

# McIntosh

## MC 2100

POWER AMPLIFIER



## SERVICE INFORMATION

STARTING WITH SERIAL NO. 10W01

McINTOSH LABORATORY INC. 2 CHAMBERS STREET BINGHAMTON, NEW YORK

MC 2100

**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**

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

20.5 volts RMS across 4 ohms

29.0 volts RMS across 8 ohms

41.0 volts RMS across 16 ohms

**MONO**

210 watts minimum sine wave continuous average power output, operating into 2 ohms, 4 ohms, or 8 ohms load impedance, which is:

20.5 volts RMS across 2 ohms

29.0 volts RMS across 4 ohms

41.0 volts RMS across 8 ohms

**OUTPUT LOAD IMPEDANCE****STEREO**

4 ohms, 8 ohms, or 16 ohms; separate terminals are provided for each output

**MONO**

2 ohms, 4 ohms, 8 ohms; separate terminals are provided for each output

**RATED POWER BAND**

20 Hz to 20,000 Hz

**TOTAL HARMONIC DISTORTION****STEREO**

0.25% maximum harmonic distortion at any power level from 250 milliwatts to 105 watts per channel from 20 Hz to 20,000 Hz, both channels operating

**MONO**

0.25% maximum distortion at any power level from 250 milliwatts to 210 watts from 20 Hz to 20,000 Hz

**FREQUENCY RESPONSE (at 1 watt output)**

20 Hz to 20,000 Hz +0 -0.25 dB

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

**INTERMODULATION DISTORTION****STEREO**

0.25% if instantaneous peak power output is 210 watts or less per channel with both channels operating for any combination of frequencies, 20 Hz to 20,000 Hz

**MONO**

0.25% if instantaneous peak power output is 420 watts or less per channel with both channels operating for any combination of frequencies, 20 Hz to 20,000 Hz

**NOISE AND HUM**

90 dB below rated output

**RATINGS****OUTPUT VOLTAGES****STEREO AND MONO**

25 volts for distribution lines

**DAMPING FACTOR**

20 at 4 ohms output

14 at 8 ohms output

11 at 16 ohms output

**INPUT IMPEDANCE**

200,000 ohms

**INPUT SENSITIVITY**

0.5 volt. Level control provided for higher input voltage

**GENERAL INFORMATION****POWER REQUIREMENTS**

120 volts, 50/60 Hz, 75 watts at zero signal output, 430 watts at rated output

**SEMICONDUCTOR COMPLEMENT**

32 silicon transistors

14 rectifiers & diodes

**MECHANICAL INFORMATION****SIZE**

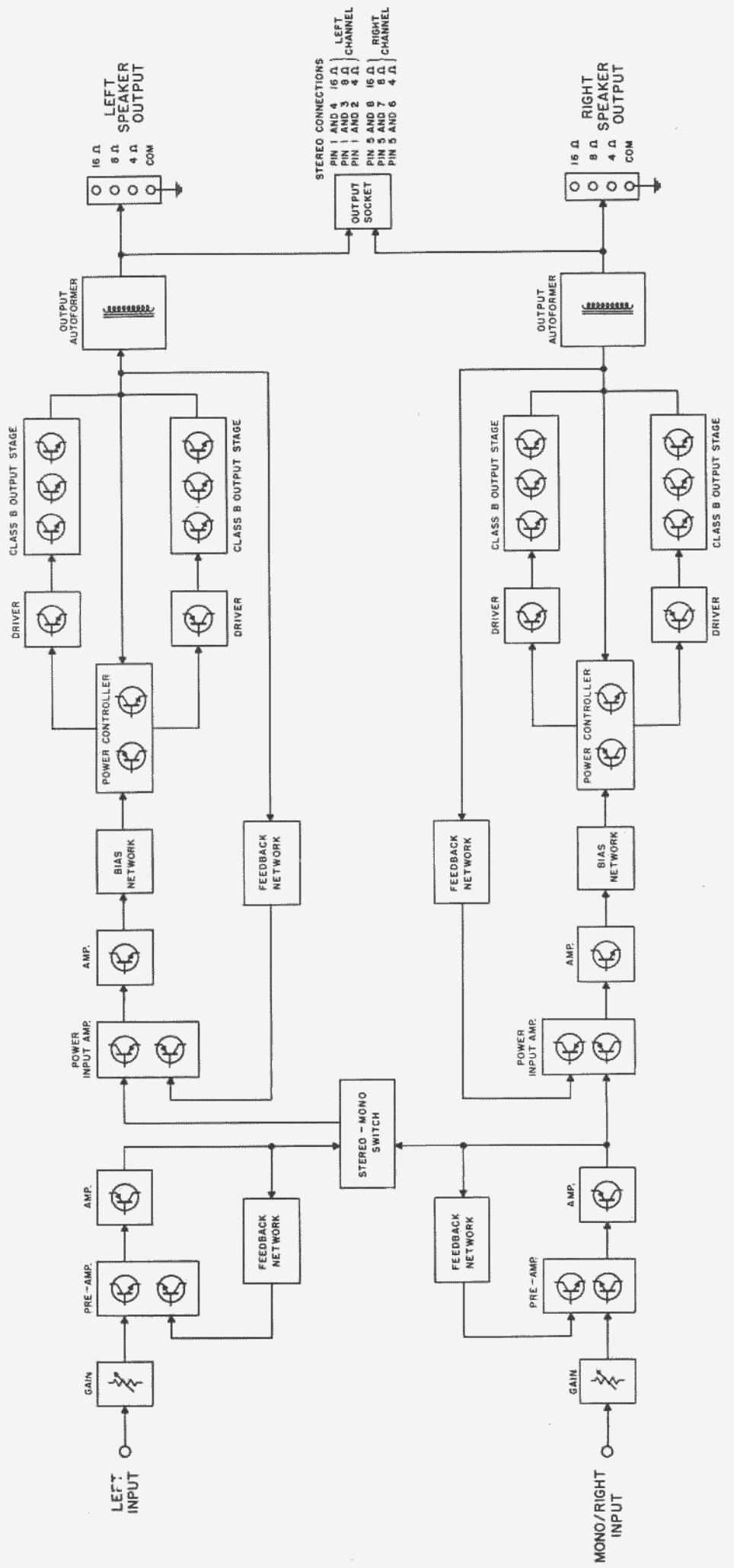
7 $\frac{3}{4}$  inches high (19.69 cm), 11 $\frac{1}{4}$  inches wide (29.85 cm), 17 inches deep (43.18 cm)

**CHASSIS**

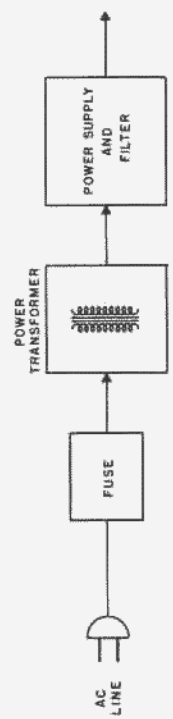
Chrome and black

**WEIGHT**

57 pounds (25.86 kg) net, 63 pounds (25.58 kg) in shipping carton



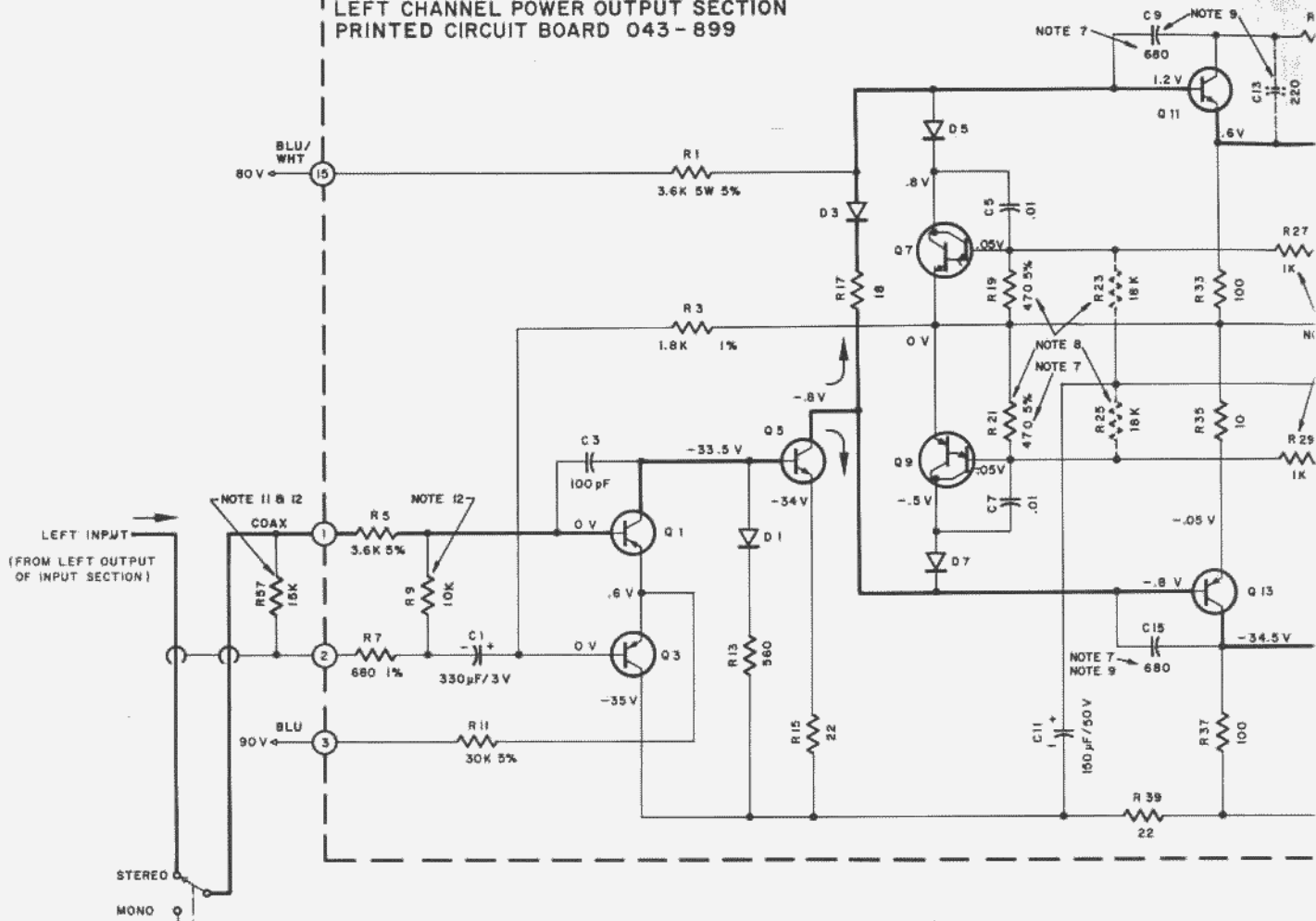
STEREO CONNECTIONS  
 PIN 1 AND 4 16 Ω LEFT CHANNEL  
 PIN 1 AND 3 8 Ω LEFT CHANNEL  
 PIN 1 AND 2 4 Ω LEFT CHANNEL  
 PIN 5 AND 8 16 Ω RIGHT CHANNEL  
 PIN 5 AND 7 8 Ω RIGHT CHANNEL  
 PIN 5 AND 6 4 Ω RIGHT CHANNEL



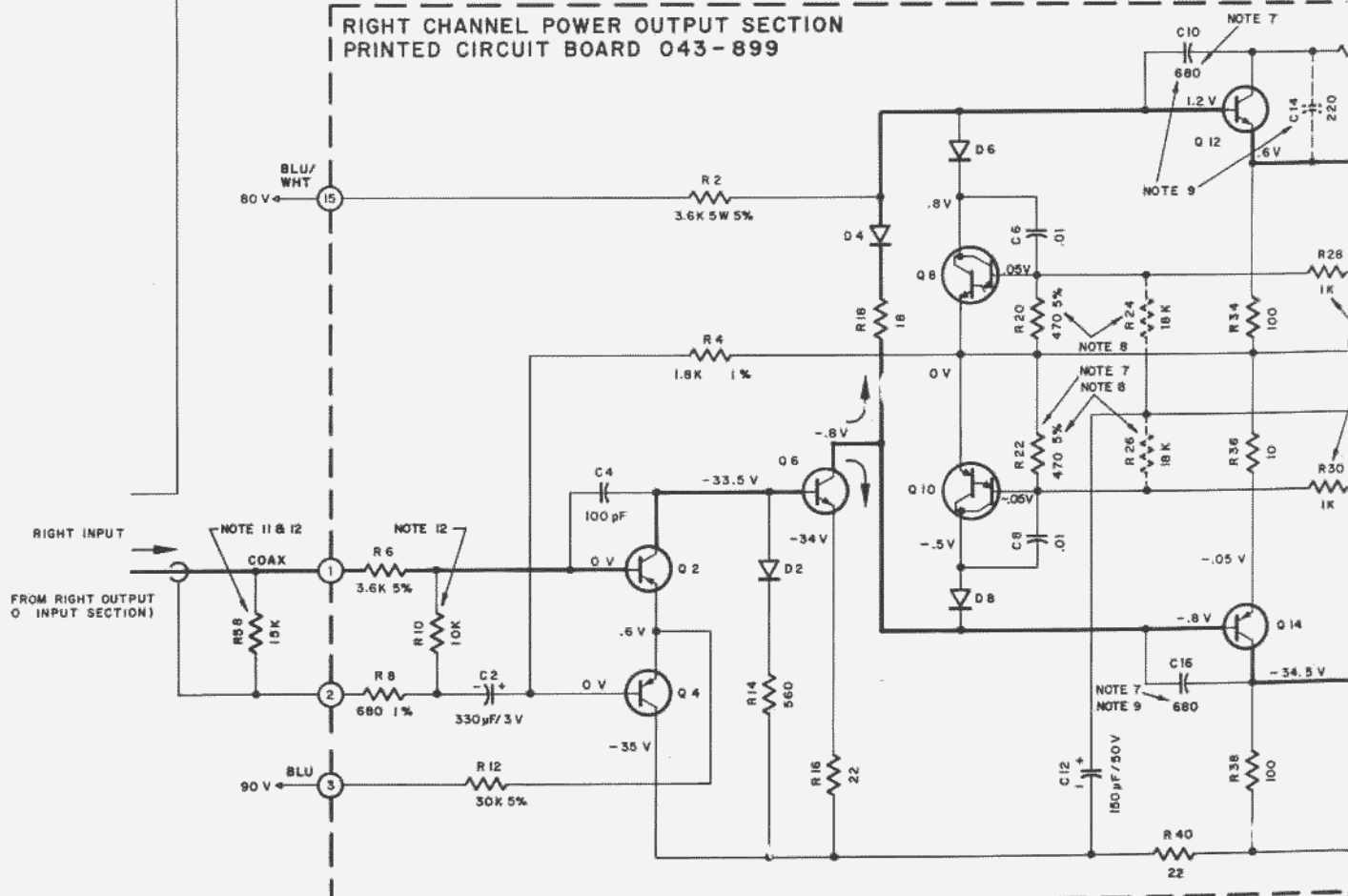
MC 2100 BLOCK DIAGRAM

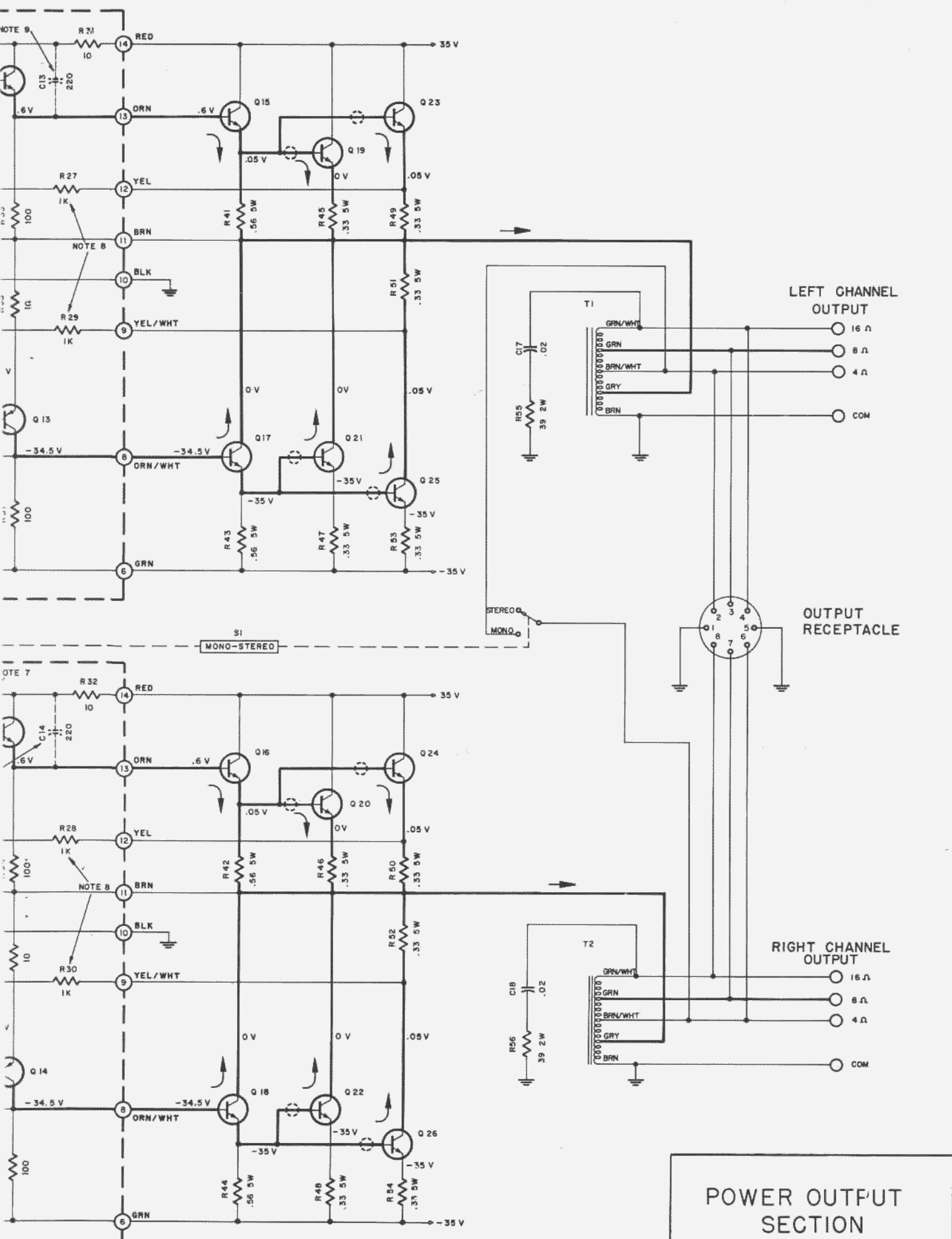


LEFT CHANNEL POWER OUTPUT SECTION  
PRINTED CIRCUIT BOARD 043-899

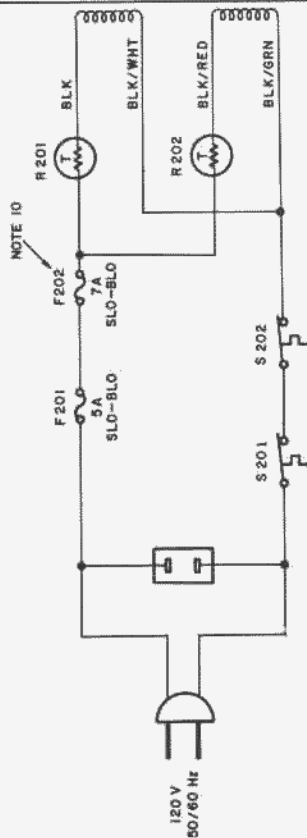
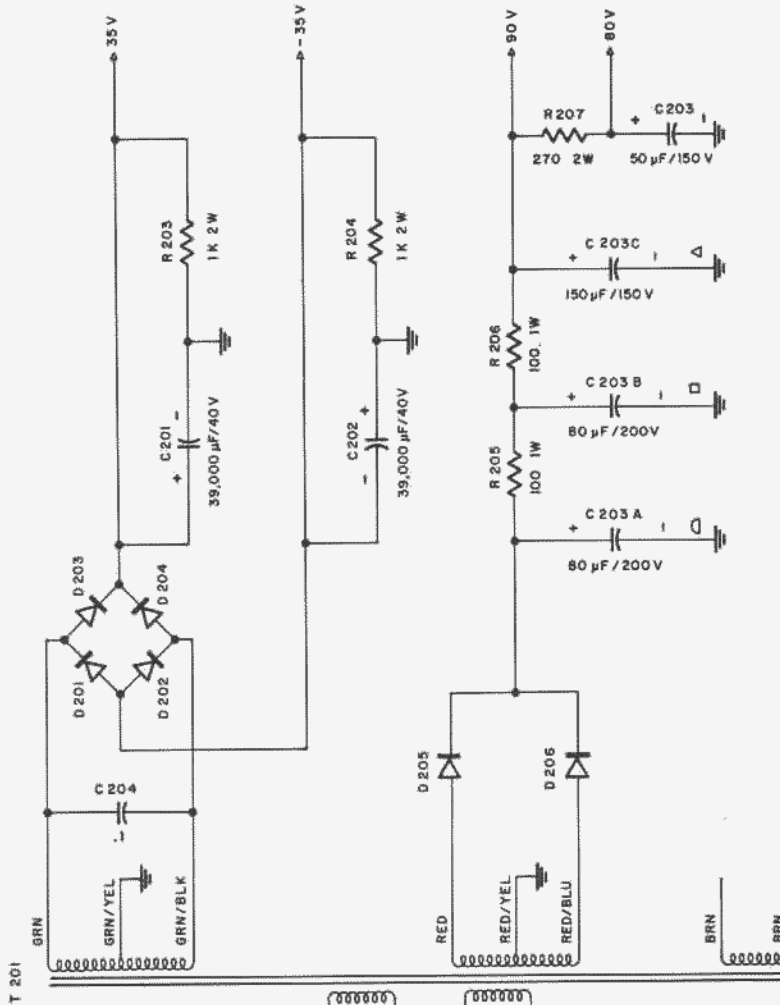


RIGHT CHANNEL POWER OUTPUT SECTION  
PRINTED CIRCUIT BOARD 043-899





**POWER OUTPUT SECTION**



# POWER SUPPLY SECTION

MC 2100 154-659



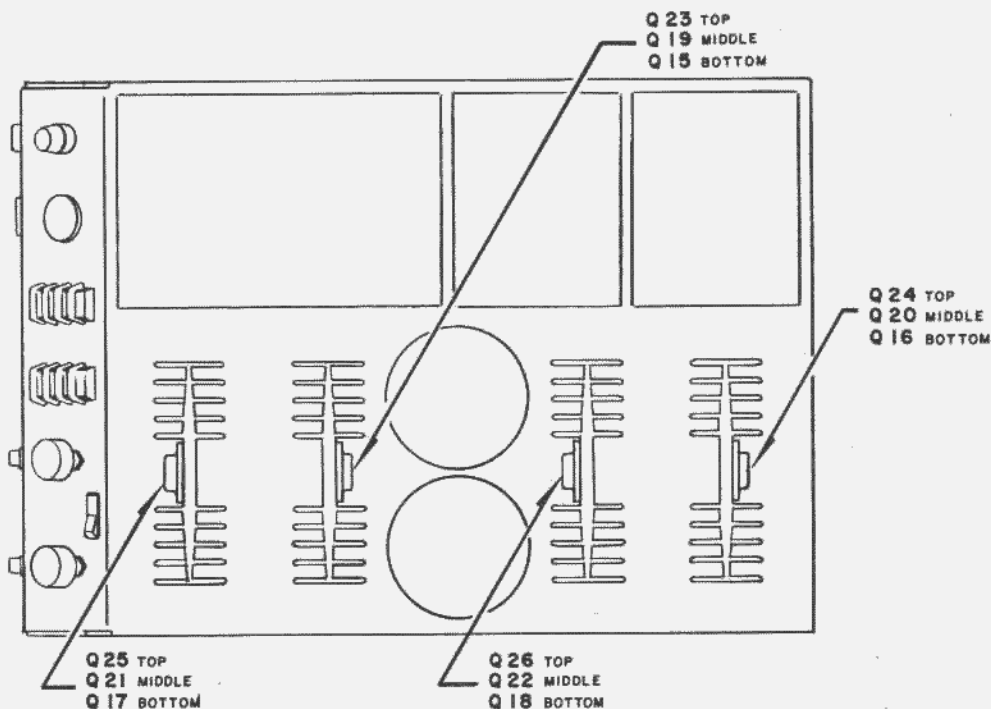


## SCHEMATIC NOTES

1. Unless otherwise specified: Resistance values are in ohms, 1/2 watt, and 10% tolerance; capacitance values smaller than 1 are in microfarads ( $\mu\text{F}$ ); capacitance values greater than 1 are in picofarads (pF); inductors are in microhenries ( $\mu\text{H}$ ).
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 117 volts AC, 50/60Hz.
  - e. Front panel controls at:
 

|            |          |
|------------|----------|
| Left Gain  | FULL CCW |
| Right Gain | FULL CCW |
| Mode       | STEREO   |
6. In units with Serial No.'s below 10W84, C311 & C312 are not used.
7. In units with Serial No.'s below 13W25: R21 & R22 are 120 $\Omega$  and C9, C10, C15, & C16 are 680pF.
8. In units with Serial No.'s below 59W75: R27, R28, R29 & R30 are 100 $\Omega$ ; R19 & R20 are 120 $\Omega$ ; R21 & R22 are 150 $\Omega$  and R23, R24, R25 & R26 are used.
9. In units with Serial No.'s below 99W26: C13 & C14 are used; R17 and R18 are 22 $\Omega$  and C9, C10, C15 & C16 are .0012 $\mu\text{F}$ .
10. In units with Serial No.'s below 99W26 F202 is not used.
11. In units with Serial No.'s below 86W06: R55 & R56 are 10K and R308 & R309 are 3.3K.
12. In units with Serial No.'s below 86W00: R9 & R10 are 3.3K and R33 & R56 are not used.

## LOCATION OF TRANSISTORS NOT ON PRINTED CIRCUIT BOARDS



## 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 |
|---------------|---|-------------|
| C1,2          | Elect. 330 $\mu$ F 3V                           | 066-105     |
| C11,12        | Elect. 150 $\mu$ F 63V                          | 066-205     |
| C201,202      | Elect. 39000 $\mu$ F 40V                        | 066-119     |
| C203          | Elect. 80/80/150/50 $\mu$ F<br>200/200/150/150V | 066-095     |
| C301,302      | Mylar .47 $\mu$ F 250V                          | 064-045     |
| C303,304      | Elect. 470 $\mu$ F 25V                          | 066-228     |
| C307,308      | Elect. 100 $\mu$ F 12V                          | 066-227     |
| C309,310      | Elect. 10 $\mu$ F 25V                           | 066-222     |

## DIODES

|          |                  |         |
|----------|------------------|---------|
| D1,2     | Si. signal diode | 070-047 |
| D3,4     | Bias diode       | 070-046 |
| D5,6     | Si. signal diode | 070-047 |
| D7,8     | Si. signal diode | 070-047 |
| D201,202 | Si. rectifier    | 070-038 |
| D203,204 | Si. rectifier    | 070-039 |
| D205,206 | Si. rectifier    | 070-031 |

## FUSES

|      |                     |         |
|------|---------------------|---------|
| F201 | Fuse 5 amp, slo-blo | 089-007 |
|------|---------------------|---------|

## TRANSISTORS

|        |                    |         |
|--------|--------------------|---------|
| Q1,2   | Si. PNP transistor | 132-056 |
| Q3,4   | Si. PNP transistor | 132-056 |
| Q5,6   | Si. NPN transistor | 132-028 |
| Q7,8   | Si. NPN transistor | 132-090 |
| Q9,10  | Si. PNP transistor | 132-100 |
| Q11,12 | Si. NPN transistor | 132-153 |
| Q13,14 | Si. PNP transistor | 132-154 |
| Q15,16 | Si. NPN transistor | 132-070 |
| Q17,18 | Si. NPN transistor | 132-070 |
| Q19,20 | Si. NPN transistor | 132-070 |
| Q21,22 | Si. NPN transistor | 132-070 |
| Q23,24 | Si. NPN transistor | 132-070 |
| Q25,26 | Si. NPN transistor | 132-070 |

|          |                    |         |
|----------|--------------------|---------|
| Q301,302 | Si. NPN transistor | 132-092 |
| Q303,304 | Si. NPN transistor | 132-092 |
| Q305,306 | Si. PNP transistor | 132-056 |

## POTENTIOMETERS

|      |            |         |
|------|------------|---------|
| R301 | Left gain  | 134-206 |
| R302 | Right gain | 134-206 |

## RESISTORS

|          |                           |         |
|----------|---------------------------|---------|
| R1,2     | Wirewound 3.6k 5W         | 139-096 |
| R41,42   | Wirewound .56 $\Omega$ 5W | 139-081 |
| R43,44   | Wirewound .56 $\Omega$ 5W | 139-081 |
| R45,46   | Wirewound .33 $\Omega$ 5W | 139-080 |
| R47,48   | Wirewound .33 $\Omega$ 5W | 139-080 |
| R49,50   | Wirewound .33 $\Omega$ 5W | 139-080 |
| R51,52   | Wirewound .33 $\Omega$ 5W | 139-080 |
| R53,54   | Wirewound .33 $\Omega$ 5W | 139-080 |
| R201,202 | Thermistor                | 144-012 |

## SWITCHES

|          |                 |         |
|----------|-----------------|---------|
| S1       | Mode selector   | 153-008 |
| S201,202 | Thermal cut-out | 153-007 |

## TRANSFORMERS

|      |                   |         |
|------|-------------------|---------|
| T1,2 | Audio autoformer  | 043-694 |
| T201 | Power transformer | 043-693 |

## MISCELLANEOUS ITEMS

|                   |         |
|-------------------|---------|
| Plastic feet      | 017-144 |
| Owners manual     | 038-848 |
| Gain control knob | 090-017 |
| Shipping carton   | 033-099 |
| AC power cord     | 170-021 |
| Fuseholder        | 178-001 |