



CAUTION: THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO AVOID ELECTRIC SHOCK DO NOT OPEN THE CHASSIS UNLESS YOU ARE QUALIFIED TO DO SO. REFER ALL SERVICING TO QUALIFIED RANE WARRANTY SERVICE STATIONS.

Disassembly Procedure

CAUTION: WAIT ABOUT 15 MINUTES AFTER THE AMPLIFIER HAS BEEN POWERED DOWN BEFORE BEGINNING DISASSEMBLY, TO ALLOW THE POWER SUPPLY CAPACITORS TO DISCHARGE.

1. **Remove the bottom cover:** 4 each #6 x 3/8" phillips screws on the bottom of the side rails and 12 each #6 x 1/4" phillips screws on the bottom cover.
2. **80 Hz High Pass Internal Jumpers:** To access the jumper on each amplifier card, locate J2 (LOW FILTER). The MA 6S is shipped with these jumpers in the *OUT* position (filters defeated). Moving this jumper to the *IN* position activates the filter.

In the event that 80 Hz is not a high enough cutoff frequency, a table of resistor values is provided below that replace R9, R10, and R11 on each amplifier card.

Frequency	R9	R10	R11
80 Hz	14.3k	97.6k	5.62k
100 Hz	11.5k	78.7k	4.53k
125 Hz	9.09k	61.9k	3.57k
160 Hz	7.15k	48.7k	2.8k
200 Hz	5.76k	39.2k	2.26k
250 Hz	4.53k	31.6k	1.78k
315 Hz	3.65k	24.9k	1.43k

3. **To remove a module (PCB card):**
 - a. Remove the input/output plate on the rear panel by removing 7 phillips screws and 12 ea. #8 tapping screws from the Euroblocks.
 - b. Remove the 7 phillips screws on the front panel just below the Level controls.
 - c. Remove the 8 ea. #6/32x3/4" machine screws from the left and right edges of the heatsink mounting flange. Now the entire heatsink/module assembly is free to slide to the rear—this will provide the clearance necessary to remove any of the six amp modules.

d. To remove a module, first de-solder the wires running to the adjacent card. Be sure to note the location of all wires for later reassembly (A to A, B to B). Then remove 7 ea. of the #4-40 machine screws holding the output, driver and bias transistors to the heatsink. Now pull firmly straight up to disengage the module from the connector—use a rocking motion to ease removal, as the connector is very tight. *NOTE: Be sure that all of the transistor sil pads (insulators) stay on the heatsink—some of these may stick on the transistor and be inadvertently lost or thrown away with the defective component. New pads should be used whenever possible.*

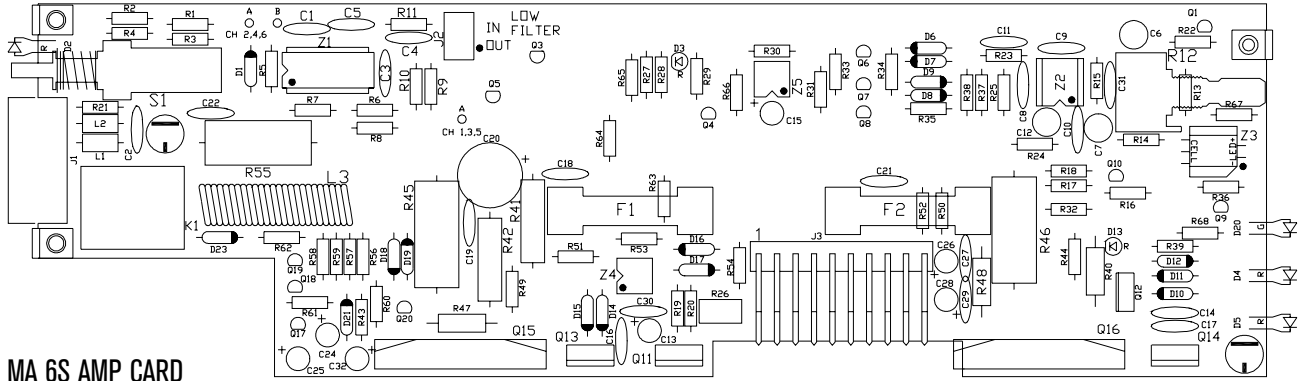
4. **Module replacement:** Factory supplied amplifier modules are pre-tuned and ready for installation. If you have made repairs on a module, be sure that ALL diodes are measured and replaced as necessary prior to installation.

- a. Be sure that all heatsink sil pads (insulators) are in place.
- b. *Be sure the nylon shoulder washers are in place on transistors Q2, Q4 and Q8 (TO-220 cases). Install the #4-40 screws in these and snug up only: Do not over-tighten these driver screws as this may damage the thin shoulder washers and cause a short.*
- c. Install the remaining 4 ea. #4-40 screws on the output and *tighten these firmly to ensure proper heat transfer to the heatsink.*
- d. Resolder the black & white wires. Be careful to connect them properly.
- e. Slide the heatsink assembly forward so that all LEDs are properly aligned in the front panel holes. Install and tighten the 8 heatsink mounting screws.
- f. Replace the 7 screws on the front panel.
- g. Replace the input/output plate and bottom cover (don't forget the 4 screws holding the bottom to the side rails).

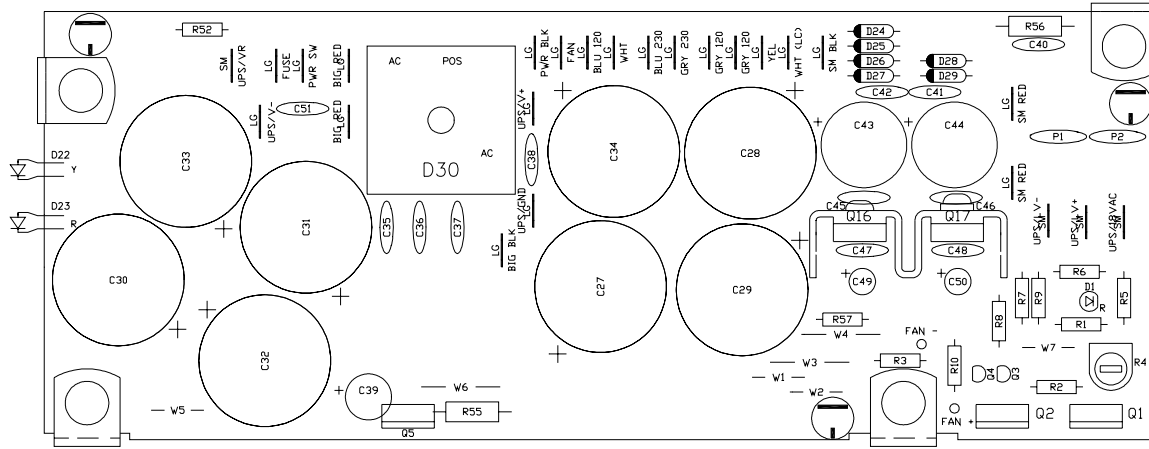
5. Power supply repairs.

- a. **Power supply PCB:** Do not attempt removal of this card. Instead, remove amplifier modules #1 and #2 as necessary to allow clear access to the foil side of the power supply PCB, then replace any defective components by de-soldering.
- b. **Transformer removal:** The transformer is held in place by one 1/4" bolt securing the transformer to the flat mounting plate. Pull all transformer spade plugs from the power PCB and lift the transformer out of the chassis. To replace the transformer, reverse the above procedure. Reconnect all transformer spade plugs as shown on the power board designator diagram on the next page.

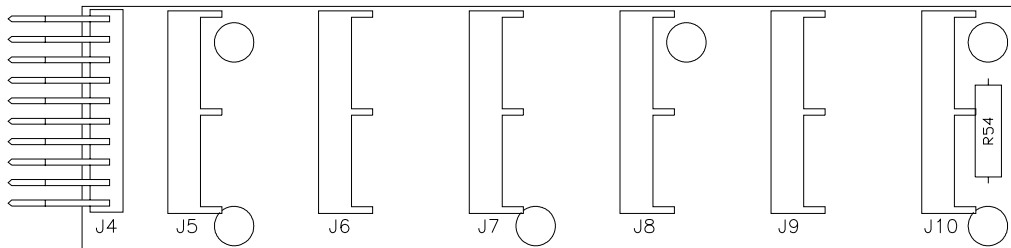
MA 6S AMP CARD



MA 6S POWER SUPPLY



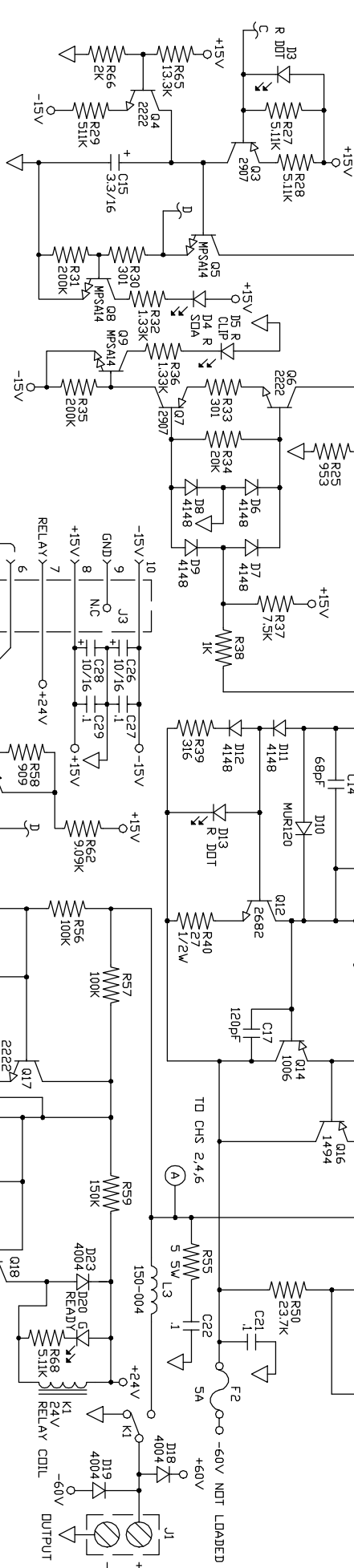
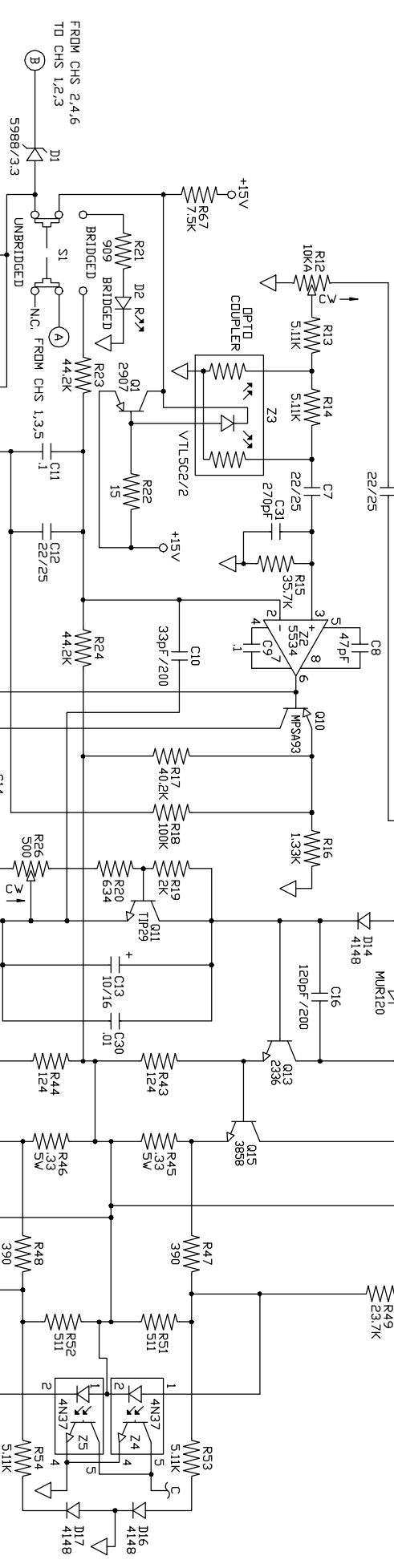
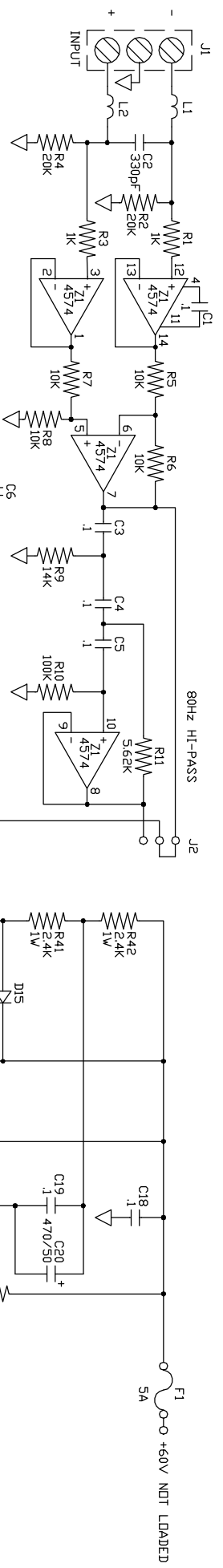
MA 6S BUS CONNECTOR



101561 SHEET 2 OF 2 DES: BUS MA 6S
 ACTION: NO CHANGE TO PART, NEW DOC# SKH 9FEB98

101557 SHEET 2 OF 2 DES: PWR MA 6S
 ACTION: NO CHANGE TO PART, NEW DOC# SKH 9FEB98

101552 SHEET 2 OF 2 DES: AMP MA 6S
 ACTION: NO CHANGE TO PART, NEW DOC# SKH 9FEB98

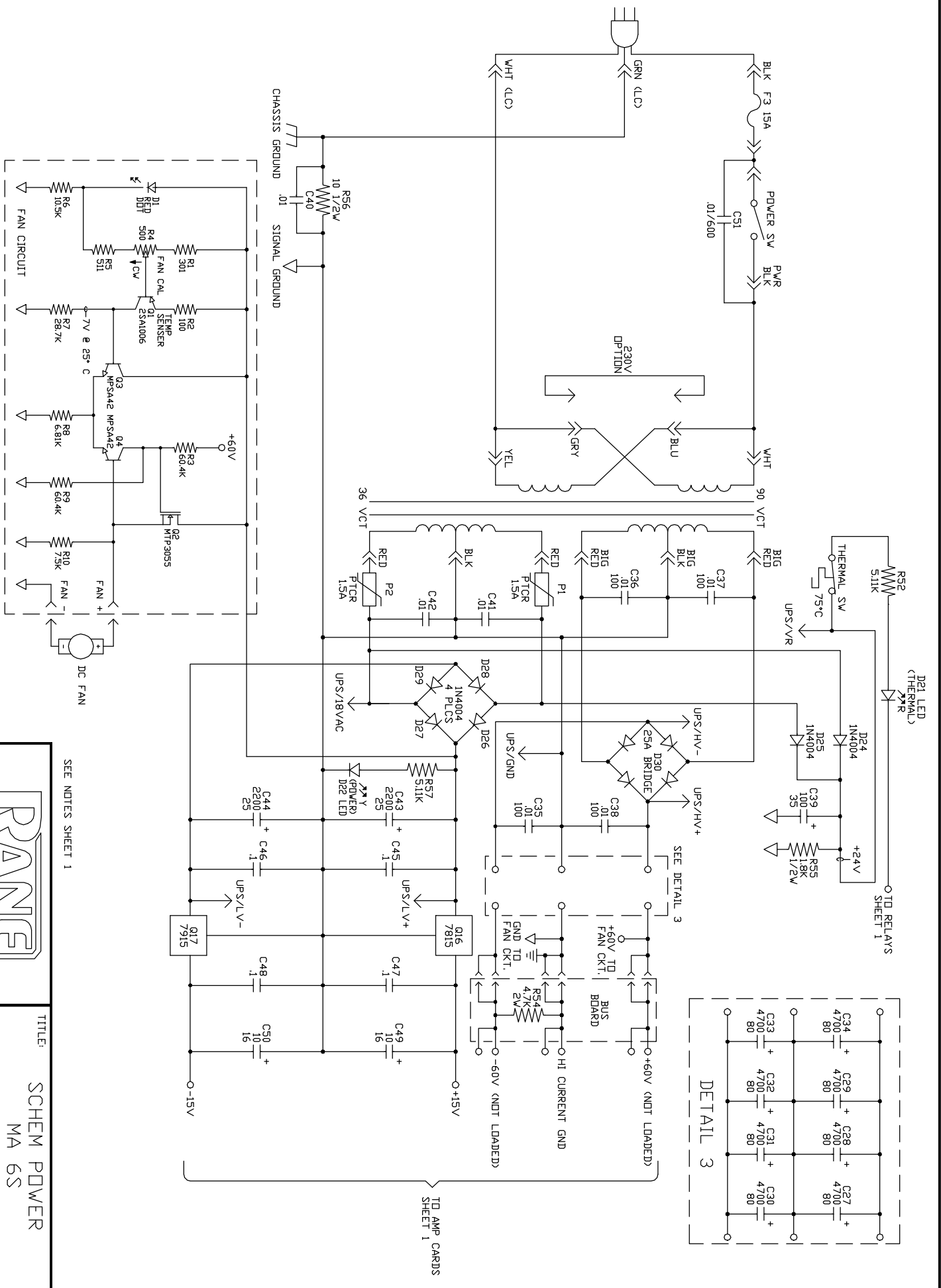


- NOTES** (UNLESS OTHERWISE SPECIFIED)
1. ALL RES. 1% METAL FILM.
 2. ALL FERRITE BEADS 2.5 TURN.
 3. POWER SUPPLY CONNECTIONS:

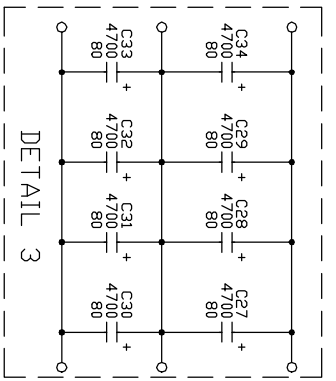
- | | | |
|------|-----------|-----------|
| SING | POS. SUP. | NEG. SUP. |
| QUAD | 8 | 4 |
| | 11 | 4 |

4. ALL SWs SHOWN IN THEIR 'OFF' POSITION

- FROM PAPER SUPPLY PCB (SHEET 2)
- | | | | | | | | | | | |
|-------|----|---|---|---|---|---|---|---|---|---|
| RELAY | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| | + | - | + | - | + | - | + | - | + | - |



SEE NOTES SHEET 1



SEE NOTES SHEET 1

RANE

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TITLE: SCHEM POWER
 MA 6S