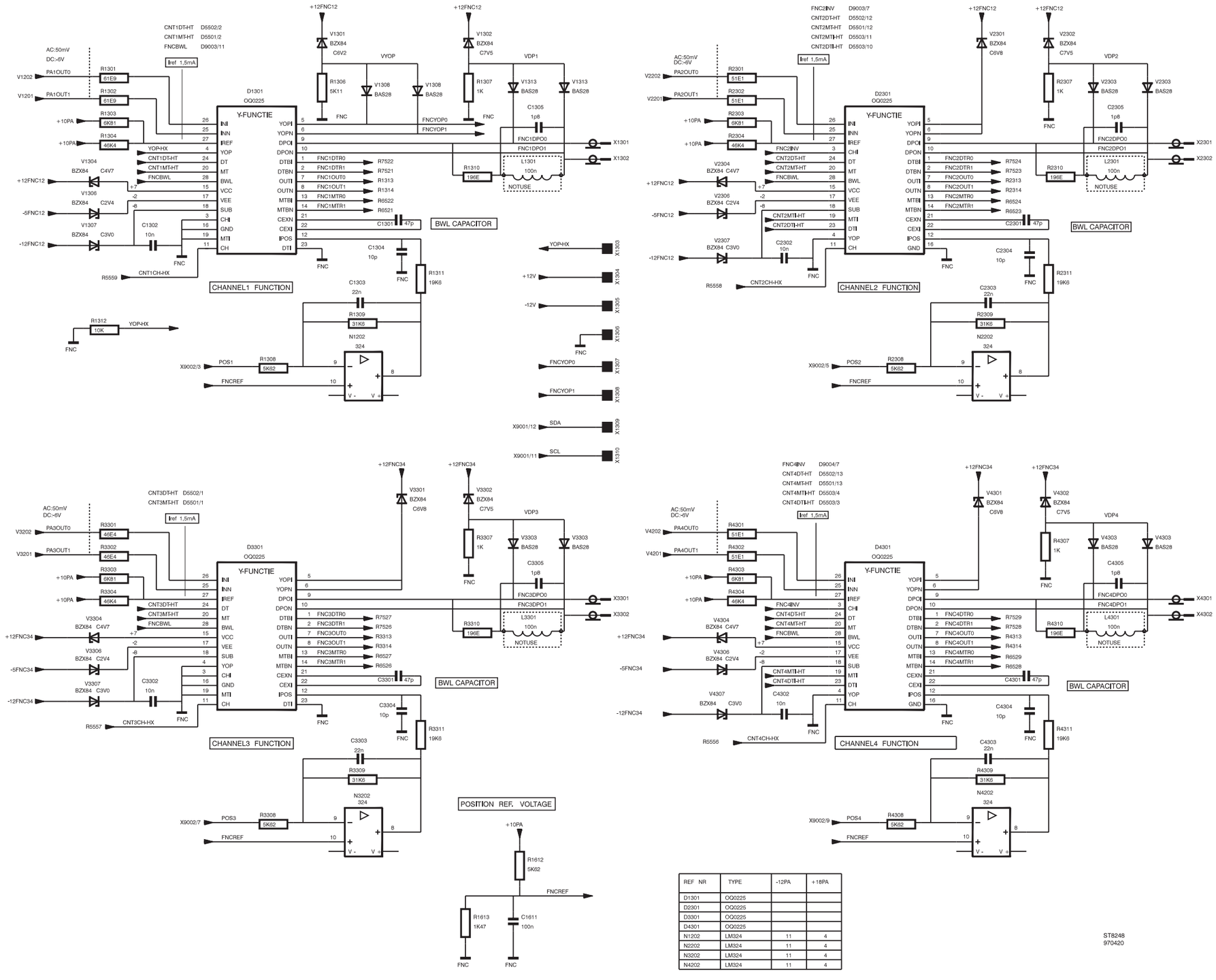

| REF NR | TYPE | -12PA | +18PA | ⊥ |
|---|---|---|---|---|
| D1201 | OQ0224 | | | |
| D2201 | OQ0224 | | | |
| N1202 | LM324 | 11 | 4 | |
| N1251 | LM358 | | 8 | 4 |
| N2202 | LM324 | 11 | 4 | |

Diagram 6 - Preamplifier CH1 and CH2




| REF NR | TYPE | -12PA | +18PA |
|---|---|---|---|
| D3201 | OQ0224 | | |
| D4201 | OQ0224 | | |
| N3202 | LM324 | 11 | 4 |
| N4202 | LM324 | 11 | 4 |

Diagram 7 - Preamplifier CH3 and CH4




| REF NR | TYPE | -12PA | +18PA |
|---|---|---|---|
| D1301 | OQ0225 | | |
| D2301 | OQ0225 | | |
| D3301 | OQ0225 | | |
| D4301 | OQ0225 | | |
| N1202 | LM324 | 11 | 4 |
| N2202 | LM324 | 11 | 4 |
| N3202 | LM324 | 11 | 4 |
| N4202 | LM324 | 11 | 4 |

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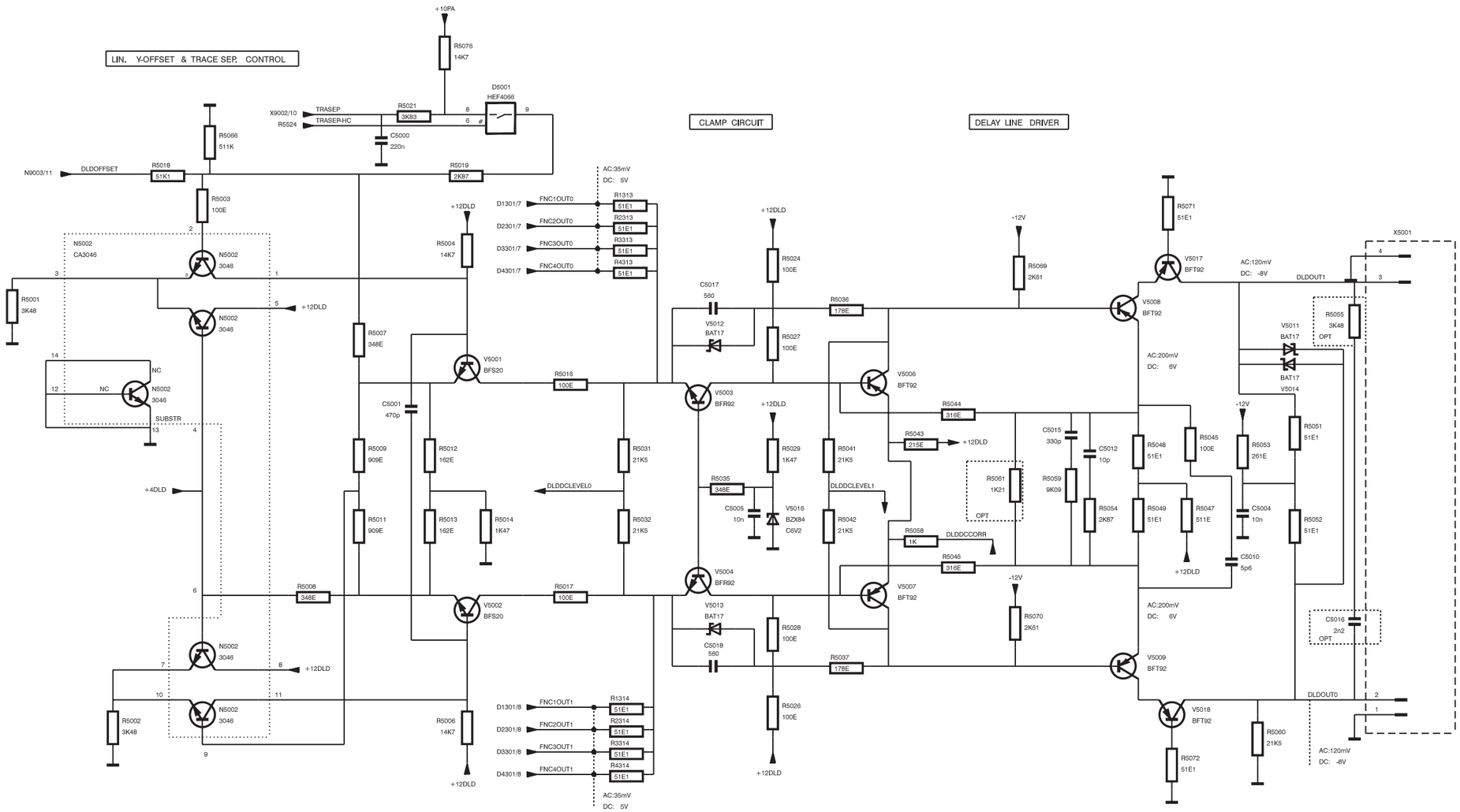
Diagram 8 - Y-functions




| REF NR | TYPE | +12DLD | ⏚ |
|---|---|---|---|
| D5001 | HEF4066 | 14 | 7 |
| N5001 | LM358 | 8 | 4 |
| N5002 | CA3046 | | |

Diagram 9 - Delay line driver (PM3394B/90B)

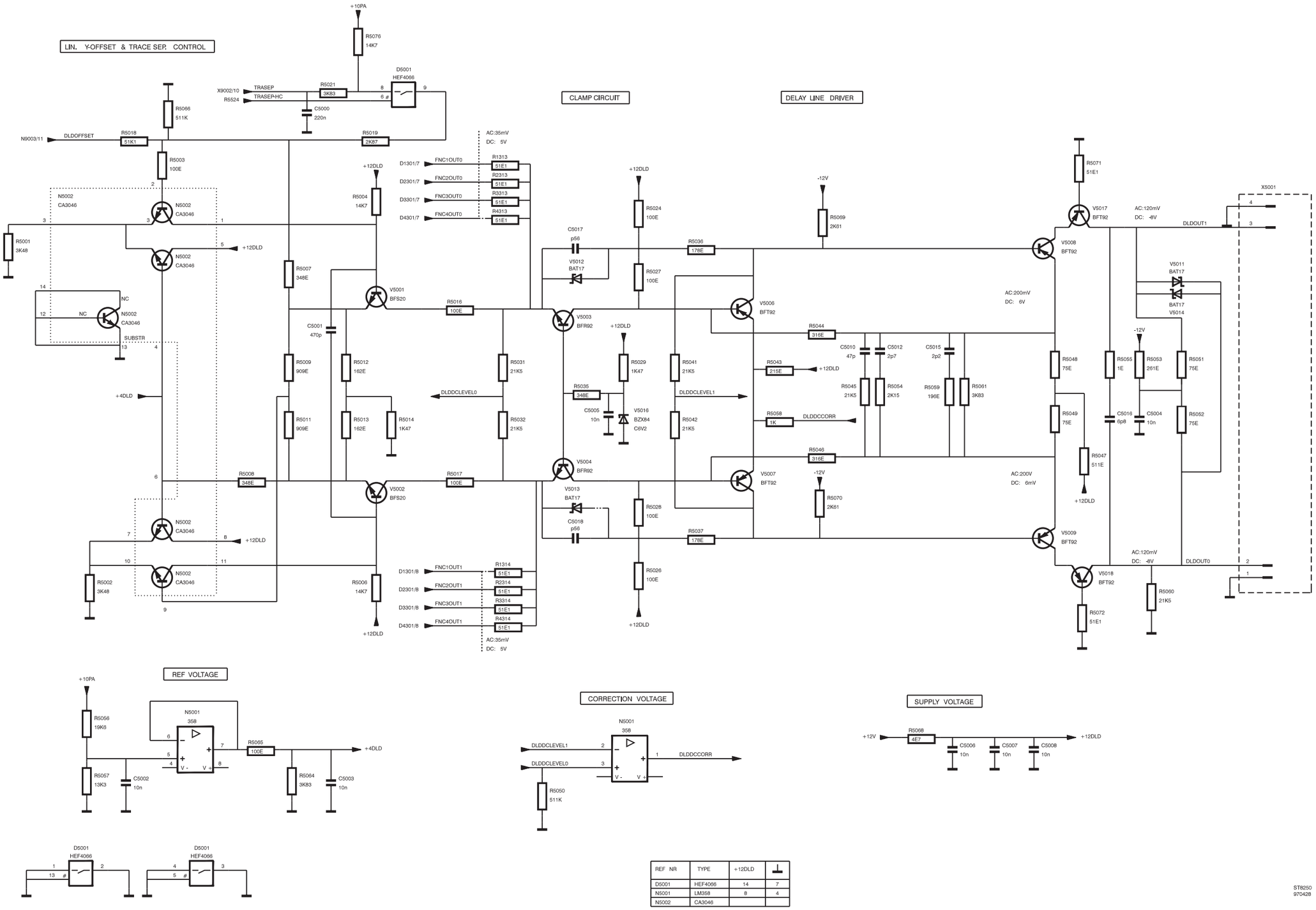
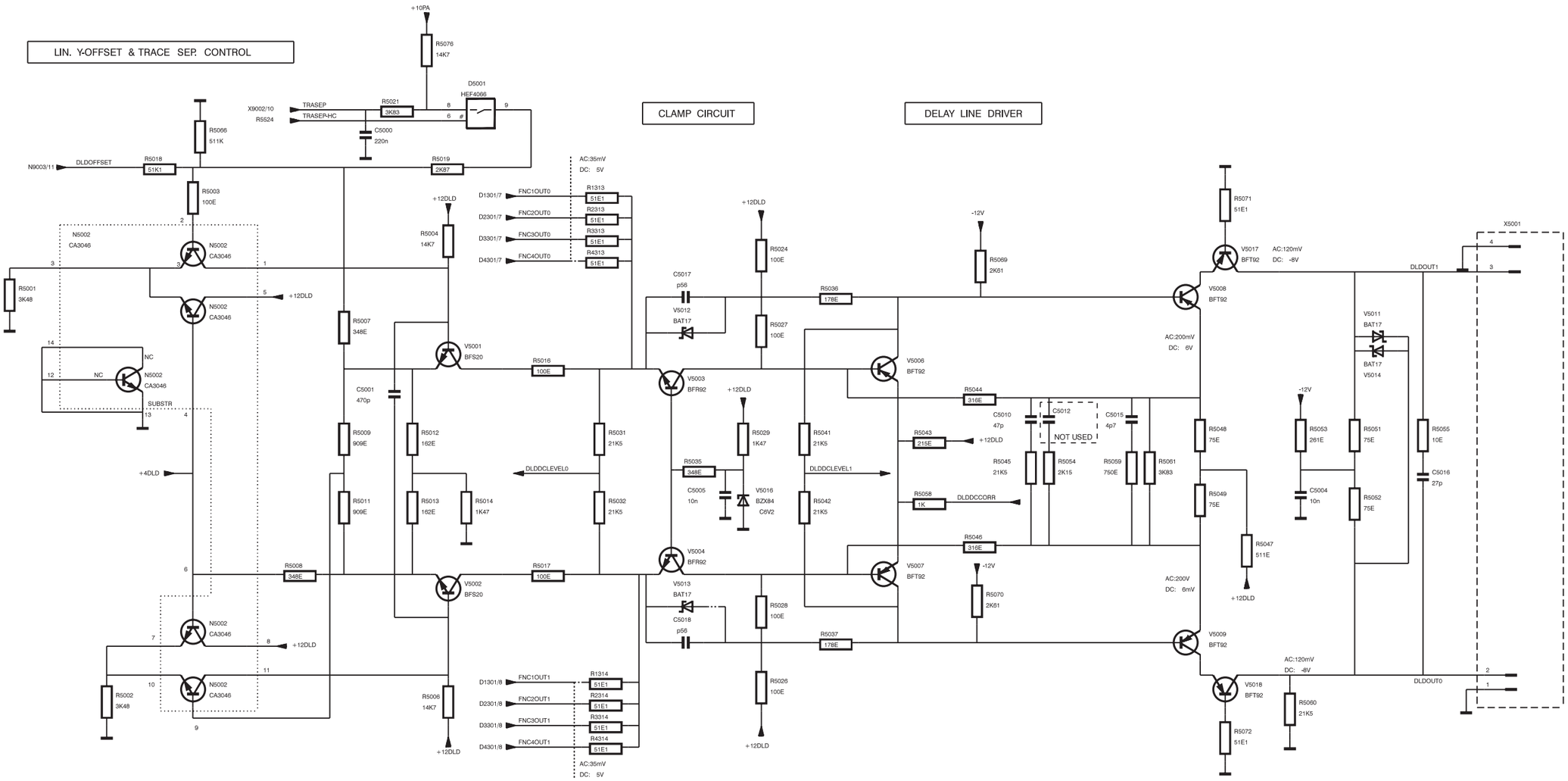



Diagram 9a - Delay line driver (PM3384B/80B)




| REF NR | TYPE | +12DLD | ⏚ |
|---|---|---|---|
| D5001 | HEF4066 | 14 | 7 |
| N5001 | LM358 | 8 | 4 |
| N5002 | CA3046 | | |

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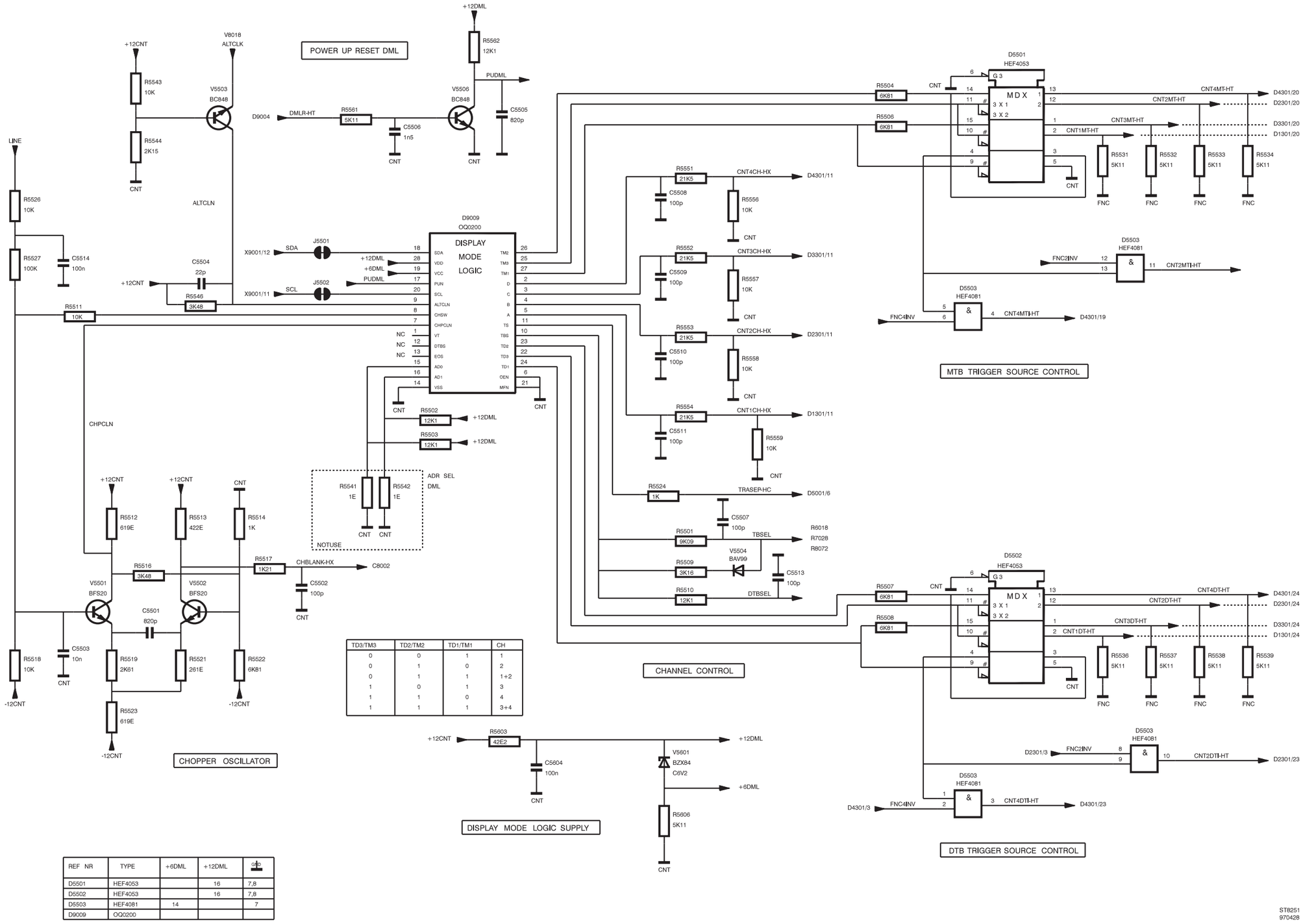
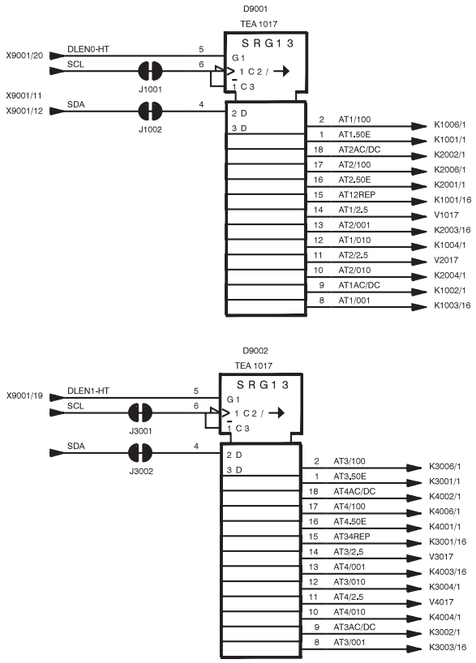
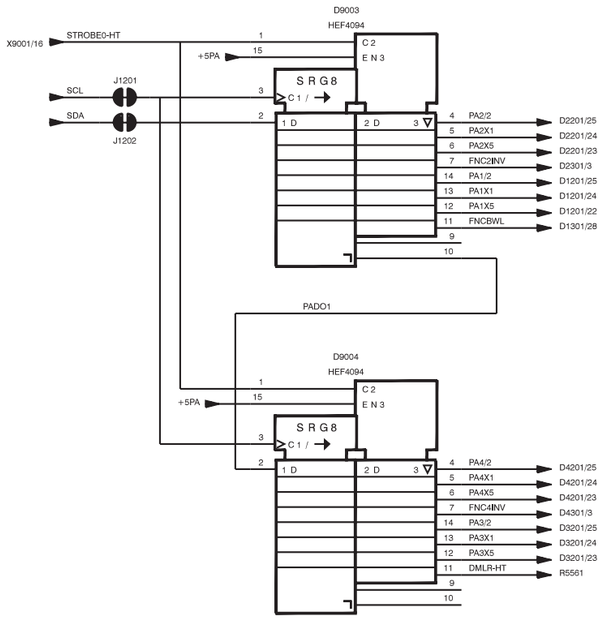
Diagram 9b - Delay line driver (Pm3370A)

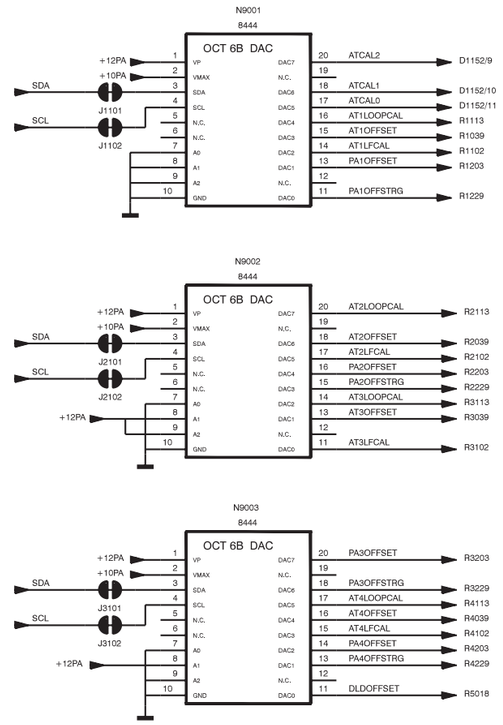


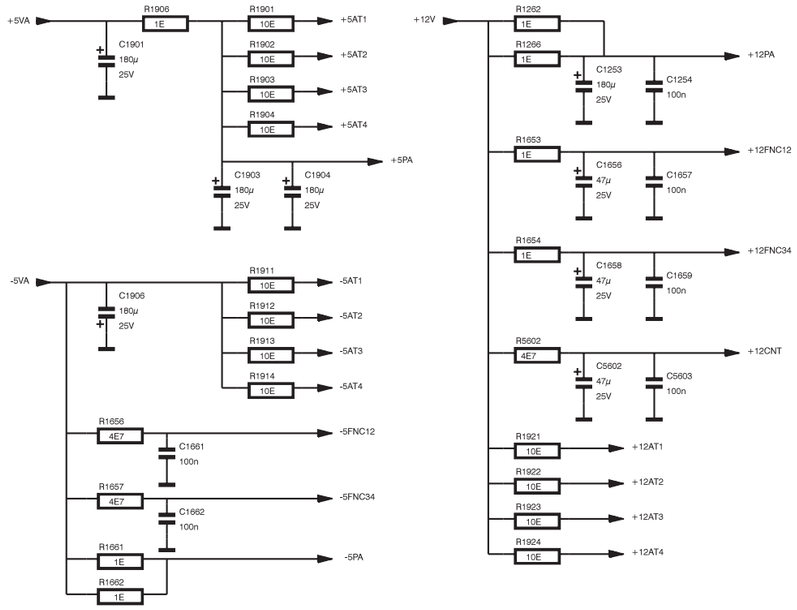

| REF NR | TYPE | +6DML | +12DML | gnd |
|---|---|---|---|---|
| D5501 | HEF4053 | | 16 | 7,8 |
| D5502 | HEF4053 | | 16 | 7,8 |
| D5503 | HEF4081 | 14 | | 7 |
| D9009 | OQ0200 | | | |

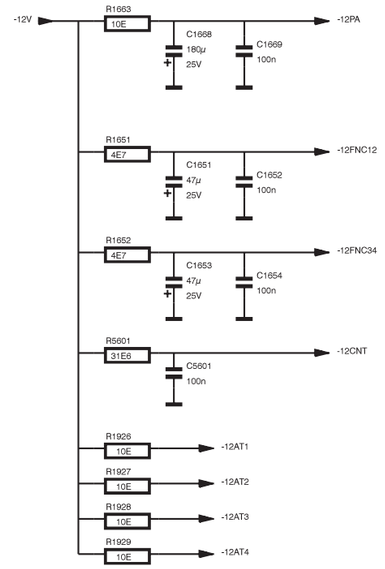
Diagram 10 - Display and trigger control

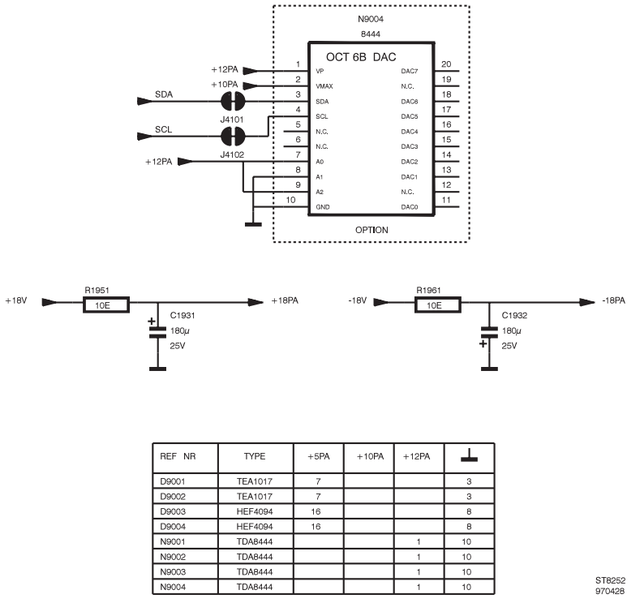



| REF NR | TYPE | +5PA | +10PA | +12PA | ⊥ |
|---|---|---|---|---|---|
| D9001 | TEA1017 | 7 | | | 3 |
| D9002 | TEA1017 | 7 | | | 3 |
| D9003 | HEF4094 | 16 | | | 8 |
| D9004 | HEF4094 | 16 | | | 8 |
| N9001 | TDA8444 | | | 1 | 10 |
| N9002 | TDA8444 | | | 1 | 10 |
| N9003 | TDA8444 | | | 1 | 10 |
| N9004 | TDA8444 | | | 1 | 10 |

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Diagram 11 - Control circuits

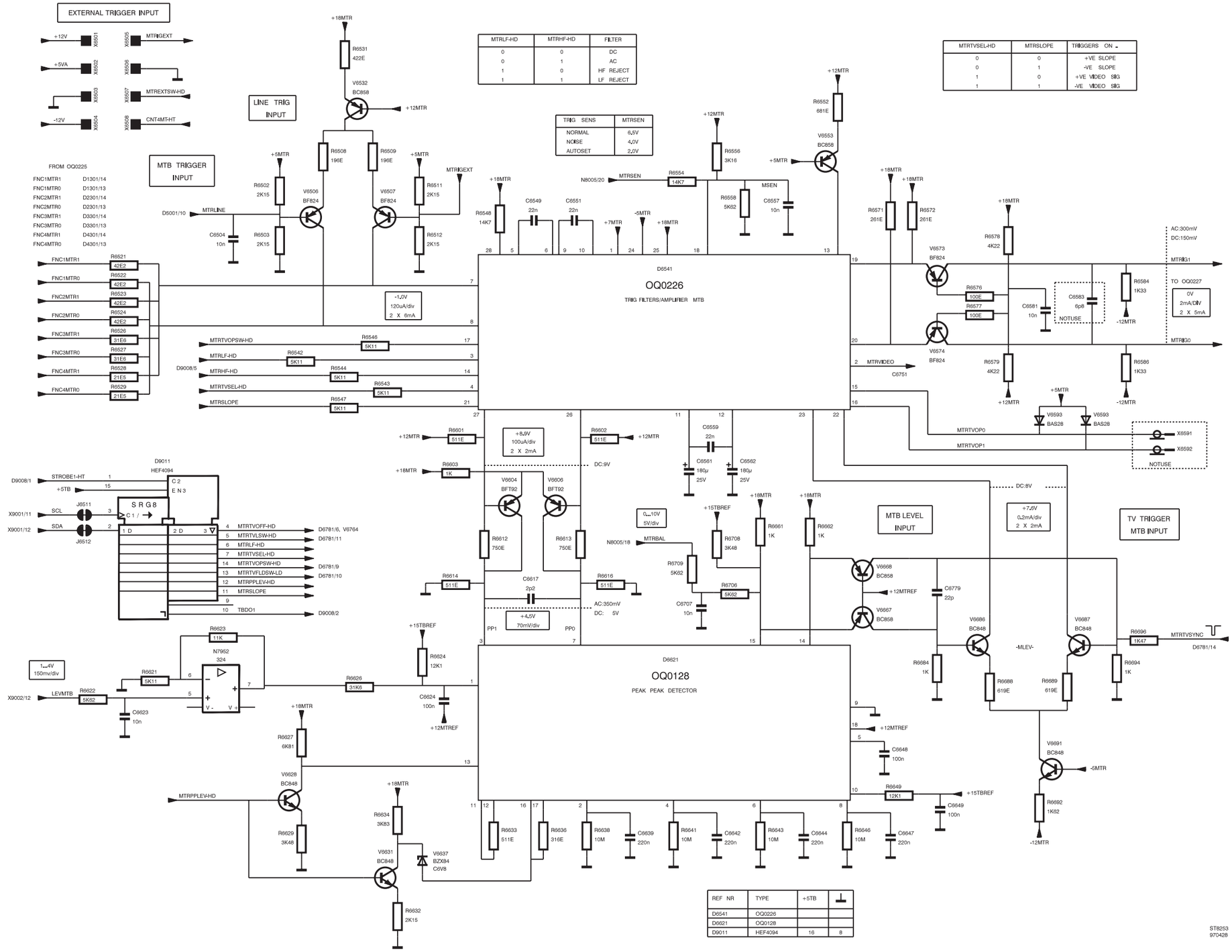


Diagram 12 - MTB trigger

TV CLAMP

TV SYNC. SEPARATOR

TV LINE/FRAME SELECTION

| TV TRIGGERING | MTRTVLSW-HD | MTRTVOPSW-HD | MTRTVFLDSW-LD |
|---|---|---|---|
| TV LINE | 1 | X | X |
| TV FIELD 1 | 0 | 0 | 1 |
| TV FIELD 2 | 0 | 0 | 0 |
| HDTV FIELD 1 | 0 | 0 | 0 |
| HDTV FIELD 2 | 0 | 0 | 1 |
| TRIG OPT IN | 0 | 1 | X |

| MTRTVMODE | TV STANDARD |
|---|---|
| +7,7V | PAL /NTSC |
| +5,0V | HDTV(JAP) |
| +2,2V | HDTV (EUREKA) |

LINE TRIGGER/XDEFL SELECTION

+7V REFERENCE VOLTAGE

| REF NR | TYPE | +18DTR | ⊥ | +5MTR | +5DTR | -5MTR | -5DTR | +12DLD |
|---|---|---|---|---|---|---|---|---|
| D6781 | HEF4053 | | 8 | 16 | | 7 | | |
| D7711 | HEF4053 | | 8 | | 16 | | 7 | |
| N6771 | LM1881 | | 4 | 8 | | | | |
| N7952 | LM324 | 4 | 11 | | | | | |
| D6779 | 74HCT112 | | 8 | 16 | | | | |
| D5001 | HEF4066 | | 7 | | | | | 14 |

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Diagram 13 - TV/line trigger

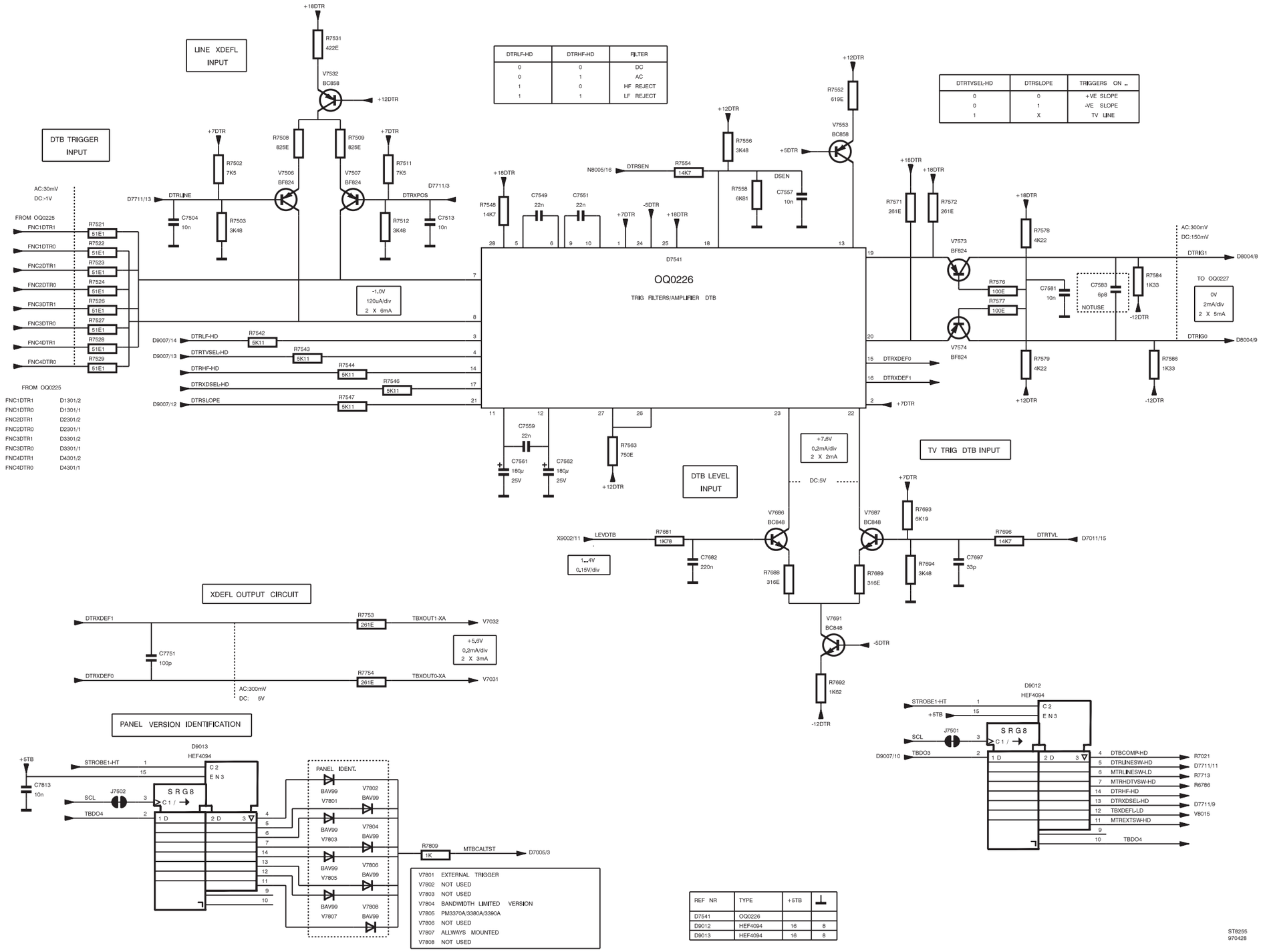



Diagram 14 - DTB trigger

| REF NO | TYPE | +5TB | +12TB | ⏚ |
|---|---|---|---|---|
| D8003 | OQ0235 | 20 | | 1 |
| D8004 | OQ0227 | 28 | 4 | |
| D8006 | HEF40106 | 14 | | 7 |
| D9008 | HEF4094 | 14 | | 7 |
| N8005 | TDA8444 | | 1 | 10 |

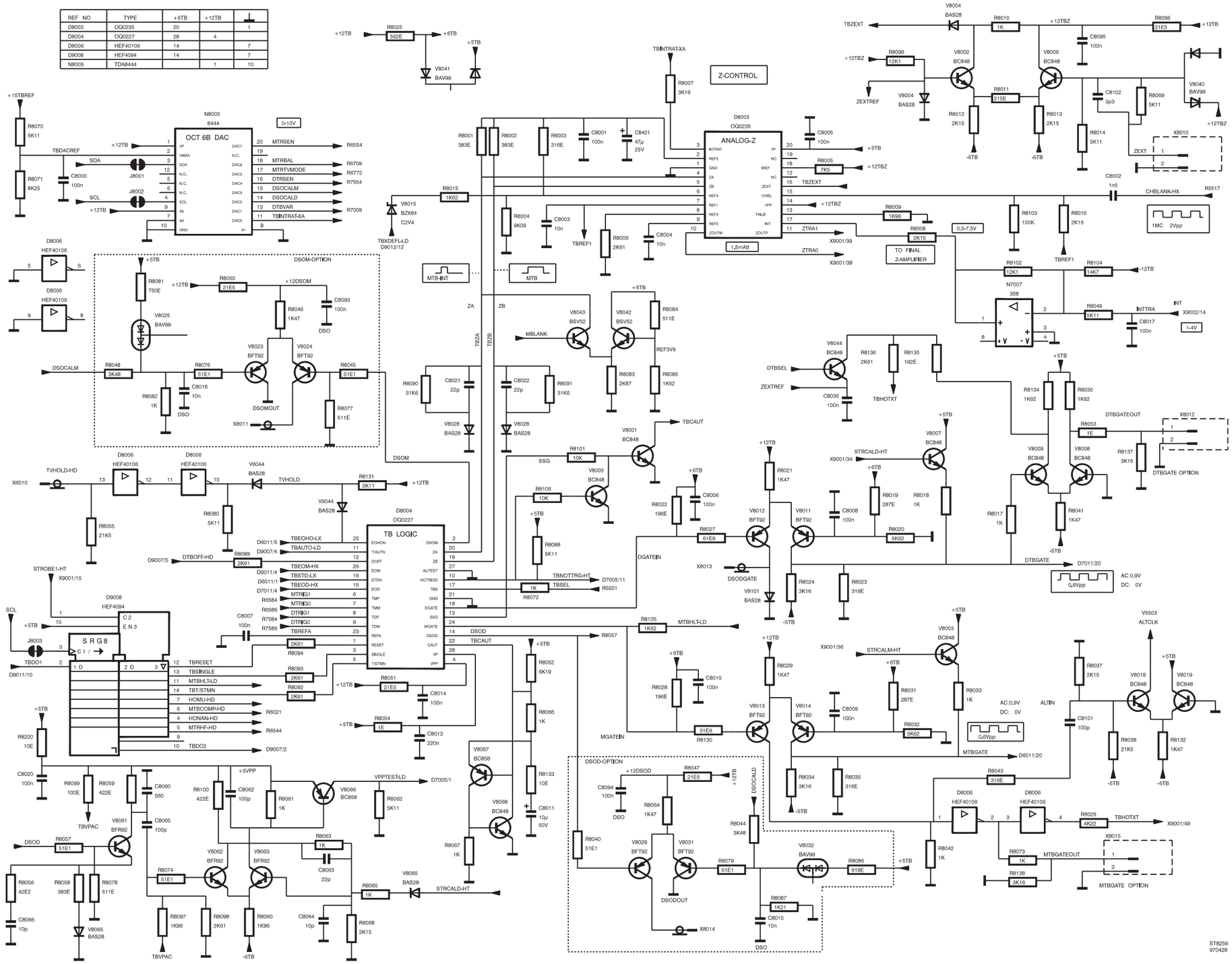
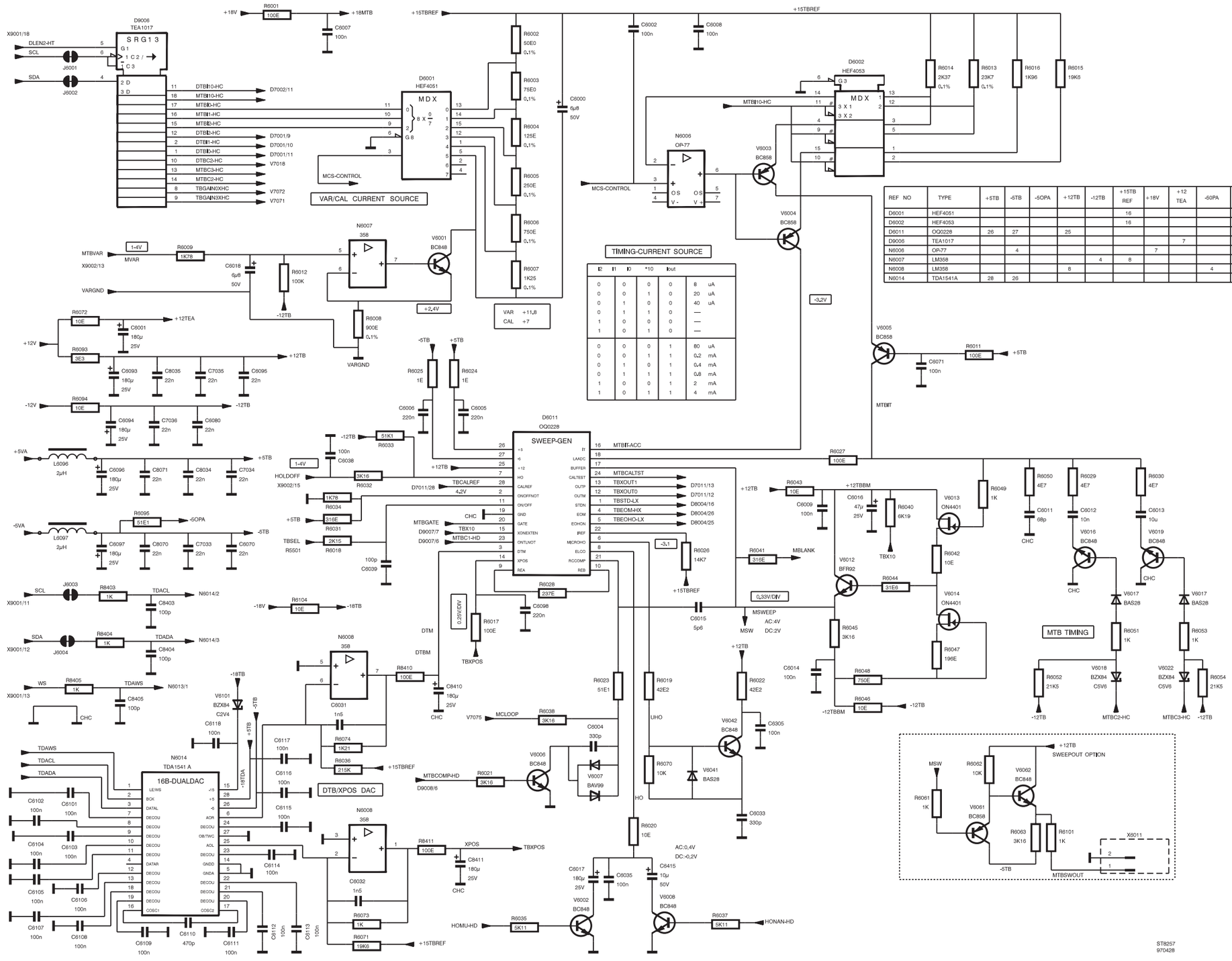



Diagram 15 - Time base logic




| REF NO | TYPE | +5TB | -5TB | -5OPA | +12TB | -12TB | +15TB REF | +18V | +12 TEA | -50PA | ⏚ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D6001 | HEF4051 | | | | | | 16 | | | | 8 |
| D6002 | HEF4053 | | | | | | 16 | | | | 8,7 |
| D6011 | OQ0228 | 26 | 27 | | 25 | | | | | | |
| D9006 | TEA1017 | | | | | | | | 7 | | 3 |
| N6006 | OP-77 | | 4 | | | | | 7 | | | |
| N6007 | LM358 | | | | | 4 | 8 | | | | |
| N6008 | LM358 | | | | 8 | | | | | 4 | |
| N6014 | TDA1541A | 28 | 26 | | | | | | | | 5 |

| I2 | I1 | I0 | *10 | Iout | |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 8 | uA |
| 0 | 0 | 1 | 0 | 20 | uA |
| 0 | 1 | 0 | 0 | 40 | uA |
| 0 | 1 | 1 | 0 | — | |
| 1 | 0 | 0 | 0 | — | |
| 1 | 0 | 1 | 0 | — | |
| 0 | 0 | 0 | 1 | 80 | uA |
| 0 | 0 | 1 | 1 | 0,2 | mA |
| 0 | 1 | 0 | 1 | 0,4 | mA |
| 0 | 1 | 1 | 1 | 0,8 | mA |
| 1 | 0 | 0 | 1 | 2 | mA |
| 1 | 0 | 1 | 1 | 4 | mA |

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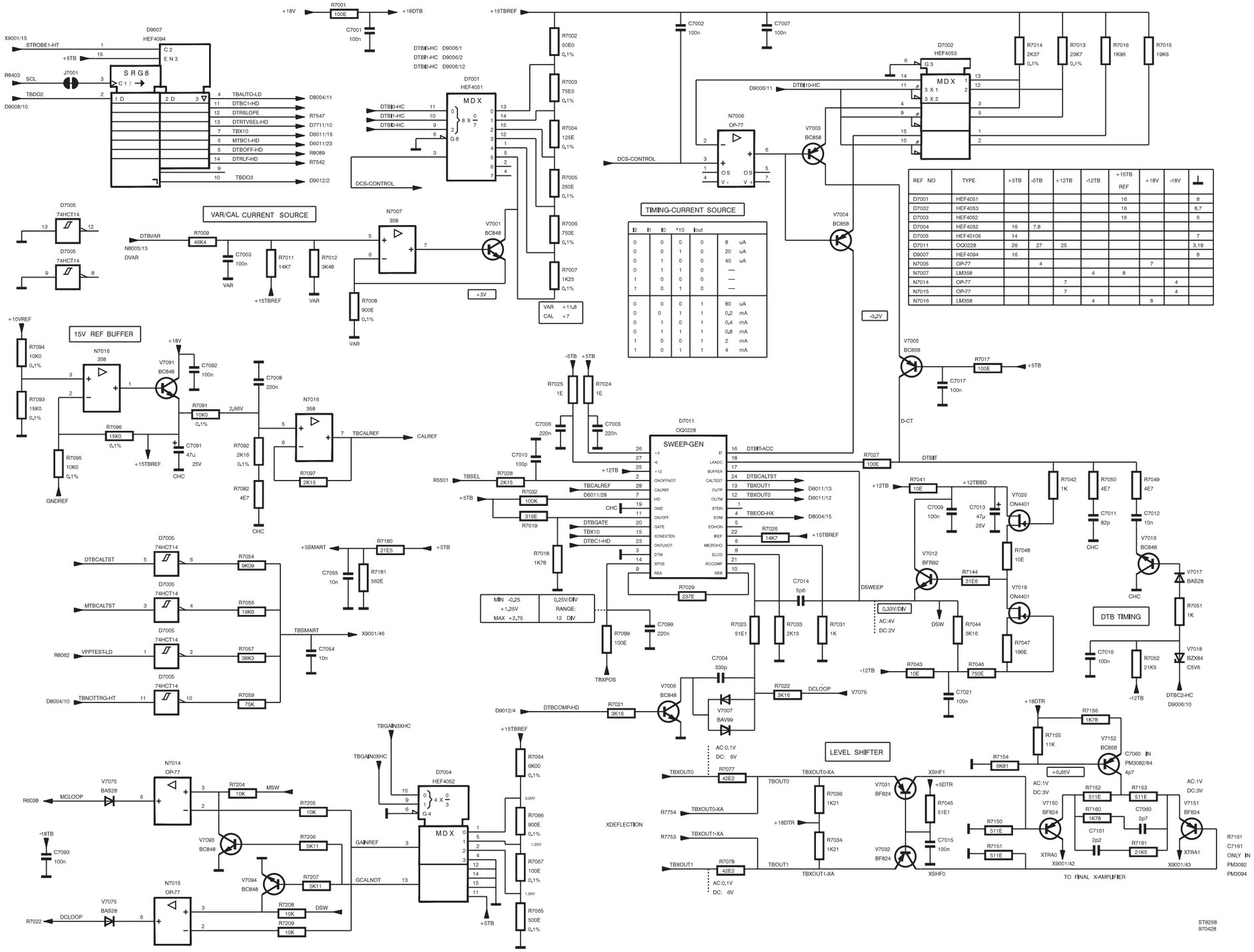
Diagram 16 - Main time base




| REF NO | TYPE | +5TB | -5TB | +12TB | -12TB | +15TB REF | +18V | -18V | ⊥ |
|---|---|---|---|---|---|---|---|---|---|
| D7001 | HEF4051 | | | | | 16 | | | 8 |
| D7002 | HEF4053 | | | | | 16 | | | 8,7 |
| D7003 | HEF4052 | | | | | 16 | | | 6 |
| D7004 | HEF4052 | 16 | 7,8 | | | | | | |
| D7005 | HEF40106 | 14 | | | | | | | 7 |
| D7011 | OQ0228 | 26 | 27 | 25 | | | | | 3,19 |
| D9007 | HEF4094 | 16 | | | | | | | 8 |
| N7006 | OP-77 | | 4 | | | | 7 | | |
| N7007 | LM358 | | | | 4 | 8 | | | |
| N7014 | OP-77 | | | 7 | | | | 4 | |
| N7015 | OP-77 | | | 7 | | | | 4 | |
| N7016 | LM358 | | | | 4 | | 8 | | |

Diagram 17 - Delayed time base

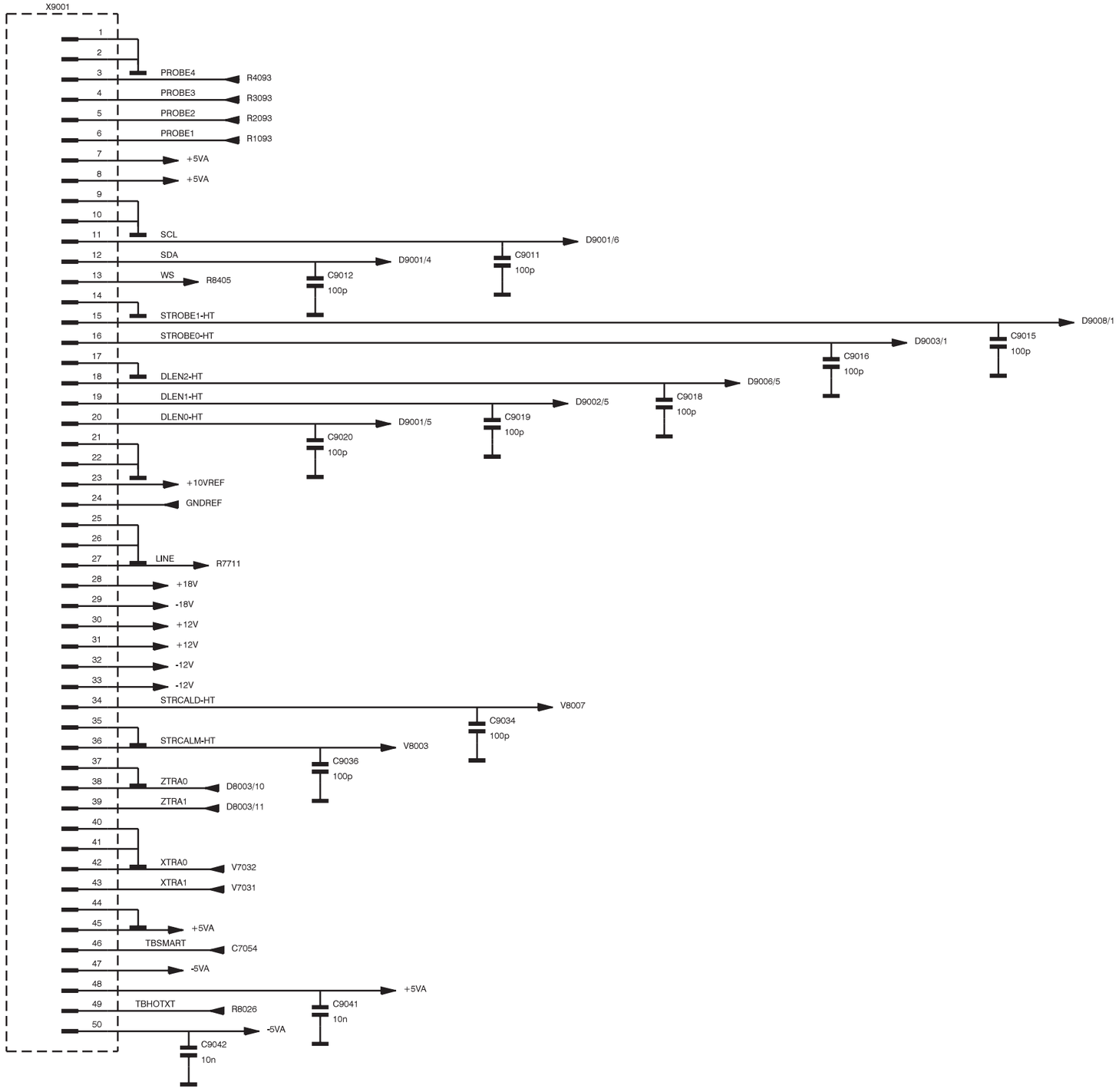



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Diagram 18 - Connectors

## 5.1.6 Parts list

### MECHANICAL

| Item | Description | | Ordering code |
|---|---|---|---|
| 0002 | SPECIAL NUT | FOR BNC | 5322 506 41006 |
| 0003 | RING | BNC SPACER | 5322 532 21188 |
| 0004 | HOLDER | BNC HOLDER | 5322 256 91792 |
| 0005 | PLATE | SCREENING PARTITION | 5322 466 83049 |
| 0006 | PIN | CALIBRATION PIN | 5322 535 93244 |
| 0007 | BRACKET | SOLDERING BRACKET | 5322 401 11419 |
| 0008 | SPRING | INDICATION SPRING | 5322 492 70939 |
| 0010 | SHIELD | SCREENING CAP 2 | 5322 466 30404 |
| 0011 | SHIELD | SCREENING CAP 1 | 5322 466 30405 |
| 0012 | SCREENING | SCREENING PLATE | 5322 466 83051 |
| 0014 | CAP | BNC ISOLATOR | 5322 462 41847 |
| 0017 | CAP,PROTECT. | SCREENING CAP C | 5322 447 70131 |

### CAPACITORS

| | | | |
|---|---|---|---|
| C1000 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C1001 | CAP.FOIL | AP 400V 10% 22NF | 5322 121 70399 |
| C1002 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1003 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C1004 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C1006 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C1007 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C1008 | CAP.CHIP | AP 63V 0.25PF 3.3PF | 5322 122 32286 |
| C1011 | CAP.CHIP | AP 63V 5% 33PF | 5322 122 32659 |
| C1012 | CAP.CHIP | AP 63V 5% 27PF | 5322 122 31946 |
| C1014 | CAP.CHIP | AP 63V 0.5PF 5.6 PF | 5322 122 32967 |
| C1018 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1019 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1020 | CAP.CERAMIC | 500V 0.25PF 2.2PF | 5322 122 32774 |
| C1021 | CAP.CERAMIC | 500V 10% 1NF | 4822 122 31175 |
| C1022 | CAP.CHIP | AP 63V 0.5PF 6.8PF | 5322 122 32269 |
| C1023 | CAP.CHIP | AP 63V 5% 470PF | 5322 122 32268 |
| C1025 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1027 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1031 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1041 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1042 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1044 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1045 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C1046 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1047 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1048 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1051 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1054 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1055 | CAP.CHIP | AP 63V 0.25PF 2.7PF | 5322 122 31873 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C1056 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C1057 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C1058 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C1059 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C1060 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C1061 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1062 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1063 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1064 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1066 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1067 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1068 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1069 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1071 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1072 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1076 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1077 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1082 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1085 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1086 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1087 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1088 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1101 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1102 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1151 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1153 | CAP.CHIP | AP 63V 10% 1.5NF | 5322 122 31865 |
| C1156 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1157 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1158 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1159 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1201 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1204 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1205 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C1208 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1209 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1210 | CAP.CERAMIC | AP 63V 5% 47PF | 5322 122 32452 |
| C1211 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1250 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1251 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1252 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1253 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1254 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1301 | CAP.CERAMIC | AP 63V 5% 47PF | 5322 122 32452 |
| C1302 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C1303 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C1304 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C1305 | CAP.CERAMIC | AP 63V 0.25PF 1.8PF | 5322 126 10343 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C1611 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1651 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C1652 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1653 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C1654 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1656 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C1657 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1658 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C1659 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1661 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1662 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1668 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1669 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C1901 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1903 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1904 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1906 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1931 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C1932 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C2000 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C2001 | CAP.FOIL | 400V 10% 22NF | 5322 121 70399 |
| C2002 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C2003 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C2004 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C2006 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C2007 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C2008 | CAP.CHIP | AP 63V 0.25PF 3.3PF | 5322 122 32286 |
| C2011 | CAP.CHIP | AP 63V 5% 33PF | 5322 122 32659 |
| C2012 | CAP.CHIP | AP 63V 5% 27PF | 5322 122 31946 |
| C2014 | CAP.CHIP | AP 63V 0.5PF 5.6PF | 5322 122 32967 |
| C2018 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2019 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2020 | CAP.CERAMIC | 500V 0.25PF 2.2PF | 5322 122 32774 |
| C2021 | CAP.CERAMIC | 500V 10% 1NF | 4822 122 31175 |
| C2022 | CAP.CHIP | AP 63V 0.5PF 6.8PF | 5322 122 32269 |
| C2023 | CAP.CHIP | AP 63V 5% 470PF | 5322 122 32268 |
| C2025 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C2027 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2031 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2041 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C2042 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2044 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2045 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C2046 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2047 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2048 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2051 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C2054 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2055 | CAP.CHIP | AP 63V 0.25PF 2.7PF | 5322 122 31873 |
| C2056 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C2057 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C2058 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C2059 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C2060 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C2061 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2062 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2063 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2064 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2066 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2067 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2068 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2069 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2071 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2072 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2076 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2077 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2085 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C2086 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2087 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C2088 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2101 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2102 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2201 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2204 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C2205 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C2208 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2209 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2210 | CAP.CERAMIC | AP 63V 5% 47PF | 5322 122 32452 |
| C2211 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C2301 | CAP.CERAMIC | AP 63V 5% 47PF | 5322 122 32452 |
| C2302 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C2303 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C2304 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C2305 | CAP.CERAMIC | AP 63V 0.25PF 1.8PF | 5322 126 10343 |
| C3000 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C3001 | CAP.FOIL | 400V 10% 22NF | 5322 121 70399 |
| C3002 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C3003 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C3004 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C3006 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C3007 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C3008 | CAP.CHIP | AP 63V 0.25PF 3.3PF | 5322 122 32286 |
| C3011 | CAP.CHIP | AP 63V 5% 33PF | 5322 122 32659 |
| C3012 | CAP.CHIP | AP 63V 5% 27PF | 5322 122 31946 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C3014 | CAP.CHIP | AP 63V 0.5PF 5.6PF | 5322 122 32967 |
| C3018 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3019 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3020 | CAP.CERAMIC | 500V 0.25PF 2.2PF | 5322 122 32774 |
| C3021 | CAP.CERAMIC | 500V 10% 1NF | 4822 122 31175 |
| C3022 | CAP.CHIP | AP 63V 0.5PF 6.8PF | 5322 122 32269 |
| C3023 | CAP.CHIP | AP 63V 5% 470PF | 5322 122 32268 |
| C3025 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C3027 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3031 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3041 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C3042 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3044 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3045 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C3046 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3047 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3048 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3051 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3054 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3055 | CAP.CHIP | AP 63V 0.25PF 2.7PF | 5322 122 31873 |
| C3056 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C3057 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C3058 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C3059 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C3060 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C3061 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3062 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3063 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3064 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3066 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3067 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3068 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3069 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3071 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3072 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3076 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3077 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3085 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C3086 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3087 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C3088 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3101 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3102 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3201 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3204 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C3205 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C3208 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C3209 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3210 | CAP.CERAMIC | AP 63V 5% 47PF | 5322 122 32452 |
| C3211 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C3301 | CAP.CERAMIC | AP 63V 5% 47PF | 5322 122 32452 |
| C3302 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C3303 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C3304 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C3305 | CAP.CERAMIC | AP 63V 0.25PF 1.8PF | 5322 126 10343 |
| C4000 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C4001 | CAP.FOIL | 400V 10% 22NF | 5322 121 70399 |
| C4002 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C4003 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C4004 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C4006 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C4007 | CAP.CERAMIC | 500V 0.25PF 3.3PF | 4822 122 31188 |
| C4008 | CAP.CHIP | AP 63V 0.25PF 3.3PF | 5322 122 32286 |
| C4011 | CAP.CHIP | AP 63V 5% 33PF | 5322 122 32659 |
| C4012 | CAP.CHIP | AP 63V 5% 27PF | 5322 122 31946 |
| C4014 | CAP.CHIP | AP 63V 0.5PF 5.6PF | 5322 122 32967 |
| C4018 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4019 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4020 | CAP.CERAMIC | 500V 0.25PF 2.2PF | 5322 122 32774 |
| C4021 | CAP.CERAMIC | 500V 10% 1NF | 4822 122 31175 |
| C4022 | CAP.CHIP | AP 63V 0.5PF 6.8PF | 5322 122 32269 |
| C4023 | CAP.CHIP | AP 63V 5% 470PF | 5322 122 32268 |
| C4025 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C4027 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4031 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4041 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C4042 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4044 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4045 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C4046 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4047 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4048 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4051 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4054 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4055 | CAP.CHIP | AP 63V 0.25PF 2.7PF | 5322 122 31873 |
| C4056 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C4057 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C4058 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C4059 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C4060 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C4061 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4062 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4063 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4064 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C4066 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4067 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4068 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4069 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4071 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4072 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4076 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4077 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4085 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C4086 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4087 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C4088 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4101 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4102 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4201 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4204 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C4205 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C4208 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4209 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4210 | CAP.CERAMIC | AP 63V 5% 47PF | 5322 122 32452 |
| C4211 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C4301 | CAP.CERAMIC | AP 63V 5% 47PF | 5322 122 32452 |
| C4302 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C4303 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C4304 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C4305 | CAP.CERAMIC | AP 63V 0.25PF 1.8PF | 5322 126 10343 |
| C5000 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C5001 | CAP.CHIP | AP 63V 5% 470PF | 5322 122 32268 |
| C5002 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C5003 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C5004 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C5005 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C5006 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C5007 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C5008 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C5010 | CAP.CERAMIC | AP 63V 0.5PF 5.6PF | 5322 122 32967 |
| C5010 | CAP.CERAMIC | AP 63V 5% 47PF | 5322 122 32452 |
| C5012 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C5012 | CAP.CERAMIC | AP 63V 0.25PF 2.7PF | 5322 122 31873 |
| C5015 | CAP.CHIP | AP 63V 5% 330PF | 5322 122 31863 |
| C5015 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C5016 | CAP.CHIP | AP 63V 10% 2.2NF | 4822 122 33127 |
| C5016 | CAP.CHIP | 63V 0.5PF 6.8PF | 5322 122 32269 |
| C5016 | CAP.CHIP | 63V 5% 27PF | 5322 122 31946 |
| C5017 | CAP.CERAMIC | AP 63V 0.25PF 0.56PF | 5322 122 33083 |
| C5018 | CAP.CERAMIC | AP 63V 0.25PF 0.56PF | 5322 122 33083 |
| C5501 | CAP.CHIP | AP 63V 5% 820PF | 5322 126 10184 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C5502 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C5503 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C5504 | CAP.CHIP | AP 63V 5% 22PF | 5322 122 32658 |
| C5505 | CAP.CHIP | AP 63V 5% 820PF | 5322 126 10184 |
| C5506 | CAP.CHIP | AP 63V 10% 1.5NF | 5322 122 31865 |
| C5507 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C5508 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C5509 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C5510 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C5511 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C5513 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C5514 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C5601 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C5602 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C5603 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C5604 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6000 | CAP.FOIL | 50V 20% 6.8UF | 5322 124 42389 |
| C6001 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C6002 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6004 | CAP.CHIP | AP 63V 5% 330PF | 5322 122 31863 |
| C6005 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C6006 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C6007 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6008 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6009 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6011 | CAP.FOIL | 630V 1% 68PF | 5322 121 70127 |
| C6012 | CAP.FOIL | 63V 5% 10NF | 5322 121 70116 |
| C6013 | CAP.ELECTROLYT. | 100V 10% 10UF | 5322 124 20164 |
| C6014 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6015 | CAP.CERAMIC | AP 63V 0.5PF 5.6PF | 5322 122 32967 |
| C6016 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C6017 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C6018 | CAP.FOIL | 50V 20% 6.8UF | 5322 124 42389 |
| C6031 | CAP.CHIP | AP 63V 10% 1.5NF | 5322 122 31865 |
| C6032 | CAP.CHIP | AP 63V 10% 1.5NF | 5322 122 31865 |
| C6033 | CAP.CHIP | AP 63V 5% 330PF | 5322 122 31863 |
| C6035 | CAP.FOIL | 63V 10% 100NF | 5322 121 42386 |
| C6038 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6039 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C6070 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C6071 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6080 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C6093 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C6094 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C6095 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C6096 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C6097 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C6098 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C6101 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6102 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6103 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6104 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6105 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6106 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6107 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6108 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6109 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6110 | CAP.CHIP | AP 63V 5% 470PF | 5322 122 32268 |
| C6111 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6112 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6113 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6114 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6115 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6116 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6117 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6118 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6305 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6415 | CAP.ELECTROLYT. | 50V 20% 10UF | 5322 124 21731 |
| C6504 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6549 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C6551 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C6557 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6559 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C6561 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C6562 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C6581 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6583 | CAP.CHIP | AP 63V 0.5PF 6.8PF | 5322 122 32269 |
| C6617 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C6623 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6624 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6639 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C6642 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C6644 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C6647 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C6648 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6649 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6707 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6751 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C6758 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C6768 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6773 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6777 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6779 | CAP.CHIP | AP 63V 5% 22PF | 5322 122 32658 |
| C6787 | CAP.CHIP | AP 63V 5% 820PF | 5322 126 10184 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C6902 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C6903 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6904 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6912 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C6913 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6922 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C6923 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6924 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6932 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C6933 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6934 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6942 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C6943 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C6953 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C6962 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C6963 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7001 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7002 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7003 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7004 | CAP.CHIP | AP 63V 5% 330PF | 5322 122 31863 |
| C7005 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C7006 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C7007 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7008 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C7009 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7010 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C7011 | CAP.FOIL | 630V 1% 82PF | 5322 121 70498 |
| C7012 | CAP.FOIL | 63V 5% 10NF | 5322 121 70116 |
| C7013 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C7014 | CAP.CERAMIC | AP 63V 0.5PF 5.6PF | 5322 122 32967 |
| C7015 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7016 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7017 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7021 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7033 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C7034 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C7035 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C7036 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C7054 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7055 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7060 | CAP.CERAMIC | AP 63V 0.25PF 2.7PF | 5322 122 31873 |
| C7091 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C7092 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7093 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C7099 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C7161 | CAP.CHIP | AP 63V 0.25PF 2.2PF | 5322 122 33063 |
| C7504 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C7513 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7549 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C7551 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C7557 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7559 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C7561 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C7562 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C7581 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7583 | CAP.CHIP | AP 63V 0.5PF 6.8PF | 5322 122 32269 |
| C7682 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C7697 | CAP.CHIP | AP 63V 5% 33PF | 5322 122 32659 |
| C7751 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C7813 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7902 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C7903 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7904 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7912 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C7913 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7923 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7932 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C7933 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7934 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7942 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C7943 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C7962 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C7963 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C8000 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8001 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8002 | CAP.CHIP | AP 63V 10% 1.5NF | 5322 122 31865 |
| C8003 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C8004 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C8005 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8006 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8007 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8008 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8009 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8010 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8011 | CAP.ELECTROLYT. | 50V 20% 10UF | 5322 124 21731 |
| C8013 | CAP.CHIP | AP 63V 10% 220NF | 4822 122 32916 |
| C8014 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8015 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C8016 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C8017 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8020 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8021 | CAP.CHIP | AP 63V 5% 22PF | 5322 122 32658 |
| C8022 | CAP.CHIP | AP 63V 5% 22PF | 5322 122 32658 |
| C8034 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |

| Item | Description | | Ordering code |
|---|---|---|---|
| C8035 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C8036 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8060 | CAP.CERAMIC | AP 63V 0.25PF 0.56PF | 5322 122 33083 |
| C8062 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C8063 | CAP.CHIP | AP 63V 5% 22PF | 5322 122 32658 |
| C8064 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C8065 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C8066 | CAP.CERAMIC | AP 63V 5% 10PF | 5322 122 32448 |
| C8070 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C8071 | CAP.CHIP | AP 63V 10% 22NF | 5322 122 32654 |
| C8093 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8094 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8095 | CAP.CHIP | AP 63V 10% 100NF | 4822 122 33496 |
| C8101 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C8102 | CAP.CHIP | AP 63V 0.25PF 3.3PF | 5322 122 32286 |
| C8401 | CAP.ELECTROLYT. | 25V 20% 47UF | 5322 121 10472 |
| C8403 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C8404 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C8405 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C8410 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C8411 | CAP.ELECTROLYT. | 25V 20% 180UF | 5322 124 42228 |
| C9011 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C9012 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C9015 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C9016 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C9018 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C9019 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C9020 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C9034 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C9036 | CAP.CHIP | AP 63V 5% 100PF | 5322 122 32531 |
| C9041 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |
| C9042 | CAP.CHIP | AP 63V 10% 10NF | 5322 122 34098 |

## DIGITAL INTEGRATED CIRCUITS

| | | | |
|---|---|---|---|
| D1151 | INTEGR.CIRCUIT | CD4053BCM NSC | 5322 209 33502 |
| D1152 | INTEGR.CIRCUIT | HEF4051BT PEL | 5322 209 11446 |
| D1201 | INTEGR.CIRCUIT | OQ0224 INPUT CIRCUIT | 5322 209 12457 |
| D1301 | INTEGR.CIRCUIT | OQ0225 OUTPUT CIRC. | 5322 209 12458 |
| D2201 | INTEGR.CIRCUIT | OQ0224 INPUT CIRCUIT | 5322 209 12457 |
| D2301 | INTEGR.CIRCUIT | OQ0225 OUTPUT CIRC. | 5322 209 12458 |
| D3201 | INTEGR.CIRCUIT | OQ0224 INPUT CIRCUIT | 5322 209 12457 |
| D3301 | INTEGR.CIRCUIT | OQ0225 OUTPUT CIRC. | 5322 209 12458 |
| D4201 | INTEGR.CIRCUIT | OQ0224 INPUT CIRCUIT | 5322 209 12457 |
| D4301 | INTEGR.CIRCUIT | OQ0225 OUTPUT CIRC. | 5322 209 12458 |
| D5001 | INTEGR.CIRCUIT | HEF4066BT PEL | 5322 209 14542 |
| D5501 | INTEGR.CIRCUIT | CD4053BCM | 5322 209 33502 |

| Item | Description | | Ordering code |
|---|---|---|---|
| D5502 | INTEGR.CIRCUIT | CD4053BCM | 5322 209 33502 |
| D5503 | INTEGR.CIRCUIT | HEF4081BT PEL | 5322 209 14483 |
| D6001 | INTEGR.CIRCUIT | HEF4051BT PEL | 5322 209 11446 |
| D6002 | INTEGR.CIRCUIT | CD4053BCM | 5322 209 33502 |
| D6011 | INTEGR.CIRCUIT | OQ0228 SAWCHIP | 5322 209 12466 |
| D6541 | INTEGR.CIRCUIT | OQ0226 TRIGGER AMPL. | 5322 209 12464 |
| D6621 | INTEGR.CIRCUIT | OQ0128 SSP | 5322 209 82925 |
| D6779 | INTEGR.CIRCUIT | PC74HCT112T PEL | 5322 209 11825 |
| D6781 | INTEGR.CIRCUIT | CD4053BCM | 5322 209 33502 |
| D7001 | INTEGR.CIRCUIT | HEF4051BT PEL | 5322 209 11446 |
| D7002 | INTEGR.CIRCUIT | CD4053BT BCM | 5322 209 33502 |
| D7004 | INTEGR.CIRCUIT | HEF4052BT PEL | 5322 209 11102 |
| D7005 | INTEGR.CIRCUIT | PC74HCT14T PEL | 5322 209 71568 |
| D7011 | INTEGR.CIRCUIT | OQ0228 SAWCHIP | 5322 209 12466 |
| D7541 | INTEGR.CIRCUIT | OQ0226 TRIGGER AMPL. | 5322 209 12464 |
| D7711 | INTEGR.CIRCUIT | CD4053BCM | 5322 209 33502 |
| D8003 | INTEGR.CIRCUIT | OQ0235 Z-LOGIC | 5322 209 12461 |
| D8004 | INTEGR.CIRCUIT | OQ0227 TIMEBASE LOG. | 5322 209 12465 |
| D8006 | INTEGR.CIRCUIT | HEF40106BT PEL | 5322 209 14486 |
| D9001 | INTEGR.CIRCUIT | TEA1017/N9 PEL | 5322 209 60191 |
| D9002 | INTEGR.CIRCUIT | TEA1017/N9 PEL | 5322 209 60191 |
| D9003 | INTEGR.CIRCUIT | HEF4094BT PEL | 5322 209 11306 |
| D9004 | INTEGR.CIRCUIT | HEF4094BT PEL | 5322 209 11306 |
| D9006 | INTEGR.CIRCUIT | TEA1017/N9 PEL | 5322 209 60191 |
| D9007 | INTEGR.CIRCUIT | HEF4094BT PEL | 5322 209 11306 |
| D9008 | INTEGR.CIRCUIT | HEF4094BT PEL | 5322 209 11306 |
| D9009 | INTEGR.CIRCUIT | OQ0200 DISPL.MODE LO | 5322 209 82924 |
| D9011 | INTEGR.CIRCUIT | HEF4094BT PEL | 5322 209 11306 |
| D9012 | INTEGR.CIRCUIT | HEF4094BT PEL | 5322 209 11306 |
| D9013 | INTEGR.CIRCUIT | HEF4094BT PEL | 5322 209 11306 |

## RELAIS

| | | | |
|---|---|---|---|
| K1001 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K1002 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K1003 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K1004 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K1006 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K2001 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K2002 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K2003 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K2004 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K2006 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K3001 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K3002 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K3003 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K3004 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K3006 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |

| Item | Description | | Ordering code |
|---|---|---|---|
| K4001 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K4002 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K4003 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K4004 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |
| K4006 | RELAY | DPDT RELAIS RAL3W-K | 5322 280 80745 |

## COILS

| | | | |
|---|---|---|---|
| L1001 | COIL | 0.056UH 5% TDK | 5322 157 63381 |
| L1301 | COIL | 0.1UH 5% TDK | 5322 157 63647 |
| L2001 | COIL | 0.056UH 5% TDK | 5322 157 63381 |
| L2301 | COIL | 0.1UH 5% TDK | 5322 157 63647 |
| L3001 | COIL | 0.056UH 5% TDK | 5322 157 63381 |
| L3301 | COIL | 0.1UH 5% TDK | 5322 157 63647 |
| L4001 | COIL | 0.056UH 5% TDK | 5322 157 63381 |
| L4301 | COIL | 0.1UH 5% TDK | 5322 157 63647 |
| L6096 | COIL | 2.0UH TDK | 4822 157 51757 |
| L6097 | COIL | 2.0UH TDK | 4822 157 51757 |

## ANALOG INTEGRATED CIRCUITS

| | | | |
|---|---|---|---|
| N1001 | INTEGR.CIRCUIT | AD548JR AND | 5322 209 31298 |
| N1101 | INTEGR.CIRCUIT | LM339D SIG | 5322 209 70684 |
| N1102 | INTEGR.CIRCUIT | LM358M NSC | 4822 209 60175 |
| N1103 | INTEGR.CIRCUIT | LM358M NSC | 4822 209 60175 |
| N1104 | I.C. ANALOGUE | OP-77GSR PMI | 5322 130 62791 |
| N1202 | INTEGR.CIRCUIT | LM324D NSC | 5322 209 83125 |
| N1251 | INTEGR.CIRCUIT | LM358M NSC | 4822 209 60175 |
| N2001 | INTEGR.CIRCUIT | AD548JR AND | 5322 209 83125 |
| N2202 | INTEGR.CIRCUIT | LM324D NSC | 5322 209 61473 |
| N3001 | INTEGR.CIRCUIT | AD548JR AND | 5322 209 31298 |
| N3102 | INTEGR.CIRCUIT | LM358M NSC | 4822 209 60175 |
| N3103 | INTEGR.CIRCUIT | LM358M NSC | 4822 209 60175 |
| N3202 | INTEGR.CIRCUIT | LM324D NSC | 5322 209 83125 |
| N4001 | INTEGR.CIRCUIT | AD548JR AND | 5322 209 31298 |
| N4202 | INTEGR.CIRCUIT | LM324D NSC | 5322 209 83125 |
| N5001 | INTEGR.CIRCUIT | LM358M NSC | 4822 209 60175 |
| N5002 | INTEGR.CIRCUIT | LM3046M NSC | 5322 209 30229 |
| N6006 | I.C. ANALOGUE | OP-77GSR PMI | 5322 130 62791 |
| N6007 | INTEGR.CIRCUIT | LM358M NSC | 4822 209 60175 |
| N6008 | INTEGR.CIRCUIT | LM358M NSC | 4822 209 60175 |
| N6014 | INTEGR.CIRCUIT | TDA1541A/N2 PEL | 4822 209 72544 |
| N6771 | INTEGR.CIRCUIT | LM1881M NSC | 4822 209 60767 |
| N7006 | I.C. ANALOGUE | OP-77GSR PMI | 5322 130 62791 |
| N7007 | INTEGR.CIRCUIT | LM358M NSC | 4822 209 60175 |
| N7014 | I.C. ANALOGUE | OP-77GSR PMI | 5322 130 62791 |
| N7015 | I.C. ANALOGUE | OP-77GSR PMI | 5322 130 62791 |
| N7016 | INTEGR.CIRCUIT | LM358M NSC | 4822 209 60175 |
| N7952 | INTEGR.CIRCUIT | LM324D NSC | 5322 209 83125 |
| N8005 | INTEGR.CIRCUIT | TDA8444AT/N4 PEL | 5322 209 30233 |
| N9001 | INTEGR.CIRCUIT | TDA8444AT/N4 PEL | 5322 209 30233 |

| Item | Description | | Ordering code |
|---|---|---|---|
| N9002 | INTEGR.CIRCUIT | TDA8444AT/N4 PEL | 5322 209 30233 |
| N9003 | INTEGR.CIRCUIT | TDA8444AT/N4 PEL | 5322 209 30233 |
| N9004 | INTEGR.CIRCUIT | TDA8444AT/N4 PEL | 5322 209 30233 |

## RESISTORS

| | | | |
|---|---|---|---|
| R1001 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R1002 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R1006 | RES.METAL FILM | MRS25 1% 100E | 4822 050 21001 |
| R1007 | RES.METAL FILM | ST MRS25 1% 100E | 4822 050 21001 |
| R1008 | RES.METAL FILM | PR24 1/4W 0.1% 9K4 | 5322 116 83712 |
| R1009 | RES.METAL FILM | PR24 1/4W 0.1% 300E | 5322 116 51814 |
| R1010 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R1011 | RES.N.T.C. | NTC 640 2% 3K3 | 5322 116 30421 |
| R1012 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R1013 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R1014 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R1016 | RES.METAL FILM | PR34 0.4W 0.1% 900K | 5322 116 51832 |
| R1019 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R1021 | RES.METAL FILM | PR34 0.4W 0.1% 990K | 5322 116 83104 |
| R1022 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R1022 | RES.CHIP | RMC1/1 1% 23E7 | 5322 117 10591 |
| R1023 | RES.METAL FILM | PR24 1/4W 0.1% 11K1 | 5322 116 83101 |
| R1024 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R1026 | RES.CHIP | RMC1/8 1% 82E5 | 5322 111 92017 |
| R1027 | RES.METAL FILM | PR24 1/4W 0.1% 111K | 5322 116 83099 |
| R1028 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1029 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1030 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R1031 | RES.METAL FILM | PR34 0.4W 0.1% 500K | 5322 116 83103 |
| R1032 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R1033 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R1034 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R1035 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R1036 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R1037 | RES.METAL FILM | HIP RC-02H 1% 3K83 | 5322 117 10561 |
| R1038 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R1039 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R1041 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R1042 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R1043 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R1044 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R1045 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R1046 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R1047 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R1048 | RES.METAL FILM | HIP RC-02H 1% 237E | 5322 117 10544 |
| R1049 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R1052 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R1053 | RES.METAL FILM | HIP RC-02H 1% 6K19 | 5322 117 10577 |
| R1054 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1056 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |
| R1057 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R1061 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R1062 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R1063 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R1064 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R1065 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R1071 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R1072 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R1073 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R1074 | RES.CHIP | RMC1/8 1% 75E | 4822 111 91937 |
| R1076 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1077 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1078 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R1079 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R1081 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1082 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1083 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R1084 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R1085 | RES.CHIP | RC-02H 1% 13K3 | 4822 051 51333 |
| R1086 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1087 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R1088 | RES.CHIP | RC-02H 1% 10K | 4822 051 10103 |
| R1092 | RES.METAL FILM | RC-02H 1% 13K3 | 4822 051 51333 |
| R1093 | RES.CHIP | RC-02H 1% 10K | 4822 051 10103 |
| R1094 | RES.CHIP | RC-02H 1% 2K15 | 5322 117 10485 |
| R1095 | RES.CHIP | RC-02H 1% 10K | 4822 051 10103 |
| R1096 | RES.CHIP | RC-02H 1% 1K | 4822 051 10102 |
| R1097 | RES.CHIP | RC-02H 1% 1K | 4822 051 10102 |
| R1101 | RES.CHIP | RC-02H 1% 46K4 | 5322 117 10486 |
| R1102 | RES.METAL FILM | RC-02H 1% 13K3 | 4822 051 51333 |
| R1103 | RES.METAL FILM | RC-02H 1% 14K7 | 5322 117 10528 |
| R1104 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1106 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1112 | RES.METAL FILM | HIP RC-02H 1% 61K9 | 5322 117 10578 |
| R1113 | RES.METAL FILM | HIP RC-02H 1% 7K5 | 5322 117 10583 |
| R1114 | RES.CHIP | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R1141 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1151 | RES.METAL FILM | HIP RC-02H 1% 61K9 | 5322 117 10578 |
| R1152 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R1153 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R1154 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R1155 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1156 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R1157 | RES.METAL FILM | PR24 1/4W 0.1% 9K4 | 5322 116 83712 |
| R1158 | RES.METAL FILM | PR24 1/4W 0.1% 750E | 5322 116 53173 |
| R1159 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R1192 | RES.METAL FILM | PR24 1/4W 0.1% 1K25 | 5322 116 53177 |
| R1193 | RES.METAL FILM | PR24 1/4W 0.1% 750E | 5322 116 53173 |
| R1194 | RES.METAL FILM | PR24 1/4W 0.1% 250E | 5322 116 53166 |
| R1195 | RES.METAL FILM | PR24 1/4W 0.1% 125E | 5322 116 53176 |
| R1196 | RES.METAL FILM | PR24 1/4W 0.1% 75E | 5322 116 53168 |
| R1197 | RES.METAL FILM | PR24 1/4W 0.1% 50E | 5322 116 53165 |
| R1200 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R1201 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 4822 051 51333 |
| R1202 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R1203 | RES.CHIP | HIP RC-02H 1% 11K | 4822 051 10113 |
| R1204 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R1205 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R1206 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R1207 | RES.CHIP | HIP RC-02H 1% 215E | 5322 117 10484 |
| R1208 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R1209 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R1210 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |
| R1211 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R1212 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R1213 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R1214 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R1215 | RES.METAL FILM | HIP RC-02H 1% 348E | 5322 117 10556 |
| R1216 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R1217 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R1218 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R1220 | RES.METAL FILM | HIP RC-02H 1% 75K | 5322 117 10584 |
| R1222 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R1223 | RES.METAL FILM | HIP RC-02H 1% 237E | 5322 117 10544 |
| R1224 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R1226 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R1227 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R1228 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R1229 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R1231 | RES.METAL FILM | HIP RC-02H 1% 178E | 5322 117 10534 |
| R1251 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R1252 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R1253 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R1254 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R1256 | RES.METAL FILM | HIP RC-02H 1% 9K09 | 5322 117 10589 |
| R1257 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R1258 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R1259 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R1260 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R1262 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R1266 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R1301 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R1302 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R1303 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R1304 | RES.CHIP | HIP RC-02H 1% 46K4 | 5322 117 10486 |
| R1306 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R1307 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R1308 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R1309 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |
| R1310 | RES.METAL FILM | HIP RC-02H 1% 196E | 5322 117 10538 |
| R1311 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R1312 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R1313 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R1314 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R1612 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R1613 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R1651 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R1652 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R1653 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R1654 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R1656 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R1657 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R1661 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R1662 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R1663 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1901 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1902 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1903 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1904 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1906 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R1911 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1912 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1913 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1914 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1921 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1922 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1923 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1924 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1926 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1927 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1928 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1929 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1951 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R1961 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R2001 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R2002 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R2006 | RES.METAL FILM | ST MRS25 1% 100E | 4822 050 21001 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R2007 | RES.METAL FILM | ST MRS25 1% 100E | 4822 050 21001 |
| R2008 | RES.METAL FILM | PR24 1/4W 0.1% 9K4 | 5322 116 83712 |
| R2009 | RES.METAL FILM | PR24 1/4W 0.1% 300E | 5322 116 51814 |
| R2010 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R2011 | RES.N.T.C. | NTC640 2% 3K3 | 5322 116 30421 |
| R2012 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R2013 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R2014 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R2016 | RES.METAL FILM | PR34 0.4W 0.1% 900K | 5322 116 51832 |
| R2019 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R2021 | RES.METAL FILM | PR34 0.4W 0.1% 990K | 5322 116 83104 |
| R2022 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R2022 | RES.CHIP | RMC1/8 1% 23E7 | 5322 117 10591 |
| R2023 | RES.METAL FILM | PR24 1/4W 0.1% 11K1 | 5322 116 83101 |
| R2024 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R2026 | RES.CHIP | RMC1/8 1% 82E5 | 5322 111 92017 |
| R2027 | RES.METAL FILM | PR24 1/4W 0.1% 111K | 5322 116 83099 |
| R2028 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2029 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2030 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R2031 | RES.METAL FILM | PR34 0.4W 0.1% 500K | 5322 116 83103 |
| R2032 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R2033 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R2034 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R2035 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R2036 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R2037 | RES.METAL FILM | HIP RC-02H 1% 3K83 | 5322 117 10561 |
| R2038 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R2039 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R2041 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R2042 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R2043 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R2044 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R2045 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R2046 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R2047 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R2048 | RES.METAL FILM | HIP RC-02H 1% 237E | 5322 117 10544 |
| R2049 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R2052 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R2053 | RES.METAL FILM | HIP RC-02H 1% 6K19 | 5322 117 10577 |
| R2054 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2056 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |
| R2057 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R2061 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R2062 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R2063 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R2064 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R2065 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R2071 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R2072 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R2073 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R2074 | RES.CHIP | RMC1/8 1% 75E | 4822 111 91937 |
| R2076 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2077 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2078 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R2079 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R2081 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2082 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2083 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R2084 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R2085 | RES.CHIP | RC-02H 1% 13K3 | 4822 051 51333 |
| R2086 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2087 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R2088 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2092 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 5322 117 10525 |
| R2093 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2094 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R2096 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R2101 | RES.CHIP | HIP RC-02H 1% 46K4 | 5322 117 10486 |
| R2102 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 4822 051 51333 |
| R2103 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R2104 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2106 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R2112 | RES.METAL FILM | HIP RC-02H 1% 61K9 | 5322 117 10578 |
| R2113 | RES.METAL FILM | HIP RC-02H 1% 7K5 | 5322 117 10583 |
| R2114 | RES.CHIP | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R2200 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R2201 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 4822 051 51333 |
| R2202 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R2203 | RES.CHIP | HIP RC-02H 1% 11K | 4822 051 10113 |
| R2204 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R2205 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R2206 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R2207 | RES.CHIP | HIP RC-02H 1% 215E | 5322 117 10484 |
| R2208 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R2209 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R2210 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |
| R2211 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R2212 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R2213 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R2214 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R2215 | RES.METAL FILM | HIP RC-02H 1% 348E | 5322 117 10556 |
| R2216 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R2217 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R2218 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R2220 | RES.METAL FILM | HIP RC-02H 1% 75K | 5322 117 10584 |
| R2222 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R2223 | RES.METAL FILM | HIP RC-02H 1% 237E | 5322 117 10544 |
| R2224 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R2226 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R2227 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R2228 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R2229 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R2231 | RES.METAL FILM | HIP RC-02H 1% 178E | 5322 117 10534 |
| R2301 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R2302 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R2303 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R2304 | RES.CHIP | HIP RC-02H 1% 46K4 | 5322 117 10486 |
| R2307 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R2308 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R2309 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |
| R2310 | RES.METAL FILM | HIP RC-02H 1% 196E | 5322 117 10538 |
| R2311 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R2313 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R2314 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R3001 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R3002 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R3006 | RES.METAL FILM | ST MRS25 1% 100E | 4822 050 21001 |
| R3007 | RES.METAL FILM | ST MRS25 1% 100E | 4822 050 21001 |
| R3008 | RES.METAL FILM | PR24 1/4W 0.1% 9K4 | 5322 116 83712 |
| R3009 | RES.METAL FILM | PR24 1/4W 0.1% 300E | 5322 116 51814 |
| R3010 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R3011 | RES.N.T.C. | NTC640 2% 3K3 | 5322 116 30421 |
| R3012 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R3013 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R3014 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R3016 | RES.METAL FILM | PR34 0.4W 0.1% 900K | 5322 116 51832 |
| R3019 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R3021 | RES.METAL FILM | PR34 0.4W 0.1% 990K | 5322 116 83104 |
| R3022 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R3022 | RES.CHIP | RMC1/8 1% 23E7 | 5322 117 10591 |
| R3023 | RES.METAL FILM | PR24 1/4W 0.1% 11K1 | 5322 116 83101 |
| R3024 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R3026 | RES.CHIP | RMC1/8 1% 82E5 | 5322 111 92017 |
| R3027 | RES.METAL FILM | PR24 1/4W 0.1% 111K | 5322 116 83099 |
| R3028 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3029 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3030 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R3031 | RES.METAL FILM | PR34 0.4W 0.1% 500K | 5322 116 83103 |
| R3032 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R3033 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R3034 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R3035 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R3036 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R3037 | RES.METAL FILM | HIP RC-02H 1% 3K83 | 5322 117 10561 |
| R3038 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R3039 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R3041 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R3042 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R3043 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R3044 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R3045 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R3046 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R3047 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R3048 | RES.METAL FILM | HIP RC-02H 1% 237E | 5322 117 10544 |
| R3049 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R3052 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R3053 | RES.METAL FILM | HIP RC-02H 1% 6K19 | 5322 117 10577 |
| R3054 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3056 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |
| R3057 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R3061 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R3062 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R3063 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R3064 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R3065 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R3071 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R3072 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R3073 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R3074 | RES.CHIP | RMC1/8 1% 75E | 4822 111 91937 |
| R3076 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3077 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3078 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R3079 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R3081 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3082 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3083 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R3084 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R3085 | RES.CHIP | RC-02H 1% 13K3 | 4822 051 51333 |
| R3086 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3087 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R3088 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3092 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 5322 117 10525 |
| R3093 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3094 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R3096 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R3101 | RES.CHIP | HIP RC-02H 1% 46K4 | 5322 117 10486 |
| R3102 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 4822 051 51333 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R3103 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R3104 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3106 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R3112 | RES.METAL FILM | HIP RC-02H 1% 61K9 | 5322 117 10578 |
| R3113 | RES.METAL FILM | HIP RC-02H 1% 7K5 | 5322 117 10583 |
| R3114 | RES.CHIP | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R3200 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R3201 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 4822 051 51333 |
| R3202 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R3203 | RES.CHIP | HIP RC-02H 1% 11K | 4822 051 10113 |
| R3204 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R3205 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R3206 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R3207 | RES.CHIP | HIP RC-02H 1% 215E | 5322 117 10484 |
| R3208 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R3209 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R3210 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |
| R3211 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R3212 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R3213 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R3214 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R3215 | RES.METAL FILM | HIP RC-02H 1% 348E | 5322 117 10556 |
| R3216 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R3217 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R3218 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R3220 | RES.METAL FILM | HIP RC-02H 1% 75K | 5322 117 10584 |
| R3222 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R3223 | RES.METAL FILM | HIP RC-02H 1% 237E | 5322 117 10544 |
| R3224 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R3226 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R3227 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R3228 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R3229 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R3231 | RES.METAL FILM | HIP RC-02H 1% 178E | 5322 117 10534 |
| R3301 | RES.MET.GLAZED | RMC1/8 1% 46E4 | 5322 116 82896 |
| R3302 | RES.MET.GLAZED | RMC1/8 1% 46E4 | 5322 116 82896 |
| R3303 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R3304 | RES.CHIP | HIP RC-02H 1% 46K4 | 5322 117 10486 |
| R3307 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R3308 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R3309 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |
| R3310 | RES.METAL FILM | HIP RC-02H 1% 196E | 5322 117 10538 |
| R3311 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R3313 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R3314 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R4001 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R4002 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R4006 | RES.METAL FILM | ST MRS25 1% 100E | 4822 050 21001 |
| R4007 | RES.METAL FILM | ST MRS25 1% 100E | 4822 050 21001 |
| R4008 | RES.METAL FILM | PR24 1/4W 0.1% 9K4 | 5322 116 83712 |
| R4009 | RES.METAL FILM | PR24 1/4W 0.1% 300E | 5322 116 51814 |
| R4010 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R4011 | RES.N.T.C. | NTC640 2% 3K3 | 5322 116 30421 |
| R4012 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R4013 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R4014 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R4016 | RES.METAL FILM | PR34 0.4W 0.1% 900K | 5322 116 51832 |
| R4019 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R4021 | RES.METAL FILM | PR34 0.4W 0.1% 990K | 5322 116 83104 |
| R4022 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R4022 | RES.CHIP | RMC1/8 1% 23E7 | 5322 117 10591 |
| R4023 | RES.METAL FILM | PR24 1/4W 0.1% 11K1 | 5322 116 83101 |
| R4024 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R4026 | RES.CHIP | RMC1/8 1% 82E5 | 5322 111 92017 |
| R4027 | RES.METAL FILM | PR24 1/4W 0.1% 111K | 5322 116 83099 |
| R4028 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4029 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4030 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R4031 | RES.METAL FILM | PR34 0.4W 0.1% 500K | 5322 116 83103 |
| R4032 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R4033 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R4034 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R4035 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R4036 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R4037 | RES.METAL FILM | HIP RC-02H 1% 3K83 | 5322 117 10561 |
| R4038 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R4039 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R4041 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R4042 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R4043 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R4044 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R4045 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R4046 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R4047 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R4048 | RES.METAL FILM | HIP RC-02H 1% 237E | 5322 117 10544 |
| R4049 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R4052 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R4053 | RES.METAL FILM | HIP RC-02H 1% 6K19 | 5322 117 10577 |
| R4054 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4056 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |
| R4057 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R4061 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R4062 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R4063 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R4064 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R4065 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R4071 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R4072 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R4073 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R4074 | RES.CHIP | RMC1/8 1% 75E | 4822 111 91937 |
| R4076 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4077 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4078 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R4079 | RES.CHIP | HIP RC-02H 1% 1M | 4822 051 10105 |
| R4081 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4082 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4083 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R4084 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R4085 | RES.CHIP | RC-02H 1% 13K3 | 4822 051 51333 |
| R4086 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4087 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R4088 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4092 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 5322 117 10525 |
| R4093 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4094 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R4096 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R4101 | RES.CHIP | HIP RC-02H 1% 46K4 | 5322 117 10486 |
| R4102 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 4822 051 51333 |
| R4103 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R4104 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4106 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R4112 | RES.METAL FILM | HIP RC-02H 1% 61K9 | 5322 117 10578 |
| R4113 | RES.METAL FILM | HIP RC-02H 1% 7K5 | 5322 117 10583 |
| R4114 | RES.CHIP | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R4200 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R4201 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 4822 051 51333 |
| R4202 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R4203 | RES.CHIP | HIP RC-02H 1% 11K | 4822 051 10113 |
| R4204 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R4205 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R4206 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R4207 | RES.CHIP | HIP RC-02H 1% 215E | 5322 117 10484 |
| R4208 | RES.METAL FILM | HIP RC-02H 1% 147E | 5322 117 10526 |
| R4209 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R4210 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |
| R4211 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R4212 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R4213 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R4214 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R4215 | RES.METAL FILM | HIP RC-02H 1% 348E | 5322 117 10556 |
| R4216 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R4217 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R4218 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R4220 | RES.METAL FILM | HIP RC-02H 1% 75K | 5322 117 10584 |
| R4222 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R4223 | RES.METAL FILM | HIP RC-02H 1% 237E | 5322 117 10544 |
| R4224 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R4226 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R4227 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R4228 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R4229 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R4231 | RES.METAL FILM | HIP RC-02H 1% 178E | 5322 117 10534 |
| R4301 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R4302 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R4303 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R4304 | RES.CHIP | HIP RC-02H 1% 46K4 | 5322 117 10486 |
| R4307 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R4308 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R4309 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |
| R4310 | RES.METAL FILM | HIP RC-02H 1% 196E | 5322 117 10538 |
| R4311 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R4313 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R4314 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R5001 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R5002 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R5003 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R5004 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R5006 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R5007 | RES.METAL FILM | HIP RC-02H 1% 348E | 5322 117 10556 |
| R5008 | RES.METAL FILM | HIP RC-02H 1% 348E | 5322 117 10556 |
| R5009 | RES.METAL FILM | HIP RC-02H 1% 909E | 5322 117 10588 |
| R5011 | RES.METAL FILM | HIP RC-02H 1% 909E | 5322 117 10588 |
| R5012 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R5013 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R5014 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R5016 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R5017 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R5018 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R5019 | RES.METAL FILM | HIP RC-02H 1% 2K87 | 5322 117 10549 |
| R5021 | RES.METAL FILM | HIP RC-02H 1% 3K83 | 5322 117 10561 |
| R5024 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R5026 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R5027 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R5028 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R5029 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R5031 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R5032 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R5035 | RES.METAL FILM | HIP RC-02H 1% 348E | 5322 117 10556 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R5036 | RES.METAL FILM | HIP RC-02H 1% 178E | 5322 117 10534 |
| R5037 | RES.METAL FILM | HIP RC-02H 1% 178E | 5322 117 10534 |
| R5041 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R5042 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R5043 | RES.CHIP | HIP RC-02H 1% 215E | 5322 117 10484 |
| R5044 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R5045 | RES.CHIP | HIP RC-02H 1% 215E | 4822 051 10484 |
| R5046 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R5047 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R5048 | RES.MET.GLAZED | RMC1/8 1% 51E1 | 5322 117 11737 |
| R5049 | RES.MET.GLAZED | RMC1/8 1% 51E1 | 5322 117 11731 |
| R5050 | RES.METAL FILM | HIP RC-02H 1% 511K | 5322 117 10571 |
| R5051 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R5052 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R5053 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R5054 | RES.METAL FILM | HIP RC-02H 1% 2K87 | 5322 117 10549 |
| R5055 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R5055 | RES.CHIP | RC-02H 1% 1E | 4822 051 10108 |
| R5055 | RES.CHIP | RC-02H 1% 10E | 4822 051 10109 |
| R5056 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R5057 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 5322 117 10525 |
| R5058 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R5059 | RES.METAL FILM | HIP RC-02H 1% 9K09 | 5322 117 10589 |
| R5060 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R5061 | RES.METAL FILM | HIP RC-02H 1% 1K21 | 5322 117 51212 |
| R5061 | RES.CHIP | RC-02H 1% 3K83 | 5322 117 10561 |
| R5064 | RES.METAL FILM | HIP RC-02H 1% 3K83 | 5322 117 10561 |
| R5065 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R5066 | RES.METAL FILM | HIP RC-02H 1% 511K | 5322 117 10571 |
| R5068 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R5069 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R5070 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R5071 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R5072 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R5076 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R5501 | RES.METAL FILM | HIP RC-02H 1% 9K09 | 5322 117 10589 |
| R5502 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R5503 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R5504 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R5506 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R5507 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R5508 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R5509 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R5510 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R5511 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R5512 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |
| R5513 | RES.METAL FILM | HIP RC-02H 1% 422E | 5322 117 10564 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R5514 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R5516 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R5517 | RES.METAL FILM | HIP RC-02H 1% 1K21 | 5322 117 10521 |
| R5518 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R5519 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R5521 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R5522 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R5523 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |
| R5524 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R5526 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R5527 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R5531 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R5532 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R5533 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R5534 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R5536 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R5537 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R5538 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R5539 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R5541 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R5542 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R5543 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R5544 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R5546 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R5551 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R5552 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R5553 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R5554 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R5556 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R5557 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R5558 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R5559 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R5561 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R5562 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R5601 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R5602 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R5603 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R5606 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R6001 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R6002 | RES.METAL FILM | PR24 1/4W 0.1% 50E | 5322 116 53165 |
| R6003 | RES.METAL FILM | PR24 1/4W 0.1% 75E | 5322 116 53168 |
| R6004 | RES.METAL FILM | PR24 1/4W 0.1% 125E | 5322 116 53176 |
| R6005 | RES.METAL FILM | PR24 1/4W 0.1% 250E | 5322 116 53166 |
| R6006 | RES.METAL FILM | PR24 1/4W 0.1% 750E | 5322 116 53173 |
| R6007 | RES.METAL FILM | PR24 1/4W 0.1% 1K25 | 5322 116 53177 |
| R6008 | RES.METAL FILM | PR24 1/4W 0.1% 900E | 5322 116 83098 |
| R6009 | RES.METAL FILM | HIP RC-02H 1% 1K78 | 5322 117 10535 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R6011 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R6012 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R6013 | RES.METAL FILM | PR24 1/4W 0.1% 23K7 | 5322 116 53169 |
| R6014 | RES.METAL FILM | PR24 1/4W 0.1% 2K37 | 5322 116 53171 |
| R6015 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R6016 | RES.METAL FILM | HIP RC-02H 1% 1K96 | 5322 117 10539 |
| R6017 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R6018 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R6019 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R6020 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R6021 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R6022 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R6023 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R6024 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R6025 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R6026 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R6027 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R6028 | RES.METAL FILM | HIP RC-02H 1% 237E | 5322 117 10544 |
| R6029 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R6030 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R6031 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R6032 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R6033 | RES.CHIP | HIP RC-02H 1% 51K1 | 4822 051 55113 |
| R6034 | RES.METAL FILM | HIP RC-02H 1% 1K78 | 5322 117 10535 |
| R6035 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R6036 | RES.METAL FILM | HIP RC-02H 1% 215K | 5322 117 10543 |
| R6037 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R6038 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R6040 | RES.METAL FILM | HIP RC-02H 1% 6K19 | 5322 117 10577 |
| R6041 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R6042 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R6043 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R6044 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R6045 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R6046 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R6047 | RES.METAL FILM | HIP RC-02H 1% 196E | 5322 117 10538 |
| R6048 | RES.METAL FILM | HIP RC-02H 1% 750E | 5322 117 10582 |
| R6049 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6050 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R6051 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6052 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R6053 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6054 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R6061 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6062 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R6063 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R6070 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R6071 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R6072 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R6073 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6074 | RES.METAL FILM | HIP RC-02H 1% 1K21 | 5322 117 10521 |
| R6093 | RES.CHIP | HIP RC-01 5% 3E3 | 4822 051 10338 |
| R6094 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R6095 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R6101 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6104 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R6502 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R6503 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R6508 | RES.METAL FILM | HIP RC-02H 1% 196E | 5322 117 10538 |
| R6509 | RES.METAL FILM | HIP RC-02H 1% 196E | 5322 117 10538 |
| R6511 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R6512 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R6521 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R6522 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R6523 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R6524 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R6526 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R6527 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R6528 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R6529 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R6531 | RES.METAL FILM | HIP RC-02H 1% 422E | 5322 117 10564 |
| R6542 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R6543 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R6544 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R6546 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R6547 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R6548 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R6552 | RES.METAL FILM | HIP RC-02H 1% 681E | 5322 117 10579 |
| R6554 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R6556 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R6558 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R6571 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R6572 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R6576 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R6577 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R6578 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R6579 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R6584 | RES.METAL FILM | HIP RC-02H 1% 1K33 | 5322 117 10524 |
| R6586 | RES.METAL FILM | HIP RC-02H 1% 1K33 | 5322 117 10524 |
| R6601 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R6602 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R6603 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6612 | RES.METAL FILM | HIP RC-02H 1% 750E | 5322 117 10582 |
| R6613 | RES.METAL FILM | HIP RC-02H 1% 750E | 5322 117 10582 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R6614 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R6616 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R6621 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R6622 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R6623 | RES.CHIP | HIP RC-02H 1% 11K | 4822 051 10113 |
| R6624 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R6626 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |
| R6627 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R6629 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R6632 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R6633 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R6634 | RES.METAL FILM | HIP RC-02H 1% 3K83 | 5322 117 10561 |
| R6636 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R6638 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R6641 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R6643 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R6646 | RES.CHIP | HIP RC-01 5% 10M | 4822 051 10106 |
| R6649 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R6661 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6662 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6684 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6688 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |
| R6689 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |
| R6692 | RES.METAL FILM | HIP RC-02H 1% 1K62 | 5322 117 10531 |
| R6694 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R6696 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R6706 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R6708 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R6709 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R6752 | RES.METAL FILM | HIP RC-02H 1% 1K21 | 5322 117 10521 |
| R6753 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R6754 | RES.METAL FILM | HIP RC-02H 1% 348E | 5322 117 10556 |
| R6756 | RES.METAL FILM | HIP RC-02H 1% 1K78 | 5322 117 10535 |
| R6758 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R6762 | RES.METAL FILM | HIP RC-02H 1% 750E | 5322 117 10582 |
| R6764 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R6769 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R6772 | RES.CHIP | HIP RC-02H 1% 11K | 4822 051 10113 |
| R6774 | RES.METAL FILM | HIP RC-02H 1% 7K5 | 5322 117 10583 |
| R6776 | RES.METAL FILM | HIP RC-02H 1% 511K | 5322 117 10571 |
| R6782 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R6783 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R6788 | RES.CHIP | HIP RC-02H 1% 11K | 4822 051 10113 |
| R6901 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R6911 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R6921 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R6931 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R6941 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R6951 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R6961 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R7001 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R7002 | RES.METAL FILM | PR24 1/4W 0.1% 50E | 5322 116 53165 |
| R7003 | RES.METAL FILM | PR24 1/4W 0.1% 75E | 5322 116 53168 |
| R7004 | RES.METAL FILM | PR24 1/4W 0.1% 125E | 5322 116 53176 |
| R7005 | RES.METAL FILM | PR24 1/4W 0.1% 250E | 5322 116 53166 |
| R7006 | RES.METAL FILM | PR24 1/4W 0.1% 750E | 5322 116 53173 |
| R7007 | RES.METAL FILM | PR24 1/4W 0.1% 1K25 | 5322 116 53177 |
| R7008 | RES.METAL FILM | PR24 1/4W 0.1% 900E | 5322 116 83098 |
| R7009 | RES.CHIP | HIP RC-02H 1% 46K4 | 5322 117 10486 |
| R7011 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R7012 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R7013 | RES.METAL FILM | PR24 1/4W 0.1% 23K7 | 5322 116 53169 |
| R7014 | RES.METAL FILM | PR24 1/4W 0.1% 2K37 | 5322 116 53171 |
| R7015 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R7016 | RES.METAL FILM | HIP RC-02H 1% 1K96 | 5322 117 10539 |
| R7017 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R7018 | RES.METAL FILM | HIP RC-02H 1% 1K78 | 5322 117 10535 |
| R7019 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R7021 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R7022 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R7023 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R7024 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R7025 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R7026 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R7027 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R7028 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R7029 | RES.METAL FILM | HIP RC-02H 1% 237E | 5322 117 10544 |
| R7031 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R7032 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R7033 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R7034 | RES.METAL FILM | HIP RC-02H 1% 1K21 | 5322 117 10521 |
| R7036 | RES.METAL FILM | HIP RC-02H 1% 1K21 | 5322 117 10521 |
| R7041 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R7042 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R7043 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R7044 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R7045 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R7046 | RES.METAL FILM | HIP RC-02H 1% 750E | 5322 117 10582 |
| R7047 | RES.METAL FILM | HIP RC-02H 1% 196E | 5322 117 10538 |
| R7048 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R7049 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R7050 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R7051 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R7052 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R7054 | RES.METAL FILM | HIP RC-02H 1% 9K09 | 5322 117 10589 |
| R7056 | RES.METAL FILM | HIP RC-02H 1% 19K6 | 5322 117 10541 |
| R7057 | RES.METAL FILM | HIP RC-02H 1% 38K3 | 5322 117 10562 |
| R7059 | RES.METAL FILM | HIP RC-02H 1% 75K | 5322 117 10584 |
| R7064 | RES.METAL FILM | PR24 1/4W 0.1% 6K | 5322 116 83102 |
| R7065 | RES.METAL FILM | PR24 1/4W 0.1% 500E | 5322 116 83097 |
| R7066 | RES.METAL FILM | PR24 1/4W 0.1% 900E | 5322 116 83098 |
| R7067 | RES.METAL FILM | PR24 1/4W 0.1% 100E | 5322 116 51701 |
| R7077 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R7078 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R7082 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R7091 | RES.METAL FILM | PR24 1/4W 0.1% 10K | 5322 116 82868 |
| R7092 | RES.METAL FILM | PR24 1/4W 0.1% 2K16 | 5322 116 83126 |
| R7093 | RES.METAL FILM | PR24 1/4W 0.1% 15K | 5322 117 10592 |
| R7094 | RES.METAL FILM | PR24 1/4W 0.1% 10K | 5322 116 82868 |
| R7095 | RES.METAL FILM | PR24 1/4W 0.1% 10K | 5322 116 82868 |
| R7096 | RES.METAL FILM | PR24 1/4W 0.1% 15K | 5322 117 10592 |
| R7097 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R7099 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R7144 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R7150 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R7151 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R7152 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R7153 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R7154 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R7155 | RES.CHIP | HIP RC-02H 1% 11K | 4822 051 10113 |
| R7156 | RES.METAL FILM | HIP RC-02H 1% 1K78 | 5322 117 10535 |
| R7160 | RES.METAL FILM | HIP RC-02H 1% 1K78 | 5322 117 10535 |
| R7161 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R7180 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R7181 | RES.METAL FILM | HIP RC-02H 1% 562E | 5322 117 10572 |
| R7204 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R7205 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R7206 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R7207 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R7208 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R7209 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R7502 | RES.METAL FILM | HIP RC-02H 1% 7K5 | 5322 117 10583 |
| R7503 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R7508 | RES.METAL FILM | HIP RC-02H 1% 825E | 5322 117 10585 |
| R7509 | RES.METAL FILM | HIP RC-02H 1% 825E | 5322 117 10585 |
| R7511 | RES.METAL FILM | HIP RC-02H 1% 7K5 | 5322 117 10583 |
| R7512 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R7521 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R7522 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R7523 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R7524 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R7526 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R7527 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R7528 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R7529 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R7531 | RES.METAL FILM | HIP RC-02H 1% 422E | 5322 117 10564 |
| R7542 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R7543 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R7544 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R7546 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R7547 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R7548 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R7552 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |
| R7554 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R7556 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R7558 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R7563 | RES.METAL FILM | HIP RC-02H 1% 750E | 5322 117 10582 |
| R7571 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R7572 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R7576 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R7577 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R7578 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R7579 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R7584 | RES.METAL FILM | HIP RC-02H 1% 1K33 | 5322 117 10524 |
| R7586 | RES.METAL FILM | HIP RC-02H 1% 1K33 | 5322 117 10524 |
| R7681 | RES.METAL FILM | HIP RC-02H 1% 1K78 | 5322 117 10535 |
| R7688 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R7689 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R7692 | RES.METAL FILM | HIP RC-02H 1% 1K62 | 5322 117 10531 |
| R7693 | RES.METAL FILM | HIP RC-02H 1% 6K19 | 5322 117 10577 |
| R7694 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R7696 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R7711 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R7712 | RES.METAL FILM | HIP RC-02H 1% 6K81 | 5322 117 10581 |
| R7713 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R7716 | RES.METAL FILM | HIP RC-02H 1% 3K83 | 5322 117 10561 |
| R7753 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R7754 | RES.CHIP | HIP RC-02H 1% 261E | 4822 051 52611 |
| R7809 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R7901 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R7911 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R7921 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R7931 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R7941 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R7951 | RES.CHIP | HIP RC-02H 1% 11K | 4822 051 10113 |
| R7952 | RES.METAL FILM | HIP RC-02H 1% 13K3 | 5322 117 10525 |
| R7953 | RES.CHIP | HIP RC-02H 1% 11K | 4822 051 10113 |
| R7954 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R7956 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R7957 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R7958 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R7961 | RES.CHIP | HIP RC-01 5% 4E7 | 4822 051 10478 |
| R8001 | RES.METAL FILM | HIP RC-02H 1% 383E | 5322 117 10559 |
| R8002 | RES.METAL FILM | HIP RC-02H 1% 383E | 5322 117 10559 |
| R8003 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R8004 | RES.METAL FILM | HIP RC-02H 1% 9K09 | 5322 117 10589 |
| R8005 | RES.METAL FILM | HIP RC-02H 1% 7K5 | 5322 117 10583 |
| R8006 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R8007 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R8008 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R8009 | RES.METAL FILM | HIP RC-02H 1% 1K96 | 5322 117 10539 |
| R8010 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8011 | RES.CHIP | HIP RC-02H 1% 215E | 5322 117 10484 |
| R8012 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R8013 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R8014 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R8015 | RES.METAL FILM | HIP RC-02H 1% 1K62 | 5322 117 10531 |
| R8016 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R8016 | RES.CHIP | RC-02H 1% 2K15 | 5322 117 10485 |
| R8017 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8018 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8019 | RES.CHIP | HIP RC-02H 1% 287E | 4822 051 52871 |
| R8020 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R8021 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R8022 | RES.METAL FILM | HIP RC-02H 1% 196E | 5322 117 10538 |
| R8023 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R8024 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R8025 | RES.METAL FILM | HIP RC-02H 1% 562E | 5322 117 10572 |
| R8026 | RES.METAL FILM | HIP RC-02H 1% 4K22 | 5322 117 10565 |
| R8027 | RES.CHIP | RMC1/8 1% 61E9 | 5322 111 92016 |
| R8028 | RES.METAL FILM | HIP RC-02H 1% 196E | 5322 117 10538 |
| R8029 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R8030 | RES.METAL FILM | HIP RC-02H 1% 1K62 | 5322 117 10531 |
| R8031 | RES.CHIP | HIP RC-02H 1% 287E | 4822 051 52871 |
| R8032 | RES.METAL FILM | HIP RC-02H 1% 5K62 | 5322 117 10573 |
| R8033 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8034 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R8035 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R8037 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R8038 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R8040 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R8041 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R8042 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8043 | RES.METAL FILM | HIP RC-02H 1% 316E | 5322 117 10552 |
| R8044 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R8045 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R8046 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R8047 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R8048 | RES.METAL FILM | HIP RC-02H 1% 3K48 | 5322 117 10557 |
| R8049 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R8050 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R8051 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R8052 | RES.METAL FILM | HIP RC-02H 1% 6K19 | 5322 117 10577 |
| R8053 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R8054 | RES.CHIP | HIP RC-01 5% 1E | 4822 051 10108 |
| R8055 | RES.METAL FILM | HIP RC-02H 1% 21K5 | 5322 117 10542 |
| R8056 | RES.CHIP | RMC1/8 1% 42E2 | 4822 111 91887 |
| R8057 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R8058 | RES.METAL FILM | HIP RC-02H 1% 383E | 5322 117 10559 |
| R8059 | RES.METAL FILM | HIP RC-02H 1% 422E | 5322 117 10564 |
| R8060 | RES.METAL FILM | HIP RC-02H 1% 1K96 | 5322 117 10539 |
| R8061 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8062 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R8063 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8064 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R8065 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8066 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8067 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8068 | RES.CHIP | HIP RC-02H 1% 2K15 | 5322 117 10485 |
| R8069 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R8070 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R8071 | RES.CHIP | HIP RC-02H 1% 8K25 | 5322 117 10586 |
| R8072 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8073 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8074 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R8075 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R8076 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R8077 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R8078 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R8079 | RES.CHIP | RMC1/8 1% 51E1 | 5322 111 91893 |
| R8080 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R8081 | RES.METAL FILM | HIP RC-02H 1% 750E | 5322 117 10582 |
| R8082 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8083 | RES.METAL FILM | HIP RC-02H 1% 2K87 | 5322 117 10549 |
| R8084 | RES.METAL FILM | HIP RC-02H 1% 511E | 5322 117 10569 |
| R8085 | RES.METAL FILM | HIP RC-02H 1% 1K62 | 5322 117 10531 |
| R8086 | RES.METAL FILM | HIP RC-02H 1% 619E | 5322 117 10576 |
| R8087 | RES.METAL FILM | HIP RC-02H 1% 1K21 | 5322 117 10521 |
| R8088 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R8089 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R8090 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |
| R8091 | RES.METAL FILM | HIP RC-02H 1% 31K6 | 5322 117 10554 |

| Item | Description | | Ordering code |
|---|---|---|---|
| R8092 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R8093 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R8094 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R8095 | RES.CHIP | RMC1/8 1% 21E5 | 5322 111 92014 |
| R8096 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R8097 | RES.METAL FILM | HIP RC-02H 1% 1K96 | 5322 117 10539 |
| R8098 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R8099 | RES.CHIP | RC-02H 1% 100E | 4822 051 10101 |
| R8100 | RES.METAL FILM | HIP RC-02H 1% 422E | 5322 117 10564 |
| R8101 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R8102 | RES.METAL FILM | HIP RC-02H 1% 12K1 | 5322 117 10522 |
| R8103 | RES.CHIP | HIP RC-02H 1% 100K | 4822 051 10104 |
| R8104 | RES.METAL FILM | HIP RC-02H 1% 14K7 | 5322 117 10528 |
| R8105 | RES.METAL FILM | HIP RC-02H 1% 1K62 | 5322 117 10531 |
| R8106 | RES.CHIP | HIP RC-02H 1% 10K | 4822 051 10103 |
| R8130 | RES.MET.GLAZED | RMC1/8 1% 31E6 | 5322 116 82895 |
| R8131 | RES.CHIP | HIP RC-02H 1% 5K11 | 5322 117 10487 |
| R8132 | RES.METAL FILM | HIP RC-02H 1% 1K47 | 5322 117 10527 |
| R8133 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R8134 | RES.METAL FILM | HIP RC-02H 1% 1K62 | 5322 117 10531 |
| R8135 | RES.METAL FILM | HIP RC-02H 1% 162E | 5322 117 10529 |
| R8136 | RES.METAL FILM | HIP RC-02H 1% 2K61 | 5322 117 10547 |
| R8137 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R8138 | RES.METAL FILM | HIP RC-02H 1% 3K16 | 5322 117 10553 |
| R8200 | RES.CHIP | RMC1/8 1% 10E | 4822 111 91885 |
| R8403 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8404 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8405 | RES.CHIP | HIP RC-02H 1% 1K | 4822 051 10102 |
| R8410 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |
| R8411 | RES.CHIP | HIP RC-02H 1% 100E | 4822 051 10101 |

## SEMICONDUCTORS

| | | | |
|---|---|---|---|
| V1001 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V1002 | DIODE | BBY62 PEL | 5322 130 82685 |
| V1003 | DIODE,REFERENCE | BZX84-C6V8 PEL | 5322 130 80406 |
| V1004 | TRANSISTOR,CHIP | BFR31 PEL | 5322 130 44787 |
| V1005 | TRANSISTOR,CHIP | BFR31 PEL | 5322 130 44787 |
| V1006 | TRANSISTOR,CHIP | BF990A PEL | 4822 130 62657 |
| V1007 | TRANSISTOR,CHIP | BFS20 PEL | 5322 130 42718 |
| V1008 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V1009 | TRANSISTOR,CHIP | BFR53 PEL | 5322 130 61244 |
| V1012 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V1013 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V1015 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V1016 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V1017 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V1018 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |

| Item | Description | | Ordering code |
|---|---|---|---|
| V1201 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V1202 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V1206 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V1207 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V1208 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V1209 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V1251 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V1252 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V1301 | DIODE,REFERENCE | BZX84-C6V2 PEL | 5322 130 33671 |
| V1302 | DIODE,REFERENCE | BZX84-C7V5 PEL | 5322 130 33763 |
| V1304 | DIODE,REFERENCE | BZX84-C4V7 PEL | 5322 130 31937 |
| V1306 | DIODE,REFERENCE | BZX84-C2V4 PEL | 4822 130 33703 |
| V1307 | DIODE,REFERENCE | BZX84-C3V0 PEL | 5322 130 32739 |
| V1308 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V1313 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V2001 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V2002 | DIODE | BBY62 PEL | 5322 130 82685 |
| V2003 | DIODE,REFERENCE | BZX84-C6V8 PEL | 5322 130 80406 |
| V2004 | TRANSISTOR,CHIP | BFR31 PEL | 5322 130 44787 |
| V2005 | TRANSISTOR,CHIP | BFR31 PEL | 5322 130 44787 |
| V2006 | TRANSISTOR,CHIP | BF990A PEL | 4822 130 62657 |
| V2007 | TRANSISTOR,CHIP | BFS20 PEL | 5322 130 42718 |
| V2008 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V2009 | TRANSISTOR,CHIP | BFR53 PEL | 5322 130 61244 |
| V2012 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V2013 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V2015 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V2016 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V2017 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V2018 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V2201 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V2202 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V2206 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V2207 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V2208 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V2209 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V2301 | DIODE,REFERENCE | BZX84-C6V8 PEL | 5322 130 80406 |
| V2302 | DIODE,REFERENCE | BZX84-C7V5 PEL | 5322 130 33763 |
| V2303 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V2304 | DIODE,REFERENCE | BZX84-C4V7 PEL | 5322 130 31937 |
| V2306 | DIODE,REFERENCE | BZX84-C2V4 PEL | 4822 130 33703 |
| V2307 | DIODE,REFERENCE | BZX84-C3V0 PEL | 5322 130 32739 |
| V3001 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V3002 | DIODE | BBY62 PEL | 5322 130 82685 |
| V3003 | DIODE,REFERENCE | BZX84-C6V8 PEL | 5322 130 80406 |
| V3004 | TRANSISTOR,CHIP | BFR31 PEL | 5322 130 44787 |
| V3005 | TRANSISTOR,CHIP | BFR31 PEL | 5322 130 44787 |

| Item | Description | | Ordering code |
|---|---|---|---|
| V3006 | TRANSISTOR,CHIP | BF990A PEL | 4822 130 62657 |
| V3007 | TRANSISTOR,CHIP | BFS20 PEL | 5322 130 42718 |
| V3008 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V3009 | TRANSISTOR,CHIP | BFR53 PEL | 5322 130 61244 |
| V3012 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V3013 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V3015 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V3016 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V3017 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V3018 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V3201 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V3202 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V3206 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V3207 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V3208 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V3209 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V3301 | DIODE,REFERENCE | BZX84-C6V8 PEL | 5322 130 80406 |
| V3302 | DIODE,REFERENCE | BZX84-C7V5 PEL | 5322 130 33763 |
| V3303 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V3304 | DIODE,REFERENCE | BZX84-C4V7 PEL | 5322 130 31937 |
| V3306 | DIODE,REFERENCE | BZX84-C2V4 PEL | 4822 130 33703 |
| V3307 | DIODE,REFERENCE | BZX84-C3V0 PEL | 5322 130 32739 |
| V4001 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V4002 | DIODE | BBY62 PEL | 5322 130 82685 |
| V4003 | DIODE,REFERENCE | BZX84-C6V8 PEL | 5322 130 80406 |
| V4004 | TRANSISTOR,CHIP | BFR31 PEL | 5322 130 44787 |
| V4005 | TRANSISTOR,CHIP | BFR31 PEL | 5322 130 44787 |
| V4006 | TRANSISTOR,CHIP | BF990A PEL | 4822 130 62657 |
| V4007 | TRANSISTOR,CHIP | BFS20 PEL | 5322 130 42718 |
| V4008 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V4009 | TRANSISTOR,CHIP | BFR53 PEL | 5322 130 61244 |
| V4012 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V4013 | TRANSISTOR,CHIP | BSS83 PEL | 5322 130 60502 |
| V4015 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V4016 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V4017 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V4018 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V4201 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V4202 | TRANSISTOR,CHIP | BF579 TEL | 5322 130 63453 |
| V4206 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V4207 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V4208 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V4209 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V4301 | DIODE,REFERENCE | BZX84-C6V8 PEL | 5322 130 80406 |
| V4302 | DIODE,REFERENCE | BZX84-C7V5 PEL | 5322 130 33763 |
| V4303 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V4304 | DIODE,REFERENCE | BZX84-C4V7 PEL | 5322 130 31937 |

| Item | Description | | Ordering code |
|---|---|---|---|
| V4306 | DIODE,REFERENCE | BZX84-C2V4 PEL | 4822 130 33703 |
| V4307 | DIODE,REFERENCE | BZX84-C3V0 PEL | 5322 130 32739 |
| V5001 | TRANSISTOR,CHIP | BFS20 PEL | 5322 130 42718 |
| V5002 | TRANSISTOR,CHIP | BFS20 PEL | 5322 130 42718 |
| V5003 | TRANSISTOR,CHIP | BFR92 PEL | 5322 130 42145 |
| V5004 | TRANSISTOR,CHIP | BFR92 PEL | 5322 130 42145 |
| V5006 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V5007 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V5008 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V5009 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V5011 | DIODE,CHIP | BAT17 PEL | 5322 130 31544 |
| V5012 | DIODE,CHIP | BAT17 PEL | 5322 130 31544 |
| V5013 | DIODE,CHIP | BAT17 PEL | 5322 130 31544 |
| V5014 | DIODE,CHIP | BAT17 PEL | 5322 130 31544 |
| V5016 | DIODE,REFERENCE | BZX84-C6V2 PEL | 5322 130 33671 |
| V5017 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V5018 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V5501 | TRANSISTOR,CHIP | BFS20 PEL | 5322 130 42718 |
| V5502 | TRANSISTOR,CHIP | BFS20 PEL | 5322 130 42718 |
| V5503 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V5504 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V5506 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V5601 | DIODE,REFERENCE | BZX84-C6V2 PEL | 5322 130 33671 |
| V6001 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6002 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6003 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V6004 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V6005 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V6006 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6007 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V6008 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6012 | TRANSISTOR,CHIP | BFR92 PEL | 5322 130 42145 |
| V6013 | TRANSISTOR | FET ON4401 PEL | 5322 130 61498 |
| V6014 | TRANSISTOR | FET ON4401 PEL | 5322 130 61498 |
| V6016 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6017 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V6018 | DIODE,REFERENCE | BZX84-C5V6 PEL | 4822 130 80125 |
| V6019 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6022 | DIODE,REFERENCE | BZX84-C5V6 PEL | 4822 130 80125 |
| V6041 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V6042 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6044 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V6061 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V6062 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6101 | DIODE,REFERENCE | BZX84-C2V4 PEL | 4822 130 33703 |
| V6506 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V6507 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |

| Item | Description | | Ordering code |
|---|---|---|---|
| V6532 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V6553 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V6573 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V6574 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V6593 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V6604 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V6606 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V6628 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6631 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6637 | DIODE,REFERENCE | BZX84-C6V8 PEL | 5322 130 80406 |
| V6667 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V6668 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V6686 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6687 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6691 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6754 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6757 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6759 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6761 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V6763 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V6764 | DIODE,REFERENCE | BZX84-C6V2 PEL | 5322 130 33671 |
| V6768 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7001 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7003 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V7004 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V7005 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V7006 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7007 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V7012 | TRANSISTOR,CHIP | BFR92 PEL | 5322 130 42145 |
| V7016 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7017 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V7018 | DIODE,REFERENCE | BZX84-C5V6 PEL | 4822 130 80125 |
| V7019 | TRANSISTOR | FET ON4401 PEL | 5322 130 61498 |
| V7020 | TRANSISTOR | FET ON4401 PEL | 5322 130 61498 |
| V7031 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V7032 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V7075 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V7091 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7093 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7094 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7150 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V7151 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V7152 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V7506 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V7507 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V7532 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V7553 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |

| Item | Description | | Ordering code |
|---|---|---|---|
| V7573 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V7574 | TRANSISTOR,CHIP | BF824 PEL | 4822 130 60383 |
| V7686 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7687 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7691 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7714 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V7801 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V7802 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V7803 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V7804 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V7805 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V7806 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V7807 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V7808 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V8001 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8002 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8003 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8004 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V8005 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8006 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8007 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8008 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8009 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8011 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V8012 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V8013 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V8014 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V8015 | DIODE,REFERENCE | BZX84-C2V4 PEL | 4822 130 33703 |
| V8018 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8019 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8023 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V8024 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V8025 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V8028 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V8029 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V8031 | TRANSISTOR,CHIP | BFT92 PEL | 5322 130 44711 |
| V8032 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V8040 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V8041 | DIODE,CHIP | BAV99 PEL | 5322 130 34337 |
| V8042 | TRANSISTOR,CHIP | BSV52 PEL | 5322 130 44336 |
| V8043 | TRANSISTOR,CHIP | BSV52 PEL | 5322 130 44336 |
| V8044 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8061 | TRANSISTOR,CHIP | BFR92 PEL | 5322 130 42145 |
| V8062 | TRANSISTOR,CHIP | BFR92 PEL | 5322 130 42145 |
| V8063 | TRANSISTOR,CHIP | BFR92 PEL | 5322 130 42145 |
| V8065 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |
| V8066 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |

| Item | Description | | Ordering code |
|---|---|---|---|
| V8067 | TRANSISTOR,CHIP | BC858C PEL | 4822 130 42513 |
| V8068 | TRANSISTOR,CHIP | BC848C PEL | 5322 130 42136 |
| V8101 | DIODE,CHIP | BAS28 PEL | 5322 130 80214 |

## CONNECTORS

| | | | |
|---|---|---|---|
| X1301 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X1301 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X1302 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X1302 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X2301 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X2301 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X2302 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X2302 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X3301 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X3301 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X3302 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X3302 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X4108 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X4108 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X4301 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X4301 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X4302 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X4302 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X5001 | CONNECTOR | DIPS 4-P HAAKS OMSL | 5322 265 30907 |
| X6010 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X6010 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X6591 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X6591 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X6592 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X6592 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X6794 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X6794 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X8011 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X8011 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X8013 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X8013 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X8014 | HOLD,OBJECTIVE | CONTACTPIN | 5322 268 14141 |
| X8014 | SOCKET,MALE | 50 OHM BUS | 5322 265 10266 |
| X9001 | CONNECTOR | 50-P DBL STRGHT | 5322 265 61242 |
| X9002 | CONNECTOR | 16-P 1.25MM STR | 5322 267 51107 |