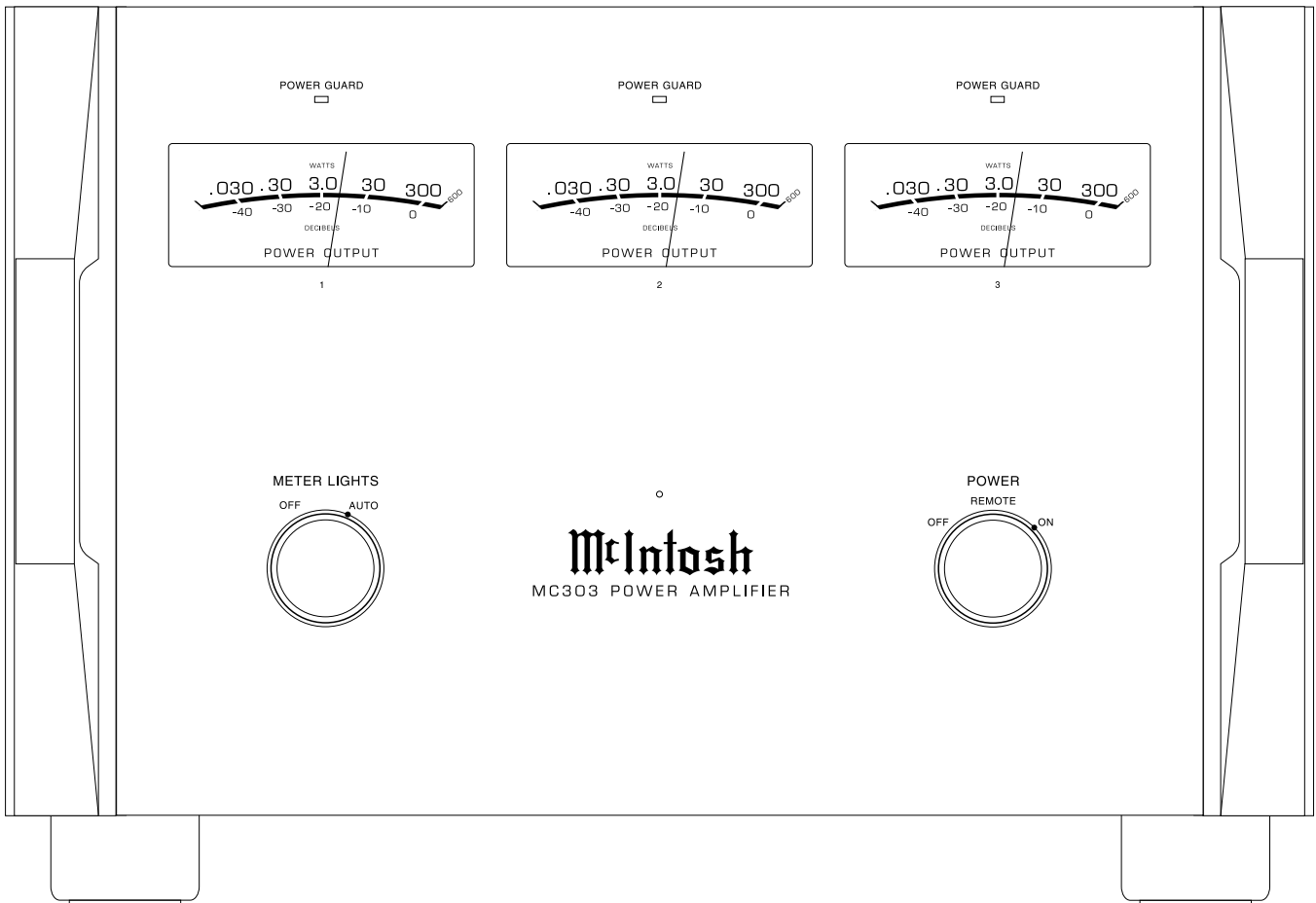




# MC303

## POWER AMPLIFIER

SERIAL NO. ZH1001 And Above



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# SERVICE MANUAL

# PERFORMANCE SPECIFICATIONS

## Specifications

### Power Output

Minimum sine wave continuous average power output per channel, all channels operating:  
300 watts into a 2 ohm, 4 ohm or 8 ohm load

### Output Load Impedance

2, 4 or 8 ohms

### Rated Power Band

20Hz to 20,000Hz

### Total Harmonic Distortion

0.005% maximum harmonic distortion at any power level from 250 milliwatts to rated power, 20Hz to 20,000Hz

### Dynamic Headroom

1.8dB

### Frequency Response

+0, -0.25dB from 20Hz to 20,000Hz  
+0, -3dB from 10Hz to 100,000Hz

### Input Sensitivity (for rated output)

1.7 Volt Unbalanced  
3.4 Volt Balanced

### Signal To Noise Ratio (A-Weighted)

112dB below rated output

### Intermodulation Distortion

0.005% maximum, if the instantaneous peak power output does not exceed twice the rated power output for any combination of frequencies from 20Hz to 20,000Hz.

### Wide Band Damping Factor

Greater than 40

### Input Impedance

10,000 ohms

### Power Guard

Less than 2% THD with up to 14dB overdrive at 1,000Hz

### Power Control Input

5VDC - 12VDC

### Power Control Output

12VDC, 25mA maximum, delay 0.2 seconds

### Power Requirements

100 Volts, 50/60Hz at 12 Amps  
110 Volts, 50/60Hz at 11 Amps  
120 Volts, 50/60Hz at 10 Amps  
220 Volts, 50/60Hz at 6 Amps  
230 Volts, 50/60Hz at 6 Amps  
240 Volts, 50/60Hz at 6 Amps  
Standby: Less than 1 watt

*Note: Refer to the rear panel of the MC303 for the correct voltage.*

### Overall Dimensions

Width is 17-3/4 inches (45.09cm)  
Height is 12-3/8 inches (31.43cm) including feet  
Depth is 22 inches (55.88cm) including the Front Panel and Cables


### Weight

155 pounds (70.3 kg) net, 180 pounds (81.6 kg) in shipping carton

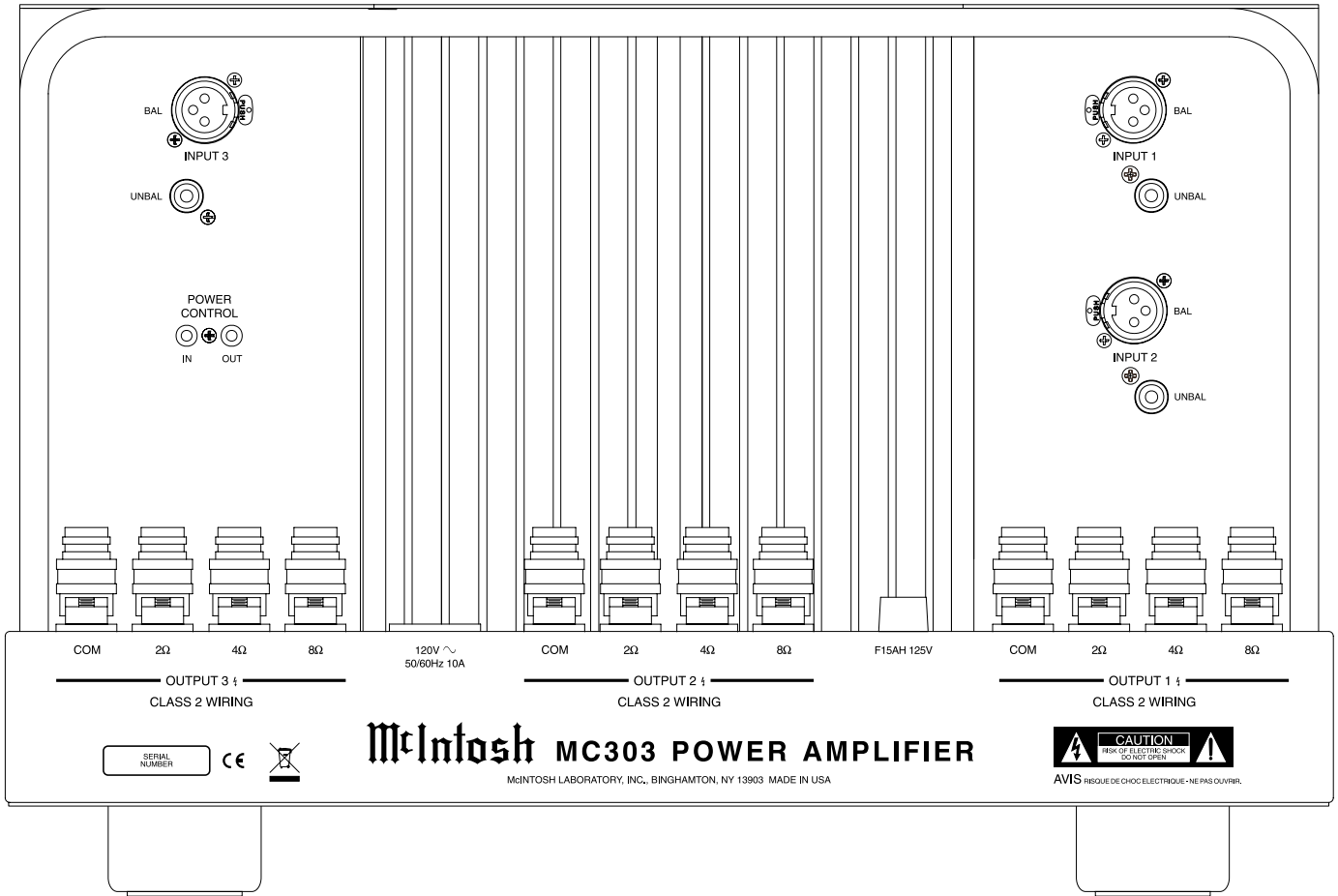
### Shipping Carton Dimensions

Width is 31 inches (78.74cm)  
Depth is 28 inches (71.12cm)  
Height is 17-1/4 inches (43.82cm)

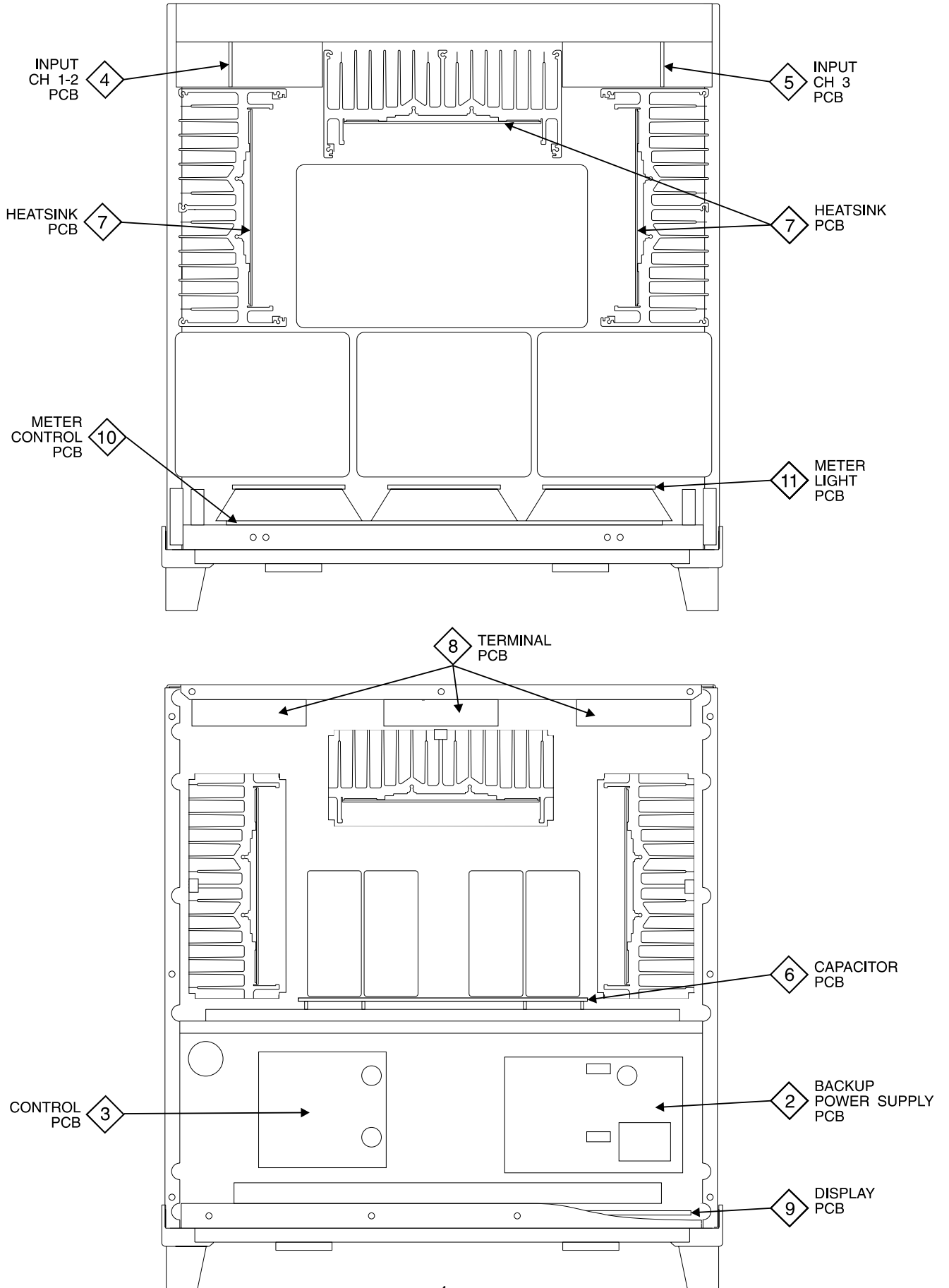
## NOTES

1. Unless otherwise noted, all voltages indicated on the schematics are measured under the following conditions:
  - a. AC input at rated voltage marked on rear panel.
  - b. All voltages are +/-10% with respect to ground. A high impedance (10 megaohm) voltmeter must be used.
2. Unless otherwise specified:
  - a. Resistor values are in ohms.
  - b. Capacitor values are microfarads (uF).
  - c. Inductor values are in microhenries (uH)
3. On PC board drawings, Square pad indicates:
  - a. Polarized Capacitors - Positive
  - b. Diodes - Cathode
  - c. Others - Pin 1
4. **WARNING**  
Parts marked with the symbol  have critical characteristics. Use only replacement parts recommended by the manufacturer.

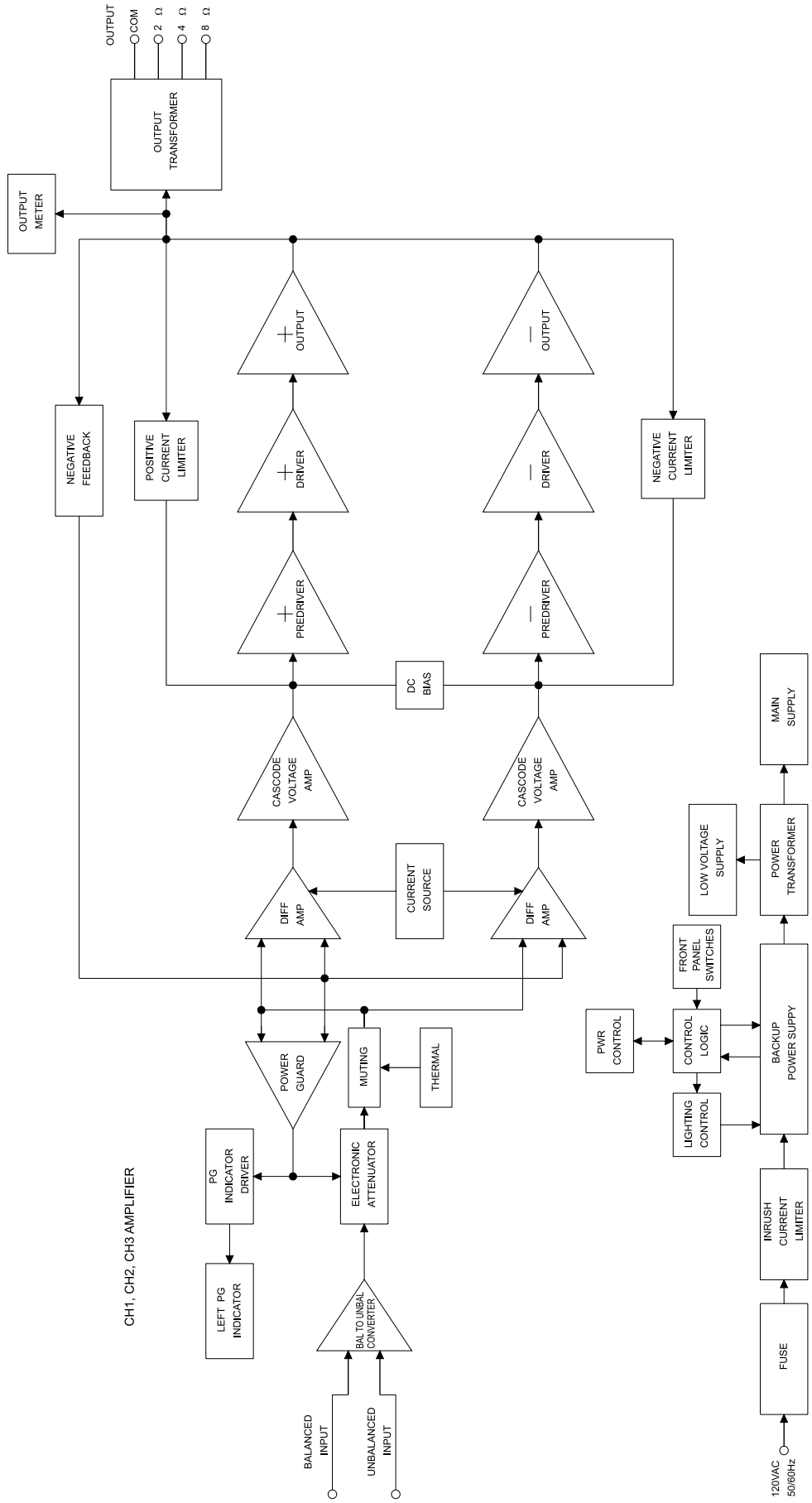
# REAR PANEL



# SECTION LOCATIONS



# BLOCK DIAGRAM

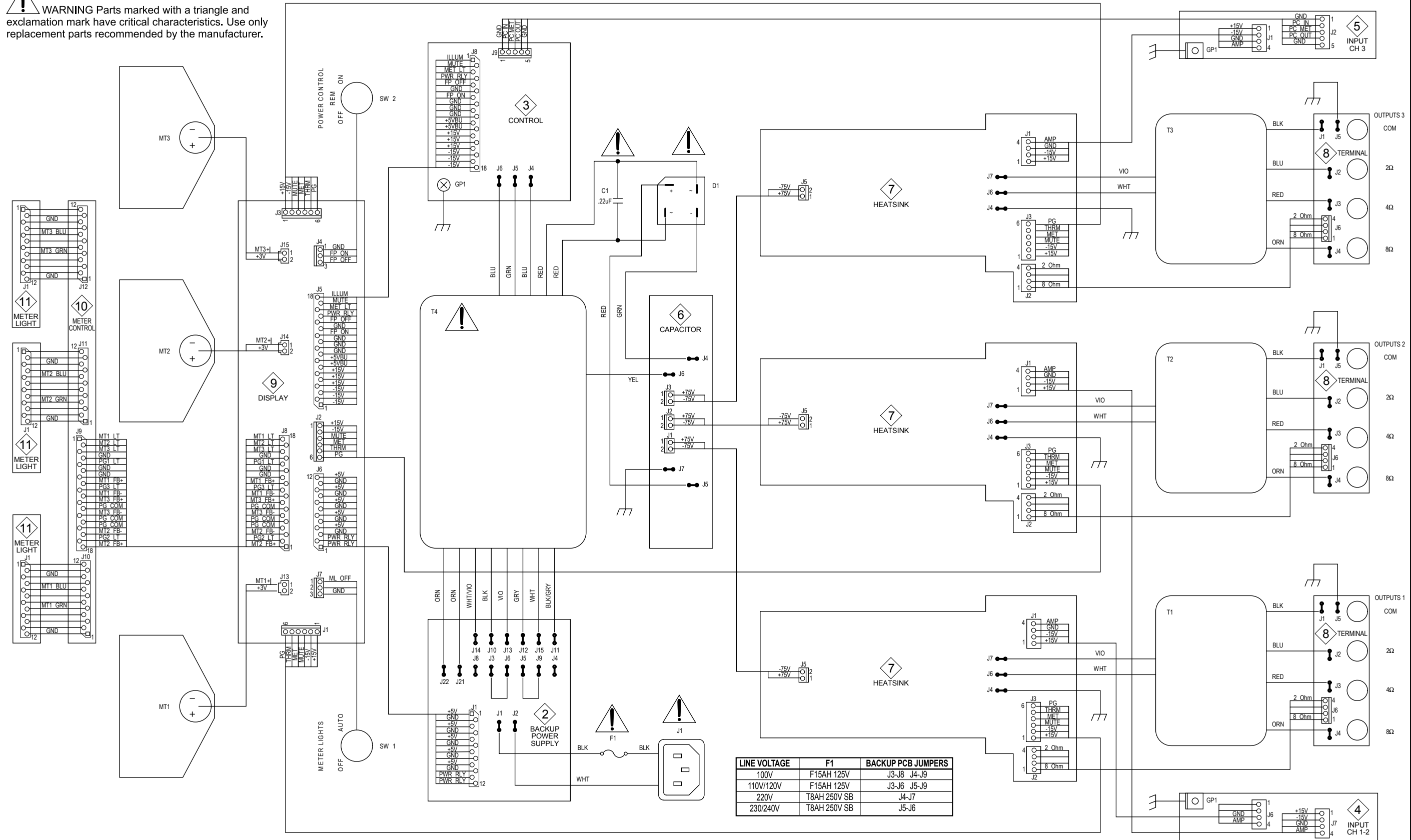


# *NOTES*

# INTERCONNECT

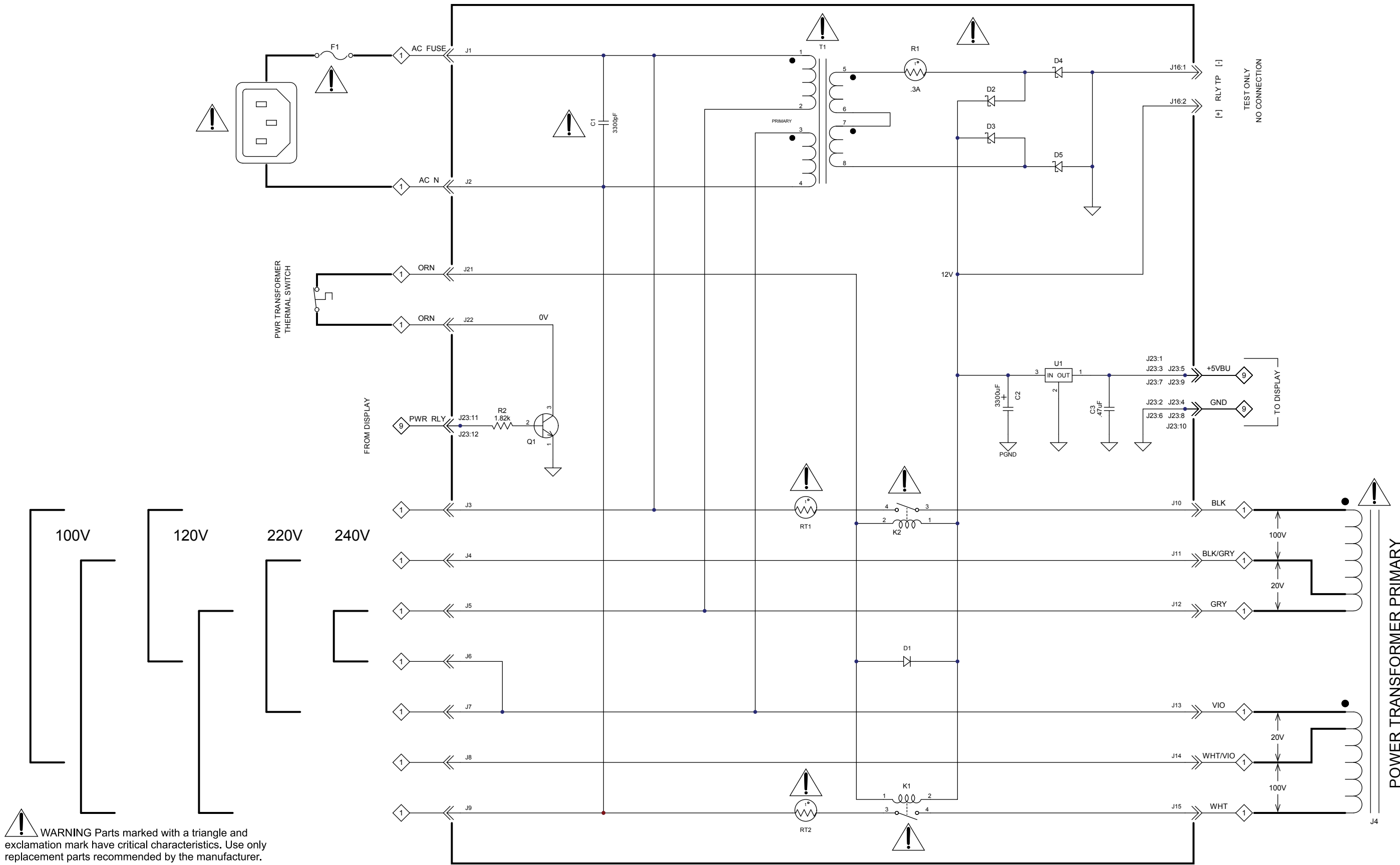
## MC303 POWER AMPLIFIER

**WARNING** Parts marked with a triangle and exclamation mark have critical characteristics. Use only replacement parts recommended by the manufacturer.



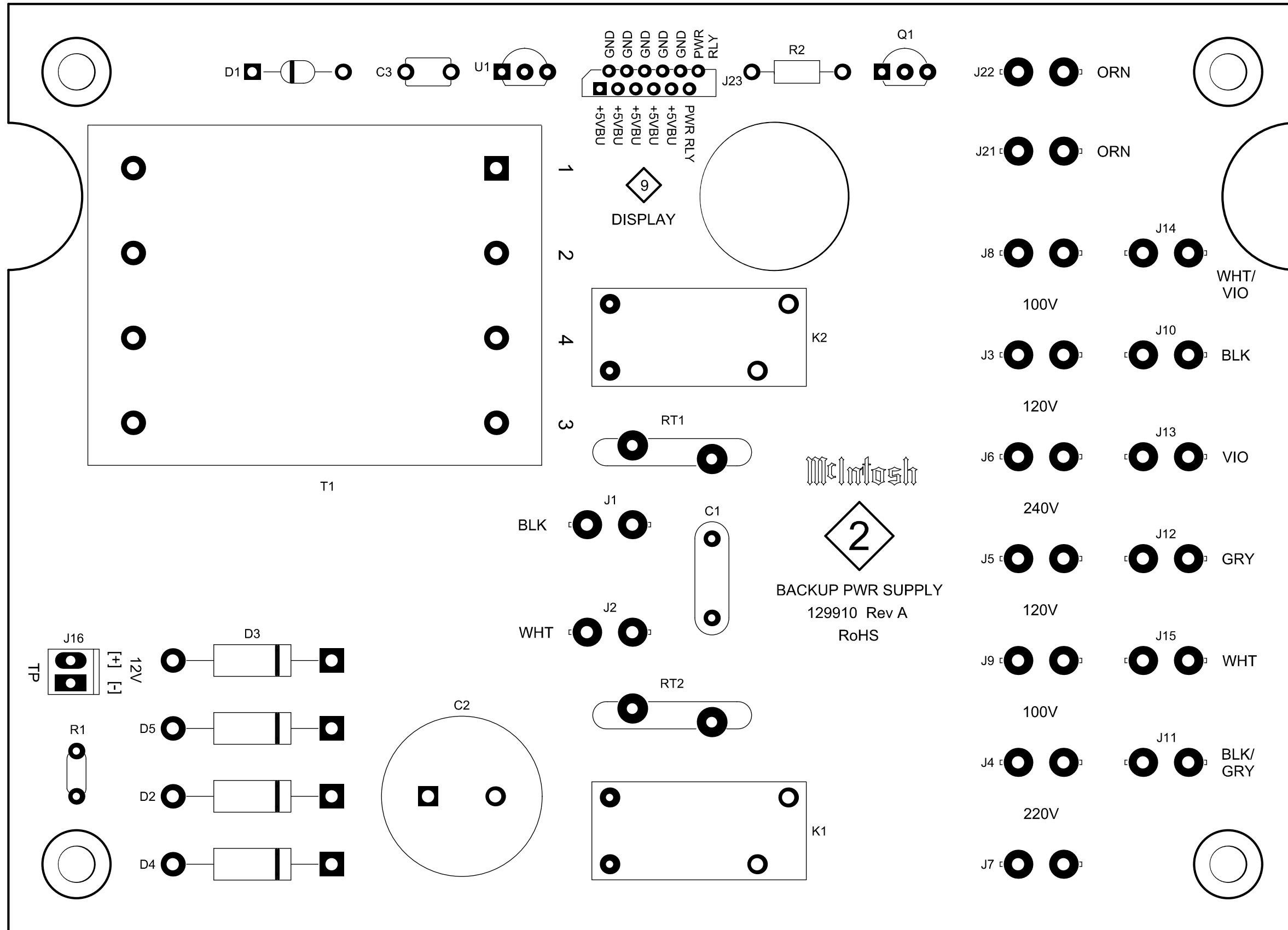
| LINE VOLTAGE | F1           | BACKUP PCB JUMPERS |
|--------------|--------------|--------------------|
| 100V         | F15AH 125V   | J3-J8 J4-J9        |
| 110V/120V    | F15AH 125V   | J3-J6 J5-J9        |
| 220V         | T8AH 250V SB | J4-J7              |
| 230/240V     | T8AH 250V SB | J5-J6              |

# 2 BACKUP POWER SUPPLY 750975 SCH

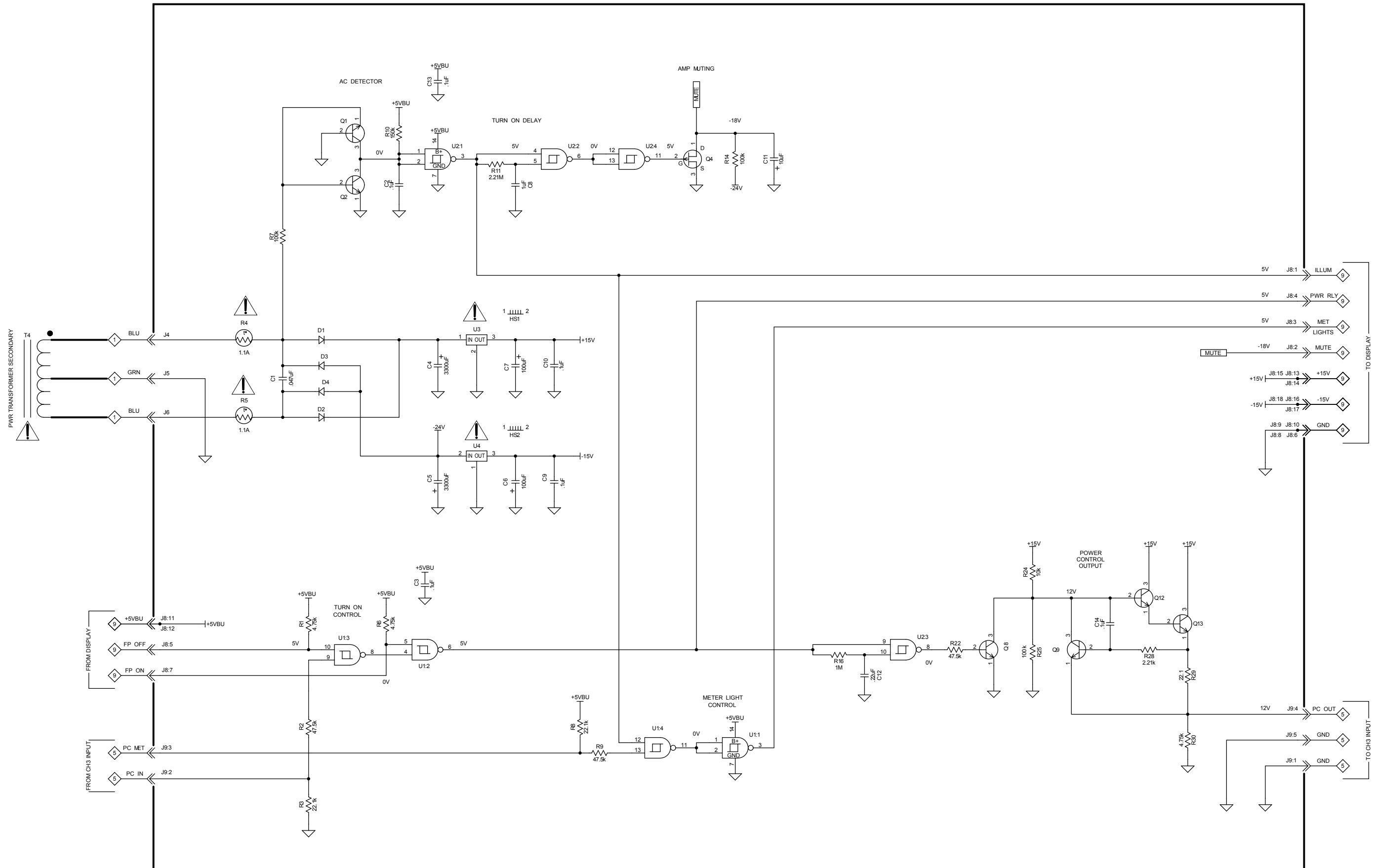


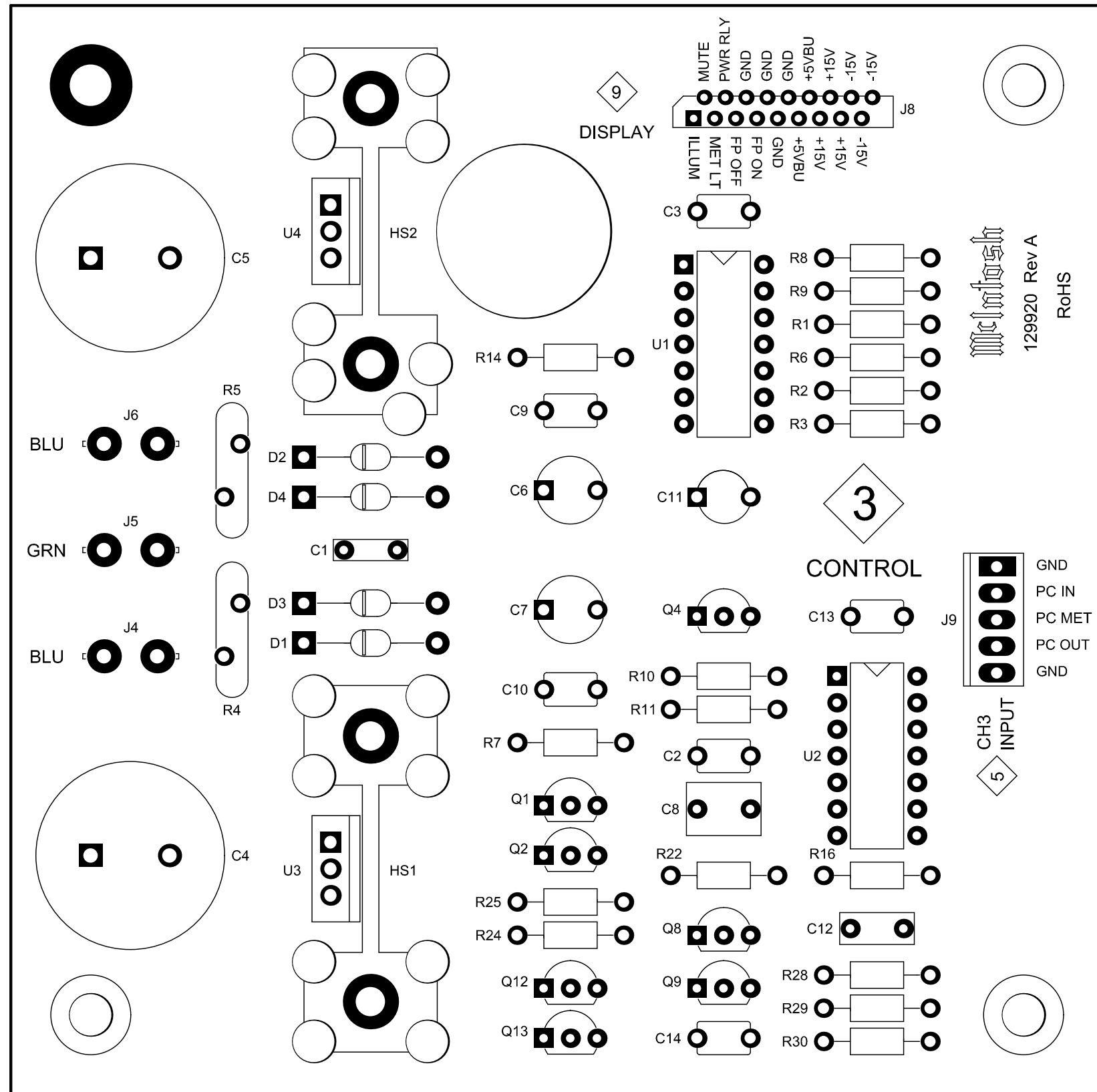


2 BACKUP POWER SUPPLY 750975 PCB

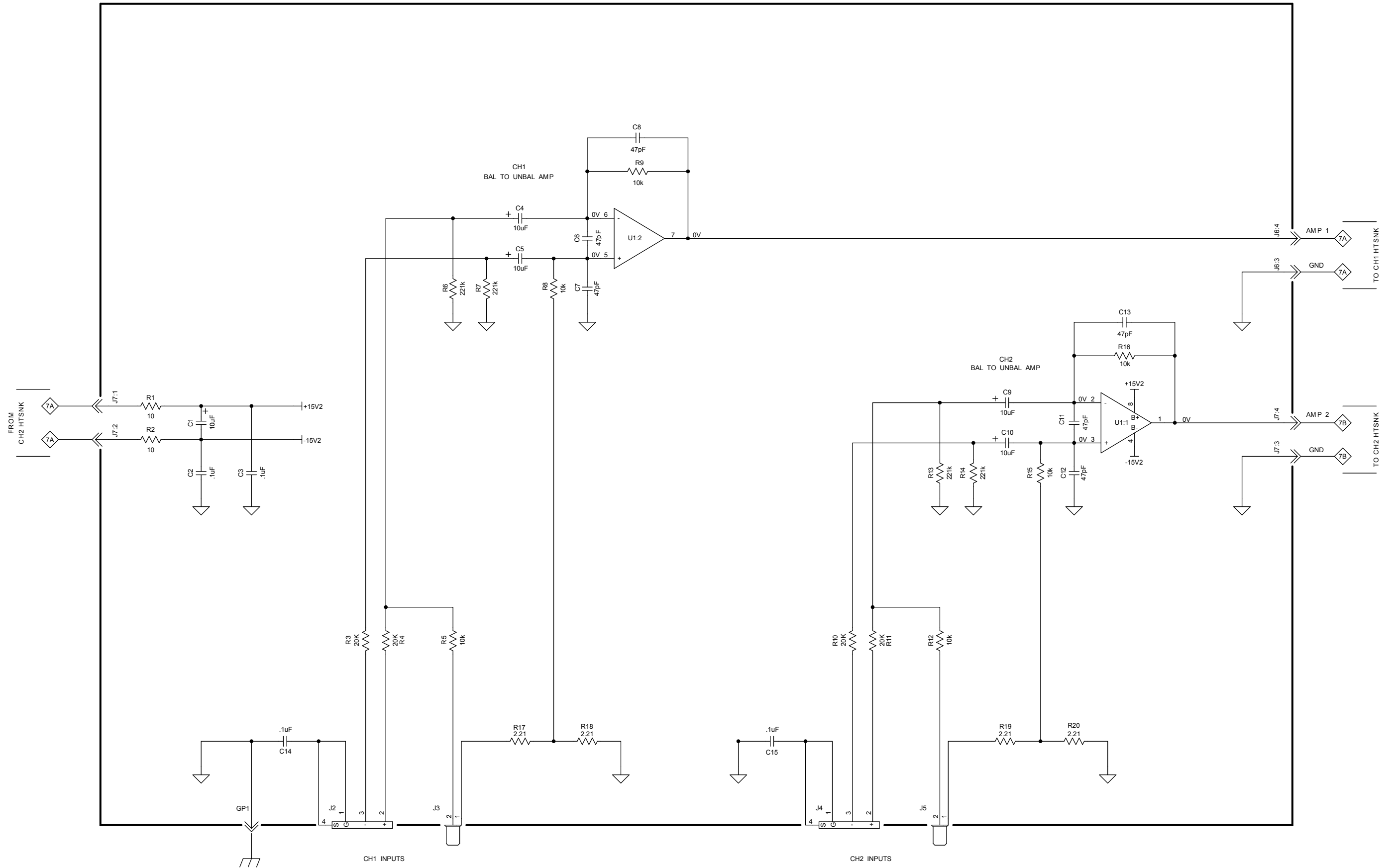


# 3 CONTROL 750886 SCH

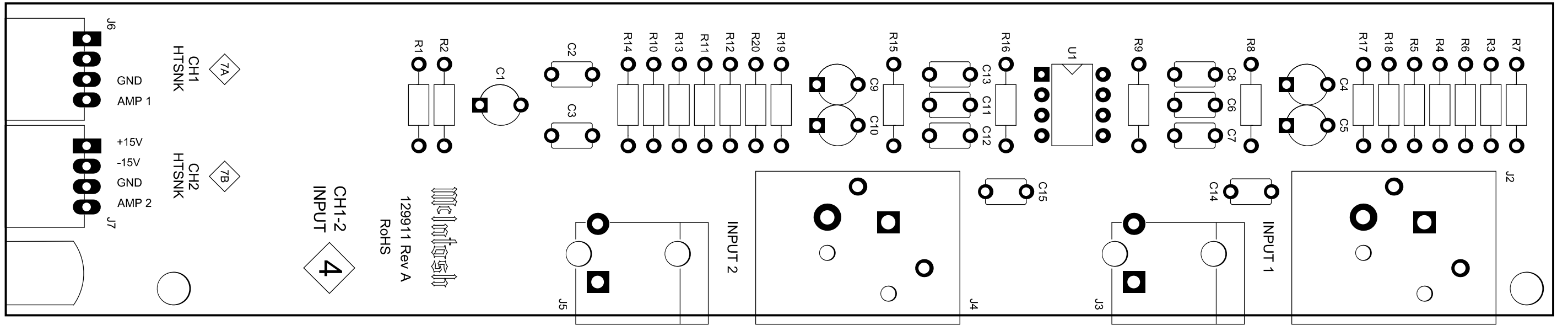




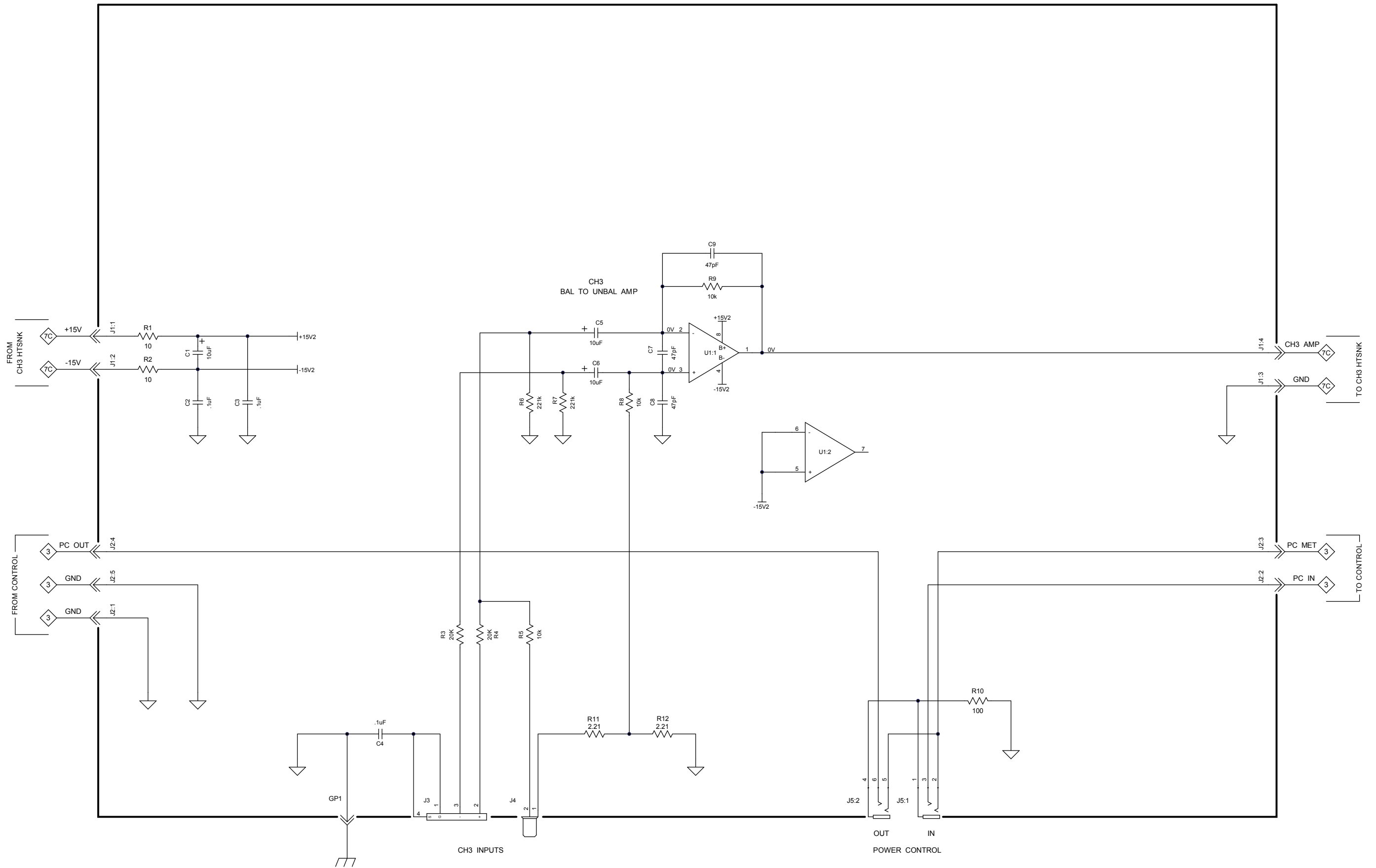
# 4 INPUT CH 1-2 750866 SCH



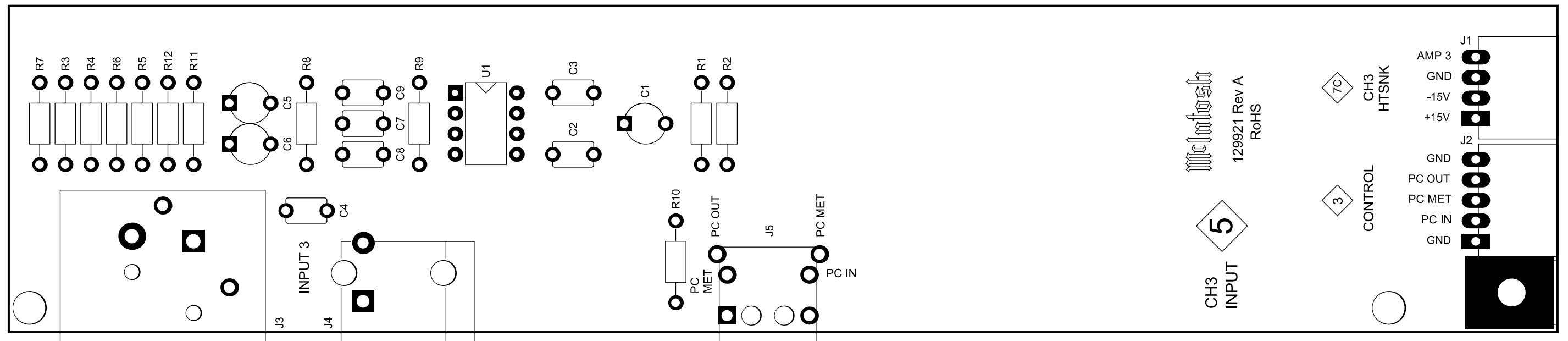
**4** INPUT CH 1-2 750866 PCB



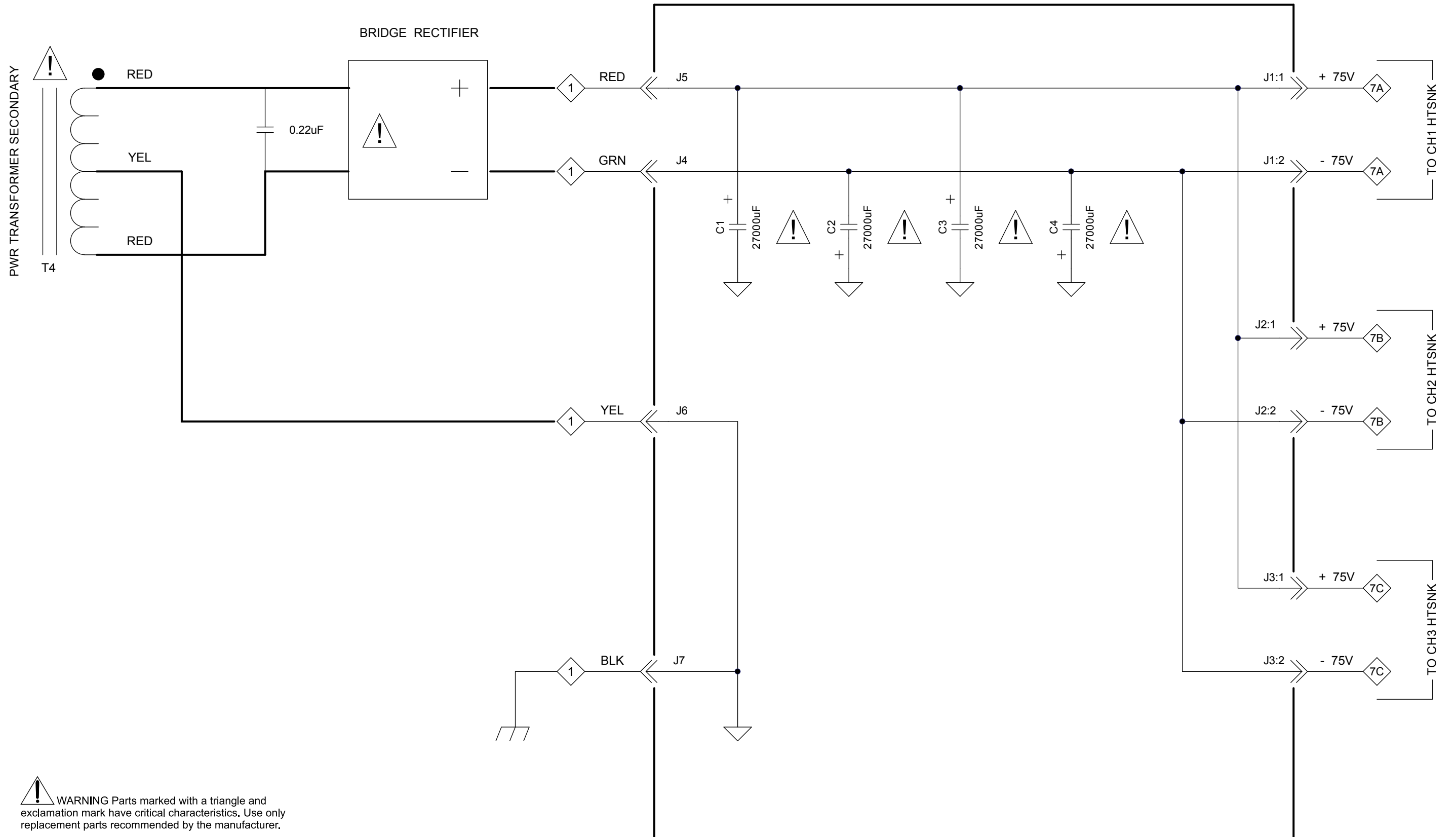
# 5 INPUT CH3 750887 SCH



**5** INPUT CH 3 750887 PCB



# 6 CAPACITOR 750986 SCH

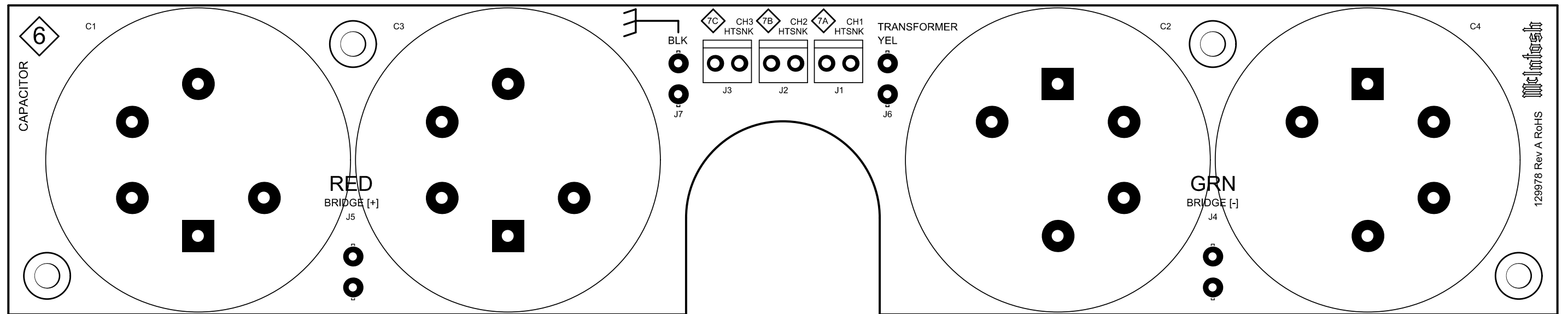


**!** WARNING Parts marked with a triangle and exclamation mark have critical characteristics. Use only replacement parts recommended by the manufacturer.

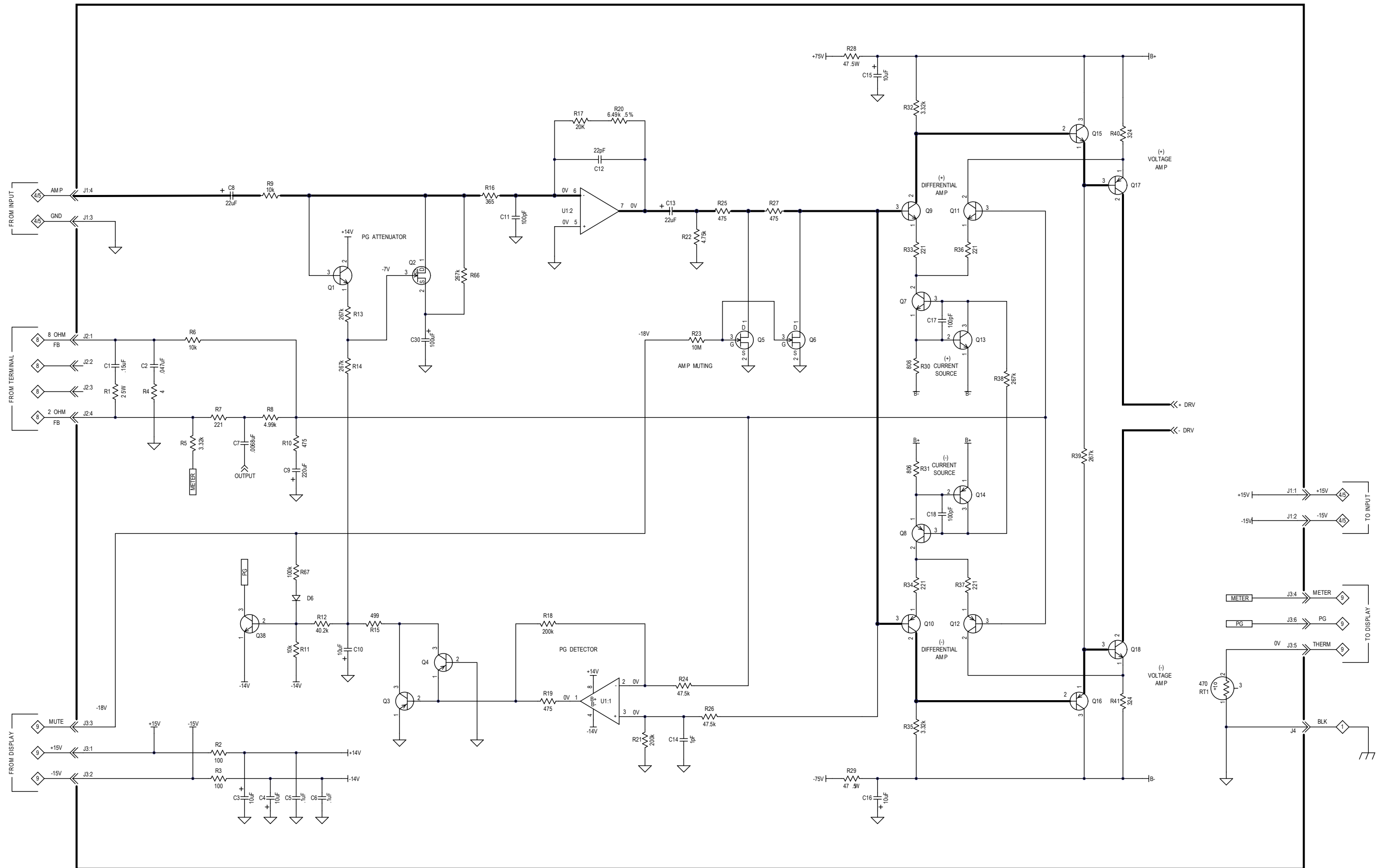


MC303  
POWER AMPLIFIER

6 CAPACITOR 750986 PCB



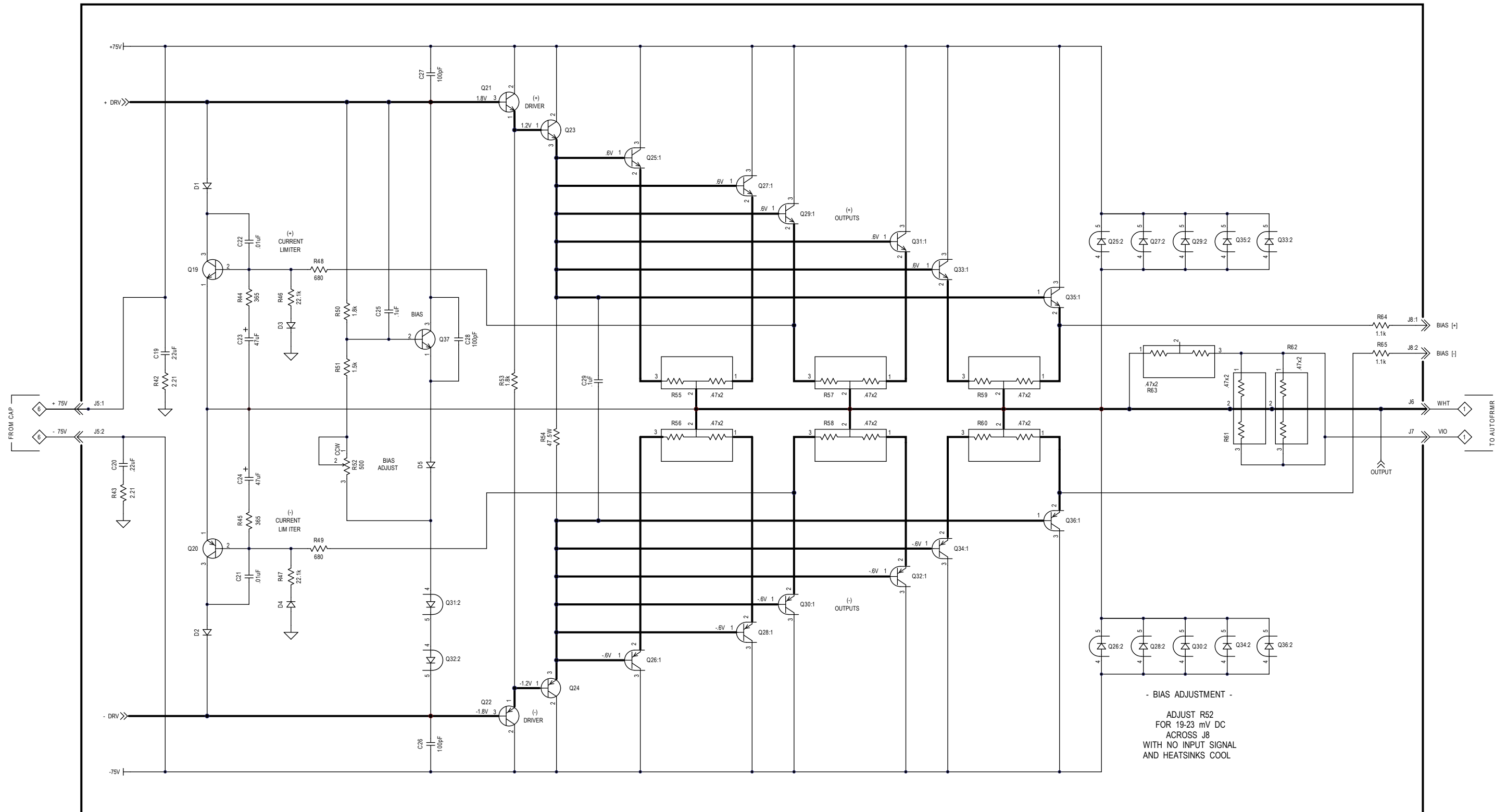
**7 HEATSINK 750868/750881 SCH 1 of 2**



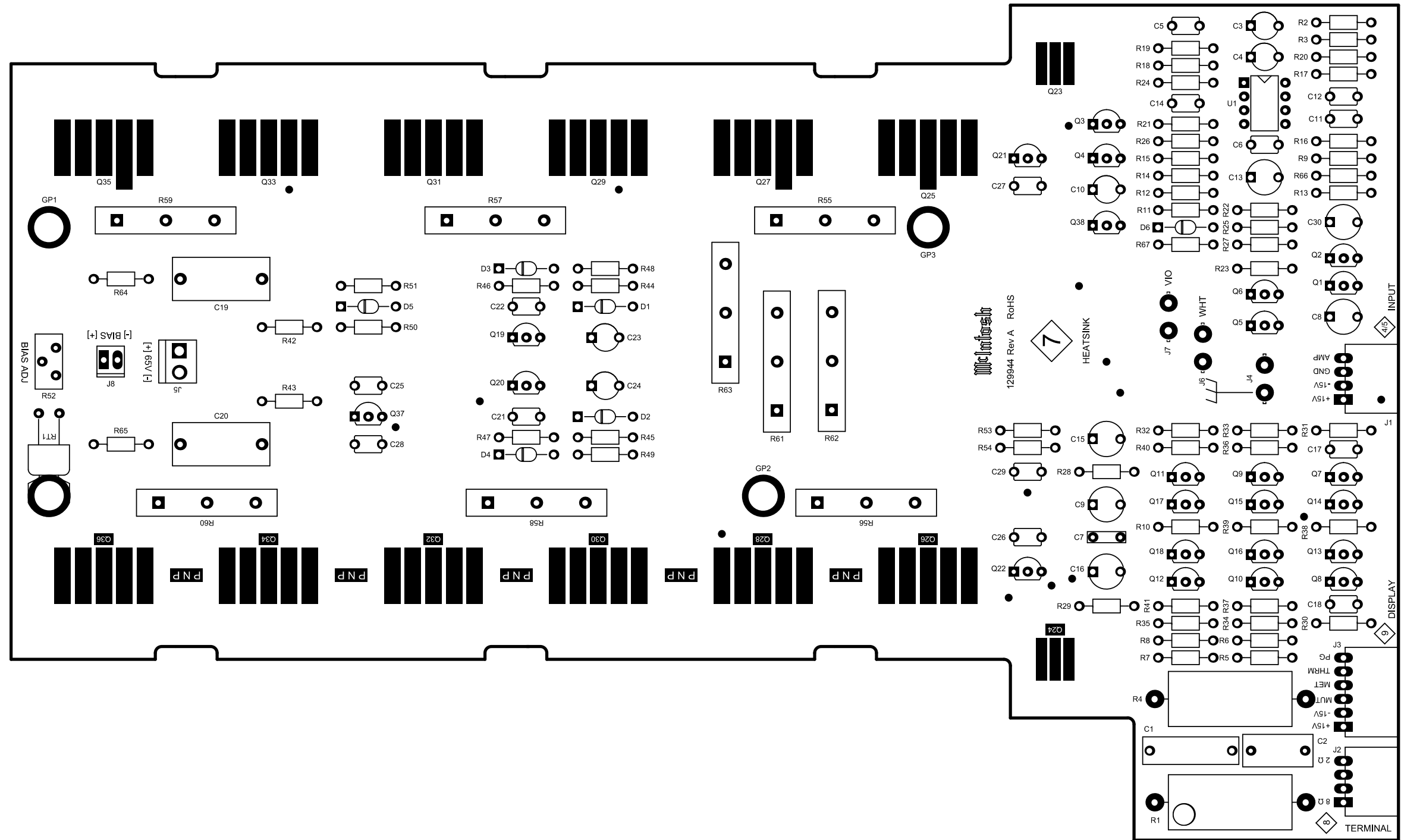
# MC303

## POWER AMPLIFIER

### 7 HEATSINK 750868/750881 SCH 2 of 2

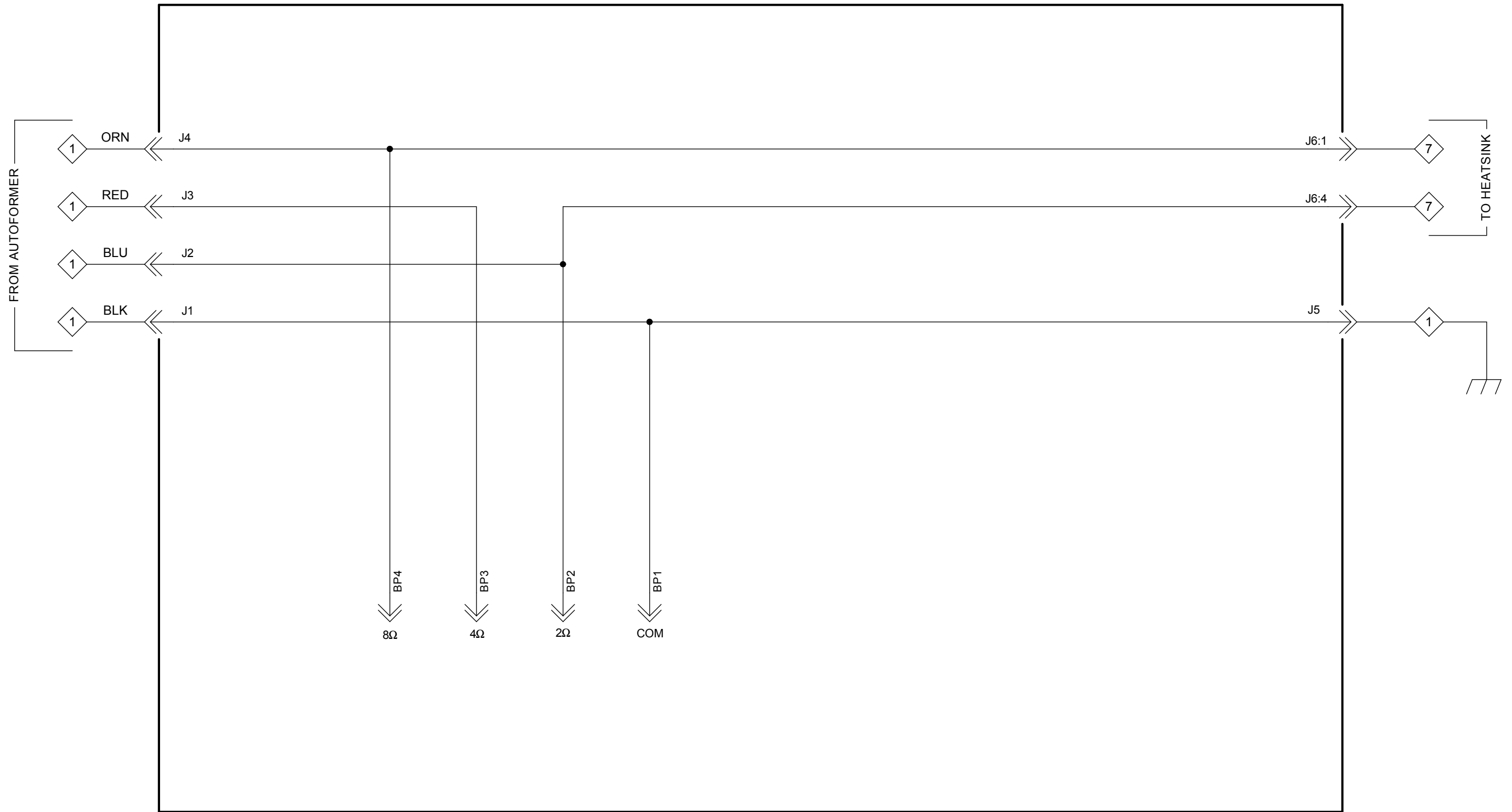


**7** HEATSINK 750868/750881 PCB

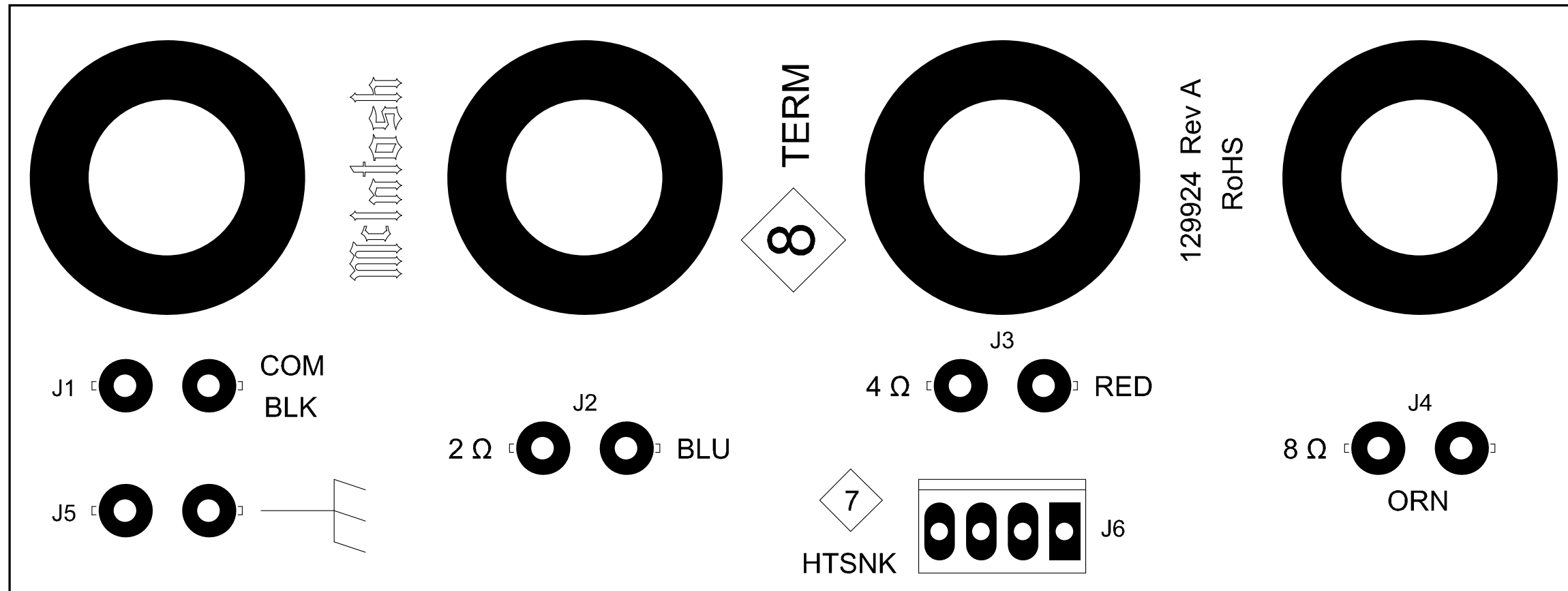


**MC303**  
POWER AMPLIFIER

**8** *TERMINAL 750890 SCH*



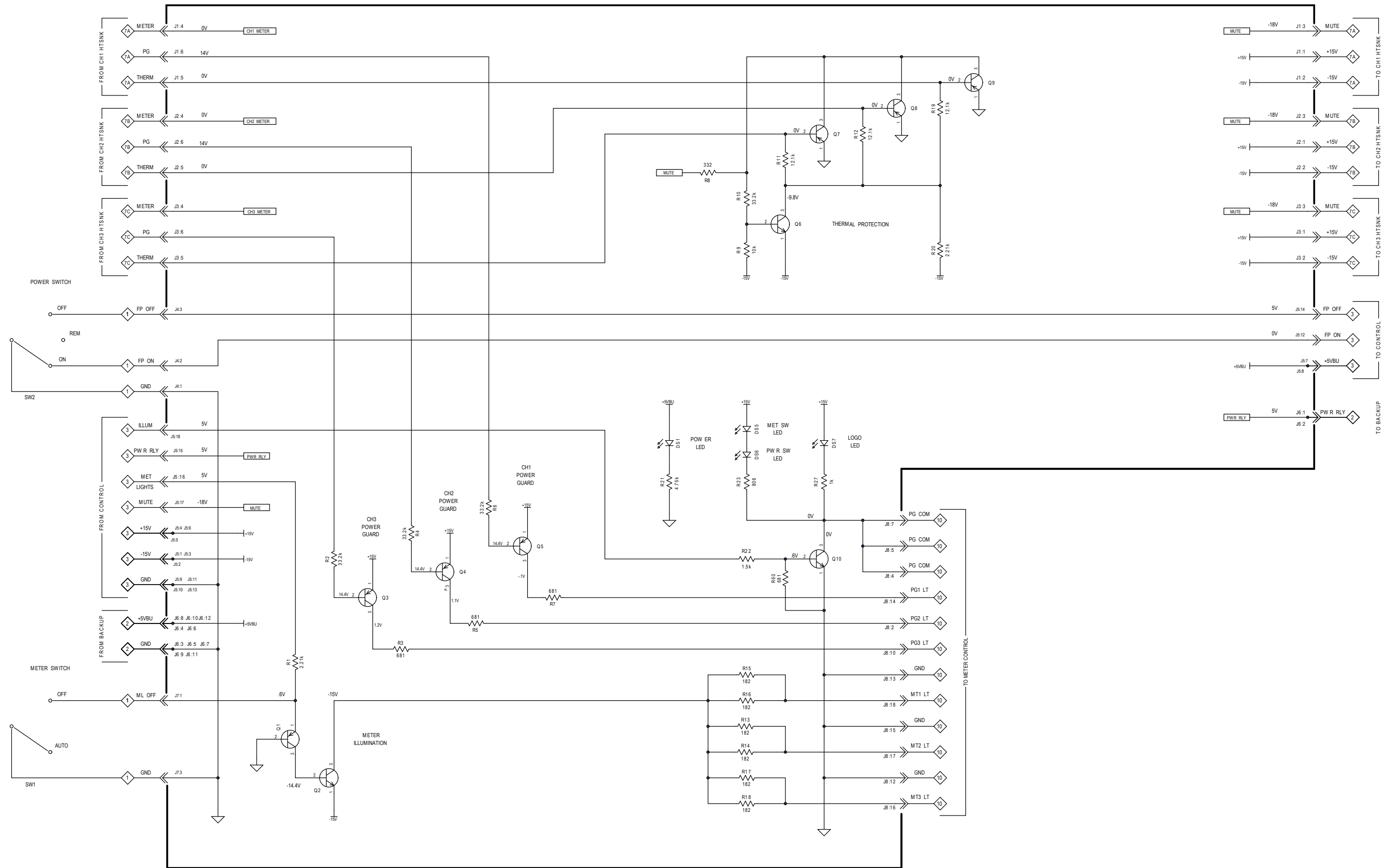
**8** *TERMINAL 750890 PCB*



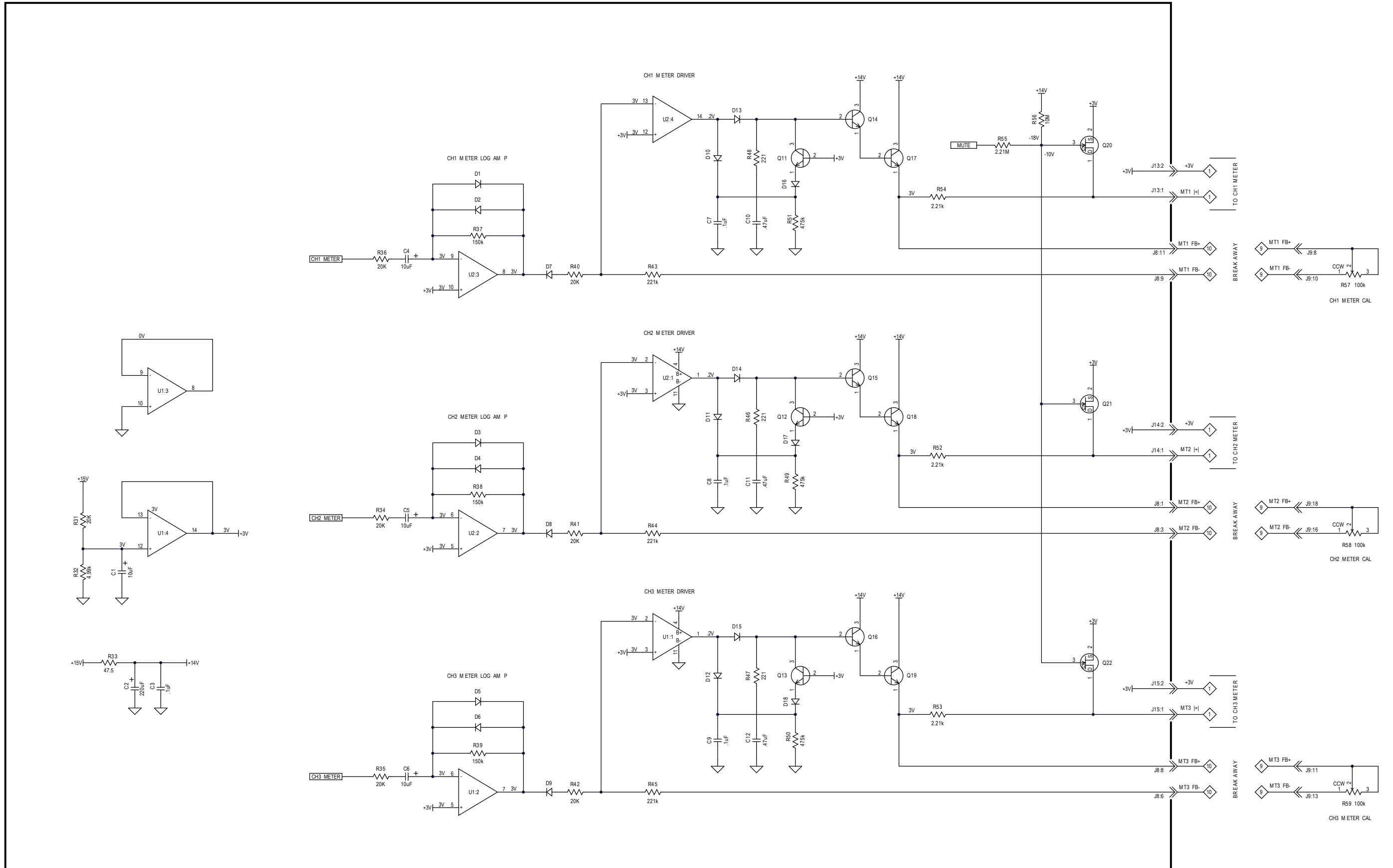
# MC303

## POWER AMPLIFIER

### 9 DISPLAY 750869 SCH 1 of 2



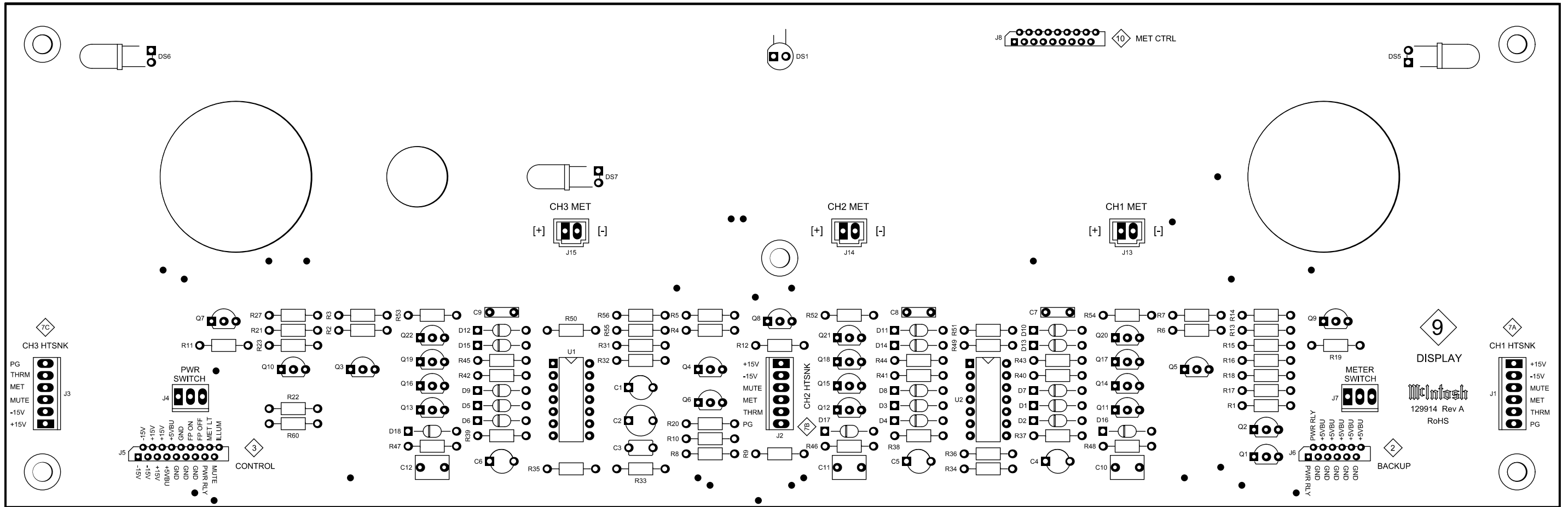
**9** DISPLAY 750869 SCH 2 of 2



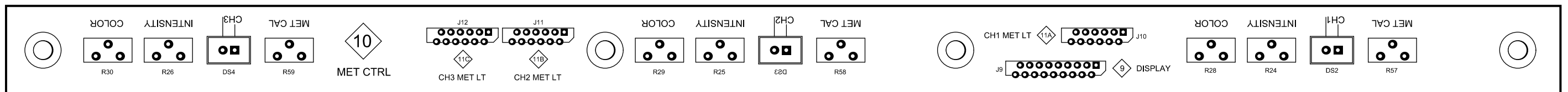
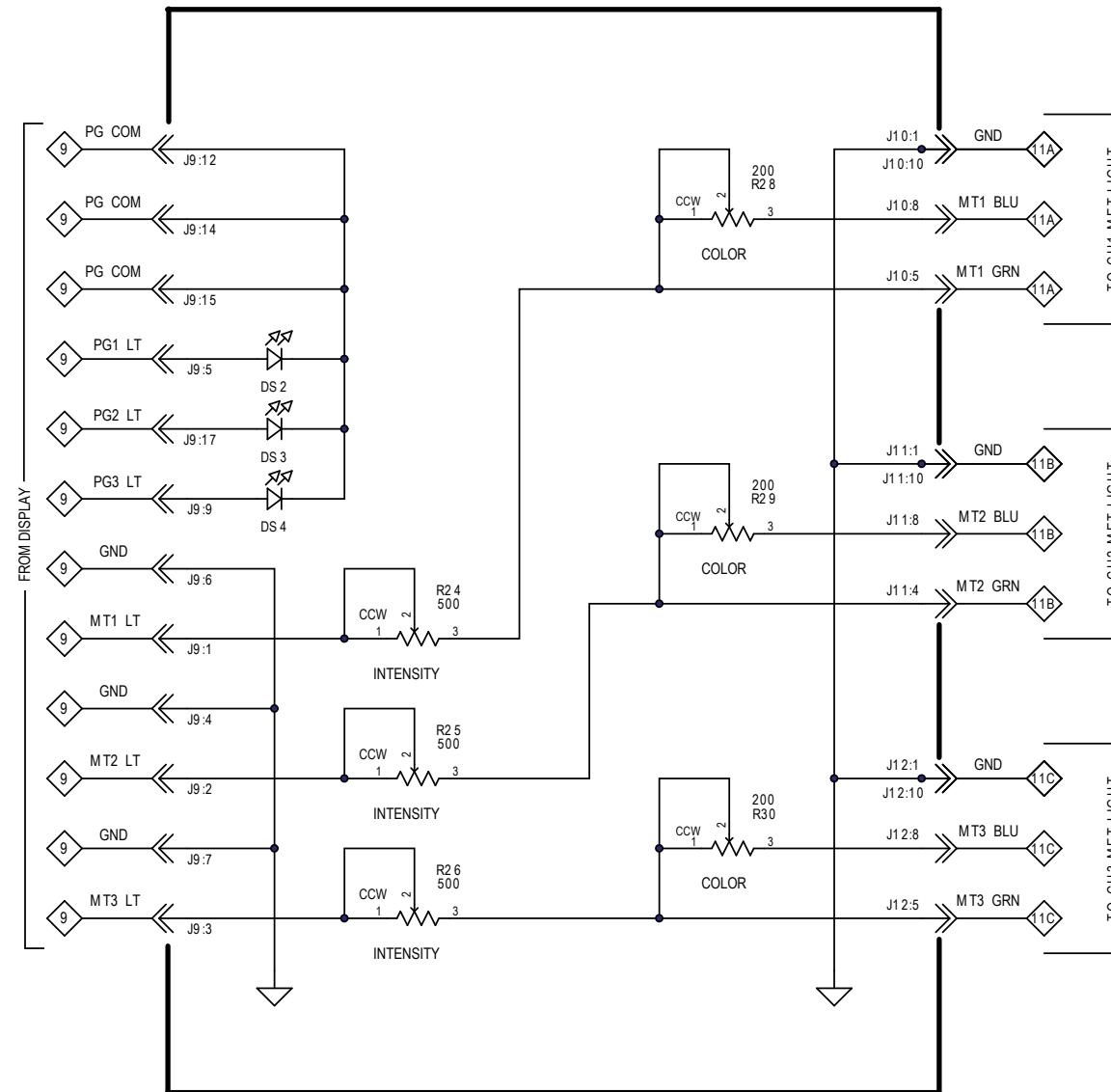


**MC303**  
POWER AMPLIFIER

**9** *DISPLAY* 750869 PCB

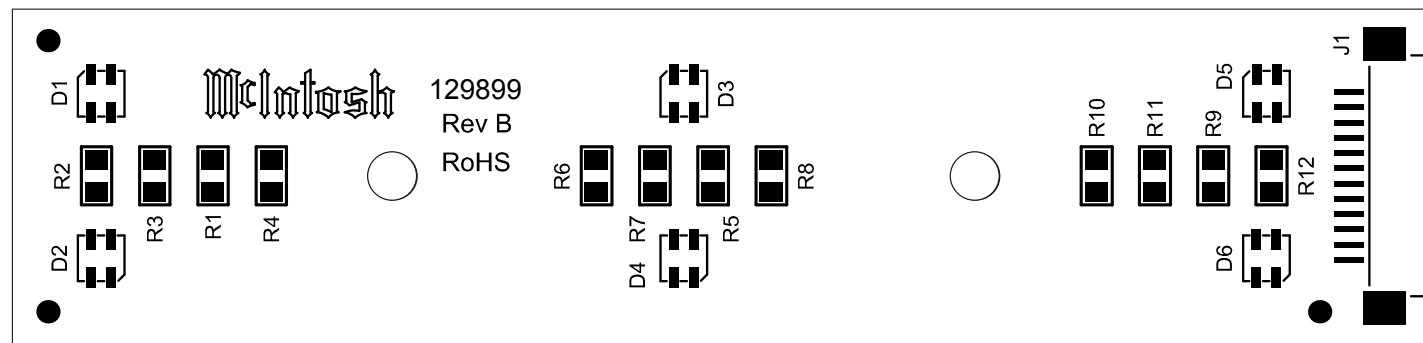
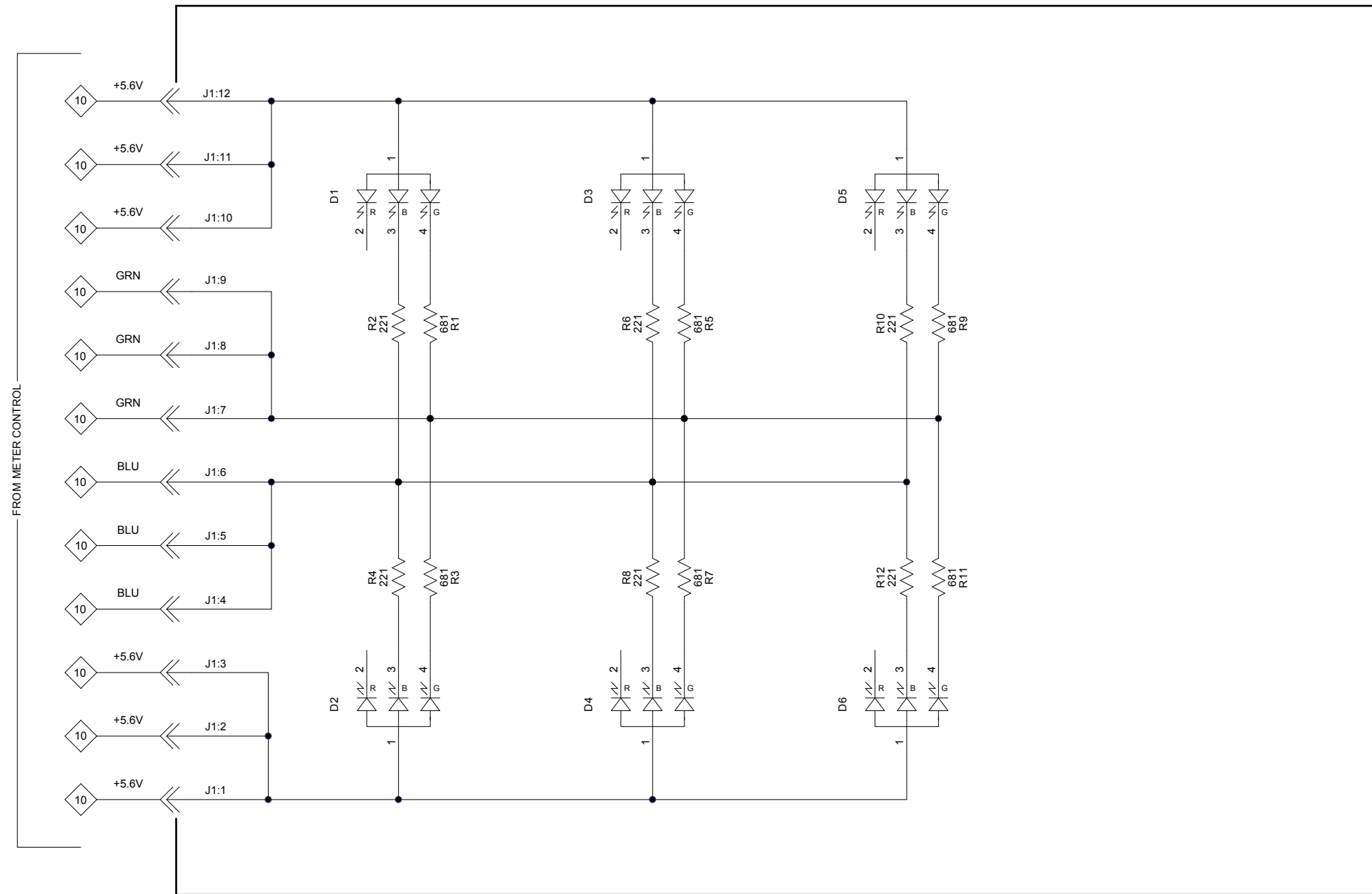


# 10 METER CONTROL 750869 SCH and PCB



**11** *METER LIGHT* 750845 SCH and PCB

**MC303**  
POWER AMPLIFIER



# *NOTES*

## PARTS LIST

## ① INTERCONNECT

| Ref. No. | Description           | Part No. |
|----------|-----------------------|----------|
| C1       | ASSY CAPACITOR        | 052005   |
| D1       | DIODE BRIDGE RECT     | 070181   |
| MT1      | METER MC303           | 124112   |
| MT2      | METER MC303           | 124112   |
| MT3      | METER MC303           | 124112   |
| SW1      | SWITCH ASSY PWR/METER | 052126   |
| SW2      | SWITCH ASSY PWR/METER | 052126   |
| T1       | TRANSFORMER OUTPUT    | 750884   |
| T2       | TRANSFORMER OUTPUT    | 750884   |
| T3       | TRANSFORMER OUTPUT    | 750884   |
| T4       | TRANSFORMER PWR       | 750883   |
| J1       | CONN AC LINE INPUT    | 117886   |
| F1       | FUSE HOLDER 1/4"      | 178190   |

## ② BACKUP POWER SUPPLY PCB 750975

|      |                             |        |
|------|-----------------------------|--------|
| C1   | CAP 3300PF 250V UL/CSA      | 061312 |
| C2   | CAP ELECT 3300UF 35V        | 066509 |
| C3   | CAP MONO .47UF 50V          | 061320 |
| D1   | DIODE SILICON               | 070174 |
| D2   | DIODE RECT SCHOTTKEY 2A 40V | 070196 |
| D3   | DIODE RECT SCHOTTKEY 2A 40V | 070196 |
| D4   | DIODE RECT SCHOTTKEY 2A 40V | 070196 |
| D5   | DIODE RECT SCHOTTKEY 2A 40V | 070196 |
| J1   | BLADE FASTON W/FEET         | 117708 |
| J2   | BLADE FASTON W/FEET         | 117708 |
| J3   | BLADE FASTON W/FEET         | 117708 |
| J4   | BLADE FASTON W/FEET         | 117708 |
| J5   | BLADE FASTON W/FEET         | 117708 |
| J6   | BLADE FASTON W/FEET         | 117708 |
| J7   | BLADE FASTON W/FEET         | 117708 |
| J8   | BLADE FASTON W/FEET         | 117708 |
| J9   | BLADE FASTON W/FEET         | 117708 |
| J10  | BLADE FASTON W/FEET         | 117708 |
| J11  | BLADE FASTON W/FEET         | 117708 |
| J12  | BLADE FASTON W/FEET         | 117708 |
| J13  | BLADE FASTON W/FEET         | 117708 |
| J14  | BLADE FASTON W/FEET         | 117708 |
| J15  | BLADE FASTON W/FEET         | 117708 |
| J16  | CONN 2 PIN MALE             | 117213 |
| J21  | BLADE FASTON W/FEET         | 117708 |
| J22  | BLADE FASTON W/FEET         | 117708 |
| J23  | CONN 12 PIN FFC             | 117907 |
| K1   | RELAY POWER TV8 12V         | 087083 |
| K2   | RELAY POWER TV8 12V         | 087083 |
| PCB1 | PC BD BACK UP               | 129910 |
| Q1   | TRANSISTOR NPN SILICON      | 132317 |
| R1   | RES POLYSWITCH RXE030       | 144670 |
| R2   | RES MF 1.82K 1% 1/4W        | 144582 |
| RT1  | THERMISTOR 2.5 OHM 15A      | 144231 |
| RT2  | THERMISTOR 2.5 OHM 15A      | 144231 |
| T1   | TRANSFORMER POWER           | 159367 |
| U1   | IC REGULATOR +5V            | 133568 |

## ③ CONTROL PCB 750886

| Ref. No. | Description                    | Part No. |
|----------|--------------------------------|----------|
| C1       | CAP MPF 0.047UF 5% 63VDC       | 064320   |
| C2       | CAP MONO .1UF 50V 20% Z5U      | 061346   |
| C3       | CAP MONO .1UF 50V 20% Z5U      | 061346   |
| C4       | CAP ELECT 3300UF 35V           | 066509   |
| C5       | CAP ELECT 3300UF 35V           | 066509   |
| C6       | CAP ELECT 100UF 25V            | 066573   |
| C7       | CAP ELECT 100UF 25V            | 066573   |
| C8       | CAP MPF 1UF 5% 63VDC           | 064337   |
| C9       | CAP MONO .1UF 50V 20% Z5U      | 061346   |
| C10      | CAP MONO .1UF 50V 20% Z5U      | 061346   |
| C11      | CAP ELECT 10UF 50V             | 066445   |
| C12      | CAP MPF 0.22UF 5% 63VDC        | 064329   |
| C13      | CAP MONO .1UF 50V 20% Z5U      | 061346   |
| C14      | CAP MONO .1UF 50V 20% Z5U      | 061346   |
| D1       | DIODE RECTIFIER                | 070175   |
| D2       | DIODE RECTIFIER                | 070175   |
| D3       | DIODE RECTIFIER                | 070175   |
| D4       | DIODE RECTIFIER                | 070175   |
| HS1      | HEATSINK TO-220                | 080021   |
| HS2      | HEATSINK TO-220                | 080021   |
|          | INSULATOR ISOSTRATE TO 220     | 084133   |
| J4       | BLADE FASTON W/FEET            | 117708   |
| J5       | BLADE FASTON W/FEET            | 117708   |
| J6       | BLADE FASTON W/FEET            | 117708   |
| J8       | CONN 18 PIN FFC                | 117908   |
| J9       | CONN MALE 5 PIN 0.1 POST ASSY  | 117216   |
| PCB1     | PC BD CONTROL                  | 129920   |
| Q1       | TRANSISTOR NPN SILICON         | 132317   |
| Q2       | TRANSISTOR NPN SILICON         | 132317   |
| Q4       | TRANSISTOR P FET 1-4PO 250 OHM | 132220   |
| Q8       | TRANSISTOR NPN SILICON         | 132317   |
| Q9       | TRANSISTOR NPN SILICON         | 132317   |
| Q12      | TRANSISTOR NPN SILICON         | 132317   |
| Q13      | TRANSISTOR NPN SILICON         | 132317   |
| R1       | RES MF 4.75K 1% 1/4W           | 144520   |
| R2       | RES MF 47.5K 1% 1/4W           | 144526   |
| R3       | RES MF 22.1K 1% 1/4W           | 144564   |
| R4       | RES POLYSWITCH RXE110          | 144671   |
| R5       | RES POLYSWITCH RXE110          | 144671   |
| R6       | RES MF 4.75K 1% 1/4W           | 144520   |
| R7       | RES MF 100K 1% 1/4W            | 144528   |
| R8       | RES MF 22.1K 1% 1/4W           | 144564   |
| R9       | RES MF 47.5K 1% 1/4W           | 144526   |
| R10      | RES MF 150K 1% 1/4W            | 144627   |
| R11      | RES MF 2.21M 1% 1/4W           | 144576   |
| R14      | RES MF 100K 1% 1/4W            | 144528   |
| R16      | RES MF 1M 1% 1/4W              | 144577   |
| R22      | RES MF 47.5K 1% 1/4W           | 144526   |
| R24      | RES MF 10K 1% 1/4W             | 144504   |
| R25      | RES MF 100K 1% 1/4W            | 144528   |
| R29      | RES MF 22.1 OHM 1% 1/4W        | 144554   |
| R28      | RES MF 2.21K 1% 1/4W           | 144584   |
| R30      | RES MF 4.75K 1% 1/4W           | 144520   |
| U1       | IC NAND SCHMIT 2-IN X 4        | 133595   |
| U2       | IC NAND SCHMIT 2-IN X 4        | 133595   |
| U3       | IC REGULATOR +15V              | 133587   |
| U4       | IC VOLTAGE REGULATOR -15V      | 133566   |
|          | SCR MS 4-40 X 1/4 PH PN BLK    | 400121   |
|          | NUT KEP 4-40 CLR               | 402001   |

# PARTS LIST (Cont'd.)

## ④ INPUT CHANNEL 1-2 PCB 750866

| Ref. No. | Description                   | Part No. |
|----------|-------------------------------|----------|
| C1       | CAP ELECT 10UF 50V            | 066445   |
| C2       | CAP MONO .1UF 50V 20% Z5U     | 061346   |
| C3       | CAP MONO .1UF 50V 20% Z5U     | 061346   |
| C4       | CAP ELECT 10UF 50V            | 066445   |
| C5       | CAP ELECT 10UF 50V            | 066445   |
| C6       | CAP MONO 47PF 200V 10% NPO    | 061340   |
| C7       | CAP MONO 47PF 200V 10% NPO    | 061340   |
| C8       | CAP MONO 47PF 200V 10% NPO    | 061340   |
| C9       | CAP ELECT 10UF 50V            | 066445   |
| C10      | CAP ELECT 10UF 50V            | 066445   |
| C11      | CAP MONO 47PF 200V 10% NPO    | 061340   |
| C12      | CAP MONO 47PF 200V 10% NPO    | 061340   |
| C13      | CAP MONO 47PF 200V 10% NPO    | 061340   |
| C14      | CAP MONO .1UF 50V 20% Z5U     | 061346   |
| C15      | CAP MONO .1UF 50V 20% Z5U     | 061346   |
| GP1      | BRACKET PCB CARD MOUNTING     | 003611   |
| J2       | CONN XLR FEM HORIZ PCB LATCH  | 117814   |
| J3       | CONN: BLACK RCA SINGLE        | 117847   |
| J4       | CONN XLR FEM HORIZ PCB LATCH  | 117814   |
| J5       | CONN: BLACK RCA SINGLE        | 117847   |
| J6       | CONN 4 PIN RA MTA100          | 117993   |
| J7       | CONN 4 PIN RA MTA100          | 117993   |
| PCB1     | PC BD INPUT CH 1-2            | 129911   |
| R1       | RES FP 10 OHM 5% 1/4W         | 137105   |
| R2       | RES FP 10 OHM 5% 1/4W         | 137105   |
| R3       | RES MF 20K 1% 1/4W            | 144524   |
| R4       | RES MF 20K 1% 1/4W            | 144524   |
| R5       | RES MF 10K 1% 1/4W            | 144504   |
| R6       | RES MF 221K 1% 1/4W           | 144629   |
| R7       | RES MF 221K 1% 1/4W           | 144629   |
| R8       | RES MF 10K 1% 1/4W            | 144504   |
| R9       | RES MF 10K 1% 1/4W            | 144504   |
| R10      | RES MF 20K 1% 1/4W            | 144524   |
| R11      | RES MF 20K 1% 1/4W            | 144524   |
| R12      | RES MF 10K 1% 1/4W            | 144504   |
| R13      | RES MF 221K 1% 1/4W           | 144629   |
| R14      | RES MF 221K 1% 1/4W           | 144629   |
| R15      | RES MF 10K 1% 1/4W            | 144504   |
| R16      | RES MF 10K 1% 1/4W            | 144504   |
| R17      | RES MF 2.21 OHM 1% 1/4W       | 144607   |
| R18      | RES MF 2.21 OHM 1% 1/4W       | 144607   |
| R19      | RES MF 2.21 OHM 1% 1/4W       | 144607   |
| R20      | RES MF 2.21 OHM 1% 1/4W       | 144607   |
| U1       | IC DUAL OPERATIONAL AMPLIFIER | 133578   |

## ⑤ INPUT CHANNEL 3 PCB 750887

|     |                            |        |
|-----|----------------------------|--------|
| C1  | CAP ELECT 10UF 50V         | 066445 |
| C2  | CAP MONO .1UF 50V 20% Z5U  | 061346 |
| C3  | CAP MONO .1UF 50V 20% Z5U  | 061346 |
| C4  | CAP MONO .1UF 50V 20% Z5U  | 061346 |
| C5  | CAP ELECT 10UF 50V         | 066445 |
| C6  | CAP ELECT 10UF 50V         | 066445 |
| C7  | CAP MONO 47PF 200V 10% NPO | 061340 |
| C8  | CAP MONO 47PF 200V 10% NPO | 061340 |
| C9  | CAP MONO 47PF 200V 10% NPO | 061340 |
|     | RIVET 1/8X3/16 STEEL       | 108011 |
| GP1 | BRACKET PCB CARD MOUNTING  | 003611 |
| J1  | CONN 4 PIN RA MTA100       | 117993 |
| J2  | CONN 5 PIN RA MTA100       | 117995 |

| Ref. No. | Description                   | Part No. |
|----------|-------------------------------|----------|
| J3       | CONN XLR FEM HORIZ PCB LATCH  | 117814   |
| J4       | CONN: BLACK RCA SINGLE        | 117847   |
| J5       | JACK HEADPHONE DUAL BLACK 1/8 | 117825   |
| PCB1     | PC BD INPUT CH3               | 129921   |
| R1       | RES FP 10 OHM 5% 1/4W         | 137105   |
| R2       | RES FP 10 OHM 5% 1/4W         | 137105   |
| R3       | RES MF 20K 1% 1/4W            | 144524   |
| R4       | RES MF 20K 1% 1/4W            | 144524   |
| R5       | RES MF 10K 1% 1/4W            | 144504   |
| R6       | RES MF 221K 1% 1/4W           | 144629   |
| R7       | RES MF 221K 1% 1/4W           | 144629   |
| R8       | RES MF 10K 1% 1/4W            | 144504   |
| R9       | RES MF 10K 1% 1/4W            | 144504   |
| R10      | RES MF 100 OHM 1% 1/4W        | 144568   |
| R11      | RES MF 2.21 OHM 1% 1/4W       | 144607   |
| R12      | RES MF 2.21 OHM 1% 1/4W       | 144607   |
| U1       | IC DUAL OPERATIONAL AMPLIFIER | 133578   |

## ⑥ CAPACITOR PCB 750986

|      |                         |        |
|------|-------------------------|--------|
| C1   | CAP ELECT 27000UF 100V  | 066596 |
| C2   | CAP ELECT 27000UF 100V  | 066596 |
| C3   | CAP ELECT 27000UF 100V  | 066596 |
| C4   | CAP ELECT 27000UF 100V  | 066596 |
| J1   | CONN HEADER 2 PIN 0.156 | 117404 |
| J2   | CONN HEADER 2 PIN 0.156 | 117404 |
| J3   | CONN HEADER 2 PIN 0.156 | 117404 |
| J4   | BLADE FASTON W/FEET     | 117708 |
| J5   | BLADE FASTON W/FEET     | 117708 |
| J6   | BLADE FASTON W/FEET     | 117708 |
| J7   | BLADE FASTON W/FEET     | 117708 |
| PCB1 | PC BD CAPACITOR         | 129978 |

## ⑦ HEATSINK PCB 750868

|     |                               |        |
|-----|-------------------------------|--------|
| C1  | CAP POLYPROP 0.15UF 10% 275V  | 064464 |
| C2  | CAP POLYPROP 0.047UF 10% 275V | 064466 |
| C3  | CAP ELECT 10UF 50V            | 066445 |
| C4  | CAP ELECT 10UF 50V            | 066445 |
| C5  | CAP MONO .1UF 50V 20% Z5U     | 061346 |
| C6  | CAP MONO .1UF 50V 20% Z5U     | 061346 |
| C7  | CAP MPF 0.0068UF 5% 63VDC     | 064310 |
| C8  | CAP ELECT 22UF 100V           | 066574 |
| C9  | CAP ELECT 22UF 25V            | 066507 |
| C10 | CAP ELECT 10UF 50V            | 066445 |
| C11 | CAP MONO 100PF 100V 10% NPO   | 061341 |
| C12 | CAP MONO 22PF 200V 10% NPO    | 061339 |
| C13 | CAP ELECT 22UF 100V           | 066574 |
| C14 | CAP MONO 1PF 50V NPO          | 061362 |
| C15 | CAP ELECT 10UF 100VDC         | 066462 |
| C16 | CAP ELECT 10UF 100VDC         | 066462 |
| C17 | CAP MONO 100PF 100V 10% NPO   | 061341 |
| C18 | CAP MONO 100PF 100V 10% NPO   | 061341 |
| C19 | CAP POLYPROP 0.22UF 400V 20%  | 064438 |
| C20 | CAP POLYPROP 0.22UF 400V 20%  | 064438 |
| C21 | CAP MONO .01UF 50V 20% X7R    | 061345 |
| C22 | CAP MONO .01UF 50V 20% X7R    | 061345 |
| C23 | CAP ELECT 47UF 35V            | 066446 |
| C24 | CAP ELECT 47UF 35V            | 066446 |
| C25 | CAP MONO .1UF 50V 20% Z5U     | 061346 |

# PARTS LIST (Cont'd.)

## ⑦ HEATSINK PCB 750868 (Cont'd.)

| Ref. No. | Description                   | Part No. | Ref. No. | Description                    | Part No. |
|----------|-------------------------------|----------|----------|--------------------------------|----------|
| C26      | CAP MONO 100PF 100V 10% NPO   | 061341   | R12      | RES MF 40.2K 1% 1/4W           | 144525   |
| C27      | CAP MONO 100PF 100V 10% NPO   | 061341   | R13      | RES MF 267K 1% 1/4W            | 144532   |
| C28      | CAP MONO 100PF 100V 10% NPO   | 061341   | R14      | RES MF 267K 1% 1/4W            | 144532   |
| C29      | CAP MONO .1UF 50V 20% Z5U     | 061346   | R15      | RES MF 499 OHM 1% 1/4W         | 144510   |
| C30      | CAP ELECT 100UF 25V           | 066573   | R16      | RES MF 365 OHM 1% 1/4W         | 144505   |
| D1       | DIODE SILICON                 | 070174   | R17      | RES MF 20K 1% 1/4W             | 144524   |
| D2       | DIODE SILICON                 | 070174   | R18      | RES MF 200K 1% 1/4W            | 144531   |
| D3       | DIODE SILICON                 | 070174   | R19      | RES MF 475 OHM 1% 1/4W         | 144509   |
| D4       | DIODE SILICON                 | 070174   | R20      | RES MF 6.49K .5% 1/4W          | 144617   |
| D5       | DIODE SILICON                 | 070174   | R21      | RES MF 200K 1% 1/4W            | 144531   |
| D6       | DIODE SILICON                 | 070174   | R22      | RES MF 4.75K 1% 1/4W           | 144520   |
| GP1      | STANDOFF 6-32 X 1/4 MOUNT PCB | 112130   | R23      | RES MF 10M 1% 1/4W             | 144575   |
| GP2      | STANDOFF 6-32 X 1/4 MOUNT PCB | 112130   | R24      | RES MF 47.5K 1% 1/4W           | 144526   |
| GP3      | STANDOFF 6-32 X 1/4 MOUNT PCB | 112130   | R25      | RES MF 475 OHM 1% 1/4W         | 144509   |
| GP4      | STANDOFF 6-32 X 1/4 MOUNT PCB | 112130   | R26      | RES MF 47.5K 1% 1/4W           | 144526   |
| J1       | CONN 4 PIN RA MTA100          | 117993   | R27      | RES MF 475 OHM 1% 1/4W         | 144509   |
| J2       | CONN 4 PIN RA MTA100          | 117993   | R28      | RES MET OX 47 OHM 5% 1/2W      | 137102   |
| J3       | CONN 6 PIN RA MTA100          | 117994   | R29      | RES MET OX 47 OHM 5% 1/2W      | 137102   |
| J4       | BLADE FASTON W/FEET           | 117708   | R30      | RES MF 806 OHM 1% 1/4W         | 144512   |
| J5       | CONN HEADER 2 PIN 0.156       | 117404   | R31      | RES MF 806 OHM 1% 1/4W         | 144512   |
| J6       | BLADE FASTON W/FEET           | 117708   | R32      | RES MF 3.32K 1% 1/4W           | 144518   |
| J7       | BLADE FASTON W/FEET           | 117708   | R33      | RES MF 221 OHM 1% 1/4W         | 144559   |
| J8       | CONN 2 PIN MALE               | 117213   | R34      | RES MF 221 OHM 1% 1/4W         | 144559   |
| PCB1     | PC BD HEATSINK                | 129944   | R35      | RES MF 3.32K 1% 1/4W           | 144518   |
| Q1       | TRANSISTOR NPN                | 132254   | R36      | RES MF 221 OHM 1% 1/4W         | 144559   |
| Q2       | TRANSISTOR N JFET             | 132318   | R37      | RES MF 221 OHM 1% 1/4W         | 144559   |
| Q3       | TRANSISTOR PNP SILICON        | 132304   | R38      | RES MF 267K 1% 1/4W            | 144532   |
| Q4       | TRANSISTOR PNP SILICON        | 132304   | R39      | RES MF 267K 1% 1/4W            | 144532   |
| Q5       | TRANSISTOR N JFET             | 132319   | R40      | RES MF 324 OHM 1% 1/4W         | 144597   |
| Q6       | TRANSISTOR N JFET             | 132319   | R41      | RES MF 324 OHM 1% 1/4W         | 144597   |
| Q7       | TRANSISTOR NPN                | 132254   | R42      | RES MF 2.21 OHM 1% 1/4W        | 144607   |
| Q8       | TRANSISTOR PNP 120V           | 132255   | R43      | RES MF 2.21 OHM 1% 1/4W        | 144607   |
| Q9       | TRANSISTOR NPN                | 132254   | R44      | RES MF 365 OHM 1% 1/4W         | 144505   |
| Q10      | TRANSISTOR PNP 120V           | 132255   | R45      | RES MF 365 OHM 1% 1/4W         | 144505   |
| Q11      | TRANSISTOR NPN                | 132254   | R46      | RES MF 22.1K 1% 1/4W           | 144564   |
| Q12      | TRANSISTOR PNP 120V           | 132255   | R47      | RES MF 22.1K 1% 1/4W           | 144564   |
| Q13      | TRANSISTOR NPN SILICON        | 132317   | R48      | RES MET OX 680 OHM 5% 1/2W     | 137099   |
| Q14      | TRANSISTOR PNP SILICON        | 132304   | R49      | RES MET OX 680 OHM 5% 1/2W     | 137099   |
| Q15      | TRANSISTOR NPN SILICON        | 132317   | R50      | RES MET OX 1.8K 5% 1/2W        | 137100   |
| Q16      | TRANSISTOR PNP SILICON        | 132304   | R51      | RES MF 1.5K 1% 1/4W            | 144539   |
| Q17      | TRANSISTOR PNP                | 132343   | R52      | POT TRIM 500 OHM 10% HORIZ ADJ | 134508   |
| Q18      | TRANSISTOR NPN                | 132342   | R53      | RES MET OX 1.8K 5% 1/2W        | 137100   |
| Q19      | TRANSISTOR NPN SILICON        | 132317   | R54      | RES MET OX 47 OHM 5% 1/2W      | 137102   |
| Q20      | TRANSISTOR PNP SILICON        | 132304   | R55      | RES WW DUAL .47 OHM 5% 5W      | 139252   |
| Q21      | TRANSISTOR NPN                | 132342   | R56      | RES WW DUAL .47 OHM 5% 5W      | 139252   |
| Q22      | TRANSISTOR PNP                | 132343   | R57      | RES WW DUAL .47 OHM 5% 5W      | 139252   |
| Q37      | TRANSISTOR NPN SILICON        | 132317   | R58      | RES WW DUAL .47 OHM 5% 5W      | 139252   |
| Q38      | TRANSISTOR NPN SILICON        | 132317   | R59      | RES WW DUAL .47 OHM 5% 5W      | 139252   |
| R1       | RES WW 2 OHM 10% 5W W/FEET    | 139253   | R60      | RES WW DUAL .47 OHM 5% 5W      | 139252   |
| R2       | RES MF 100 OHM 1% 1/4W        | 144568   | R61      | RES WW DUAL .47 OHM 5% 5W      | 139252   |
| R3       | RES MF 100 OHM 1% 1/4W        | 144568   | R62      | RES WW DUAL .47 OHM 5% 5W      | 139252   |
| R4       | RES WW 4 OHM 5% 5W            | 139248   | R63      | RES WW DUAL .47 OHM 5% 5W      | 139252   |
| R5       | RES MF 3.32K 1% 1/4W          | 144518   | R64      | RES MF 1.1K 1% 1/4W            | 144514   |
| R6       | RES MF 10K 1% 1/4W            | 144504   | R65      | RES MF 1.1K 1% 1/4W            | 144514   |
| R7       | RES MF 221 OHM 1% 1/4W        | 144559   | R66      | RES MF 267K 1% 1/4W            | 144532   |
| R8       | RES MF 4.99K 1% 1/4W          | 144521   | R67      | RES MF 100K 1% 1/4W            | 144528   |
| R9       | RES MF 10K 1% 1/4W            | 144504   | RT1      | THERMISTOR 100                 | 144279   |
| R10      | RES MF 475 OHM 1% 1/4W        | 144509   | U1       | IC DUAL OPERATIONAL AMPLIFIER  | 133578   |
| R11      | RES MF 10K 1% 1/4W            | 144504   |          |                                |          |

# PARTS LIST (Cont'd.)

## 7 HEATSINK ASSY PCB 750881 (Cont'd.)

| Ref. No. | Description                | Part No. |
|----------|----------------------------|----------|
|          | EXTRUSION COMPLETE         | 018920   |
|          | ISOTRATE                   | 084183   |
|          | ISOTRATE                   | 084194   |
| Q23      | TRANSITOR NPN              | 132324   |
| Q24      | TRANSISTOR PNP             | 132323   |
| Q25      | TRANSISTOR NPN THERMALTRAK | 132330   |
| (Q25)    | CLIP ANGLE RIGHT           | 414141   |
| Q26      | TRANSISTOR PNP THERMALTRAK | 132331   |
| Q27      | TRANSISTOR NPN THERMALTRAK | 132330   |
| Q28      | TRANSISTOR PNP THERMALTRAK | 132331   |
| Q29      | TRANSISTOR NPN THERMALTRAK | 132330   |
| Q30      | TRANSISTOR PNP THERMALTRAK | 132331   |
| Q31      | TRANSISTOR NPN THERMALTRAK | 132330   |
| Q32      | TRANSISTOR PNP THERMALTRAK | 132331   |
| Q33      | TRANSISTOR NPN THERMALTRAK | 132330   |
| Q34      | TRANSISTOR PNP THERMALTRAK | 132331   |
| Q35      | TRANSISTOR NPN THERMALTRAK | 132330   |
| Q36      | TRANSISTOR PNP THERMALTRAK | 132331   |
| (Q36)    | CLIP ANGLE RIGHT           | 414141   |

## 8 TERMINAL PCB 750890

| Ref. No. | Description         | Part No. |
|----------|---------------------|----------|
| J1       | BLADE FASTON W/FEET | 117708   |
| J2       | BLADE FASTON W/FEET | 117708   |
| J3       | BLADE FASTON W/FEET | 117708   |
| J4       | BLADE FASTON W/FEET | 117708   |
| J5       | BLADE FASTON W/FEET | 117708   |
| J6       | CONN 4 PIN          | 117215   |
|          | PC BD TERMINAL      | 129924   |

## 9 DISPLAY PCB 750869

|     |                           |        |
|-----|---------------------------|--------|
| C1  | CAP ELECT 10UF 50V        | 066445 |
| C2  | CAP ELECT 220UF 25V       | 066507 |
| C3  | CAP MONO .1UF 50V 20% Z5U | 061346 |
| C4  | CAP ELECT 10UF 50V        | 066445 |
| C5  | CAP ELECT 10UF 50V        | 066445 |
| C6  | CAP ELECT 10UF 50V        | 066445 |
| C7  | CAP MPF 0.1UF 5% 63VDC    | 064325 |
| C8  | CAP MPF 0.1UF 5% 63VDC    | 064325 |
| C9  | CAP MPF 0.1UF 5% 63VDC    | 064325 |
| C10 | CAP MPF 0.47UF 5% 100VDC  | 064442 |
| C11 | CAP MPF 0.47UF 5% 100VDC  | 064442 |
| C12 | CAP MPF 0.47UF 5% 100VDC  | 064442 |
| D1  | DIODE SILICON             | 070174 |
| D2  | DIODE SILICON             | 070174 |
| D3  | DIODE SILICON             | 070174 |
| D4  | DIODE SILICON             | 070174 |
| D5  | DIODE SILICON             | 070174 |
| D6  | DIODE SILICON             | 070174 |
| D7  | DIODE SILICON             | 070174 |
| D8  | DIODE SILICON             | 070174 |
| D9  | DIODE SILICON             | 070174 |
| D10 | DIODE SILICON             | 070174 |
| D11 | DIODE SILICON             | 070174 |
| D12 | DIODE SILICON             | 070174 |
| D13 | DIODE SILICON             | 070174 |
| D14 | DIODE SILICON             | 070174 |
| D15 | DIODE SILICON             | 070174 |

| Ref. No. | Description                   | Part No. |
|----------|-------------------------------|----------|
| D16      | DIODE SILICON                 | 070174   |
| D17      | DIODE SILICON                 | 070174   |
| D18      | DIODE SILICON                 | 070174   |
| DS1      | LED RED 5MM ROUND             | 058187   |
| (DS1)    | LED SPACER .220 LENGTH        | 163001   |
| DS2      | LED AMBER                     | 058133   |
| (DS2)    | LED SPACER .220 LENGTH        | 163001   |
| DS3      | LED AMBER                     | 058133   |
| (DS3)    | LED SPACER .220 LENGTH        | 163001   |
| DS4      | LED AMBER                     | 058133   |
| (DS4)    | LED SPACER .220 LENGTH        | 163001   |
| DS5      | LED GREEN 5MM 30 DEG          | 058190   |
| (DS5)    | SPACER LED                    | 112108   |
| DS6      | LED GREEN 5MM 30 DEG          | 058190   |
| (DS6)    | SPACER LED                    | 112108   |
| DS7      | LED GREEN 5MM 30 DEG          | 058190   |
| (DS7)    | SPACER LED                    | 112108   |
| J1       | CONN MALE 6 POS FRICTION LOCK | 117218   |
| J2       | CONN MALE 6 POS FRICTION LOCK | 117218   |
| J3       | CONN MALE 6 POS FRICTION LOCK | 117218   |
| J4       | CONN 3 POS MALE MTS100 NORMAL | 117214   |
| J5       | CONN 18 PIN FFC               | 117908   |
| J6       | CONN 12 PIN FFC               | 117907   |
| J7       | CONN 3 POS MALE MTS100 NORMAL | 117214   |
| J8       | CONN 18 PIN FFC               | 117908   |
| J9       | CONN 18 PIN FFC               | 117908   |
| J10      | CONN 12 PIN FFC               | 117907   |
| J11      | CONN 12 PIN FFC               | 117907   |
| J12      | CONN 12 PIN FFC               | 117907   |
| J13      | HEADER 2 PIN LATCHING         | 117766   |
| J14      | HEADER 2 PIN LATCHING         | 117766   |
| J15      | HEADER 2 PIN LATCHING         | 117766   |
| PCB1     | PC BD DISPLAY                 | 129914   |
| Q1       | TRANSISTOR PNP SILICON        | 132304   |
| Q2       | TRANSISTOR NPN SILICON        | 132317   |
| Q3       | TRANSISTOR PNP SILICON        | 132304   |
| Q4       | TRANSISTOR PNP SILICON        | 132304   |
| Q5       | TRANSISTOR PNP SILICON        | 132304   |
| Q6       | TRANSISTOR NPN SILICON        | 132317   |
| Q7       | TRANSISTOR PNP SILICON        | 132304   |
| Q8       | TRANSISTOR PNP SILICON        | 132304   |
| Q9       | TRANSISTOR PNP SILICON        | 132304   |
| Q10      | TRANSISTOR NPN SILICON        | 132317   |
| Q11      | TRANSISTOR NPN SILICON        | 132317   |
| Q12      | TRANSISTOR NPN SILICON        | 132317   |
| Q13      | TRANSISTOR NPN SILICON        | 132317   |
| Q14      | TRANSISTOR NPN SILICON        | 132317   |
| Q15      | TRANSISTOR NPN SILICON        | 132317   |
| Q16      | TRANSISTOR NPN SILICON        | 132317   |
| Q17      | TRANSISTOR NPN SILICON        | 132317   |
| Q18      | TRANSISTOR NPN SILICON        | 132317   |
| Q19      | TRANSISTOR NPN SILICON        | 132317   |
| Q20      | TRANSISTOR N JFET             | 132318   |
| Q21      | TRANSISTOR N JFET             | 132318   |
| Q22      | TRANSISTOR N JFET             | 132318   |
| R1       | RES MF 2.21K 1% 1/4W          | 144584   |
| R2       | RES MF 33.2K 1% 1/4W          | 144694   |
| R3       | RES MF 681 OHM 1% 1/4W        | 144567   |
| R4       | RES MF 33.2K 1% 1/4W          | 144694   |



# PARTS LIST (Cont'd.)

## 9 DISPLAY PCB 750869

| 10 Ref. No. | Description                    | Part No. |
|-------------|--------------------------------|----------|
| R5          | RES MF 681 OHM 1% 1/4W         | 144567   |
| R6          | RES MF 33.2K 1% 1/4W           | 144694   |
| R7          | RES MF 681 OHM 1% 1/4W         | 144567   |
| R8          | RES MF 332 OHM 1% 1/4W         | 144646   |
| R9          | RES MF 10K 1% 1/4W             | 144504   |
| R10         | RES MF 33.2K 1% 1/4W           | 144694   |
| R11         | RES MF 12.1K 1% 1/4W           | 144550   |
| R12         | RES MF 12.1K 1% 1/4W           | 144550   |
| R13         | RES MF 182 OHM 1% 1/4W         | 144579   |
| R14         | RES MF 182 OHM 1% 1/4W         | 144579   |
| R15         | RES MF 182 OHM 1% 1/4W         | 144579   |
| R16         | RES MF 182 OHM 1% 1/4W         | 144579   |
| R17         | RES MF 182 OHM 1% 1/4W         | 144579   |
| R18         | RES MF 182 OHM 1% 1/4W         | 144579   |
| R19         | RES MF 12.1K 1% 1/4W           | 144550   |
| R20         | RES MF 2.21K 1% 1/4W           | 144584   |
| R21         | RES MF 4.75K 1% 1/4W           | 144520   |
| R22         | RES MF 1.5K 1% 1/4W            | 144539   |
| R23         | RES MF 806 OHM 1% 1/4W         | 144512   |
| R24         | POT TRIM 500 OHM 10% HORIZ ADJ | 134508   |
| R25         | POT TRIM 500 OHM 10% HORIZ ADJ | 134508   |
| R26         | POT TRIM 500 OHM 10% HORIZ ADJ | 134508   |
| R27         | RES MF 1K 1% 1/4W              | 144513   |
| R28         | POT TRIM 200 OHM 20% HORIZ AD  | 134506   |
| R29         | POT TRIM 200 OHM 20% HORIZ AD  | 134506   |
| R30         | POT TRIM 200 OHM 20% HORIZ AD  | 134506   |
| R31         | RES MF 20K 1% 1/4W             | 144524   |
| R32         | RES MF 4.99K 1% 1/4W           | 144521   |
| R33         | RES MF 47.5 OHM 1% 1/4W        | 144642   |
| R34         | RES MF 20K 1% 1/4W             | 144524   |
| R35         | RES MF 20K 1% 1/4W             | 144524   |
| R36         | RES MF 20K 1% 1/4W             | 144524   |
| R37         | RES MF 150K 1% 1/4W            | 144627   |
| R38         | RES MF 150K 1% 1/4W            | 144627   |
| R39         | RES MF 150K 1% 1/4W            | 144627   |
| R40         | RES MF 20K 1% 1/4W             | 144524   |
| R41         | RES MF 20K 1% 1/4W             | 144524   |
| R42         | RES MF 20K 1% 1/4W             | 144524   |
| R43         | RES MF 221K 1% 1/4W            | 144629   |
| R44         | RES MF 221K 1% 1/4W            | 144629   |

| Ref. No. | Description             | Part No. |
|----------|-------------------------|----------|
| R45      | RES MF 221K 1% 1/4W     | 144629   |
| R46      | RES MF 221 OHM 1% 1/4W  | 144559   |
| R47      | RES MF 221 OHM 1% 1/4W  | 144559   |
| R48      | RES MF 221 OHM 1% 1/4W  | 144559   |
| R49      | RES MF 475K 1% 1/4W     | 144604   |
| R50      | RES MF 475K 1% 1/4W     | 144604   |
| R51      | RES MF 475K 1% 1/4W     | 144604   |
| R52      | RES MF 2.21K 1% 1/4W    | 144584   |
| R53      | RES MF 2.21K 1% 1/4W    | 144584   |
| R54      | RES MF 2.21K 1% 1/4W    | 144584   |
| R55      | RES MF 2.21M 1% 1/4W    | 144576   |
| R56      | RES MF 10M 1% 1/4W      | 144575   |
| R57      | POT TRIM 100K OHM 20%   | 134504   |
| R58      | POT TRIM 100K OHM 20%   | 134504   |
| R59      | POT TRIM 100K OHM 20%   | 134504   |
| R60      | RES MF 681 OHM 1% 1/4W  | 144567   |
| U1       | IC QUAD OP AMP TLC074CN | 133419   |
| U2       | IC QUAD OP AMP TLC074CN | 133419   |

## 11 METER LIGHT PCB 750845

|      |                         |        |
|------|-------------------------|--------|
| D1   | LED RGB SURFACE MOUNT   | 058178 |
| D2   | LED RGB SURFACE MOUNT   | 058178 |
| D3   | LED RGB SURFACE MOUNT   | 058178 |
| D4   | LED RGB SURFACE MOUNT   | 058178 |
| D5   | LED RGB SURFACE MOUNT   | 058178 |
| D6   | LED RGB SURFACE MOUNT   | 058178 |
| J1   | CONN 12 PIN FFC SMT RA  | 117990 |
| PCB1 | PC BD METER LIGHT       | 129899 |
| R1   | RES SMD0805 681 1/8W 1% | 145002 |
| R2   | RES SMD0805 221 1/8W 1% | 145001 |
| R3   | RES SMD0805 681 1/8W 1% | 145002 |
| R4   | RES SMD0805 221 1/8W 1% | 145001 |
| R5   | RES SMD0805 681 1/8W 1% | 145002 |
| R6   | RES SMD0805 221 1/8W 1% | 145001 |
| R7   | RES SMD0805 681 1/8W 1% | 145002 |
| R8   | RES SMD0805 221 1/8W 1% | 145001 |
| R9   | RES SMD0805 681 1/8W 1% | 145002 |
| R10  | RES SMD0805 221 1/8W 1% | 145001 |
| R11  | RES SMD0805 681 1/8W 1% | 145002 |
| R12  | RES SMD0805 221 1/8W 1% | 145001 |

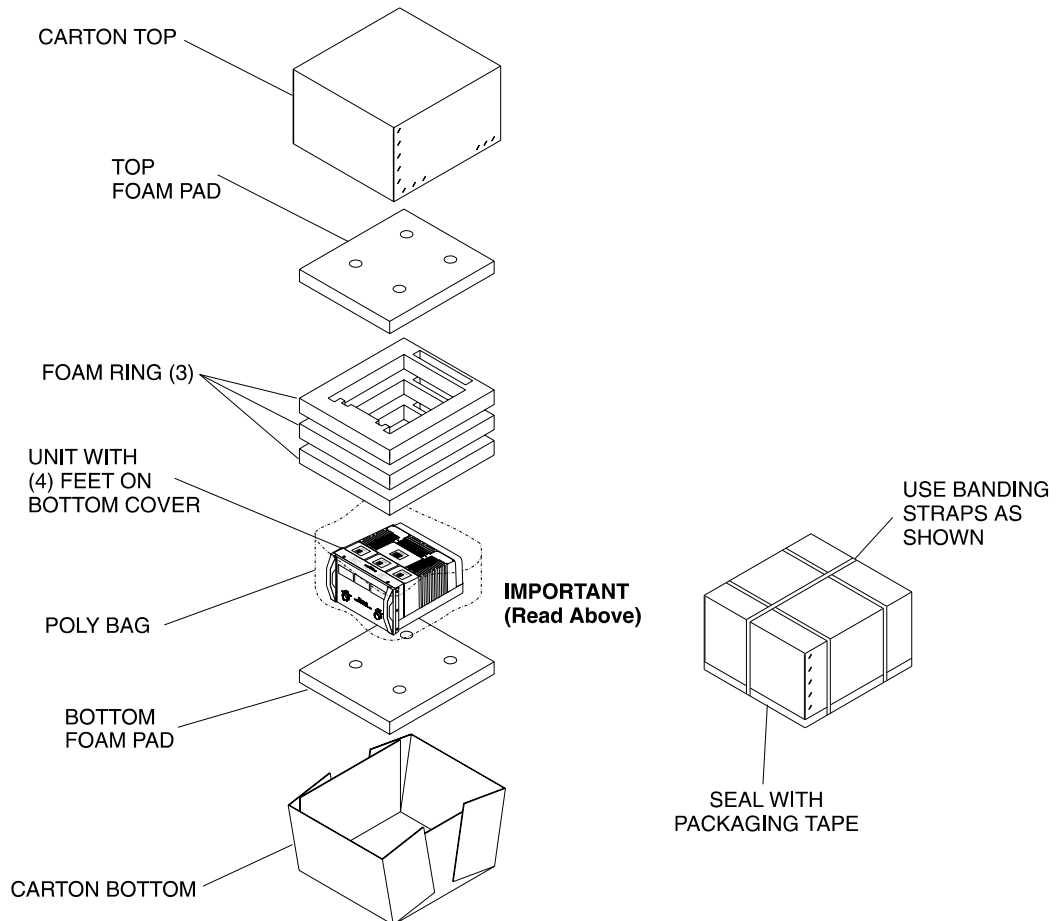
# *NOTES*

# REPACKING INSTRUCTIONS

In the event it is necessary to repack the equipment for shipment, the equipment must be packed exactly as shown below. It is very important that the four plastic feet are attached to the bottom of the equipment. Four 1/4 - 20x2-1/4 inch screws and washers must be used to fasten the unit securely to the bottom pad and wood skid. This will ensure the proper equipment location on the bottom pad. Failure to do this will result in shipping damage.

Use the original shipping carton and interior parts only if they are all in good serviceable condition. If a shipping carton or any of the interior part(s) are needed, please call or write Customer Service Department of McIntosh Laboratory. Refer to page 3. Please see the Part List for the correct part numbers.

| Quantity | Part Number | Description               |
|----------|-------------|---------------------------|
| 1        | 034105      | Shipping carton top       |
| 1        | 034104      | Shipping carton bottom    |
| 2        | 034439      | Foam Pad (top and bottom) |
| 3        | 034441      | Foam Ring                 |
| 4        | 018445      | Feet                      |



# MC303

## POWER AMPLIFIER

SERIAL NO. ZH1001 And Above



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