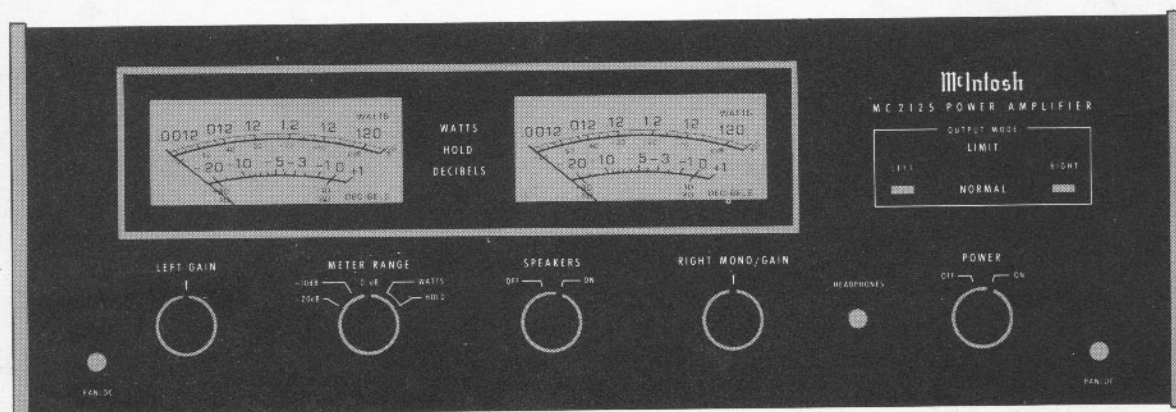


McIntosh

MC 2125 POWER AMPLIFIER



SERVICE INFORMATION

STARTING WITH SERIAL NO. AZ1001

McINTOSH LABORATORY INC. BINGHAMTON, NEW YORK 13903

038-886

PERFORMANCE

McIntosh audio power ratings are in accordance with the Federal Trade Commission Regulation of November 4, 1974 concerning power output claims for amplifiers used in home entertainment products.

POWER OUTPUT

STEREO: 120 watts minimum sine wave continuous average power output, per channel, both channels operating into 2 ohms, 4 ohms, 8 ohms, or 16 ohms load impedance, which is:

15.5 volts RMS across 2 ohms
21.9 volts RMS across 4 ohms
31.0 volts RMS across 8 ohms
43.8 volts RMS across 16 ohms

MONO: 240 watts minimum sine wave continuous average power output into 1 ohm, 2 ohms, 4 ohms, or 8 ohms load impedance, which is:

15.5 volts RMS across 1 ohm
21.9 volts RMS across 2 ohms
31.0 volts RMS across 4 ohms
43.8 volts RMS across 8 ohms

OUTPUT LOAD IMPEDANCE

STEREO: 2 ohms, 4 ohms, 8 ohms, and 16 ohms; separate terminals are provided for each output.

MONO: 1 ohm, 2 ohms, 4 ohms, and 8 ohms; obtained by connecting together appropriate terminals of both channels.

RATED POWER BAND

20 Hz to 20,000 Hz

TOTAL HARMONIC DISTORTION

STEREO: 0.1% maximum harmonic distortion at any power level from 150 milliwatts to 120 watts per channel from 20 Hz to 20,000 Hz, both channels operating

MONO: 0.1% maximum harmonic distortion at any power level from 150 milliwatts to 240 watts from 20 Hz to 20,000 Hz

INTERMODULATION DISTORTION

STEREO: 0.1% maximum if instantaneous peak power output is 240 watts or less per channel with both channels operating for any combination of frequencies, 20 Hz to 20,000 Hz

MONO: 0.1% maximum if instantaneous peak power output is 480 watts or less for any combination of frequencies, 20 Hz to 20,000 Hz

FREQUENCY RESPONSE

(at one watt output)

20 Hz to 20,000 Hz, +0 -0.25 dB
10 Hz to 100,000 Hz, +0 -3.0 dB

NOISE AND HUM

95dB below rated output

RATINGS

OUTPUT VOLTAGES

25 volts for distribution lines

DAMPING FACTOR

STEREO: 16 at 2 ohms output, 50 at 4 ohms output, 20 at 8 ohms output, 14 at 16 ohms output

MONO: 16 at 1 ohm, 50 at 2 ohms, 20 at 4 ohms, and 14 at 8 ohms output

INPUT IMPEDANCE

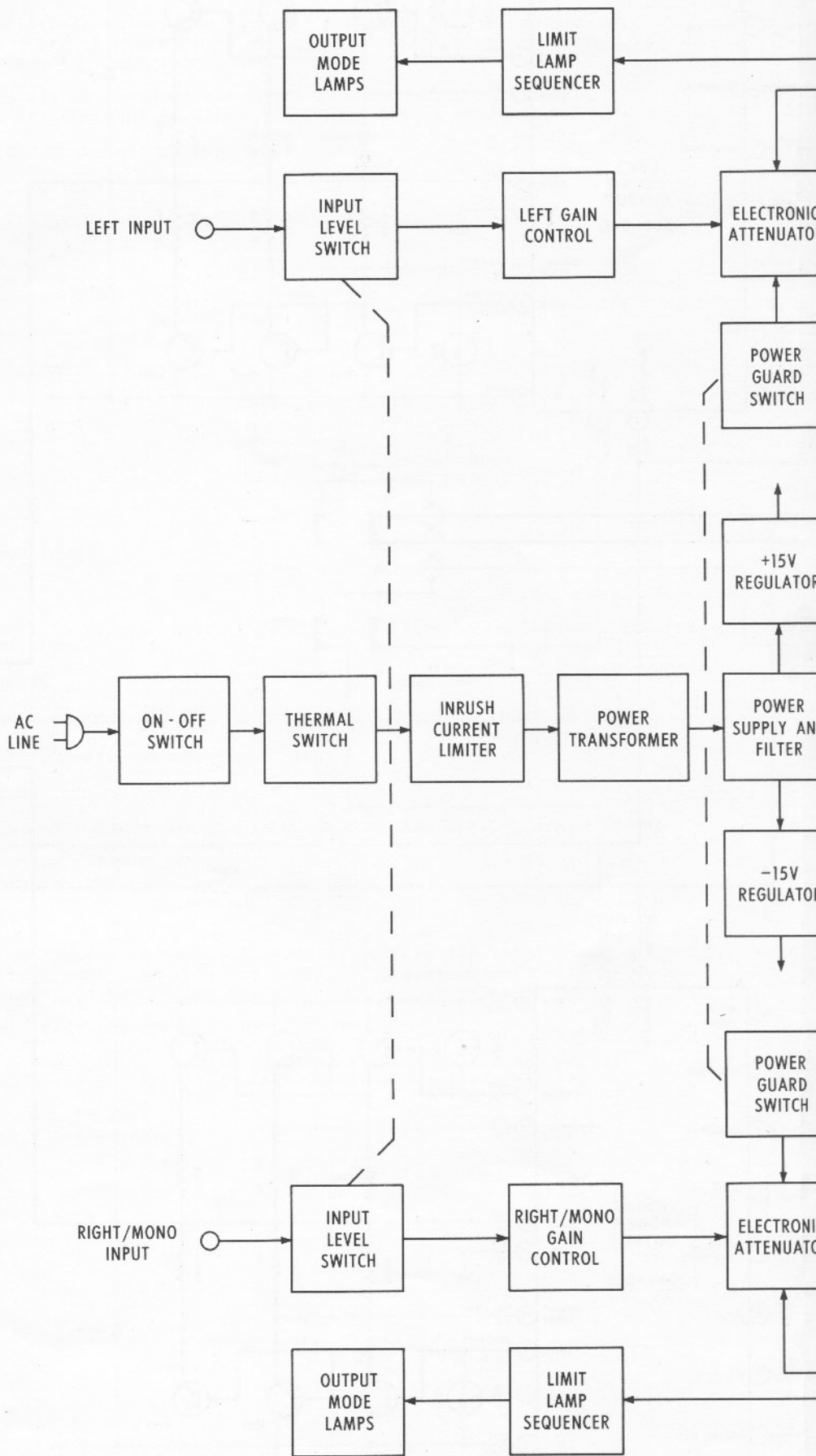
100,000 ohms

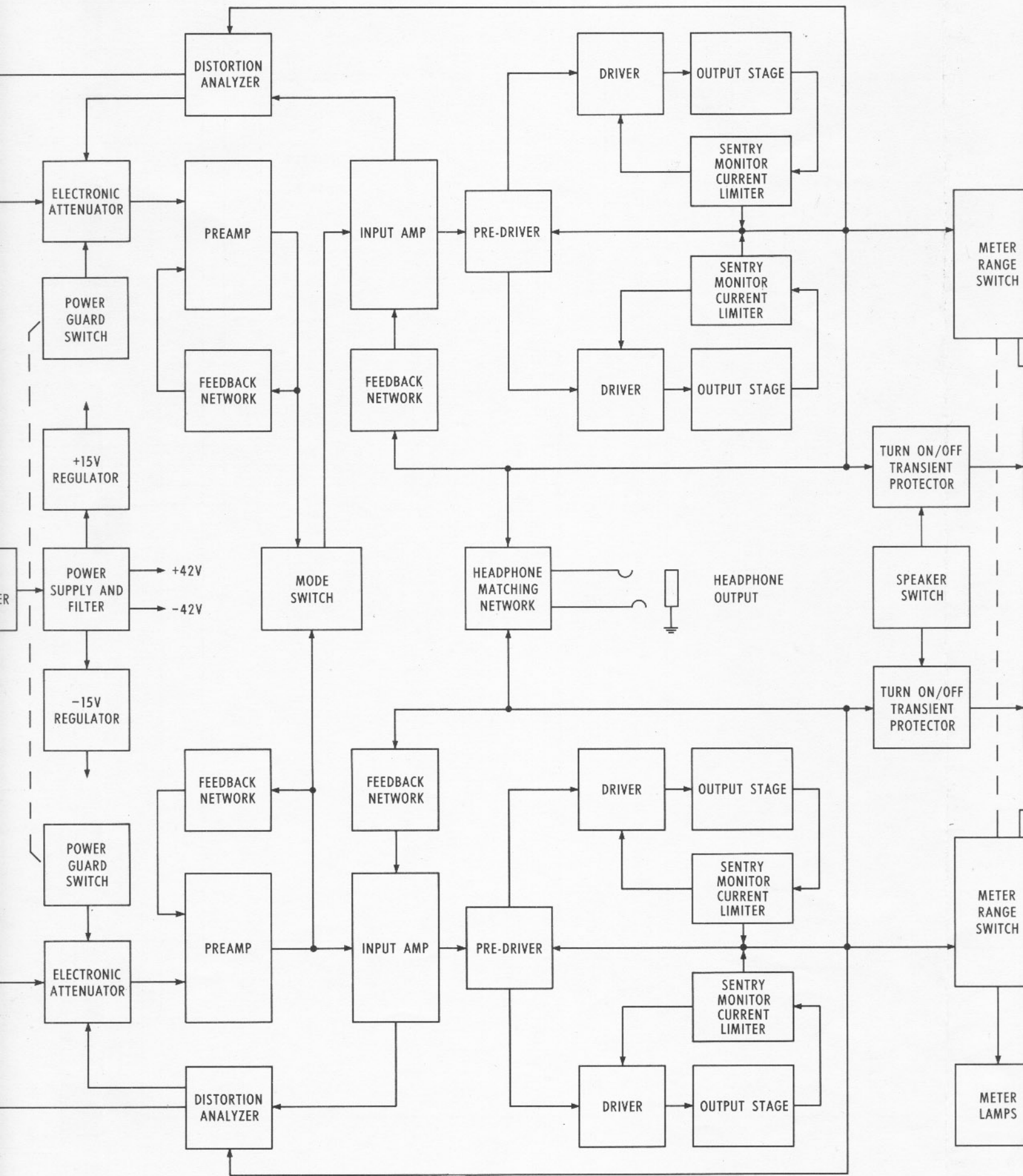
INPUT SENSITIVITY

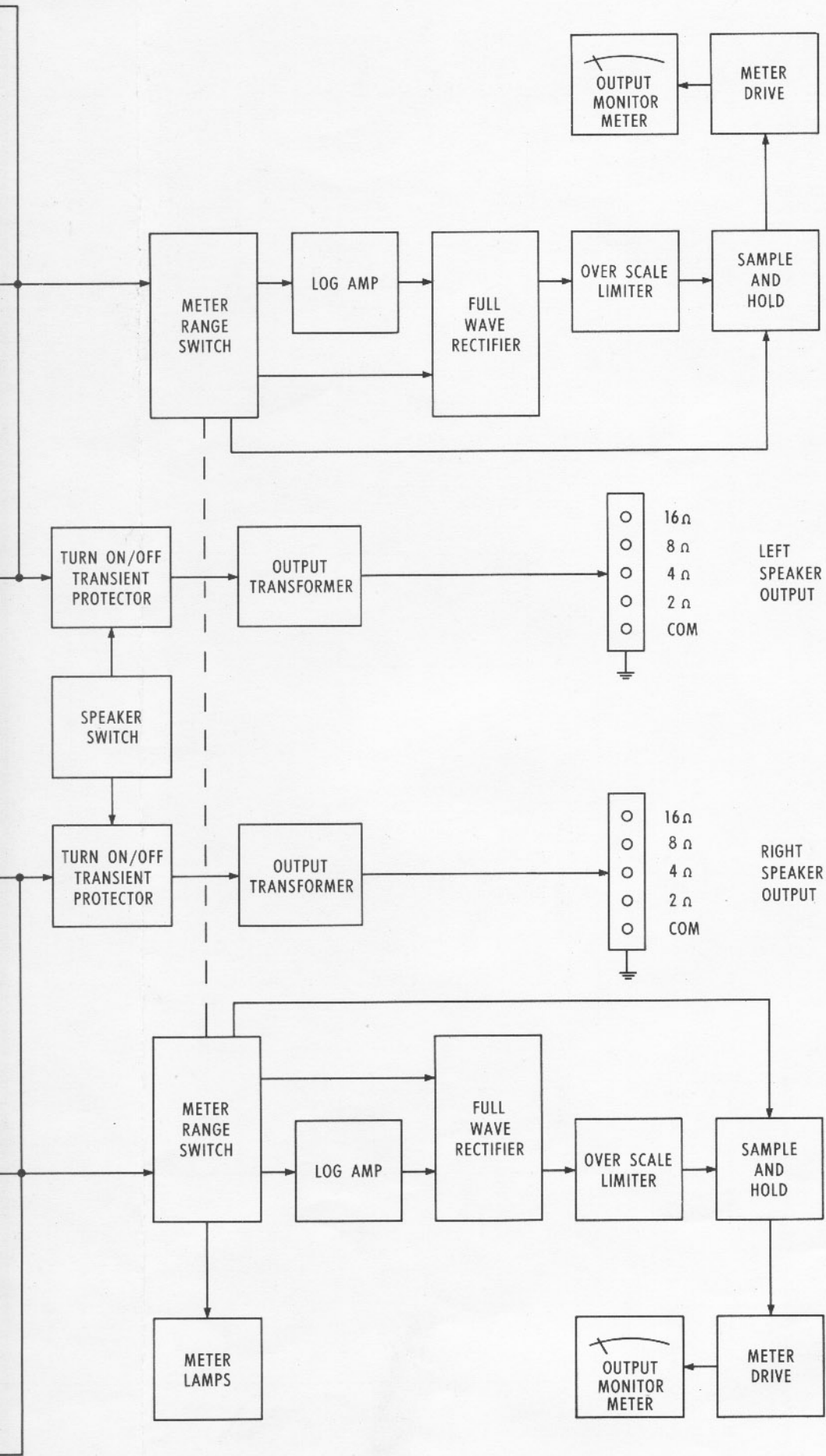
Switchable: 0.75 volt or 2.5 volts-
Level control provided for higher input voltages

POWER REQUIREMENTS

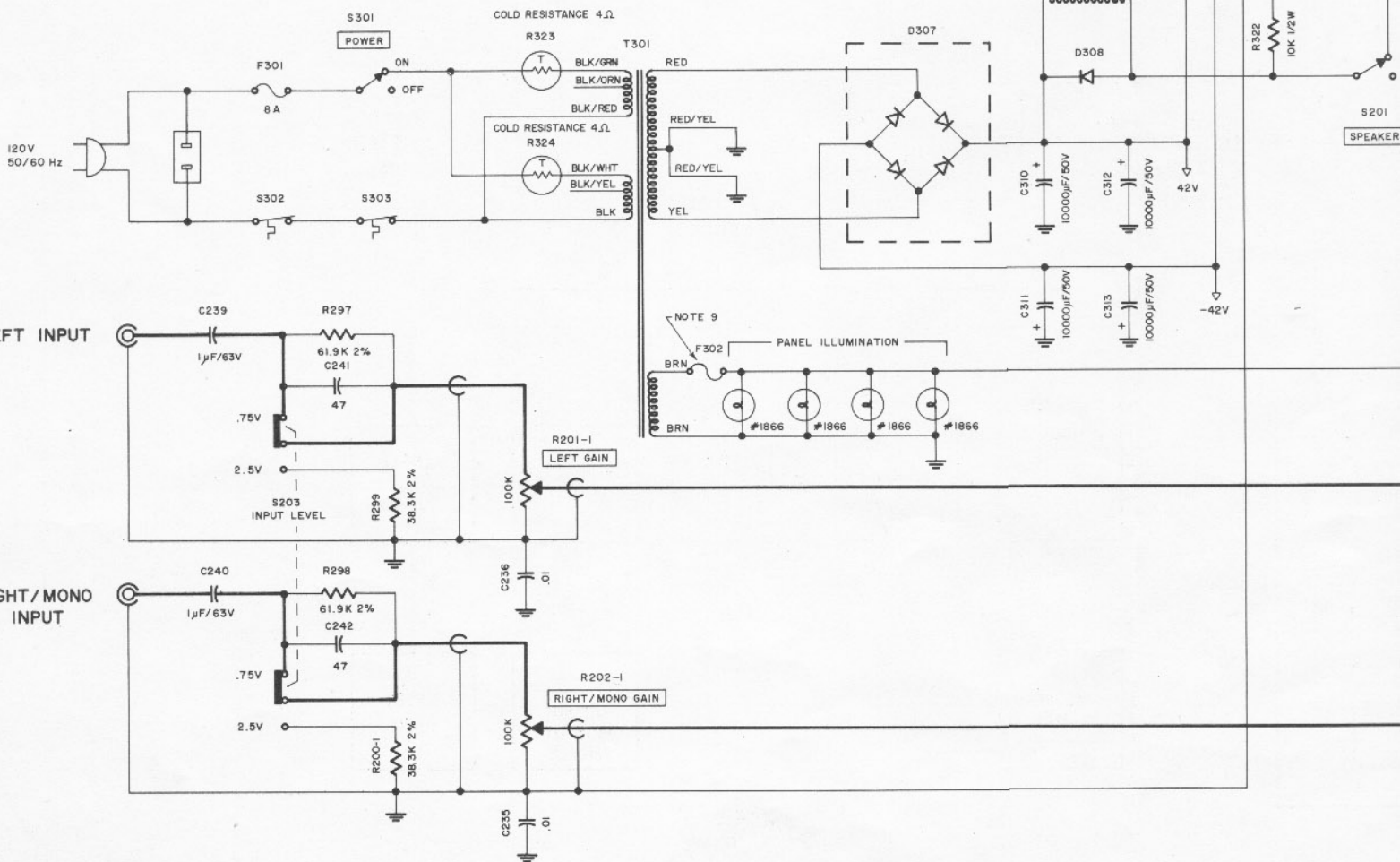
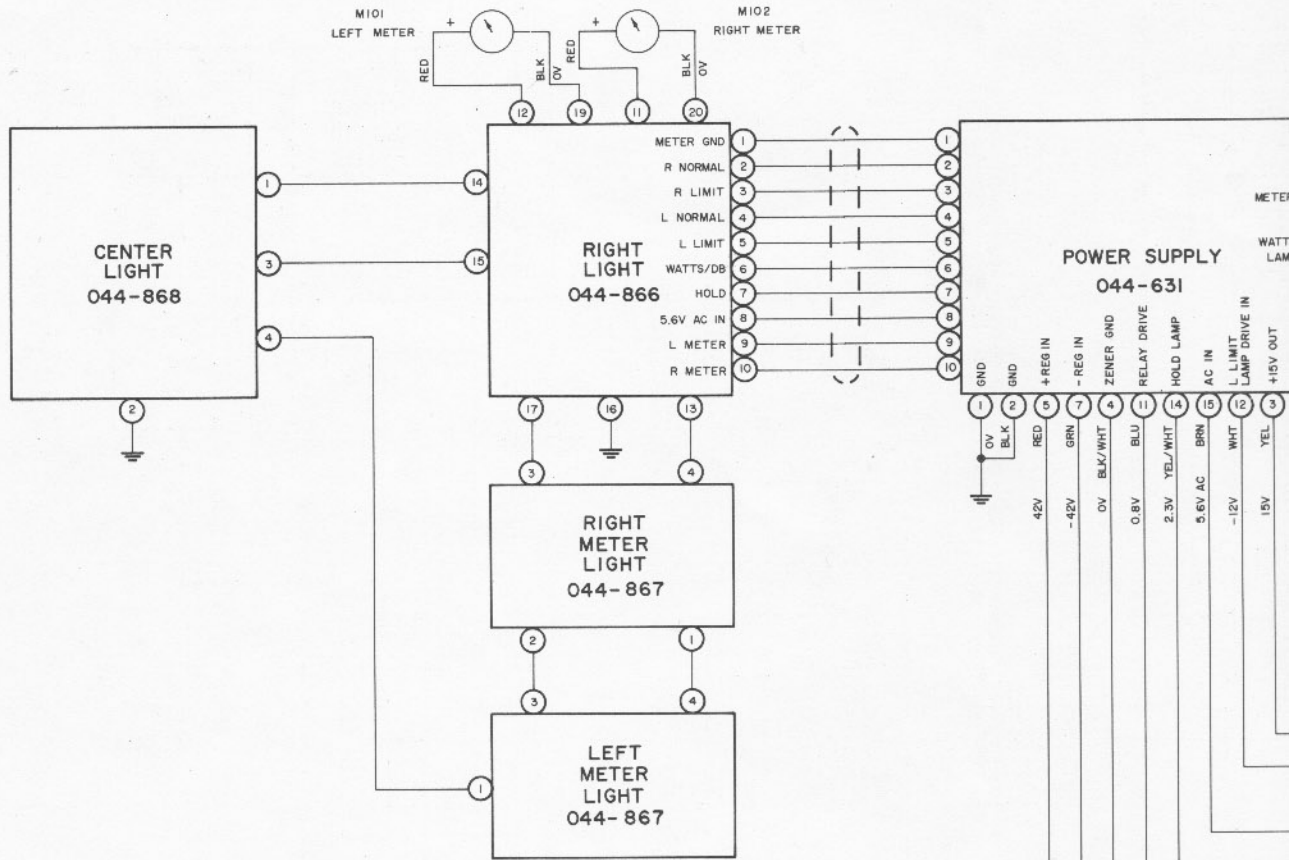
120 volts 50/60 Hz, 50 watts at zero signal output, 460 watts at rated output

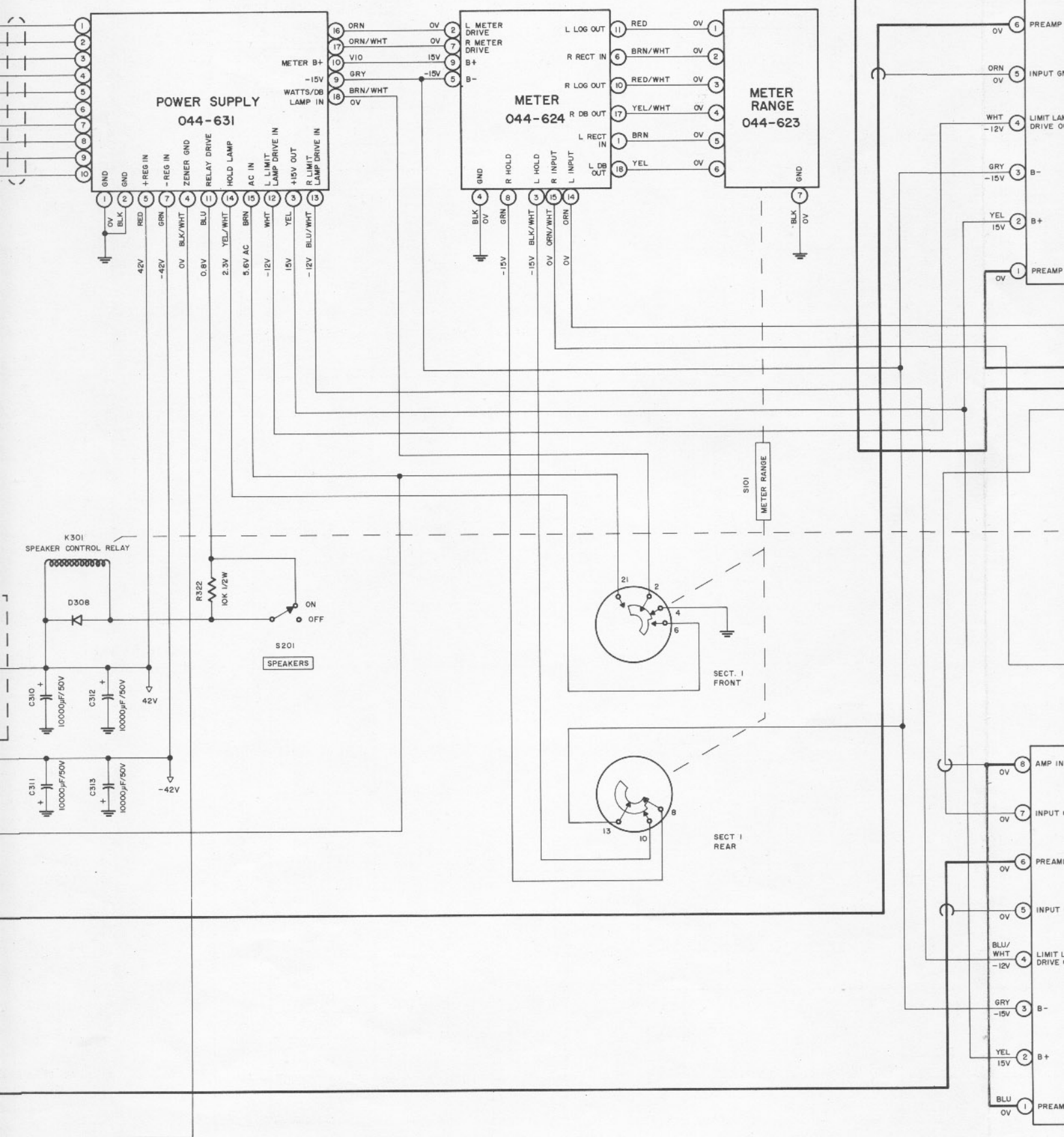






BLOCK DIAGRAM





POWER SUPPLY
044-631

METER
044-624

METER RANGE
044-623

K301
SPEAKER CONTROL RELAY

S201
SPEAKERS

SECT. I
FRONT

SECT. I
REAR

AMP IN

INPUT

PREAMP

INPUT

LIMIT LAMP DRIVE

B-

B+

PREAMP

AMP IN

INPUT

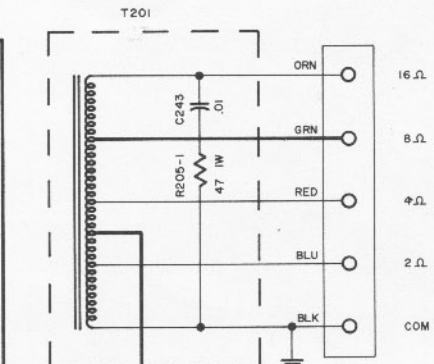
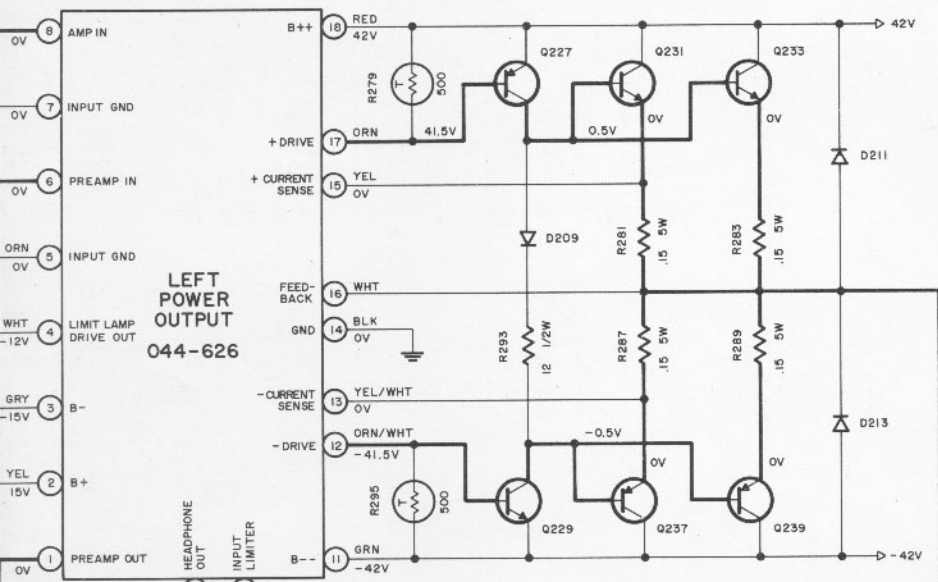
PREAMP

LIMIT LAMP DRIVE

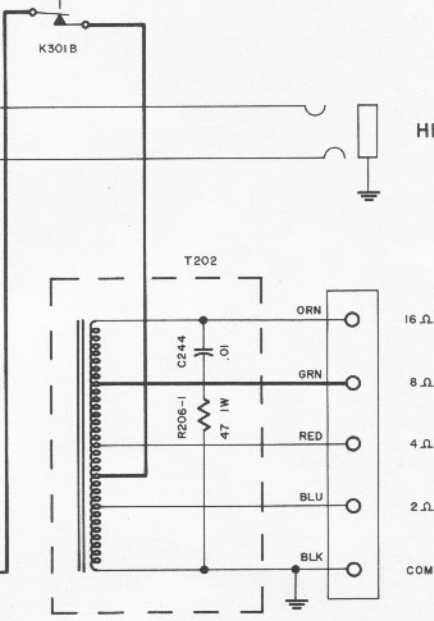
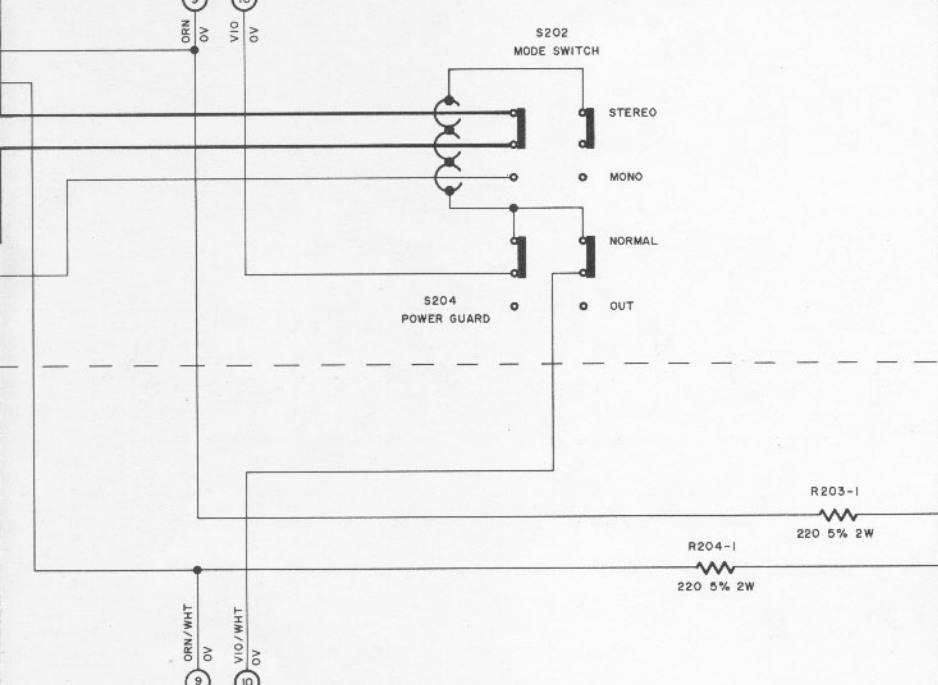
B-

B+

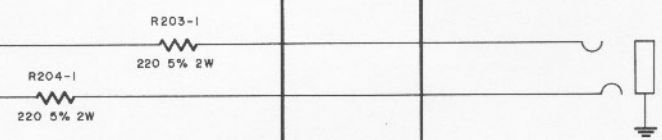
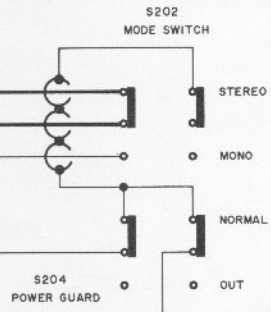
PREAMP



LEFT CHANNEL OUTPUT



RIGHT CHANNEL OUTPUT



HEADPHONE

SCHEMATIC NOTES

1. Unless otherwise specified: Resistance values are in ohms, 1/4 watt, and 10% tolerance; capacitance values smaller than 1 are in microfarads (μF); capacitance values greater than 1 are in picofarads (pF); inductors are in microhenries (μH).
2. Printed circuit board components are outlined on the schematics by dotted lines. The circled numbers on the dotted lines correspond to the numbers on the PC board layouts.
3. The heavy lines on the schematics denote the primary signal path.
4. The terminal numbering of rotary switches is for reference only.
5. All voltages indicated on the schematics are measured under the following conditions:
 - a. Use of an 11 megohm impedance VTVM.
 - b. All voltages $\pm 10\%$ with respect to chassis ground.
 - c. No signal at input terminals.
 - d. AC input at 120 volts AC, 50/60Hz.
 - e. Front panel controls at:

| | |
|-----------------|-----------|
| Left Gain | FULLY CCW |
| Meter Range | WATTS |
| Right/Mono Gain | FULLY CCW |
| Speakers | ON |
| Power | ON |

Rear panel switches at:

| | |
|-------------|--------|
| Input Level | 0.75V |
| Mode | Stereo |
| Power Guard | Normal |

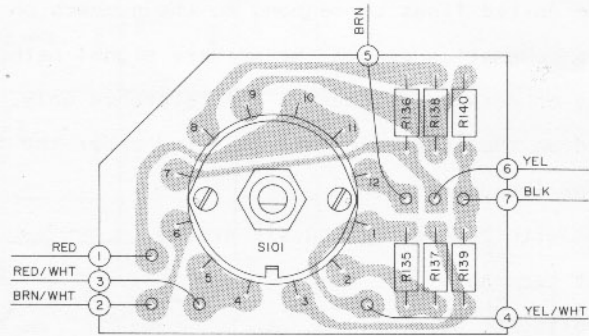
6. Relay K301 shown in energized position.
7. Meter adjustments:

Amplifier must be working properly to adjust meters. Operate amplifier at full power (31V rms) into 8 ohm loads with 1kHz input signal.

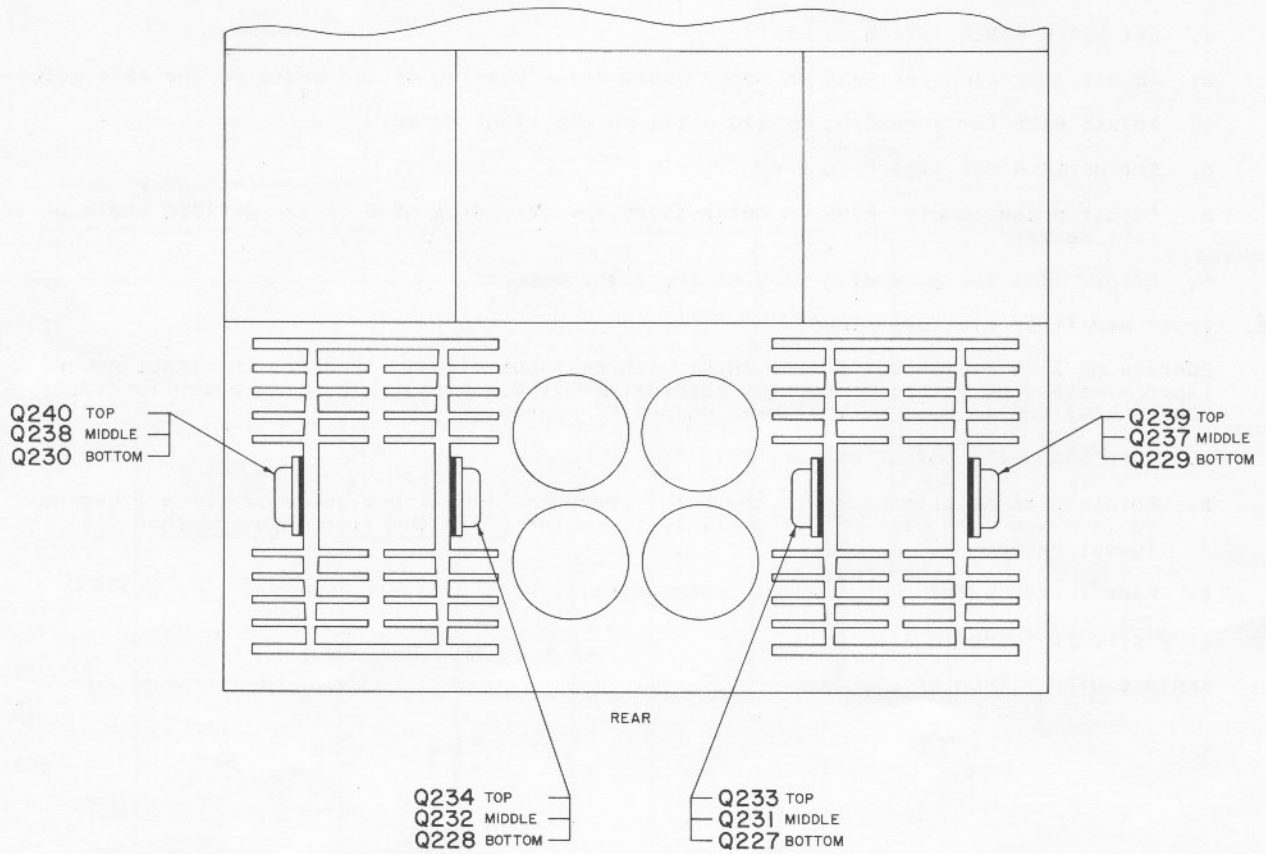
- a. Set METER RANGE switch to WATTS.
 - b. Adjust potentiometer R125 on meter board for a reading of 120 watts on the left meter.
 - c. Adjust R126 for a reading of 120 watts on the right meter.
 - d. Set METER RANGE switch to 0 dB.
 - e. Adjust potentiometer R105 on meter board for a reading of 0 on the DECIBEL scale of the left meter.
 - f. Adjust R106 for a reading of 0 on the right meter.
8. Power amplifier bias adjustment:

Operate MC 2125 at 120 volts line input with no input signal. Measure the input power (approximately 50 watts) or current (approximately 0.4 amps). The bias potentiometers R241 & R242 are located on the power output PC boards.

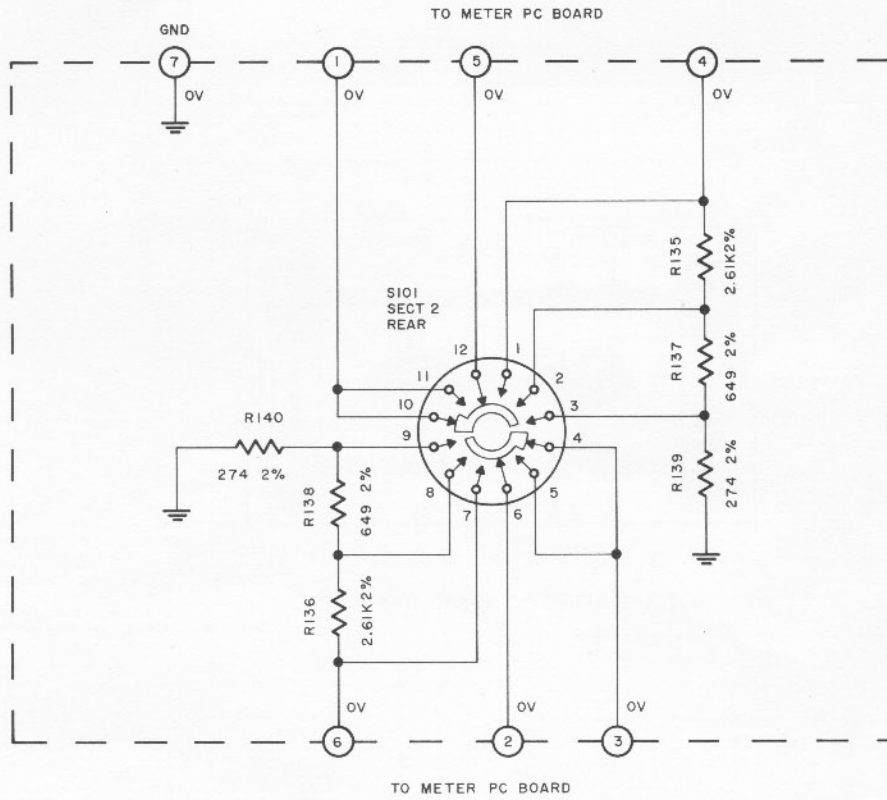
- a. Turn both bias potentiometers full ccw
 - b. Rotate bias adjustment cw to the point where the line input power or current begins to increase then back off slightly to the point where the line input reaches its lowest value.
 - c. Repeat step b for each channel independently.
9. Lamp circuit fuseable link:
Replace with 1 inch of #31 wire.



METER RANGE PC BOARD O44-623

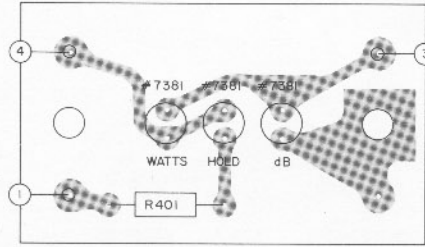


LOCATION OF TRANSISTORS NOT ON PC BOARD

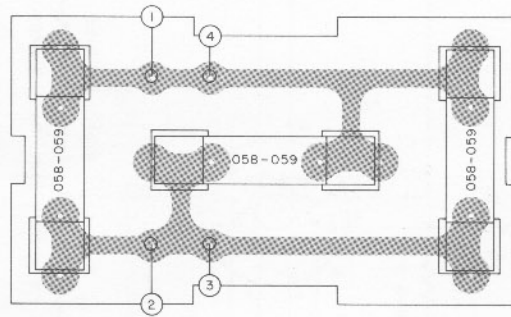


METER RANGE PC BOARD 044-623

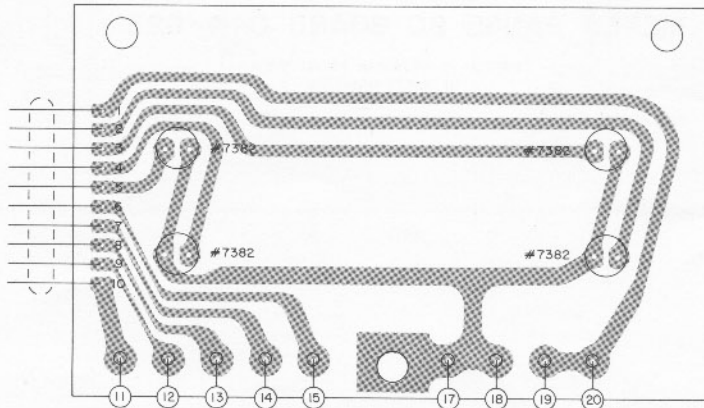
SWITCH IS SHOWN IN FRONT VIEW
IN WATTS POSITION



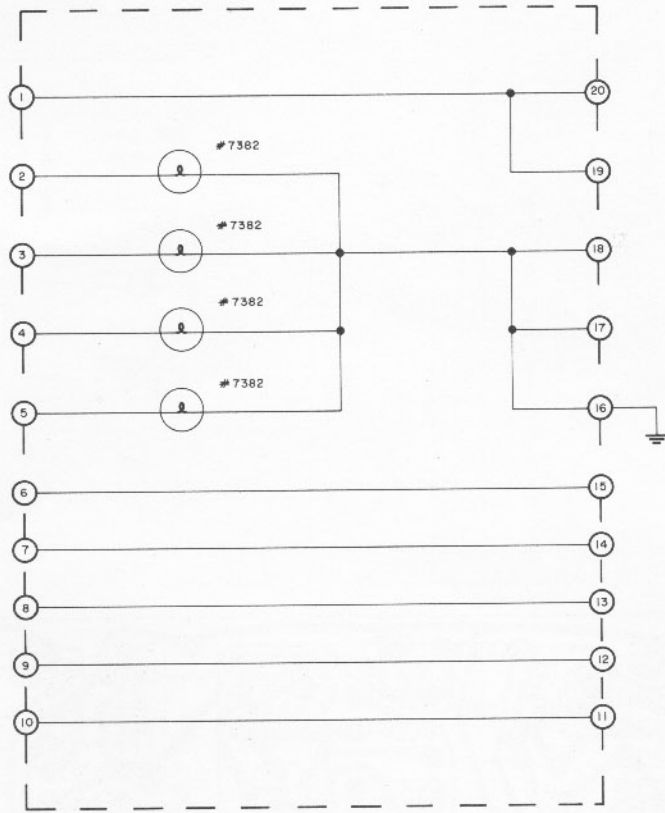
CENTER LIGHT PC BOARD 044-868



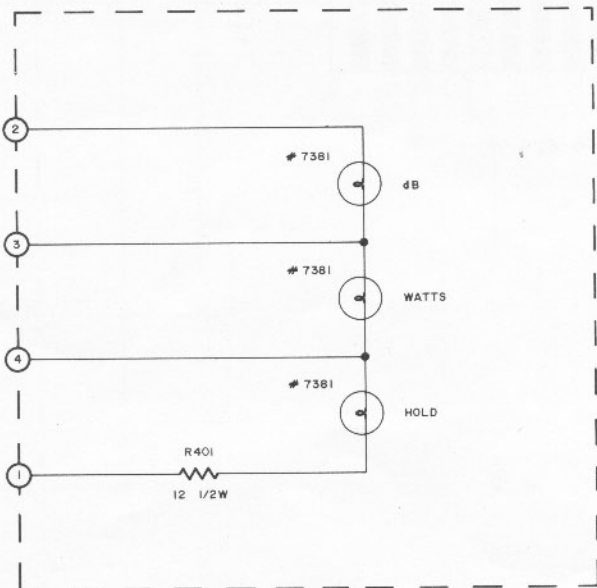
METER LIGHT PC BOARD 044-867



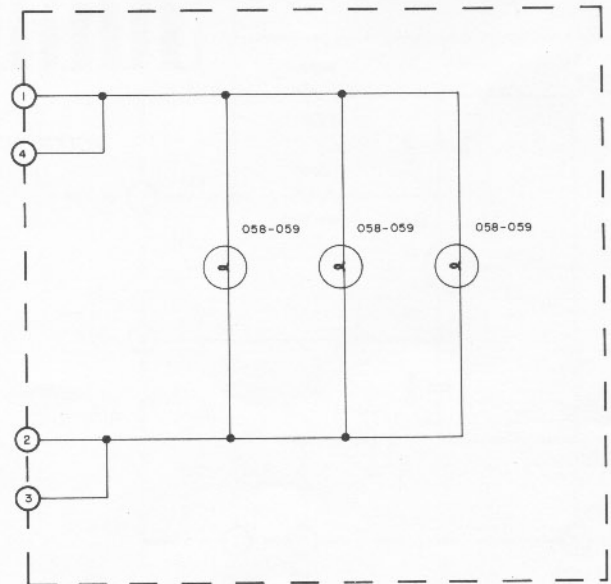
RIGHT LIGHT PC BOARD 044-866



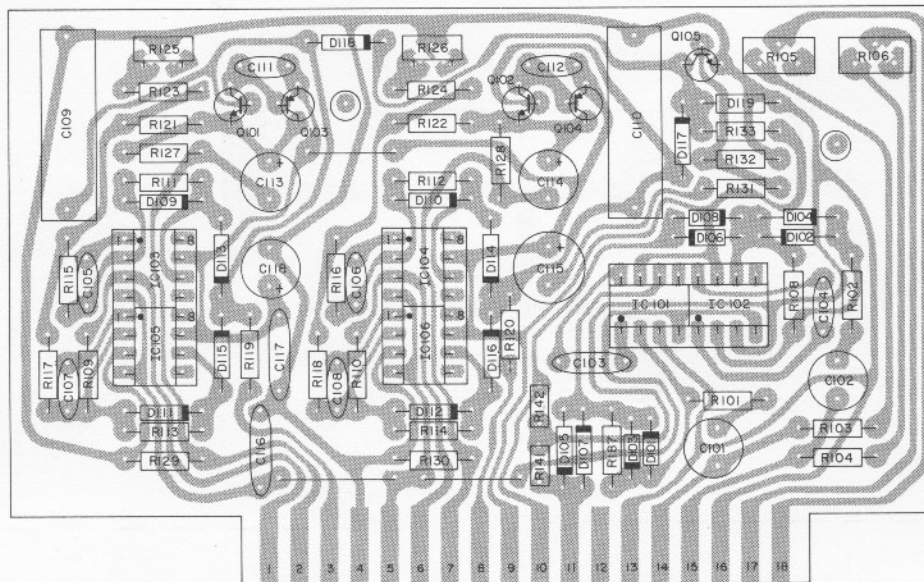
RIGHT LIGHT PC BOARD 044-866



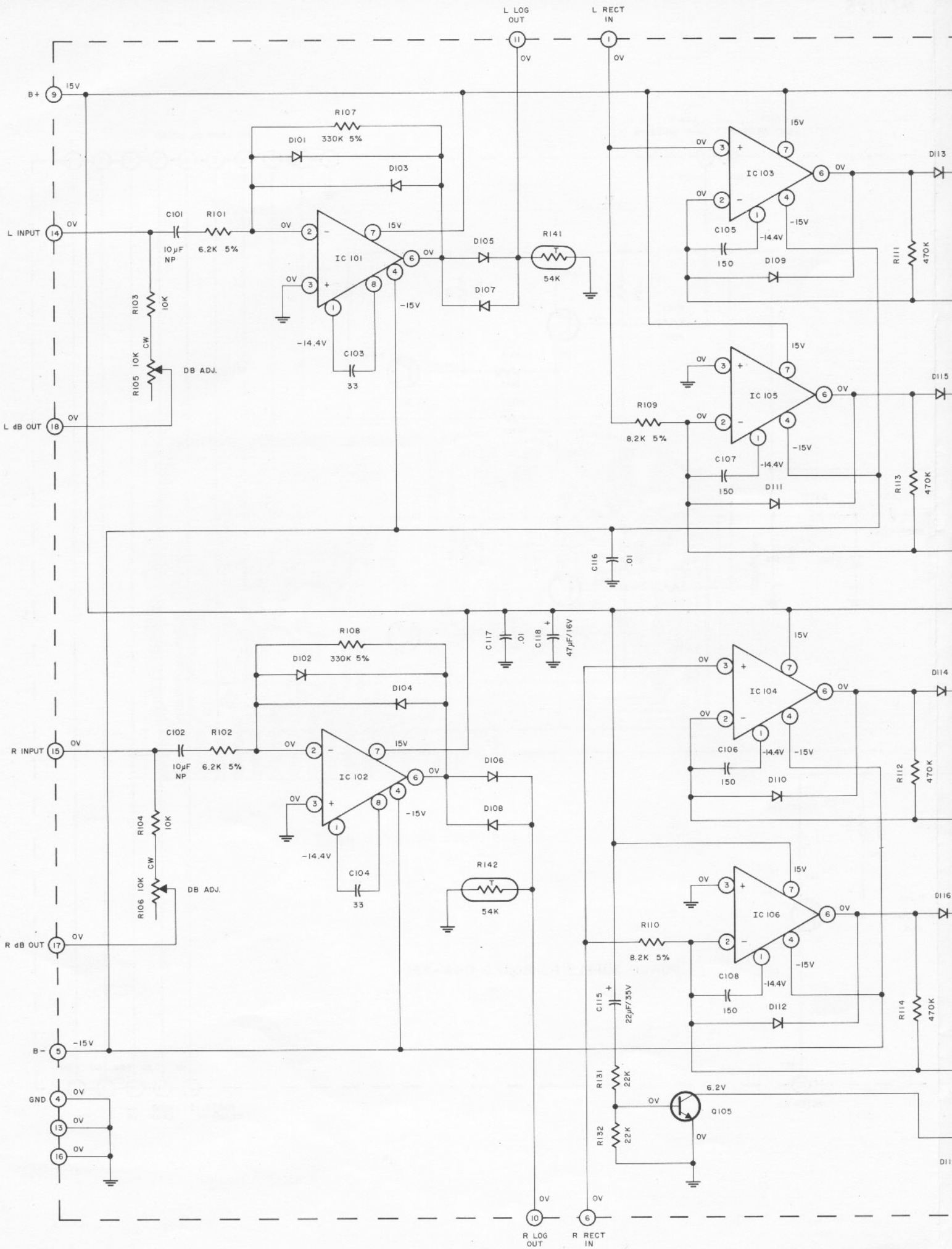
CENTER LIGHT PC BOARD 044-868



METER LIGHT PC BOARD 044-867



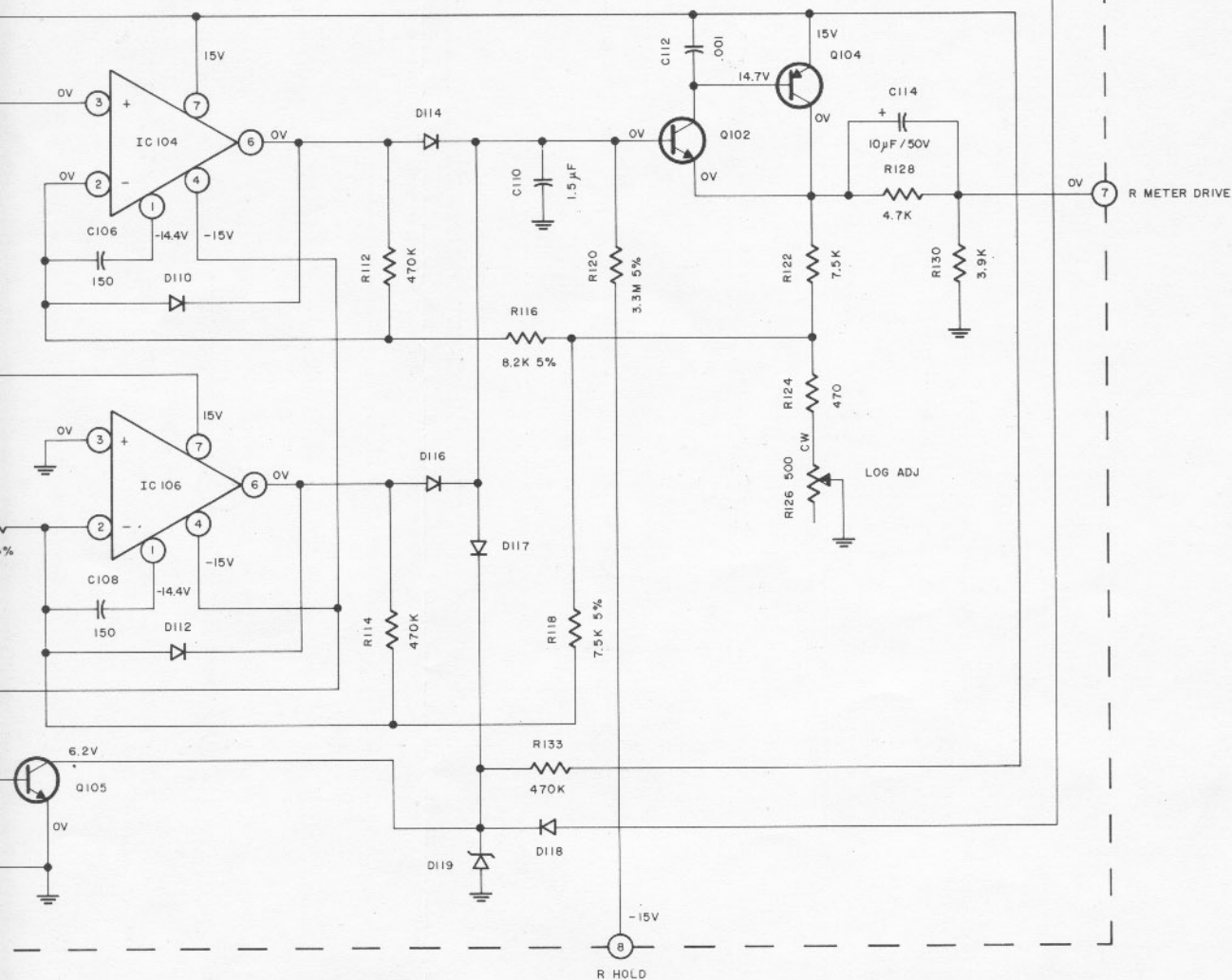
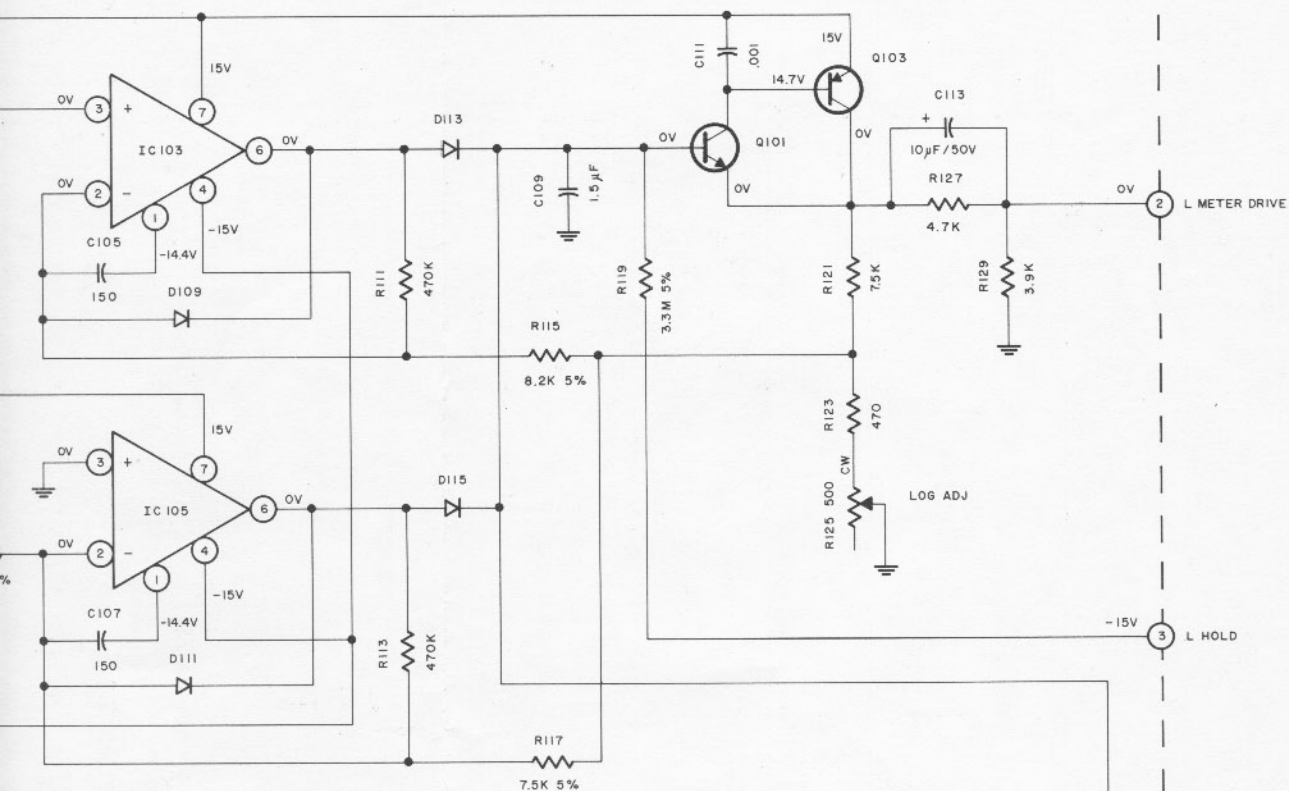
METER PC BOARD 044-624



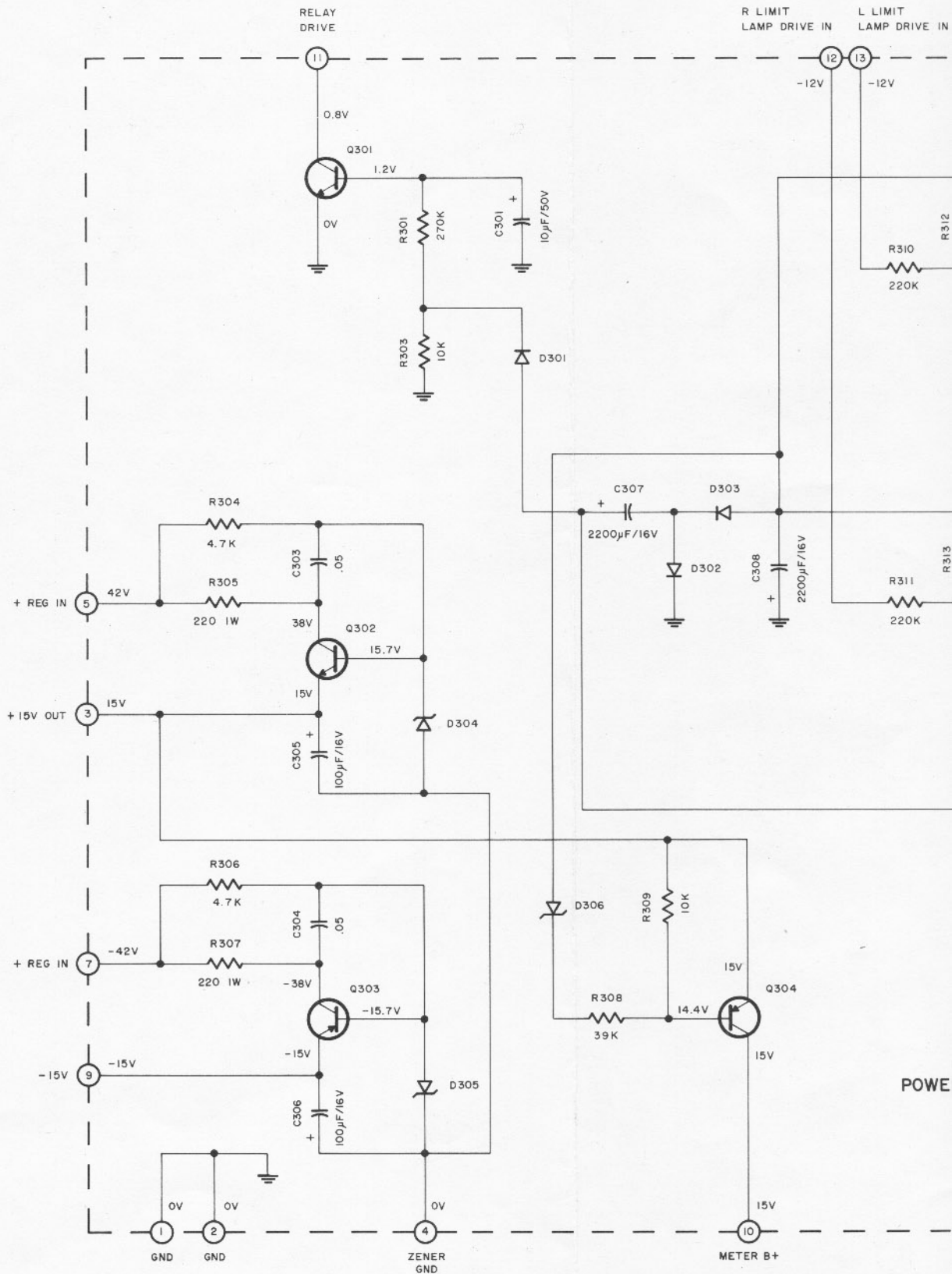
B+ 9 15V
 L INPUT 14 0V
 L dB OUT 18 0V
 R INPUT 15 0V
 R dB OUT 17 0V
 B- 5 -15V
 GND 4 0V
 13 0V
 16 0V

L LOG OUT 11 0V
 L RECT IN 1 0V
 R LOG OUT 10 0V
 R RECT IN 6 0V

METER SECTION PC BOARD 044-624

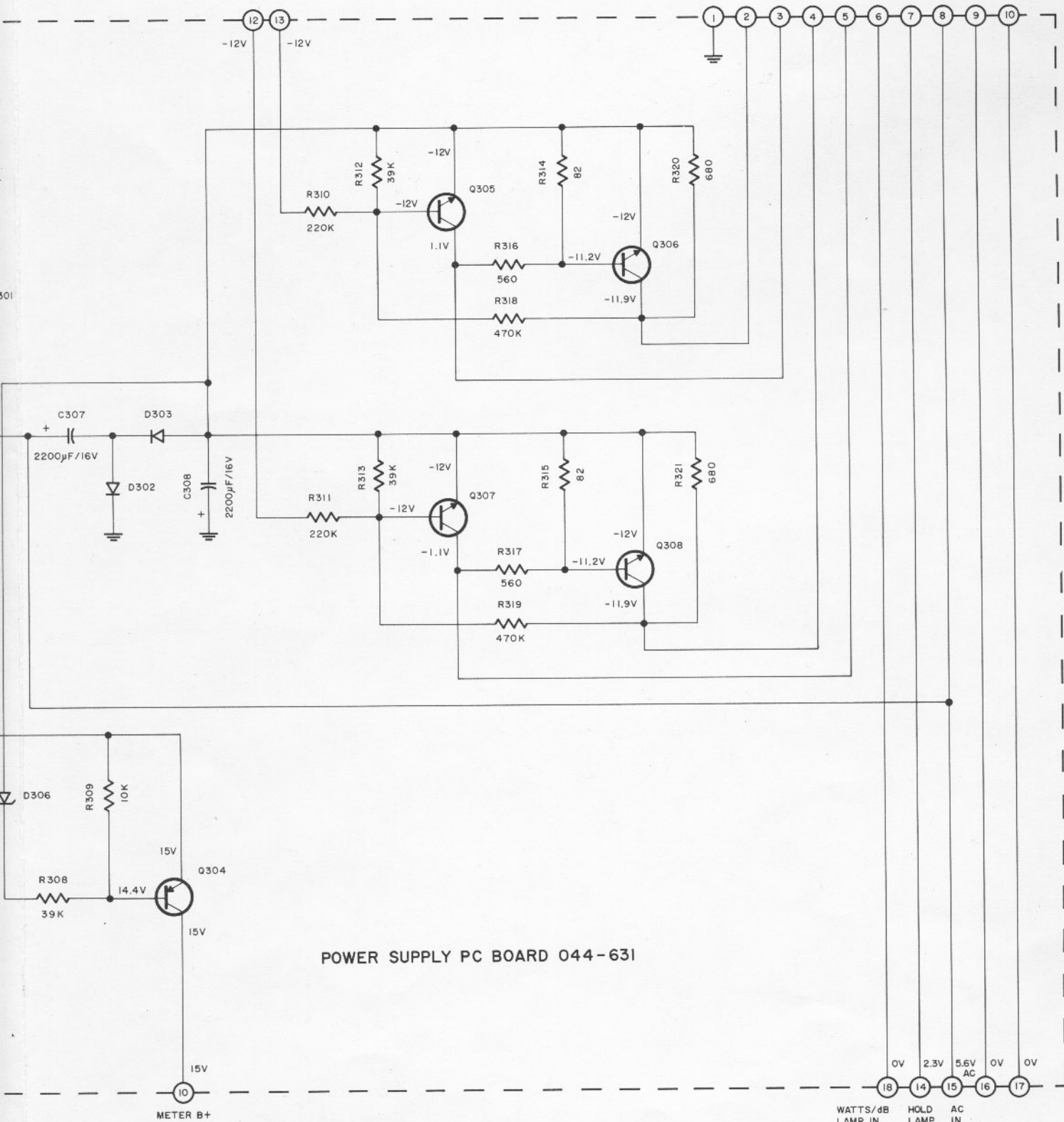


METER



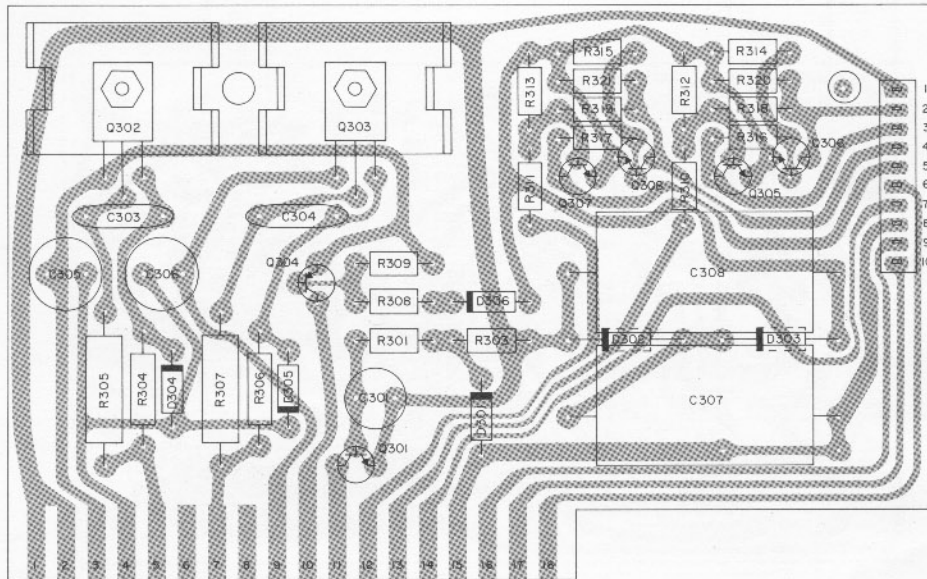
R LIMIT LAMP DRIVE IN
L LIMIT LAMP DRIVE IN

TO LAMP PC BOARD

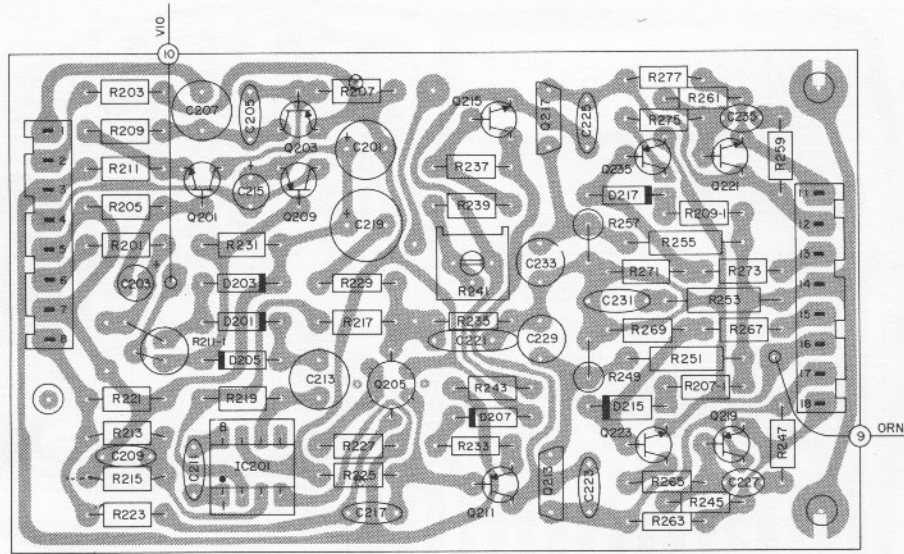


POWER SUPPLY PC BOARD 044-631

OV 2.3V 5.6V AC OV OV
WATTS/4B HOLD AC
LAMP IN LAMP IN

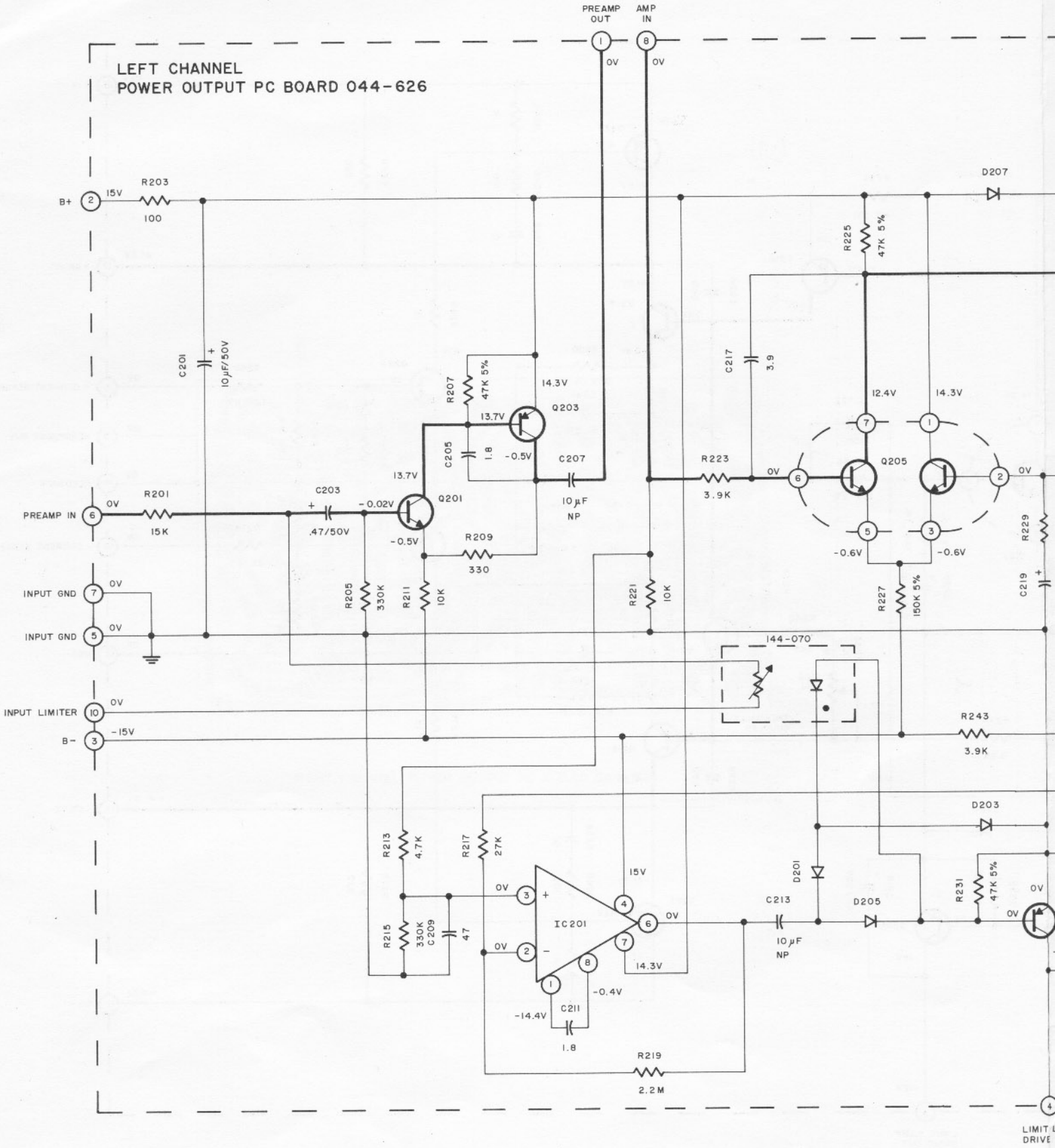


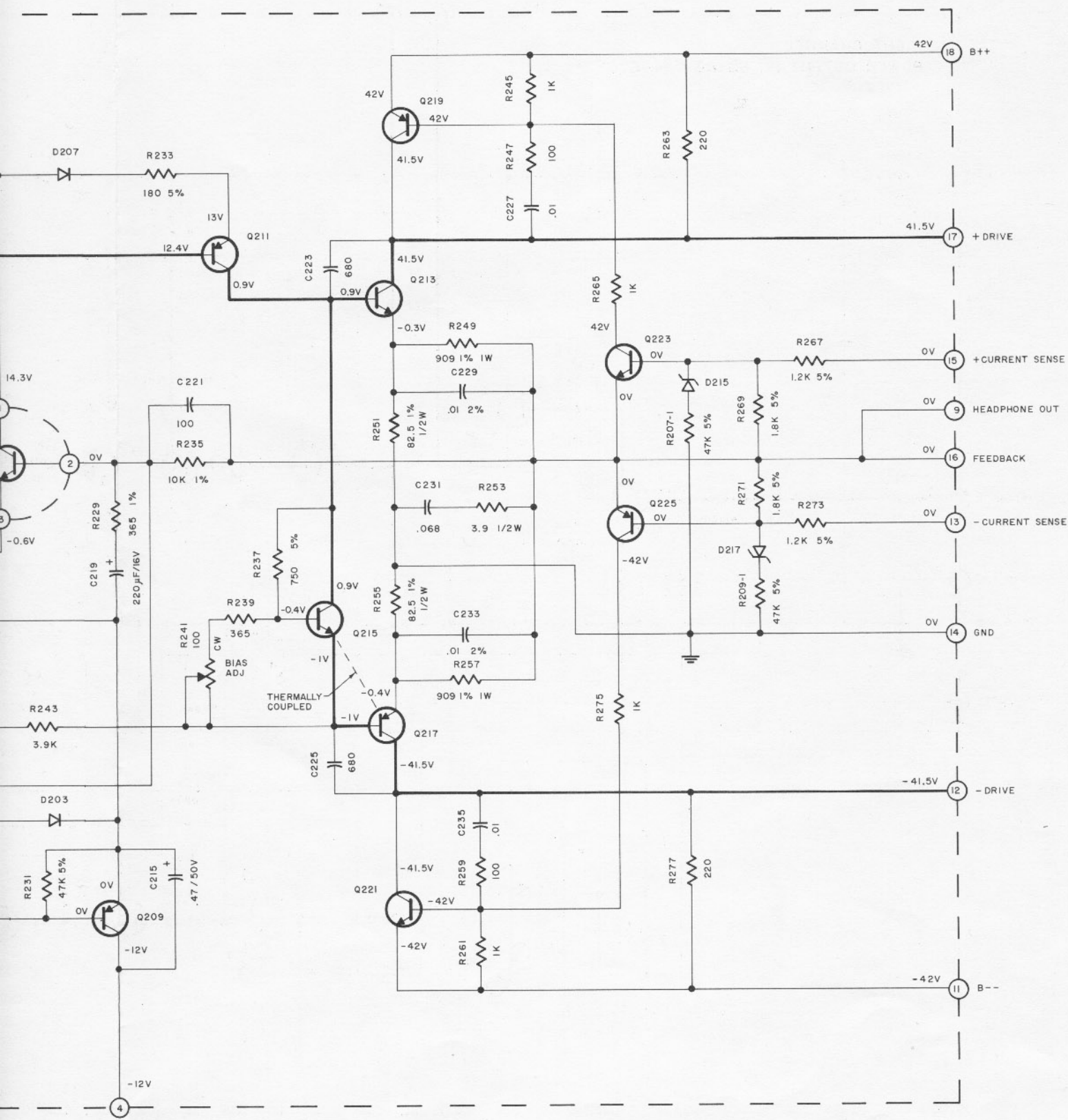
POWER SUPPLY PC BOARD 044-631



LEFT CHANNEL POWER OUTPUT PC BOARD 044-626

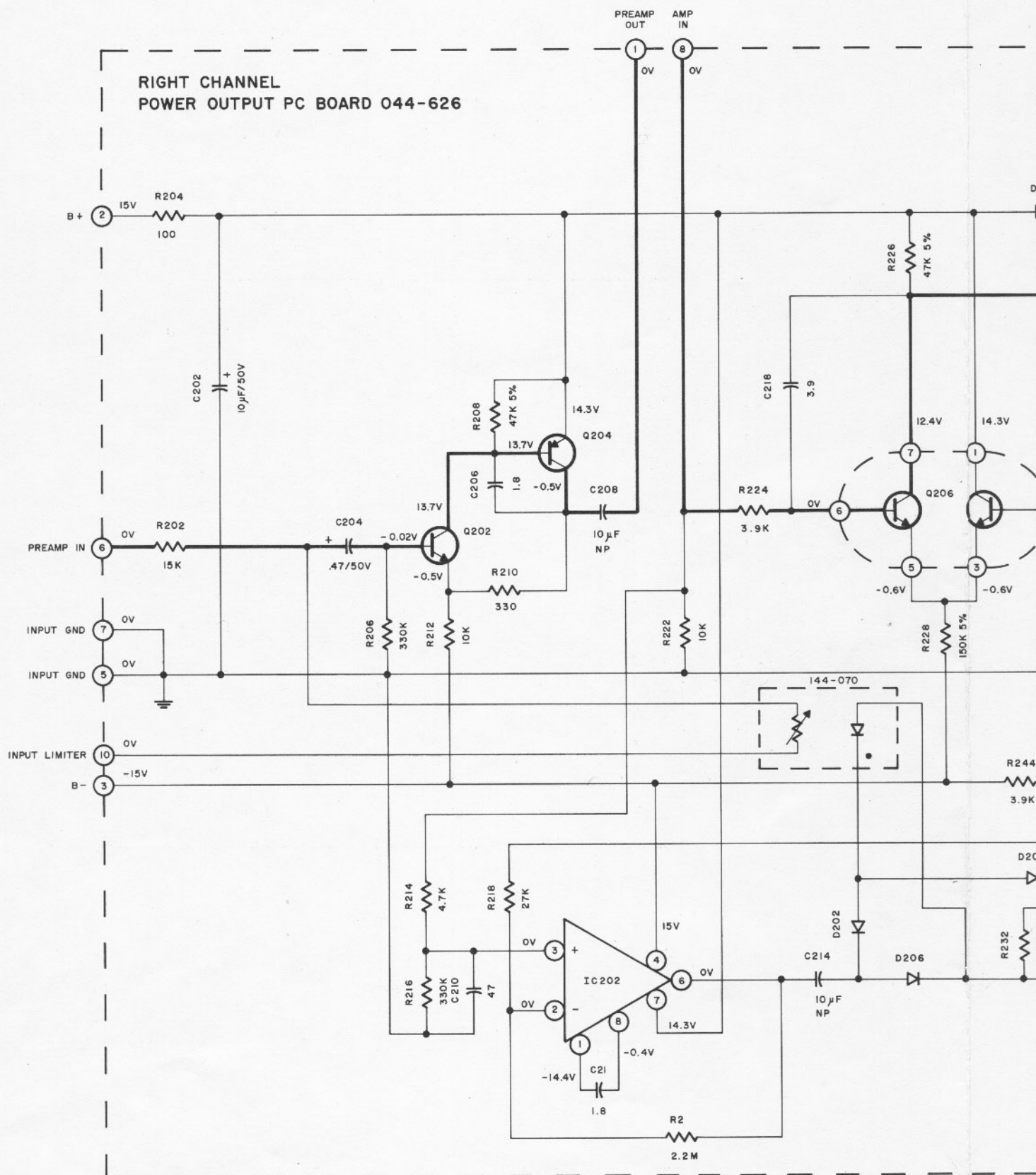
LEFT CHANNEL
POWER OUTPUT PC BOARD 044-626



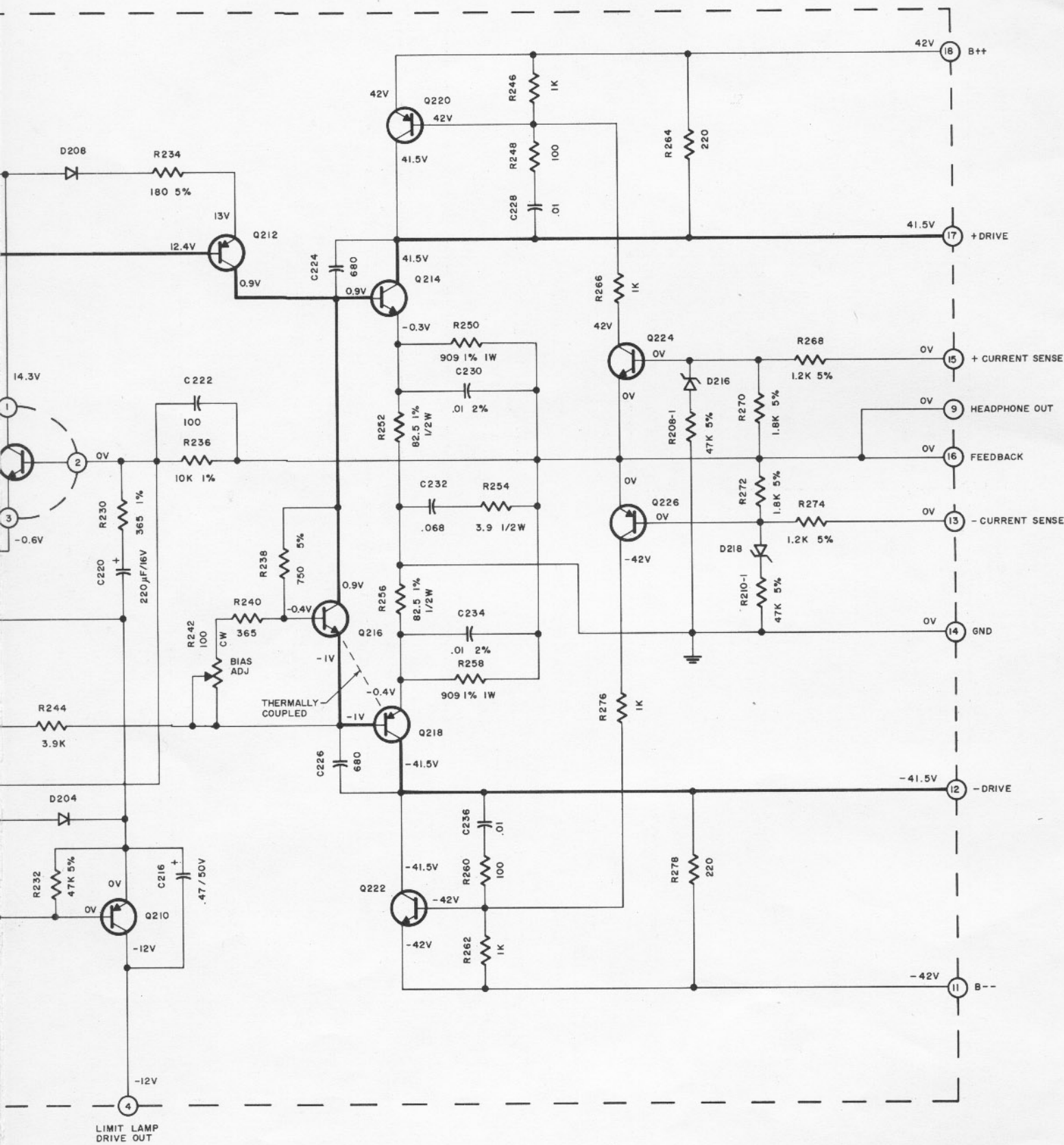


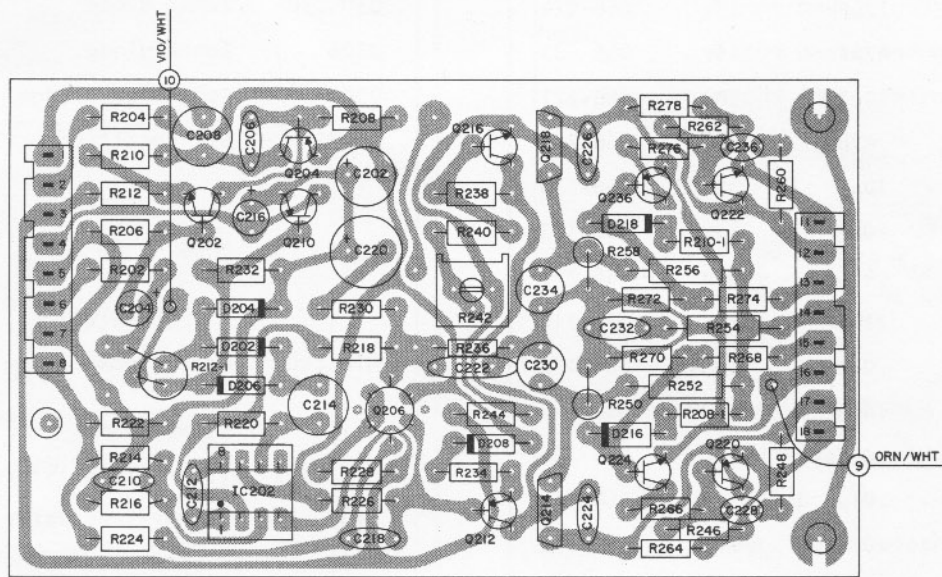
LIMIT LAMP
DRIVE OUT

POWER OUTPUT



POWER OUTPUT





RIGHT CHANNEL POWER OUTPUT PC BOARD 044-626

REPLACEMENT PARTS

All parts not listed are common items obtainable from radio parts jobbers.

Replacement parts may be obtained when ordered by PART NUMBER from:

McIntosh Laboratory, Inc.
Customer Service Department
2 Chambers Street
Binghamton, New York 13903
(telephone 607-723-3512)

CAPACITORS

| Symbol Number | Description | Part Number |
|---------------|---------------------------|-------------|
| C101,102 | Elect 10 μ F 35V | 066-173 |
| C109,110 | Mylar 1.5 μ F 100V | 064-143 |
| C113,114 | Elect 10 μ F 50V | 066-221 |
| C115 | Elect 22 μ F 35V | 066-214 |
| C118 | Elect 47 μ F 16V | 066-182 |
| C201,202 | Elect 10 μ F 50V | 066-221 |
| C203,204 | Elect .47 μ F 50V | 066-244 |
| C207,208 | Elect 10 μ F 35V | 066-173 |
| C213,214 | Elect 10 μ F 35V | 066-173 |
| C215,216 | Elect .47 μ F 50V | 066-244 |
| C219,220 | Elect 220 μ F 16V | 066-218 |
| C227,228 | Mylar .0047 μ F 100V | 064-132 |
| C229,230 | Poly .01 μ F 2.5% 63V | 064-142 |
| C231,232 | Mylar .068 μ F 100V | 064-136 |
| C233,234 | Poly .01 μ F 2.5% 63V | 064-142 |
| C235,236 | Mylar .0047 μ F 100V | 064-132 |
| C239,240 | Elect 1 μ F 63V | 066-248 |
| C301 | Elect 10 μ F 50V | 066-221 |
| C305,306 | Elect 100 μ F 16V | 066-203 |
| C307,308 | Elect 2200 μ F 16V | 066-247 |
| C309 | Mylar .22 μ F 630V | 064-052 |
| C310,311 | Elect 10000 μ F 50V | 066-249 |
| C312,313 | Elect 10000 μ F 50V | 066-249 |

DIODES

| | | |
|----------|------------------|---------|
| D101,102 | Si. signal diode | 070-046 |
| D103,104 | Si. signal diode | 070-046 |
| D105,106 | Si. signal diode | 070-046 |
| D107,108 | Si. signal diode | 070-046 |
| D109,110 | Si. signal diode | 070-047 |
| D111,112 | Si. signal diode | 070-047 |
| D113,114 | Si. signal diode | 070-047 |
| D115,116 | Si. signal diode | 070-047 |
| D117,118 | Si. signal diode | 070-047 |
| D119 | Zener diode | 070-085 |

| | | |
|----------|------------------|---------|
| D201,202 | Si. signal diode | 070-047 |
| D203,204 | Si. signal diode | 070-047 |
| D205,206 | Si. signal diode | 070-047 |
| D207,208 | Si. signal diode | 070-047 |
| D209,210 | Si. rectifier | 070-031 |
| D211,212 | Si. rectifier | 070-031 |
| D213,214 | Si. rectifier | 070-031 |
| D215,216 | Si. signal diode | 070-047 |
| D217,218 | Si. signal diode | 070-047 |
| D301 | Si. signal diode | 070-047 |
| D302,303 | Si. signal diode | 070-031 |
| D304,305 | Zener diode 16V | 070-089 |
| D306 | Zener diode 16V | 070-089 |
| D307 | Rectifier bridge | 070-050 |
| D308 | Si. rectifier | 070-031 |

FUSES

| | | |
|------|---------|---------|
| F301 | Fuse 8A | 089-008 |
|------|---------|---------|

METERS

| | | |
|----------|---------------------|---------|
| M101,102 | Meter (power level) | 124-027 |
|----------|---------------------|---------|

TRANSISTORS

| | | |
|----------|---------------------|---------|
| Q101,102 | Si. NPN transistor | 132-092 |
| Q103,104 | Si. PNP transistor | 132-096 |
| Q105 | Si. NPN transistor | 132-092 |
| Q201,202 | Si. NPN transistor | 132-093 |
| Q203,204 | Si. PNP transistor | 132-096 |
| Q205,206 | Dual NPN transistor | 132-155 |
| Q209,210 | Si. PNP transistor | 132-096 |
| Q211,212 | Si. PNP transistor | 132-096 |
| Q213,214 | Si. NPN transistor | 132-149 |
| Q215,216 | Si. NPN transistor | 132-093 |
| Q217,218 | Si. PNP transistor | 132-148 |
| Q219,220 | Si. PNP transistor | 132-150 |
| Q221,222 | Si. NPN transistor | 132-143 |
| Q223,224 | Si. NPN transistor | 132-136 |
| Q225,226 | Si. PNP transistor | 132-147 |
| Q227,228 | Si. PNP transistor | 132-151 |
| Q229,230 | Si. NPN transistor | 132-152 |
| Q231,232 | Si. NPN transistor | 132-164 |
| Q233,234 | Si. NPN transistor | 132-164 |
| Q237,238 | Si. PNP transistor | 132-165 |
| Q239,240 | Si. PNP transistor | 132-165 |

| | | |
|------|--------------------|---------|
| Q301 | Si. NPN transistor | 132-090 |
| Q302 | Si. NPN transistor | 132-078 |
| Q303 | Power transistor | 132-079 |
| Q304 | Si. PNP transistor | 132-096 |
| Q305 | Si. NPN transistor | 132-090 |
| Q306 | Si. NPN transistor | 132-143 |
| Q307 | Si. NPN transistor | 132-090 |
| Q308 | Si. NPN transistor | 132-143 |

INTEGRATED CIRCUITS

| | | |
|-----------|--------------------|---------|
| IC101,102 | Integrated circuit | 133-037 |
| IC103,104 | Integrated circuit | 133-037 |
| IC105,106 | Integrated circuit | 133-037 |
| IC201,202 | Integrated circuit | 133-037 |

POTENTIOMETERS

| | | |
|--------------|---------------|---------|
| R105,106 | dB Adjust | 134-294 |
| R125,126 | Log Adjust | 134-293 |
| R241,242 | Bias Adjust | 134-292 |
| R201-1,202-1 | Gain controls | 134-273 |

RESISTORS

| | | | |
|--------------|---------------------------|------|---------|
| R135,136 | Film 2.61K 2% | 1/4W | 144-078 |
| R137,138 | Film 649 Ω 2% | 1/4W | 144-050 |
| R139,140 | Film 274 Ω 2% | 1/4W | 144-048 |
| R141,142 | Thermistor | | 144-075 |
| R229,230 | Film 365 Ω 1% | 1/4W | 144-071 |
| R235,236 | Film 10K 1% | 1/4W | 144-053 |
| R249,250 | Film 909 Ω 1% | 1/4W | 144-073 |
| R251,252 | Film 82.5 Ω 1% | 1/4W | 144-072 |
| R255,256 | Film 82.5 Ω 1% | 1/4W | 144-072 |
| R257,258 | Film 909 Ω 1% | 1/4W | 144-073 |
| R279,280 | Thermistor | | 144-074 |
| R281,282 | Wirewound .15 Ω 5W | | 139-105 |
| R283,284 | Wirewound .15 Ω 5W | | 139-105 |
| R287,288 | Wirewound .15 Ω 5W | | 139-105 |
| R289,290 | Wirewound .15 Ω 5W | | 139-105 |
| R295,296 | Thermistor | | 144-074 |
| R297,298 | Film 61.9K 2% | 1/4W | 144-077 |
| R299 | Film 38.3K 2% | 1/4W | 144-076 |
| R323 | Thermistor | | 144-012 |
| R324 | Thermistor | | 144-012 |
| R200-1 | Film 38.3K 2% | 1/4W | 144-076 |
| R203-1,204-1 | Wirewound 220 Ω 2W | | 139-076 |

SWITCHES

| | | |
|----------|---------------------|---------|
| S101 | Meter range switch | 146-180 |
| S201 | Power on-off switch | 146-167 |
| S301 | Speaker switch | 146-167 |
| S302,303 | Thermal cutout | 153-017 |

RELAY

| | | |
|------|-----------------|---------|
| K301 | Speaker control | 087-018 |
|------|-----------------|---------|

TRANSFORMERS

| | | |
|----------|--------------------|---------|
| T201,202 | Output transformer | 044-864 |
| T301 | Power transformer | 044-853 |

FRONT PANEL & TRIM

| | |
|----------------------|---------|
| Front panel | 044-869 |
| Front panel end caps | 018-160 |
| Knobs (all controls) | 090-157 |

LAMPS

| | |
|------------------------|---------|
| #1866 Panel | 058-014 |
| #7382 Normal & limit | 058-061 |
| #7381 Hold, dB & watts | 058-062 |
| Meter lamps | 058-059 |

PANLOC SYSTEM

| | |
|-----------------------|---------|
| Shelf bracket (right) | 043-592 |
| Shelf bracket (left) | 043-593 |
| Mounting template | 038-179 |
| Hardware package | 044-890 |

MISCELLANEOUS ITEMS

| | |
|-----------------|---------|
| Plastic feet | 017-218 |
| Shipping carton | 045-034 |
| Owners manual | 038-885 |
| Line cord | 170-021 |
| Fuse holder | 178-001 |

MC2125

038-886

15C1230S7-M5886-1