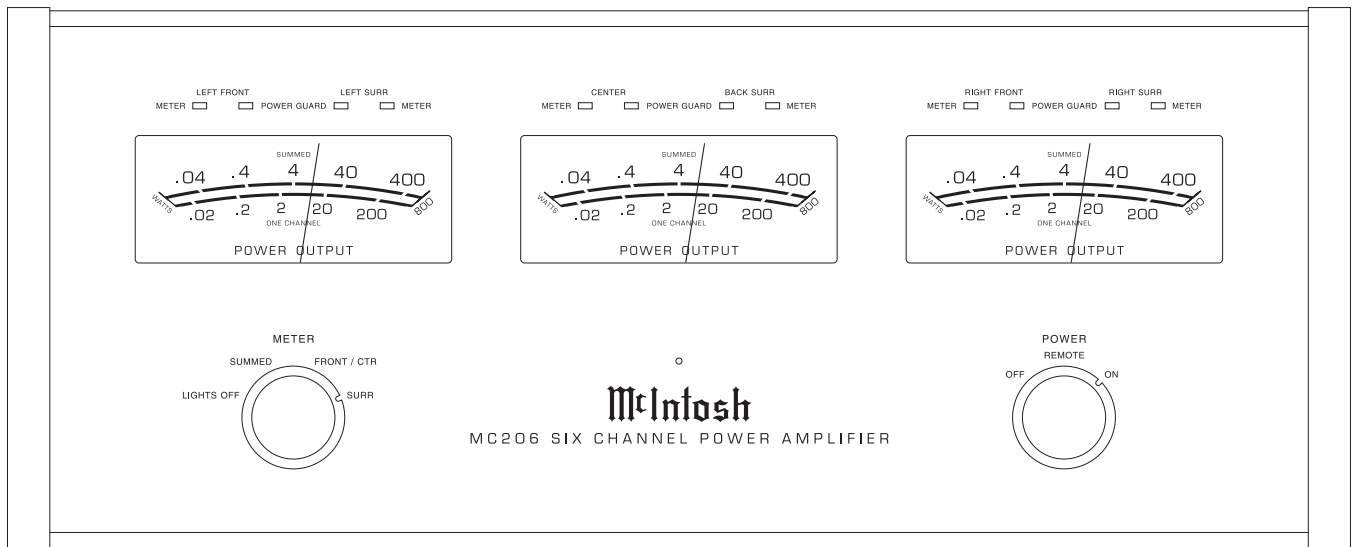


MC206

POWER AMPLIFIER



CONTENTS

Performance Specifications	2	Heatsink Schematic and PCB	10 - 12
Notes	2	Driver Schematic and PCB	13 - 15
Rear Panel	3	Capacitor Schematic and PCB	15 - 16
Section Location	3	Meter Schematic and PCB	17 - 21
Block Diagram	4	Parts List	22 - 24
Interconnection Diagram	5 - 8	Exploded Views and Parts Lists	25 - 28
Multi-channel Schematic and PCB	9	Repacking Instruction	29

McIntosh®

SERVICE MANUAL

PERFORMANCE SPECIFICATIONS

Power Output

Minimum sine wave continuous average power output per channel, all channels operating is:
200 watts into 4 ohm load
120 watts into 8 ohm load

Rated Power Band

20Hz to 20,000Hz

Total Harmonic Distortion

Maximum Total Harmonic Distortion at any power level from 250 milliwatts to rated power output is:
0.005% for 4 or 8 ohm loads

Dynamic Headroom

1.6dB

Frequency Response

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

Sensitivity

1 volt

A-Weighted Signal To Noise Ratio

92dB (113dB below rated output)

Intermodulation Distortion

Maximum Intermodulation Distortion if instantaneous peak output per channel does not exceed twice the rated output, for any combination of frequencies from 20Hz to 20,000Hz, with all channels operating is:
0.005% for 4 or 8 ohm loads

Input Impedance

10,000 ohms

Wide Band Damping Factor

100 at 4 ohms
200 at 8 ohms

Power Requirements

100 Volts, 50/60Hz at 13.2 amps
110 Volts, 50/60Hz at 12.0 amps
120 Volts, 50/60Hz at 11.0 amps
220 Volts, 50/60Hz at 6.0 amps
230 Volts, 50/60Hz at 6.0 amps
240 Volts, 50/60Hz at 6.0 amps

Note: Refer to the rear panel of the MC206 for the correct voltage.


Dimensions

Front Panel: 17-1/2 inches (44.45cm) wide, 7-1/8 inches (18.10cm) high. Depth behind front mounting panel is 18 inches (45.72cm). Clearance required in front of the Front Panel is 1 inch (2.54cm) for knobs.

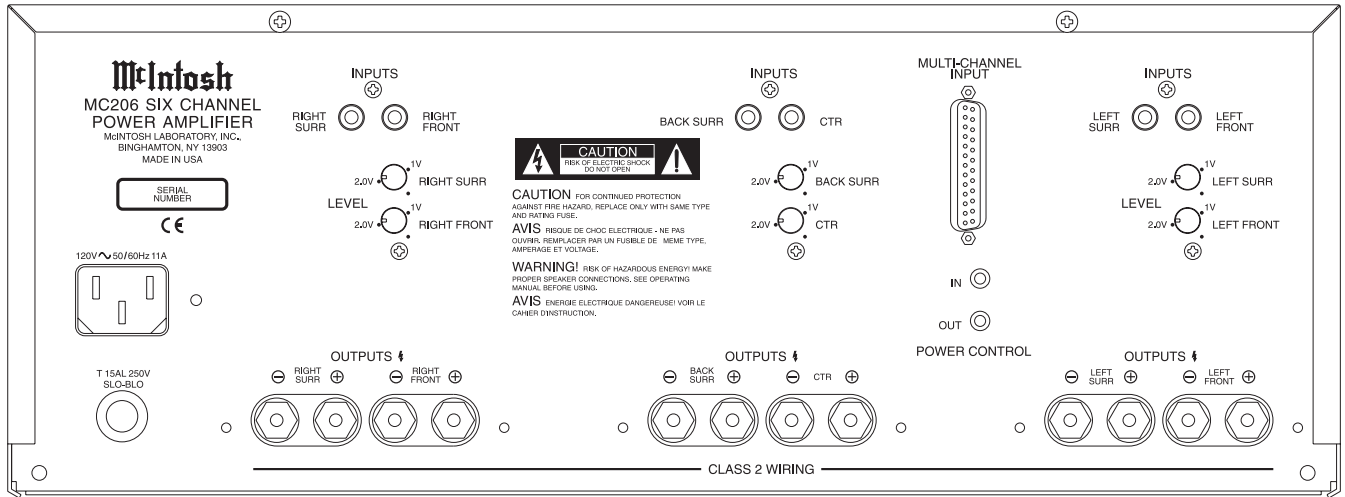
Weight

57 pounds (25.9kg) net, 76 pounds (34.5kg) in shipping carton

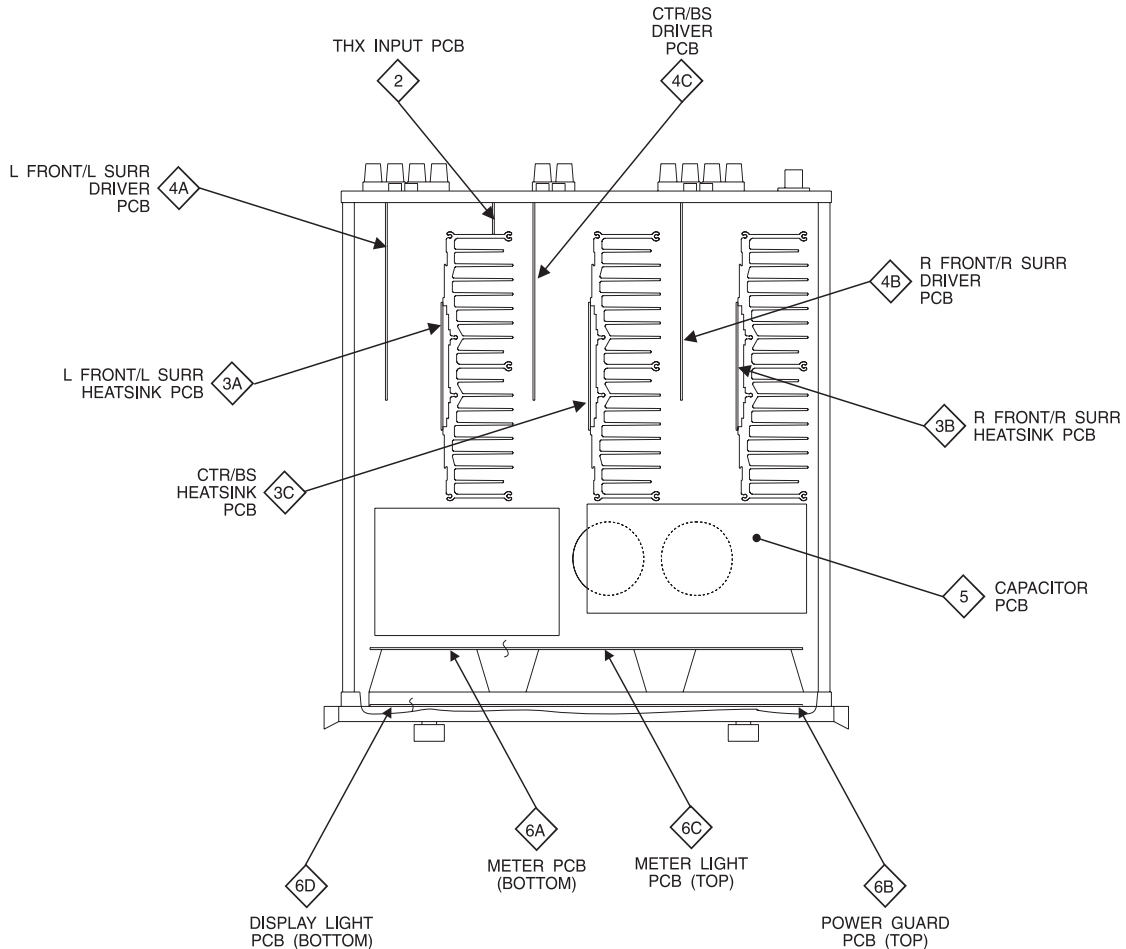
NOTES

1. The heavy lines on the schematic denote the primary signal path.
2. Unless otherwise noted, all voltages indicated on the schematics are measured under the following conditions:
 - a. AC input at 120 volts, 50/60Hz.
 - b. All voltages are +/-10% with respect to ground. A high impedance (10 megaohm) voltmeter must be used.
3. Unless otherwise specified:
 - a. Resistor values are in ohms.
 - b. Capacitor values are microfarads (uF).
 - c. Inductor values are in microhenries (uH).
4. On PC board drawings, Square pad indicates:
 - a. Polarized Capacitors - Positive
 - b. Diodes - Cathode
 - c. Others - Pin 1
5. **WARNING**
Parts marked with the symbol  have critical characteristics. Use only replacement parts recommended by the manufacturer.

REAR PANEL

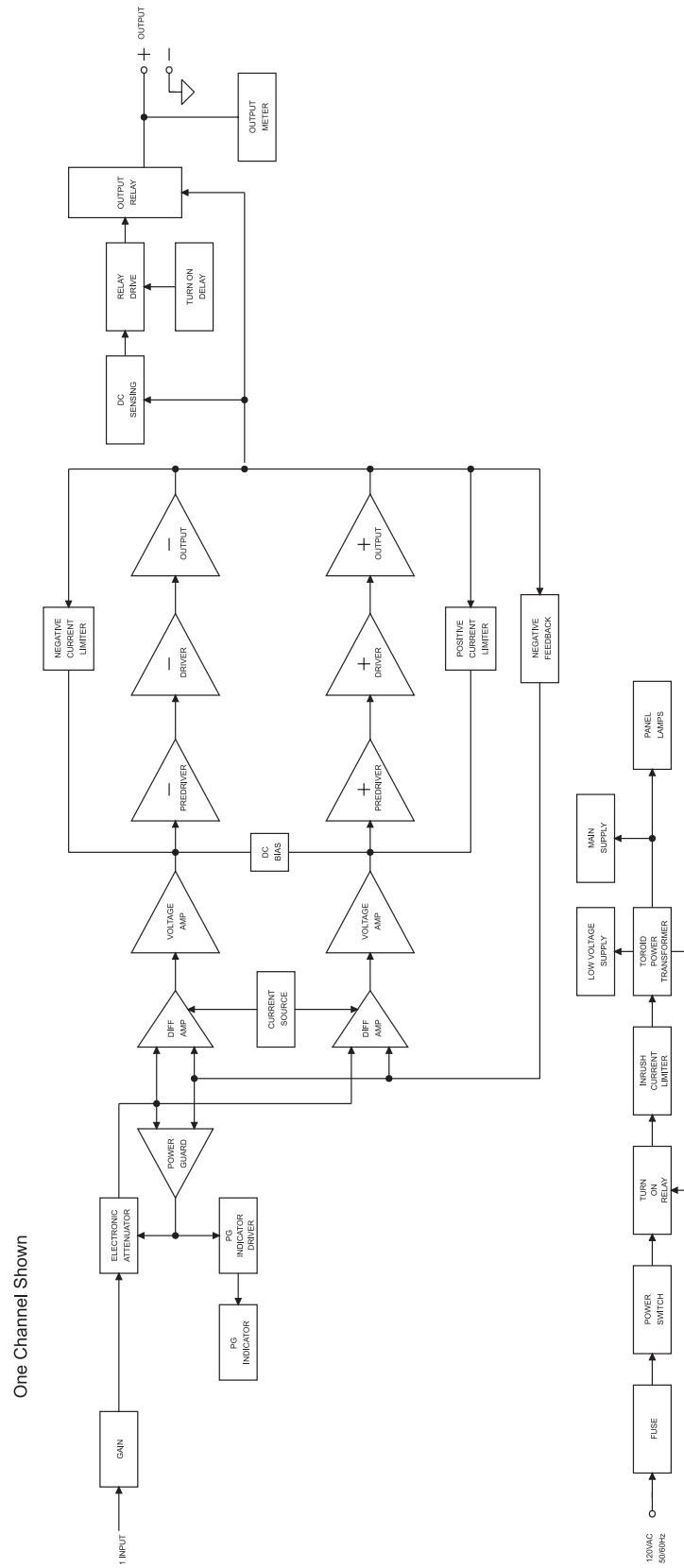


SECTION LOCATIONS

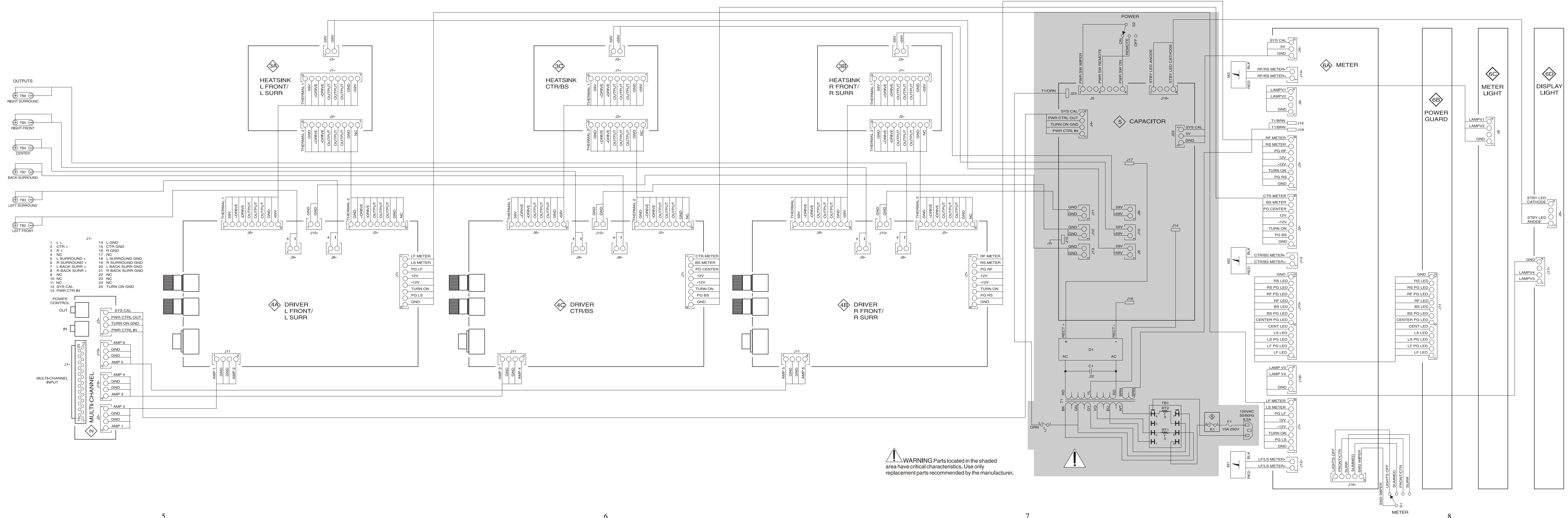


TOP VIEW WITH COVER REMOVED

BLOCK DIAGRAM

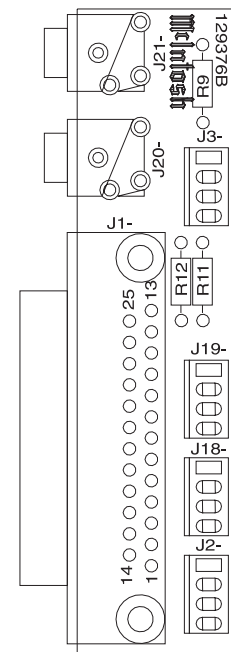
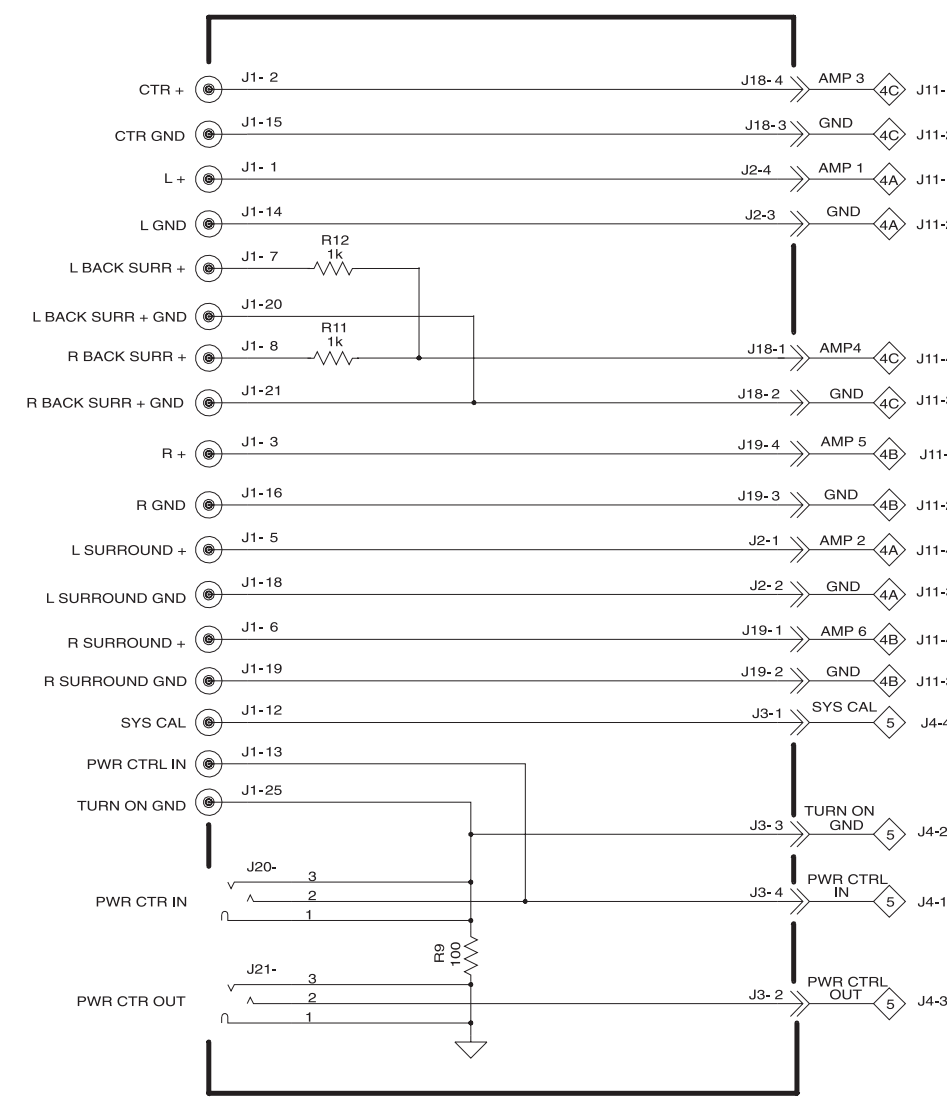


INTERCONNECT

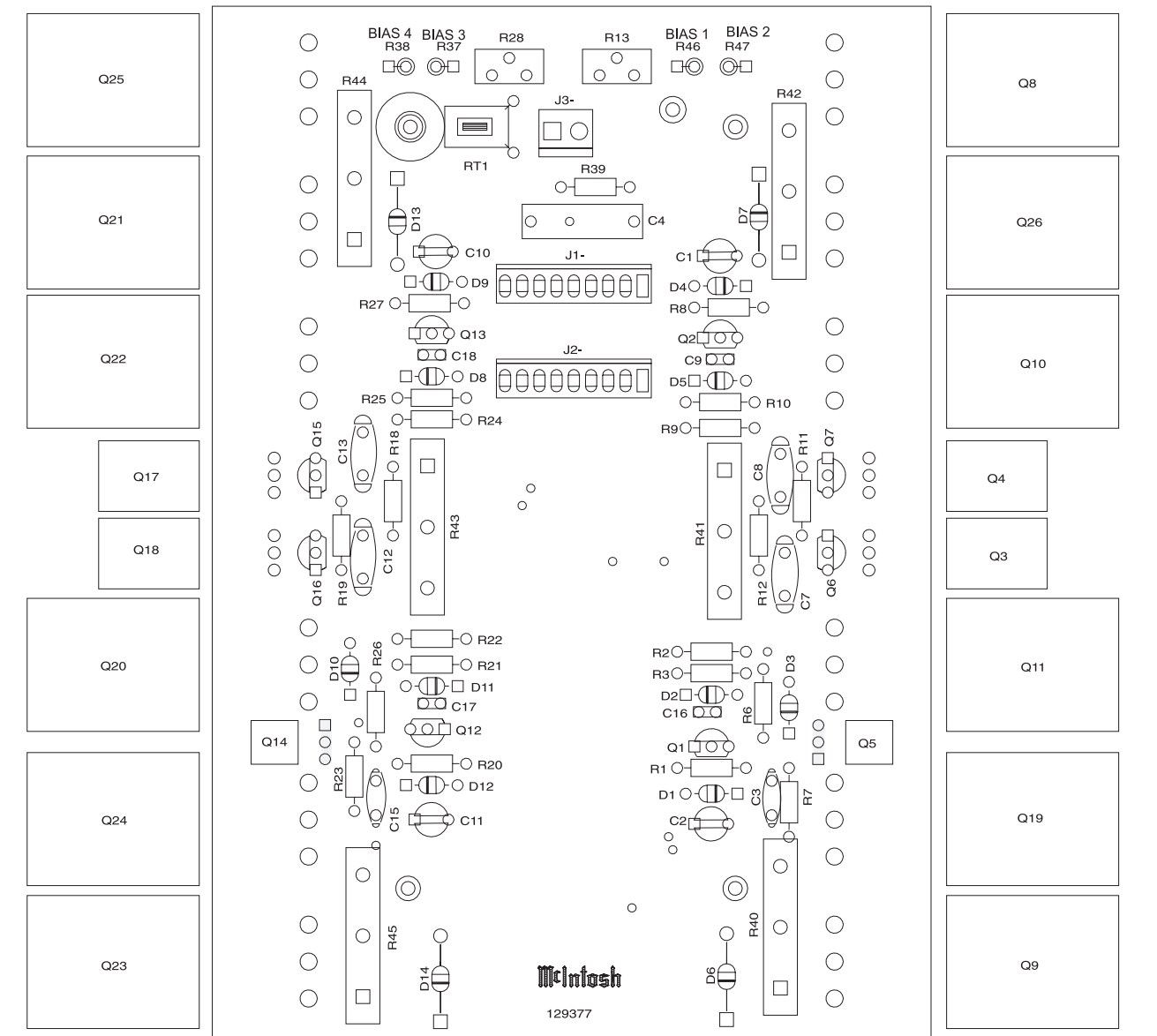
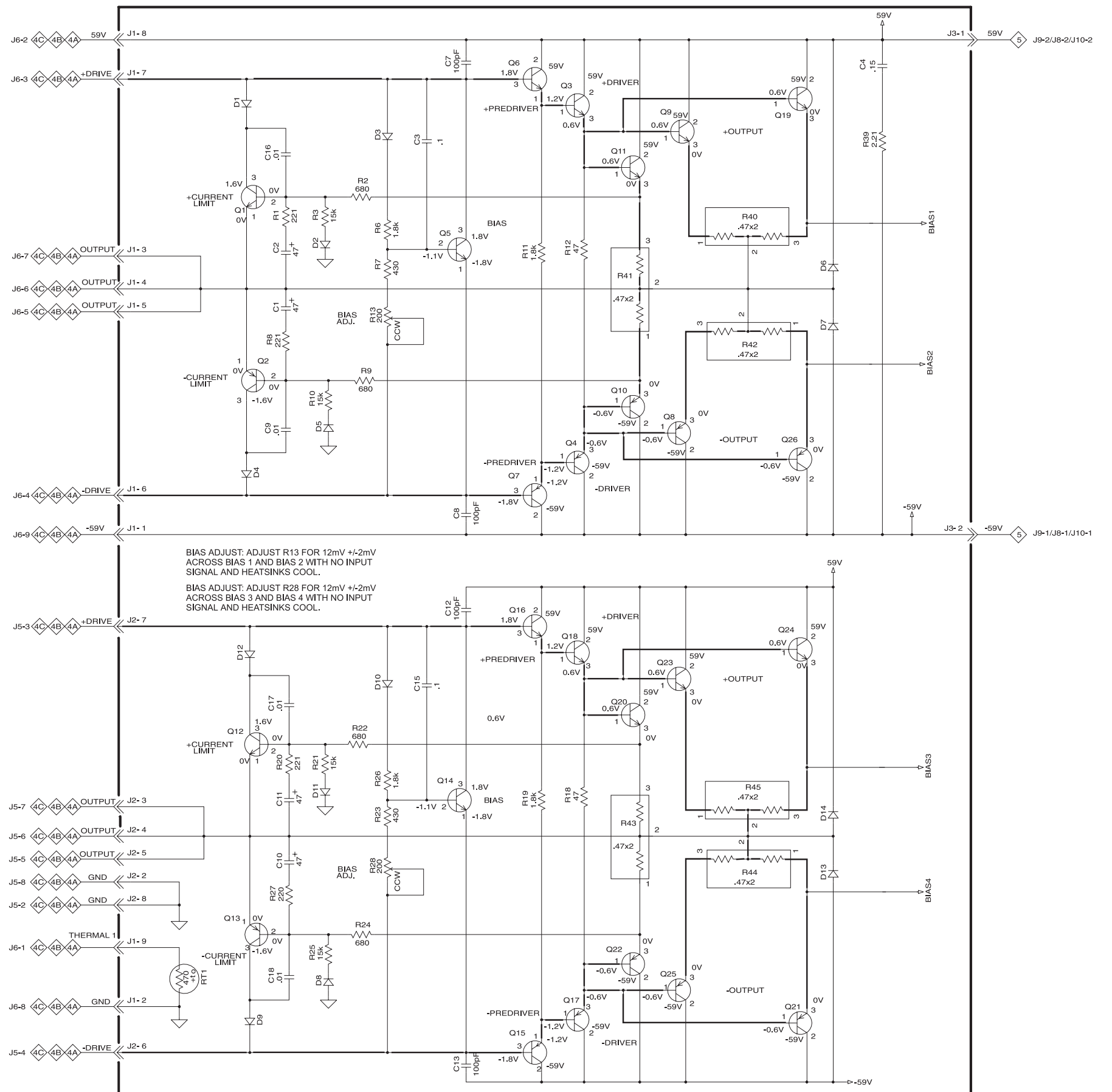


WARNING Parts located in the shaded area have critical characteristics. Use only replacement parts recommended by the manufacturer.

2 MULTI-CHANNEL 048551B



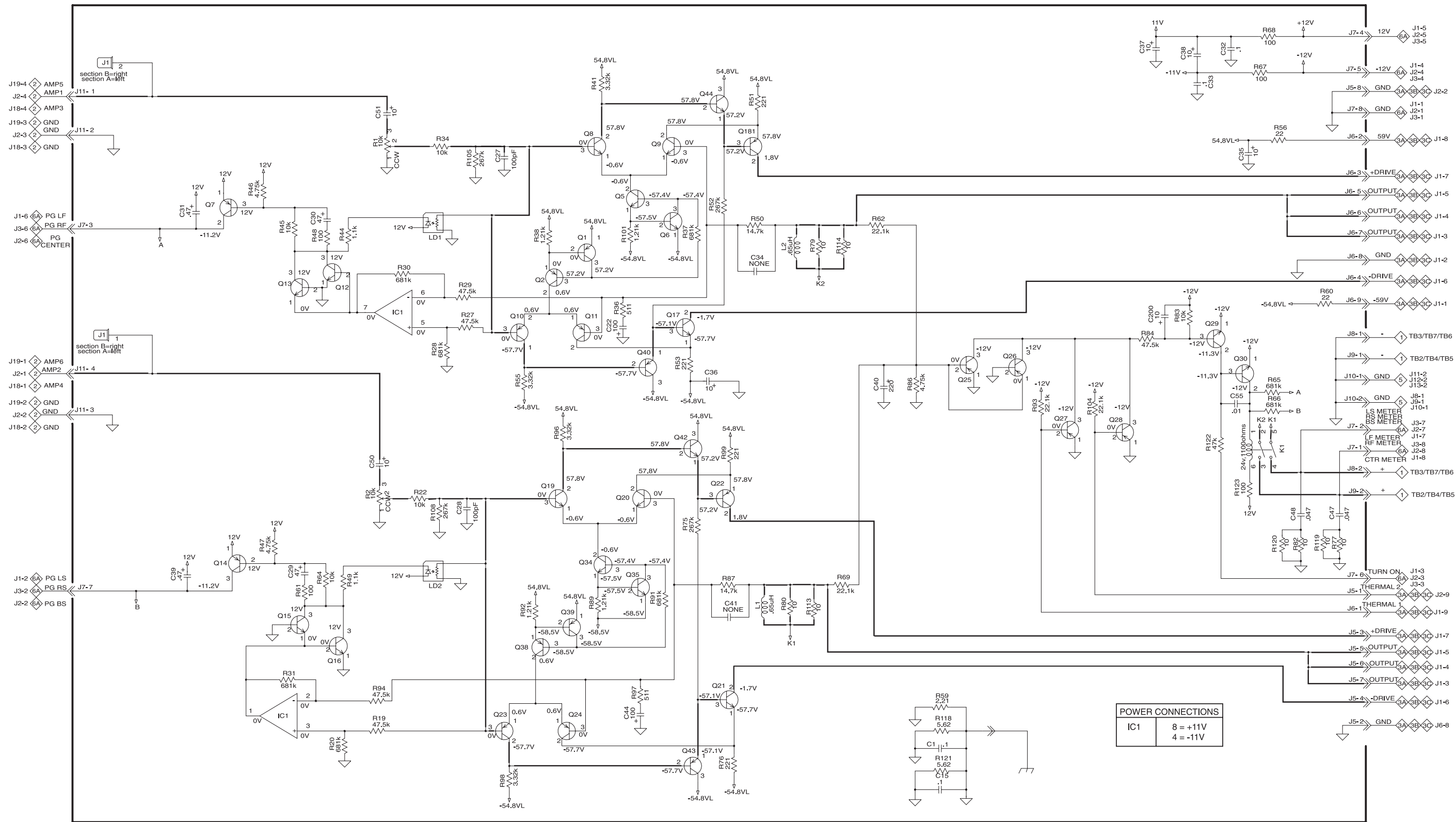
3B HEATSINK 049552



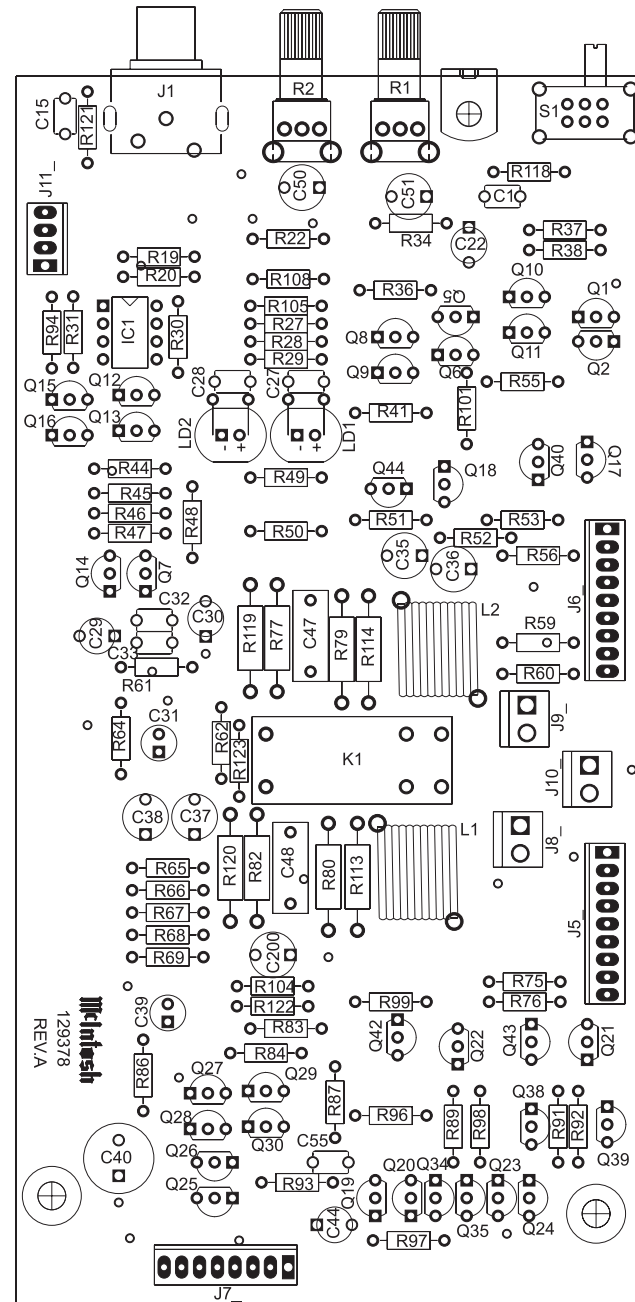


DRIVER 049553

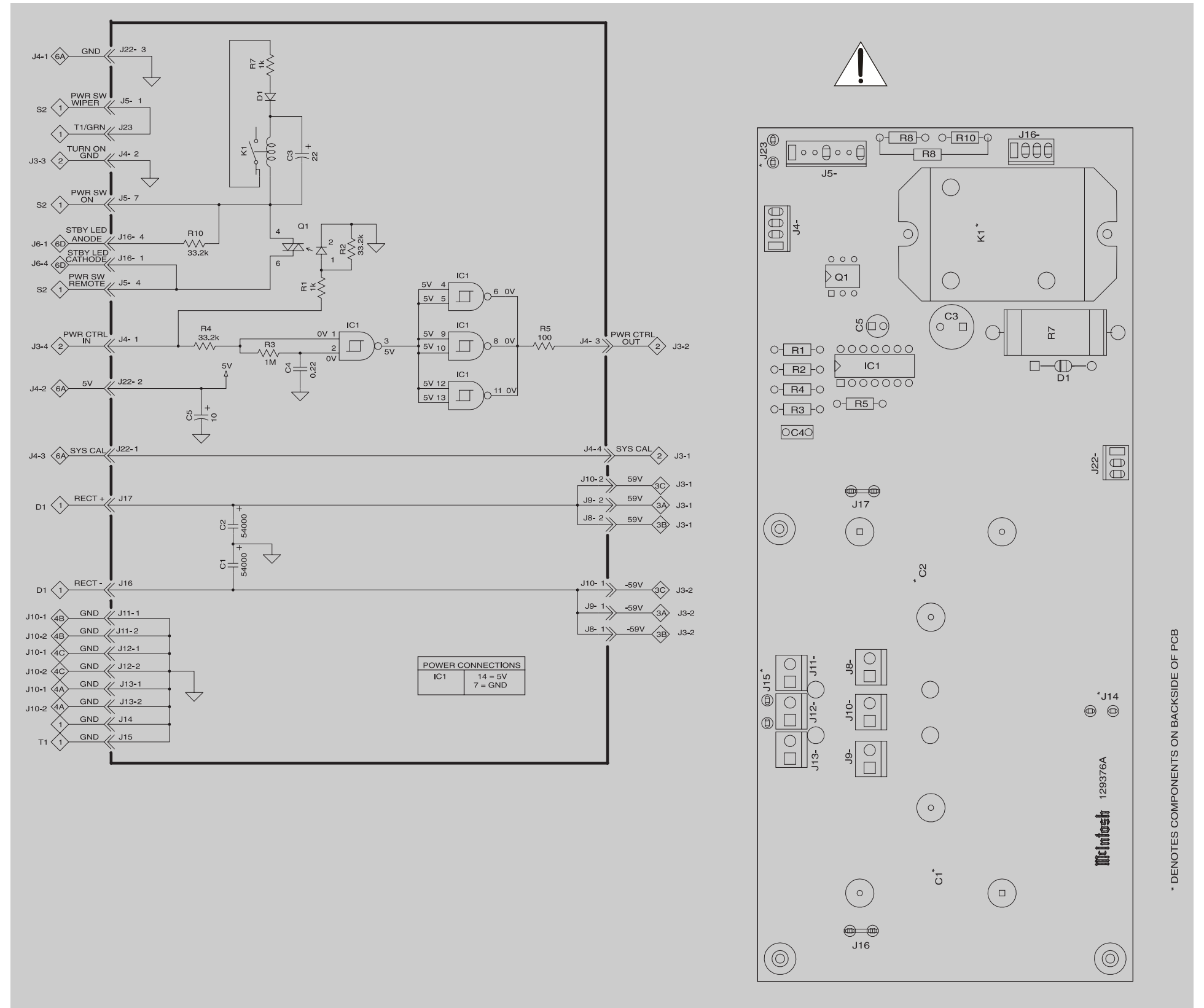
MC206

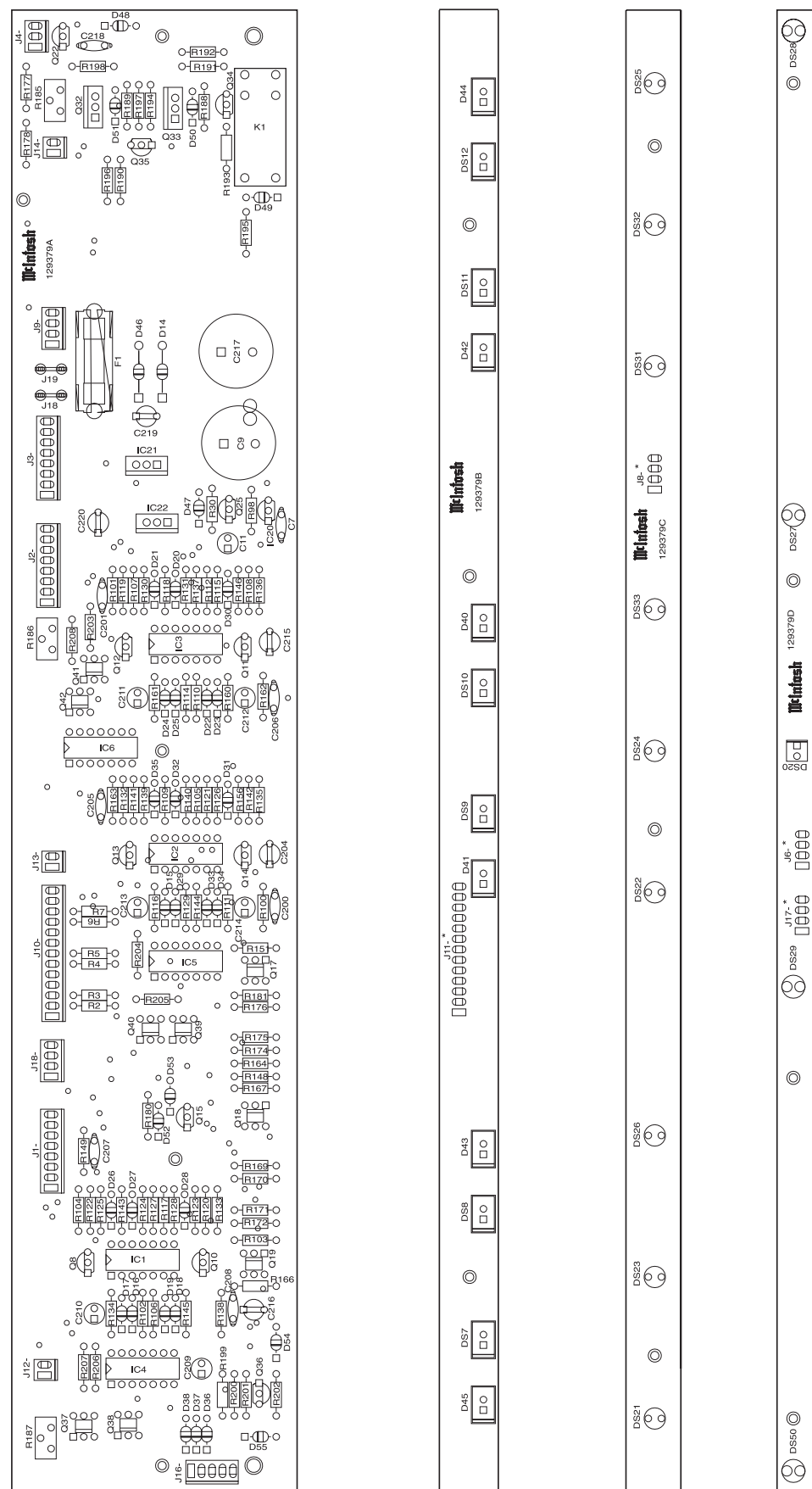


4B DRIVER 049553



5 CAPACITOR 049551





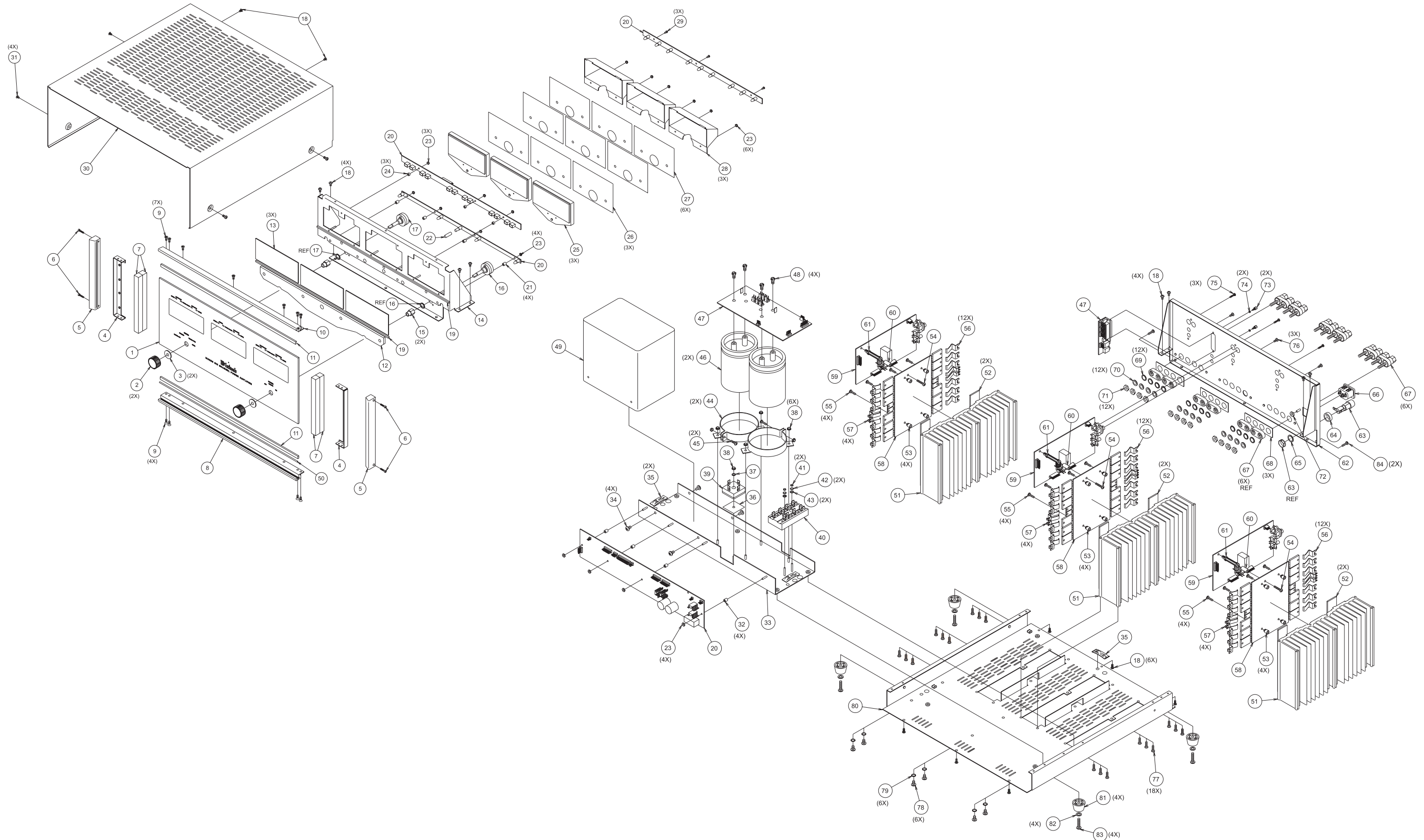
PARTS LIST

Reference No.	Description	Part No.
INTERCONNECT		
C1	.22uF CAPACITOR	05200500
D1	BRIDGE RECTIFIER	07013900
F1	15A 250V FUSE	08904200
M1 M2 M3	PANEL METER	12406400
RT1 RT2	THERMISTOR	05200800
S1	METER SWITCH	14625000
S2	POWER SWITCH	14624300
T1	TRANSFORMER	04898000
TB1	TERMINAL BLOCK	07409100
TB2 TB3 TB4 TB5 TB6 TB7	SPEAKER TERMINAL	08412400
049551B MULTI-CHANNEL PCB		
J1-	CONN D 25-PIN	11750100
J2- J3- J4- J16- J18- J19-	CONN 4 PIN	11721500
J20- J21-	JACK MINI	11749400
R9	RES MF 100 1% 1/4W	14419600
R11 R12	RES MF 1K 1% 1/4W	14409000
049552 HEATSINK PCB		
C1 C2 C10 C11	CAPELECT 47UF 35V	06644600
C3 C15	CAP MONO .1UF 50V 20% Z5U	06130500
C4	CAPPOLYPROP 0.15UF 10% 250VDC	06436300
C7 C8 C12 C13	CAP MONO 100PF 100V 10% NPO	06130000
C9 C16 C17 C18	CAP MONO .01UF 50V 20% X7R	06130400
D1 D2 D3 D4 D5 D8 D9 D10 D11 D12	DIODE SILICON	07004700
D6 D7 D13 D14	DIODE RECTIFIER	07013100
J1- J2-	CONN MALE 9 POS FRICTION LOCK	11724400
J3-	CONN HEADER 2 PIN 0.156	11740400
J10 J11	CONN MALE 2 PIN	11721300
Q1 Q12 Q5 Q14	TRANSISTOR NPN	13222300
Q2 Q13	TRANSISTOR PNP	13222400
Q3 Q18	TRANSISTOR NPN POWER	13226800
Q4 Q17	TRANSISTOR PNP POWER	13226700
Q6 Q16	TRANSISTOR NPN	13226200
Q7 Q15	TRANSISTOR PNP	13226100
Q8 Q10 Q21 Q22 Q25 Q26	TRANSISTOR PNP POWER	13223900
Q9 Q11 Q19 Q20 Q23 Q24	TRANSISTOR NPN POWER	13223800
R1 R8 R20 R27	RES MF 221 1% 1/4W	14417200
R2 R9 R22 R24	RES MET OX 680 5% .5W	13709300
R3 R10 R21 R25	RES MF 15K 1% 1/4W	14441200
R6 R11 R19 R26	RES MET OX 1.8K 5% .5W	13709400
R7 R23	RES MET OX 430 5% .5W	13709500
R12 R18	RES MET OX 47.5% .5W	13709600
R13 R28	POT TRIM 200 OHM 20% HORIZ AD	13439000
R39	RES MF 2.21 OHM 1/4W 1%	14437800
R40 R41 R42 R43 R44 R45	RES WW DUAL .47 OHM 5% 5W	13919900
RT1	THERMISTOR 100	14427900
049553 DRIVER PCB		
C1 C15 C32 C33	CAP MONO .1UF 50V 20% Z5U	06130500
C22 C44	CAPELECT 100UF 25V	06644700
C27 C28	CAP MONO 100PF 100V 10% NPO	06130000
C29 C30	CAPELECT 47UF 35V	06644600
C31 C39	CAPELECT 0.47UF 50V 20%	06624400
C35 C36 C37 C38 C50 C51 C200	CAPELECT 10UF 100VDC	06646200
C40	CAPELECT 220UF 50V 20%	06625400

C47 C48	CAPPOLYPROP .047UF 10% 250VDC	06436400
C55	CAP MONO .01UF 50V 20% X7R	06130400
IC1	IC DUAL OPERATIONAL AMPLIFIER	13326000
J1	JACK PHONO GOLD PJ261G	11743600
J5- J6-	CONN MALE 9 POS FRICTION LOCK	11724400
J7-	CONN 8 POS MALE FRICTION LOCK	11727500
J8- J9- J10-	CONN HEADER 2 PIN 0.156	11740400
J11-	CONN 4 PIN	11721500
K1	RELAY 24VDC 5A 277VAC	08705700
L1 L2	CHOKE OUTPUT .65UH	12229700
LD1 LD2	LDR NETWORK VTL5C9	14417900
Q1 Q7 Q14 Q25 Q26 Q27 Q28 Q39	TRANSISTOR PNP	13222400
Q2 Q10 Q11 Q23 Q24 Q38	TRANSISTOR PNP 120V	13225500
Q5 Q8 Q9 Q19 Q20 Q29 Q30 Q34	TRANSISTOR NPN	13225400
Q6 Q12 Q13 Q15 Q16 Q35 Q42 Q44	TRANSISTOR NPN	13222300
Q17 Q21	TRANSISTOR NPN	13226200
Q18 Q22	TRANSISTOR PNP	13226100
Q40 Q43	TRANSISTOR PNP	13222400
R1 R2	POT GAIN CONTROL 10K OHM	13448600
R19 R27 R29 R84 R94 R122	RES MF 47.5K 1% 1/4W	14410800
R20 R28 R30 R31 R37 R65 R66 R91	RES MF 681K 1% 1/4W	14444300
R22 R34 R45 R64 R83	RES MF 10K 1% 1/4W	14405300
R36 R97	RES 511 1% 1/4W	14412300
R38 R89 R92 R101	RES MF 1.21K 1% 1/4W	14419100
R41 R55 R96 R98	RES MF 3.32K 1% 1/4W	14409500
R44 R49	RES MF 1.1K 1% 1/4W	14409100
R46 R47 R86	RES MF 4.75K 1% 1/4W	14409700
R48 R61 R67 R68 R123	RES MF 100 1% 1/4W	14419600
R50 R87	RES MF 14.7K 1% 1/4W	14414900
R51 R53 R76 R99	RES MF 221 1% 1/4W	14417200
R52 R75 R105 R108	RES MF 267K 1% 1/4W	14411800
R56 R60	RES FP 22 OHM 1/4W 5%	13703300
R59	RES MF 2.21 OHM 1/4W 1%	14437800
R62 R69 R93 R104	RES MF 22.1K 1% 1/4W	14418700
R77 R79 R80 R82 R113 R114 R119 R120	RES CF 10 5% 1/2W	14116500
R118 R121	RES MF 5.62OHM 1% 1/4W	14416800
049551 CAPACITOR PCB		
C3	CAPELECT 22UF 100V	06650600
C4	CAP M POLY .22UF 5% 63VDC	06432900
C5	CAPELECT 10UF 50V	06644500
D1	DIODE RECTIFIER	07013100
IC1	IC NAND SCHMITT 2-IN X 4	13319200
J4- J16-	CONN 4 PIN	11721500
J5-	CONN MALE 7 PIN	11721700
J8- J9- J10- J11- J12- J13-	CONN HEADER 2 PIN 0.156	11740400
J14 J15 J16 J17 J23	BLADE FASTON 1/4 INCH	11734200
J22-	CONN MALE 3 POS MTS100 NORMAL	11721400
K1	RELAY 48VDC	08704900
Q1	TRIAC OPTOCOUPLER	13102400
R1	RES MF 1K 1% 1/4W	14409000
R2 R4 R10	RES MF 33.2K 1% 1/4W	14401500
R3	RES MF 1M 1/4W	14426900
R5	RES MF 100 1% 1/4W	14419600
R7	RES WW 1K 5W 10%	13912100
049554 METER PCB		
C7 C200 C201 C205 C206 C207 C208 C218	CAP MONO .1UF 50V 20% Z5U	06130500
C9 C217	CAPELECT 3300UF 35V	06650900
C11	CAPELECT 22UF 50V	06634500
C204 C215 C216 C219 C220	CAPELECT 100UF 25V	06644700

C209 C210 C211 C212 C213 C214	CAPELECT 2.2UF 50V	06651100
D14 D46	DIODE RECTIFIER	07013100
D15 D16 D17 D18 D19 D20 D21 D22 D23	DIODE SILICON	07004700
D24 D25 D26 D27 D28 D29 D30 D31 D32	DIODE SILICON	07004700
D33 D34 D35 D36 D37 D38 D47 D48 D49	DIODE SILICON	07004700
D40 D41 D42 D43 D44 D45	LED BAR RED	05813900
D50 D51 D52	DIODE ZENER 16V 5% 500MW	07011400
D53 D54 D55	DIODE SILICON	07004700
DS7 DS8 DS9 DS10 DS11 DS12	LED AMBER	05813300
DS20	LED RED HIGH EFFICIENCY	05814800
DS21 DS22 DS23 DS24 DS25 DS26 DS27	LAMP 14V	05812000
DS27 DS28 DS29 DS50	SOCKET LAMP 0.125 PINS .110 HI	17816200
DS28 DS29 DS31 DS32 DS33 DS50	LAMP 14V	05812000
F1	HOLDER FUSE 5X20MM PCB MOUNT	17815900
IC1 IC2 IC3	IC QUAD OPAMP NJM4741D	13331200
IC4 IC5 IC6	IC QUAD ANALOG SW	13311700
IC20	IC REGULATOR +5 VOLT	13309300
IC21	IC REGULATOR -12V	13315500
IC22	IC REGULATOR 12V	13315600
J1- J2- J3-	CONN 8 POS MALE FRICTION LOCK	11727500
J4-	CONN MALE 3 POS MTS100 NORMAL	11721400
J6- J8- J9- J17- J18-	CONN 4 PIN	11721500
J10- J11-	CONN 13 POS	11729800
J12- J13- J14-	HEADER 2 PIN .100	11769000
J16-	CONN MALE 5 PIN 0.1 POST ASSY	11721600
J18 J19	BLADE FASTON 1/4 INCH	11734200
K1	RELAY 24VDC 5A 277VAC	08705700
Q8 Q10 Q11 Q12 Q13 Q14 Q15 Q22	TRANSISTOR NPN	13222300
Q25 Q35 Q57 Q58 Q59 Q60 Q61 Q62	TRANSISTOR PNP	13222400
Q32 Q33	TRANSISTOR POWER N-CHN ENHANCE	13224200
Q34 Q36 Q37 Q38 Q39 Q40 Q41 Q50	TRANSISTOR NPN	13222300
Q51 Q52 Q53 Q54 Q55 Q56	TRANSISTOR NPN	13222300
R2 R3 R4 R5 R6 R7	RES MF 681 1% 1/4W	14419500
R30	RES MF 681K 1% 1/4W	14444300
R98 R148 R166 R169 R172 R174 R181	RES MF 150K 1% 1/4W	14441900
R100 R101 R138 R149 R162 R163	RES MF 20.0 1/4W	14417400
R102 R106 R110 R114 R129 R144 R202	RES MF 100K 1% 1/4W	14411300
R103 R151 R164 R167 R170 R176	RES MF 5.62K OHM 1% 1/4W	14444700
R104 R119 R132 R133 R135 R136	RES MF 15K 1% 1/4W	14441200
R105 R127 R137	RES MF 4.75M 1/4W 1%	14437900
R107 R108 R109 R118 R120 R122 R141	RES MF 3.32K 1% 1/4W	14409500
R111 R116 R134 R145 R160 R161 R192	RES MF 178K 1% 1/4W	14442000
R112 R117 R121 R124 R131 R140 R171	RES MF 10K 1% 1/4W	14405300
R115 R126 R128 R177 R178	RES 26.7K 1% 1/4W	14410500
R123 R146 R156 R195	RES MF 221 1% 1/4W	14417200
R125 R130 R139	RES MF 90.9K 1% 1/4W	14417000
R142 R143 R194	RES MF 3.32K 1% 1/4W	14409500
R175 R199	RES MF 10K 1% 1/4W	14405300
R180	RES MF 18.2K 1% 1/4W	14418100
R185 R186 R187	POT TRIMMER 5K OHM 20%	13438700
R188 R193	RES MF 3.16K 1% 1/4W	14419900
R189	RES MF 7.5K 1% 1/4W	14421000
R190	RES MF 47.5K 1% 1/4W	14410800
R191 R197	RES MF 12.1K 1% 1/4W	14415400
R196 R200 R201 R203 R204 R205 R206	RES MF 178K 1% 1/4W	14442000
R198	RES MF 5.11K 1% 1/4W	14408300
R207 R208	RES MF 178K 1% 1/4W	14442000

MC206 EXPLODED VIEW



MC206 EXPLODED VIEW PARTS LIST

Ref No.	Part No.	Description
1	016446	GLASS
2	049319	KNOB ASSY
3	104017	WASHER FILT BLK 3/4 X1/4 X 1/16
4	004801	BRACKET EXTRUSION
5	018612	END CAP 7"
6	101042	SCREW TS 4-40 X 1/2 SLOT FILLISTER
7	094360	TAPE FOAM 1/2 X 1/2
8	018588	EXTRUSION BOTTOM
9	101172	SCREW TC 6-32 X 1/4 PH FL U/C
10	018587	EXTRUSION TOP
11	094016	TAPE FOAM 1/4 X 1/8
12	017855	PLEXIGLAS
13	092413	ACETATE FILTER BLUE
14	005001	SUB PANEL
15	021159	BUSHING SWITCH
16	146243	POWER SWITCH (W/LOCKWASHER)
17	146250	METER SWITCH (W/LOCKWASHER)
18	101054	SCREW TAPTITE 6-32 X 1/4 PH PAN
19	094017	TAPE FOAM 1/4 X 1/4
20	049554	METER PCB ASSY
21	112086	SPACER NYLON
22	077031	SLEEING FIBERGLAS #2
23	102001	NUT KEP 4-40 CADMIUM PLATE
24	112051	SPACER 1/8" NYLON
25	124080	METER
26	092341	FILTER AZURE BLUE
27	092342	FILTER PALE BLUE
28	017447	LIGHT BOX PLASTIC
29	114072	RIVET NYLON POP-IN
30	004798	TOP COVER
31	101078	SCREW TAP 8-32 X 5/16 PH PAN BLK
32	021094	SPACER #4 X 1/4
33	004791	TRAY
34	101163	SCREW TC 8-32 X 1/4 PH PN TYPE F
35	106007	SPRING CLIP LATCH TYPE
36	084135	PAD THERMAL
37	104005	WASHER FLAT STEEL 6 X 3/8 X .032
38	102045	NUT KEP 6-32 SPECIAL
39	070139	DIODE BRIDGE RECTIFIER
40	074091	TERMINAL BLOCK AC
41	102022	NUT MACH 4-40 X 3/16 X 1/16
42	104004	WASHER LOCK 5 X .255 INT STAR
43	104001	WASHER FLAT STEEL 4 X 9/32 X .025
44	003855	CLAMP CAPACITOR
45	100118	SCREW MACH 6-32 X 1/2 PH PN
46	066480	CAP ELECT
47	049551	CAPACITOR PCB ASSY
48	100188	SCREW MACH SEMS 10-32 X 3/8
49	048980	TRANSFORMER ASSY
50	098113	DIAL CORD
51	018671	HEATSINK
52	084183	ISOSTRATE
53	112087	SPACER PCB 1/4"
54	101202	SCREW SM 6-20 X 3/4 PH PN TYPE B
55	101059	SCREW 6 X 5/8 PH PN TYPE A
56	114119	CLIP TRANSISTOR 214
57	114118	CLIP TRANSISTOR 218
58	049552	HEATSINK PCB ASSY
59	049553	DRIVER PCB ASSY
60	022185	SPACER #6 X 1/2
61	112088	SUPPORT CIRCUIT BOARD
62	005156	REAR PANEL
63	078122	HOLDER FUSE SOCKET UL/CSA
64	112032	SPACER BLACK NYLON
65	104016	WASHER INT STAR .5 X .630 X .022
66	117487	RECEPTACLE AC LINE
67	084124	POST DUAL BINDING
68	004800	PLATE OUTPUT
69	104130	WASHER LOCK #10 SPLT PHOS/BRNZ
70	104148	WASHER PLAT BRASS
71	110009	NUT M5 X 0.8 BRASS W/GOLD PLATE
72	102020	NUT MACH 6-32 SELF-LOCK
73	112015	STANDOFF
74	104142	WASHER LOCK 2.5mm INT STAR ZINC
75	101114	SCREW SM 4-24 X 1/2 PH PN TYPE A
76	100271	SCREW MACH SEMS 6-32 X 1/4 PH PN
77	101176	SCREW TC 6-32 X PH PN TYPE F
78	100120	SCREW MACH 10-32 X 1/4 PH PN ZINC
79	104067	WASHER LOCK #10 INT STAR
80	005175	CHASSIS
81	017218	FOOT PLASTIC BLACK
82	104080	WASHER FLAT #10 CLEAR ZINC
83	100159	SCREW 10-32 X 3/4 PH PN BLK
84	101109	SCREW TAP 6-32 X 5/16 PH PN BLK

REPACKING INSTRUCTION

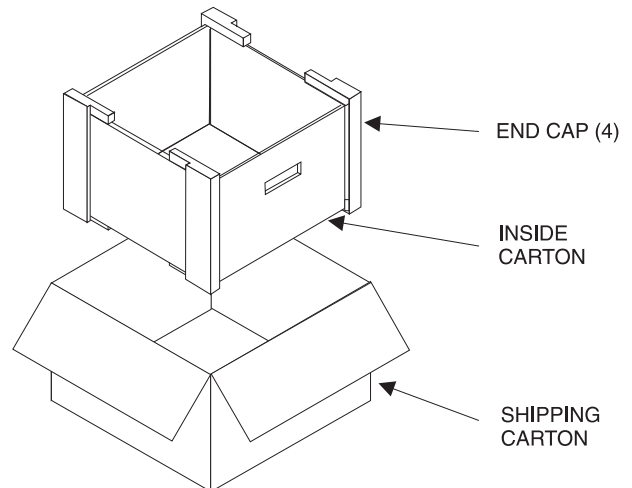
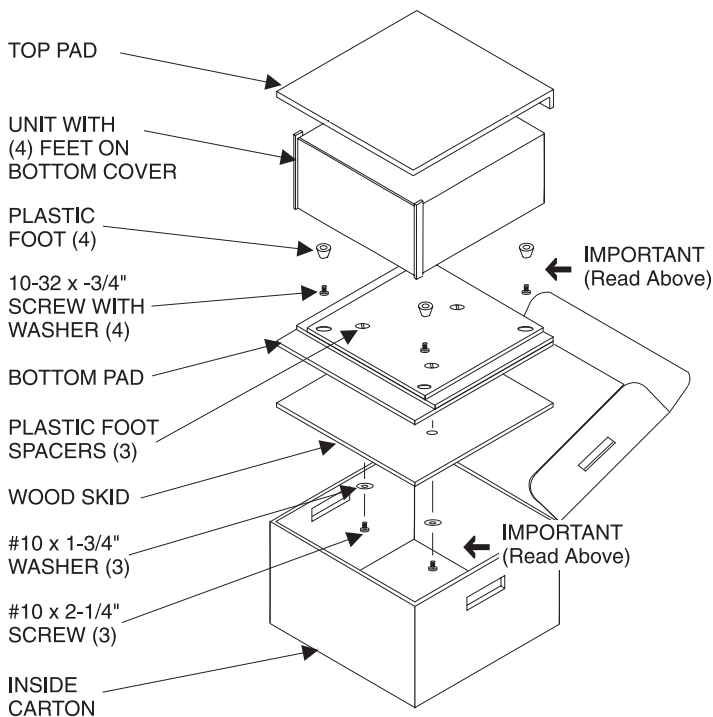
In the event it is necessary to repack the unit for shipment, the unit must be packed exactly as shown below.

IMPORTANT - The four plastic feet must be attached to the bottom of the unit so they will locate in the four holes of the bottom pad. Three #10 x 2-1/4" screws and washers must be used to fasten the unit securely to the bottom pad and wood skid. Failure to do this will result in shipping damage.

If a shipping carton or any of the interior parts is needed, please call or write the Customer Service Department of McIntosh Laboratory. Order parts from the accompanying list by part number.

Use the original shipping carton and interior parts only if they are in good serviceable condition.

Qty.	Part No.	Description
1	033888	Shipping carton only
4	033887	End cap (Foam pad)
1	033697	Inside carton only
1	033725	Top pad
1	034008	Bottom pad
3	017218	Plastic foot (spacer)
1	033699	Wood skid
3	101169	#10 x 2-1/4" Wood screw
3	104033	#10 x 1-3/4" Flat washer
4	017218	Plastic foot
4	100159	#10-32 x 3/4" Machine screw
4	104083	#10 x 7/16" Flat washer
1	049299	Packaging complete



MC206

POWER AMPLIFIER

SERVICE MANUAL

The continuous improvement of its products is the policy of McIntosh Laboratory Incorporated, who reserve the right to improve design without notice. Because of the constant upgrading of McIntosh products' circuitry and components, the Company cannot insure, and does not warrant, the accuracy of the within schematic material, which is intended for information only.