

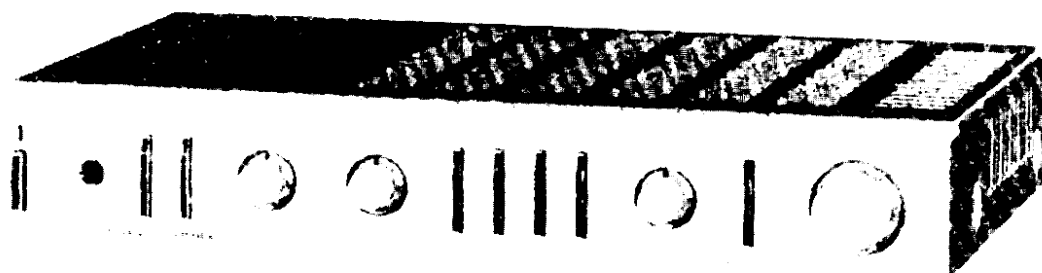
SERVICE MANUAL



FISHER[®]

CA-M300

**Stereo Pre-Main
Amplifier**



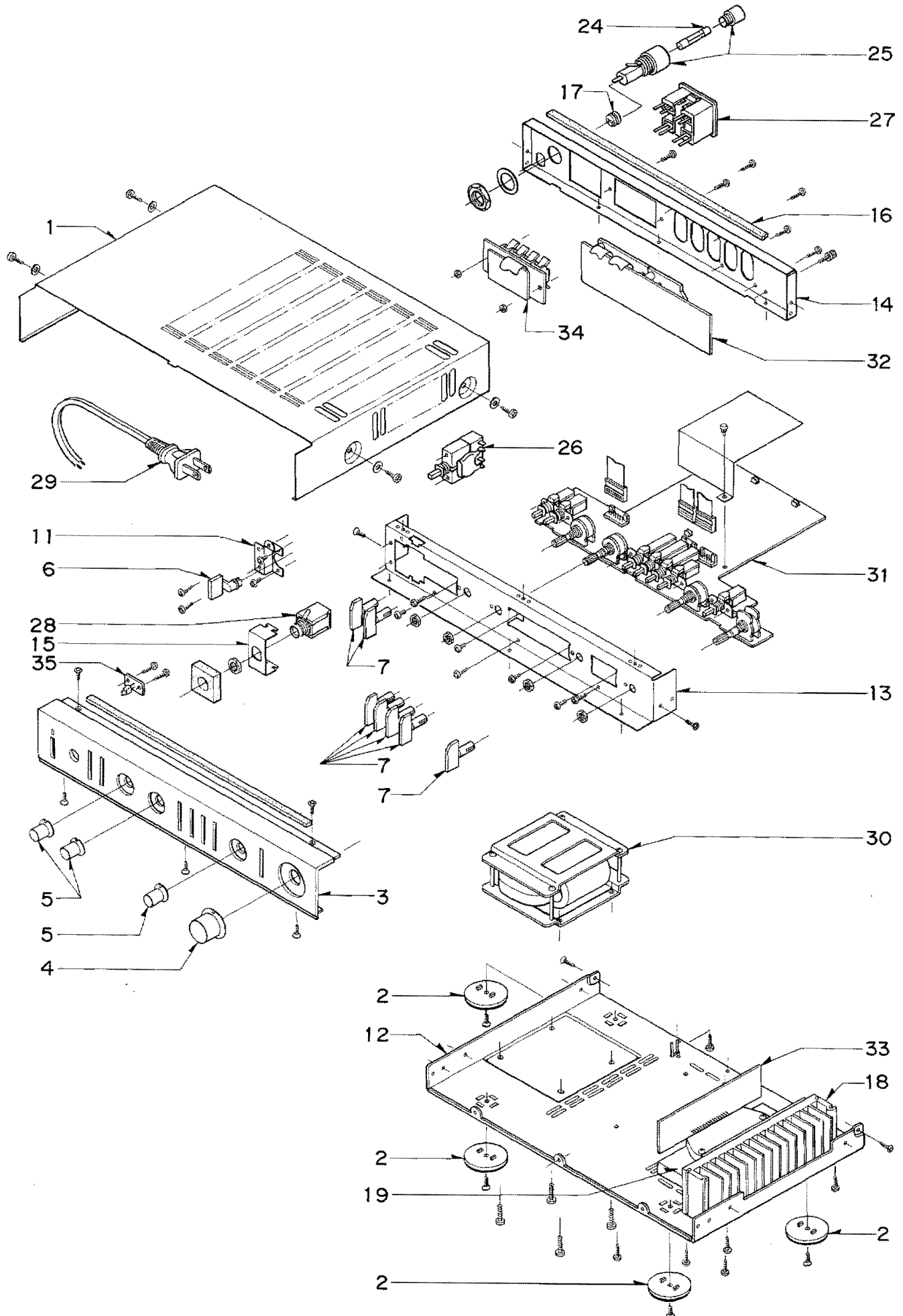
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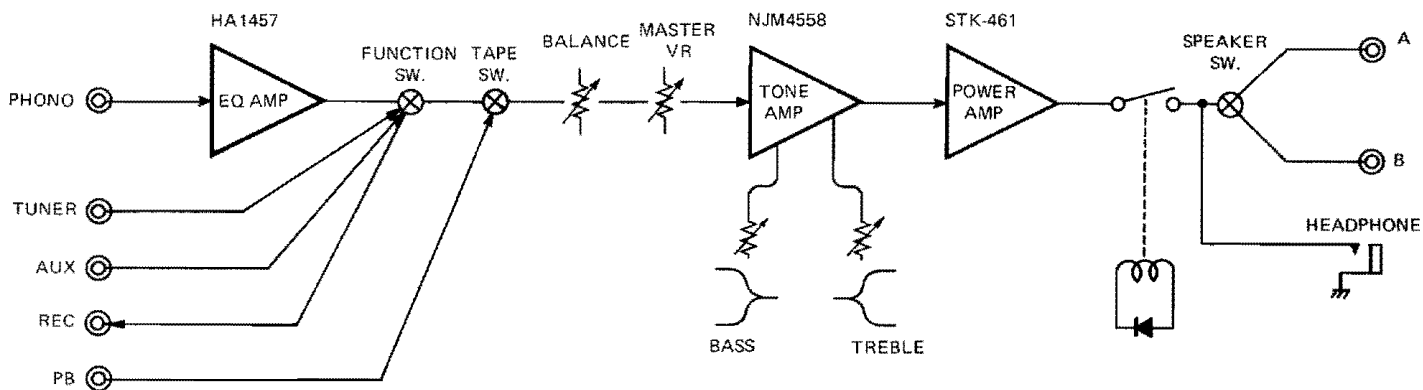
SPECIFICATIONS

AMPLIFIER	CA-M300	
POWER AMPLIFIER SECTION		
Minimum RMS sine wave power per channel within stated bandwidth at no more than stated distortion and with an 8 ohm load.	20 Watts	
Power Band Width	20 Hz - 20 kHz	
Total Harmonic Distortion	0.05%	
I.M. Distortion	0.05%	
Speaker Damping	>40	
PREAMPLIFIER SECTION		
Frequency Response	Phono (RIAA) (30 Hz - 15 kHz)	±0.5 dB
	Aux. (20 Hz - 20 kHz)	±0.5 dB
Input Sensitivity and Impedance	Phono	2.5 mV/50 kΩ
	Tape Monitor	150 mV/40 kΩ
	Tuner	150 mV/40 kΩ
	Auxiliary	150 mV/40 kΩ
Phono Max. Input Capability	Phono	180 mV
Tone Control	Bass (100 Hz)	±10 dB
	Treble (10 kHz)	±10 dB
Loudness Contour (100 Hz/10 kHz)		+8 dB/+4 dB
Hum and Noise (IHF Short Circuit, A Net Work)	Phono	75 dB
	Tape Monitor	100 dB
	Tuner	100 dB
	Auxiliary	100 dB
Output Level and Impedance Rec Out		150 mV/5 kΩ
GENERAL		
Power Requirements (50/60 Hz)		120 V AC ±10% 110 W
Dimensions (W x D x H)		11-3/4" x 8-1/2" x 2"
Weight		7.3 lbs.

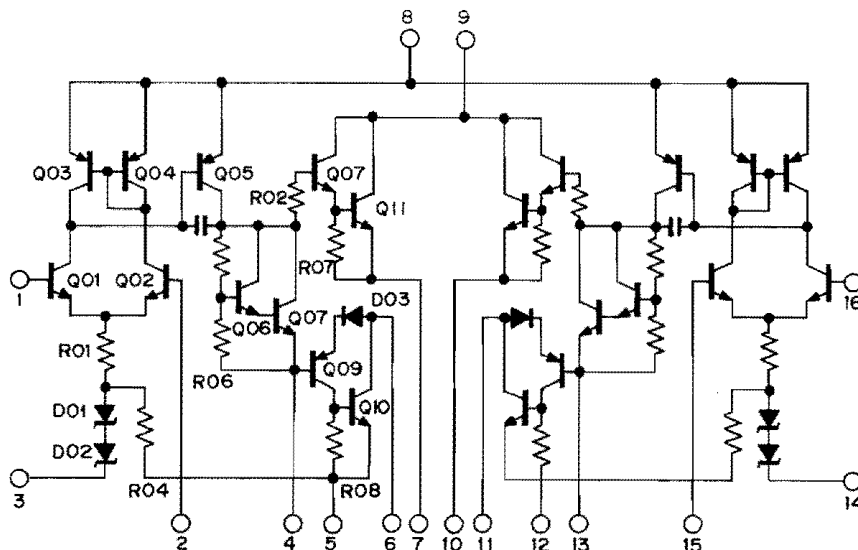
CABINET & CHASSIS EXPLODED VIEW



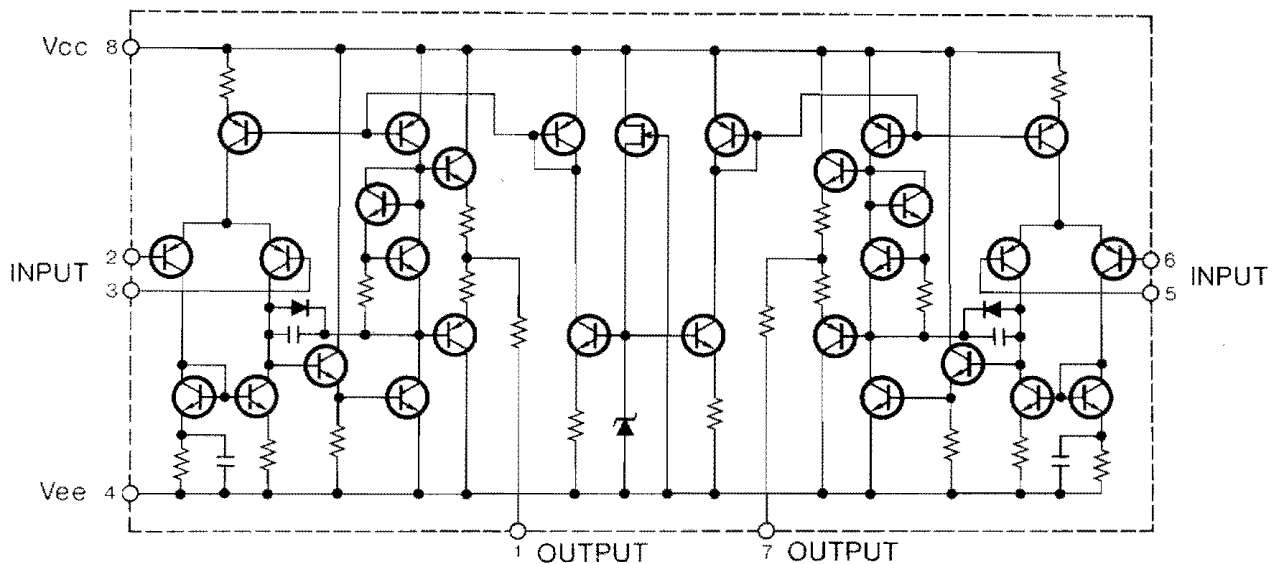
FUNCTIONAL BLOCK DIAGRAM



POWER AMP IC STK-461 EQUIVALENT CIRCUIT

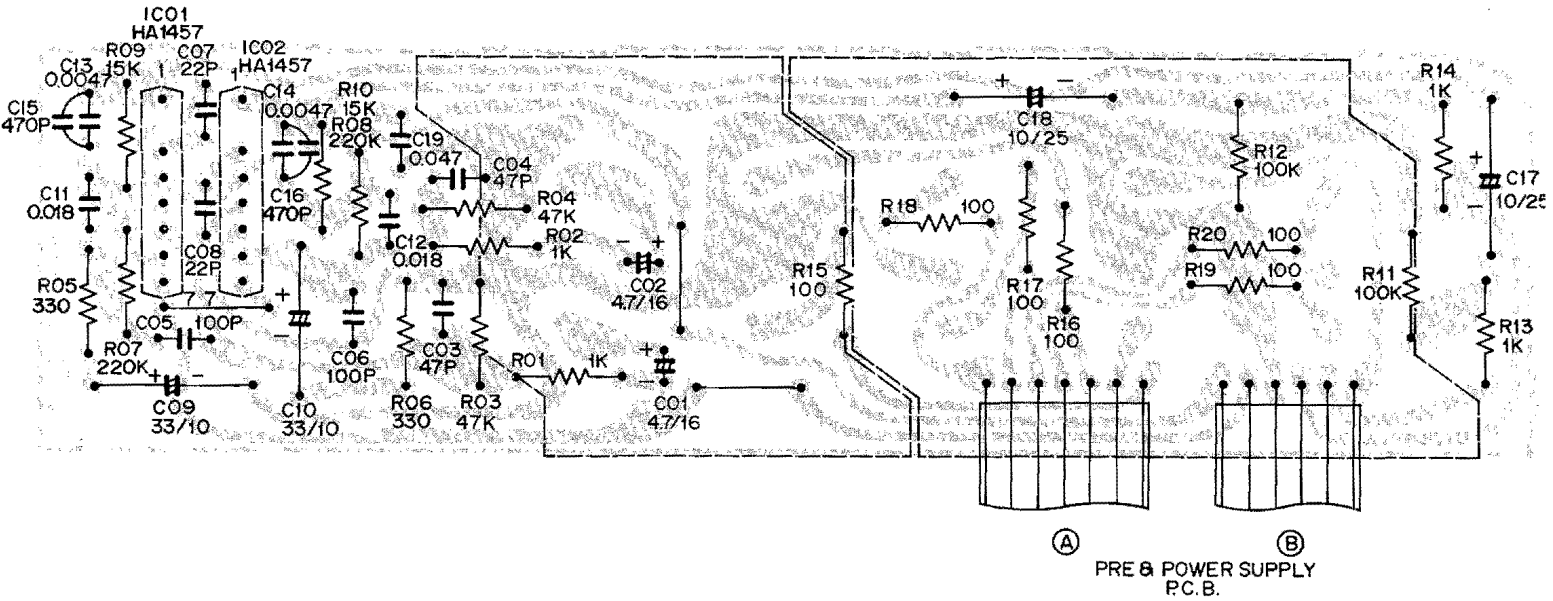


TONE AMP IC NJM4558D EQUIVALENT CIRCUIT



EQ AMP P.C.BOARD

(BOTTOM VIEW)



IC PIN NUMBER VOLTAGES									
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC01,02	HA1457	0V	-	0V	-18V	-16.6V	0V	0V	18.4V

PARTS LIST

EQ AMP P.C.B. Assy
131 0 4001 05311

Ref. No.	Parts Number	Description
	4 2352 00380	Pin Jack 4P
	4 2352 00750	Jack 6P

CAPACITORS

C01,02	C1CTRK475A	Tantalum	4.7 μ F	16V	\pm 10%
C03,04	C1HCYK470APA	Ceramic	47 pF	50V	\pm 10%
C05,06	C1HCYK101APA	Ceramic	100 pF	50V	\pm 10%
C07,08	C1HCYK220APA	Ceramic	22 pF	50V	\pm 10%
C09,10	C1ART-336A	Electrolytic	33 μ F	10V	
C11,12	C1HFRJ183A	Mylar	0.018 μ F	50V	\pm 5%
C13,14	C1HFRJ472A	Mylar	0.0047 μ F	50V	\pm 5%
C15,16	C1HCDK471SL	Ceramic	470 pF	50V	\pm 10%
C17,18	C1ERT-106A	Electrolytic	10 μ F	25V	
C19	C1HYDZ473A	Ceramic	0.047 μ F	50V	+80,-20%

Ref. No.	Parts Number	Description
SEMICONDUCTORS		
IC01,02	IKK-HA1457	IC, HA1457

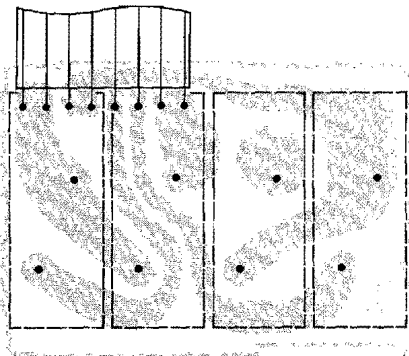
RESISTORS

R01,02	R2EDZJ102APA	Carbon	1k	1/4W	\pm 5%
R03,04	R2EDZJ473APA	Carbon	47k	1/4W	\pm 5%
R05,06	R2EDSJ331A	Carbon	330	1/4W	\pm 5%
R07,08	R2EDZJ224APA	Carbon	220k	1/4W	\pm 5%
R09,10	R2EDZJ153APA	Carbon	15k	1/4W	\pm 5%
R11,12	R2EDZJ104APA	Carbon	100k	1/4W	\pm 5%
R13,14	R2EDZJ102APA	Carbon	1k	1/4W	\pm 5%
R15,16	R2EDZJ101APA	Carbon	100	1/4W	\pm 5%
17,18					
19,20					

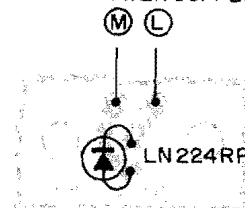
SP TERMINAL P.C.BOARD (BOTTOM VIEW)

L.E.D. P.C.BOARD (BOTTOM VIEW)

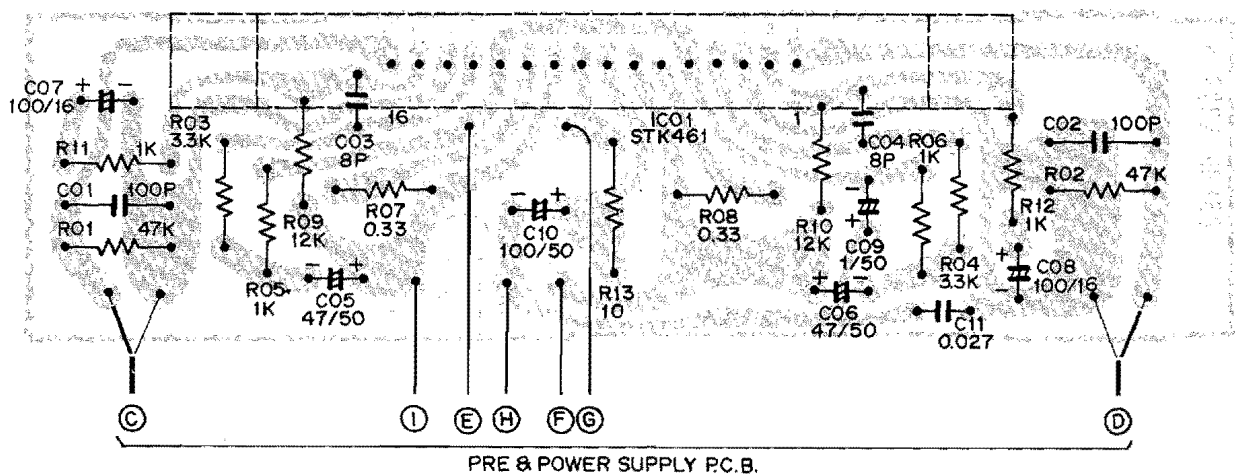
PRE & POWER SUPPLY P.C.B.



PRE & POWER SUPPLY P.C.B.

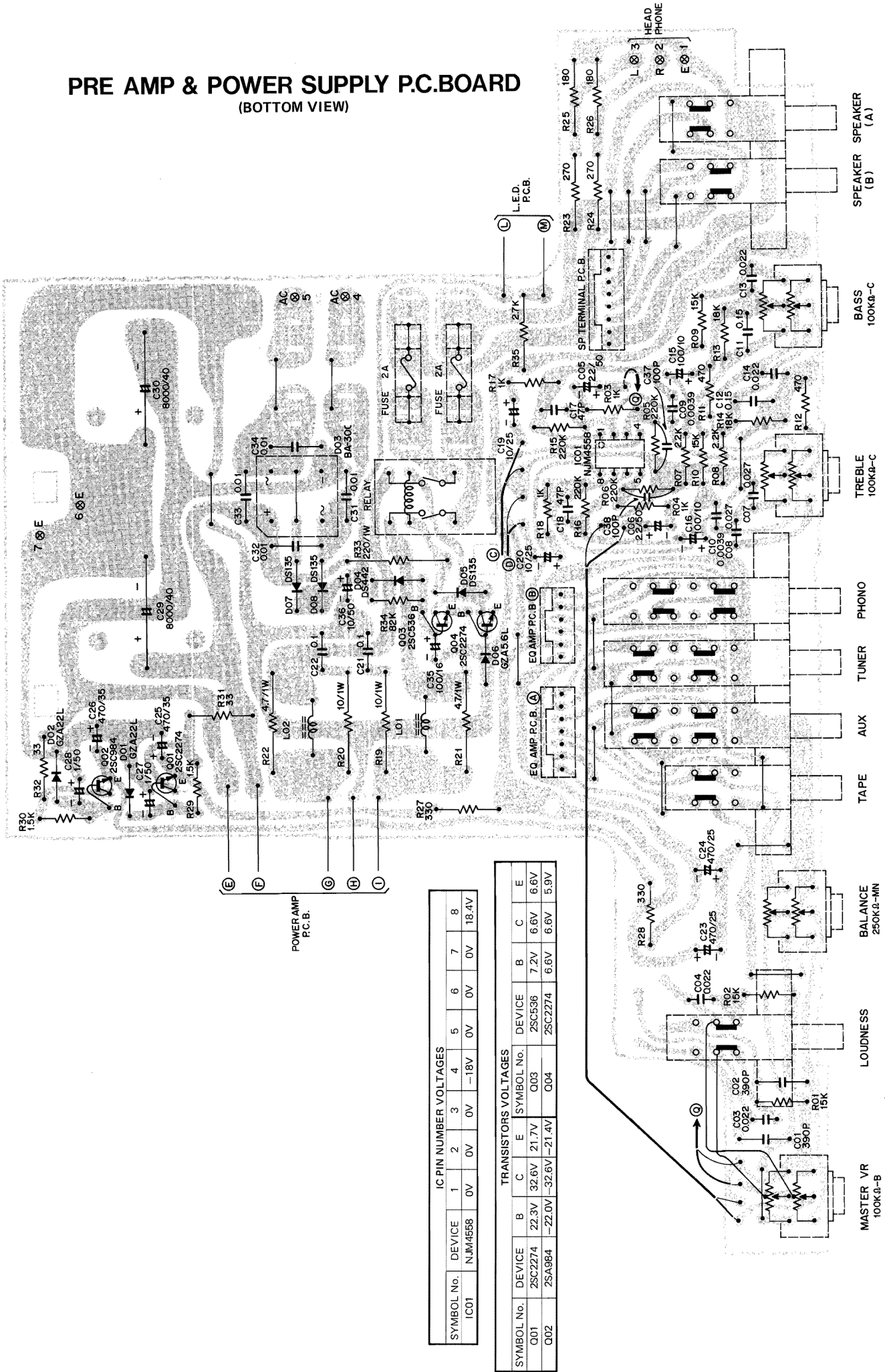


POWER AMP P.C.BOARD (BOTTOM VIEW)



		IC PIN NUMBER VOLTAGES															
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC01	STK-461	0V	0V	0V	-1.5V	-32.7V	0V	0V	31.5V	32.7V	0V	0V	-33.7V	-1.5V	0V	0V	0V

PRE AMP & POWER SUPPLY P.C.BOARD (BOTTOM VIEW)



POWERAMP P.C.B.

IC PIN NUMBER VOLTAGES									
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC01	NJM4558	0V	0V	-18V	0V	0V	0V	0V	18.4V

TRANSISTORS VOLTAGES

SYMBOL No.	DEVICE	B	C	E
Q01	25C2274	22.3V	32.6V	21.7V
Q02	2SA984	-22.0V	-32.6V	-21.4V
		Q03	25C536	7.2V
		Q04	25C2274	6.6V
				6.6V
				5.9V

HEAD PHONE
L 3 R 2 E 1

SPEAKER (A)
SPEAKER (B)

BASS 100K Ω -C
TREBLE 100K Ω -C

PHONO
TUNER
AUX
TAPE

LOUDNESS
BALANCE 250K Ω -MIN
MASTER VR 100K Ω -B

PARTS LIST

PACKING PARTS LIST

Ref. No.	Parts Number	Description
	131 6 1139 85101	Box Corrugate-EXP
	131 6 1139 85201	Box Corrugate-EXP
	131 6 2119 02071	Bag Polyethylene-EXP
	131 6 3009 30930	Pad (Right, Left)
	131 6 3009 30940	Pad

ACCESSORIES PARTS LIST

Ref. No.	Parts Number	Description
	131 6 2719 10801	Bag Fan
	131 6 4119 84301	Explanatory Booklet
	131 6 4519 14400	Guarantee Card
	131 6 4319 10802	Service Station List
	131 6 4939 00200	Information Card

CABINET PARTS LIST

Ref. No.	Parts Number	Description
1	131 2 1410 24700	Cover
2	131 0 1003 14400	Leg

APPEARANCE PARTS LIST

Ref. No.	Parts Number	Description
3	131 0 1016 36501	Panel Decorate Assy
4	131 0 1001 57400	Knob (Volume)
5	131 0 1001 57500	Knob (Bass, Treble, Balance)
6	131 0 1001 58600	Knob (Power Push)
7	131 2 1601 65200	Knob (Push)

CHASSIS PARTS LIST

Ref. No.	Parts Number	Description
11	131 2 3101 72900	Metal Mount (Power Switch)
12	* 131 2 3301 27400	Chassis
13	* 131 2 3305 29700	Panel Front
14	* 131 2 3306 32600	Panel Rear
15	131 2 3624 13500	Headphone Jack Mount
16	131 2 5205 15800	Cushion
17	131 2 6111 11300	Bushing
18	131 2 6201 28600	Plate Heat Sink
19	131 2 6201 28700	Plate Heat Sink

ELECTRICAL PARTS LIST

Ref. No.	Parts Number	Description
24	4 2349 20321	Fuse 1.5 A
25	4 2359 21110	Fuse Holder
26	4 2312 02170	Switch Push Power
27	4 2352 00540	AC Socket
28	4 2352 00740	Headphone Jack 3P
29	4 2439 20720	Power Cord
30	4 2512 12600	Power Transformer
31	* 131 0 4001 05301	Pre Amp & Power Supply P.C.B. Assy
32	* 131 0 4001 05311	EQ Amp P.C.B. Assy
33	* 131 0 4001 05321	Power Amp P.C.B. Assy
34	* 131 0 4001 05331	SP Terminal P.C.B. Assy
35	* 131 0 4001 05341	L.E.D. P.C.B. Assy
C01	C2HYDP103A	Ceramic 0.01 μ F 500V

*—Not a service part.

PARTS LIST

POWER AMP P.C.B. Assy 131 0 4001 05321

Ref. No.	Parts Number	Description
CAPACITORS		
C01,02	C1HCZJ101SPA	Ceramic 100 pF 50V ±5%
C03,04	C1HCYD080APA	Ceramic 8 pF 50V ±0.5%
C05,06	C1HRY-476APA	Electrolytic 47 μF 50V
C07,08	C1CRY-107APA	Electrolytic 100 μF 16V
C09	C1HRY-105APA	Electrolytic 1 μF 50V
C10	C1HRE-107A	Electrolytic 100 μF 50V
C11	C1HFYK273APA	Mylar 0.027 μF 50V ±10%

SEMICONDUCTORS

IC01 206 5 7330 46141 IC, STK-461SA

RESISTORS

R01,02	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R03,04	R2EDZJ332APA	Carbon 3.3k 1/4W ±5%
R05,06	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R07,08	4 2212 00130	Metallized Paper 0.33 2W
R09,10	R2EDZJ123APA	Carbon 12k 1/4W ±5%
R11,12	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R13	R2HZPK100A	Fuse 10 1/2W ±10%

SP TERMINAL P.C.B. Assy 131 0 4001 05331

Ref. No.	Parts Number	Description
	4 2379 21560	Terminal 8P

L.E.D. P.C.B. Assy 131 0 4001 05341

Ref. No.	Parts Number	Description
SEMICONDUCTORS		
	DWW-LN224RP	LN224RP (L.E.D.)

PRE AMP & POWER SUPPLY P.C.B. Assy 131 0 4001 05301

Ref. No.	Parts Number	Description
	4 2312 04480	Switch Push 4 key
	4 2312 04490	Switch Push 2 key
	4 2312 04500	Switch Push 1 key
	4 2322 00160	Relay
	4 2342 00280	Fuse 2 A
L01,02	4 2532 00180	RF Filter
VR01	4 2229 25380	VR 250k-MN (Balance)
VR02	4 2222 01760	VR 100k-Bx2 (Master VR)
VR03,04	4 2222 00370	VR 100k-Cx2 (Bass, Treble)

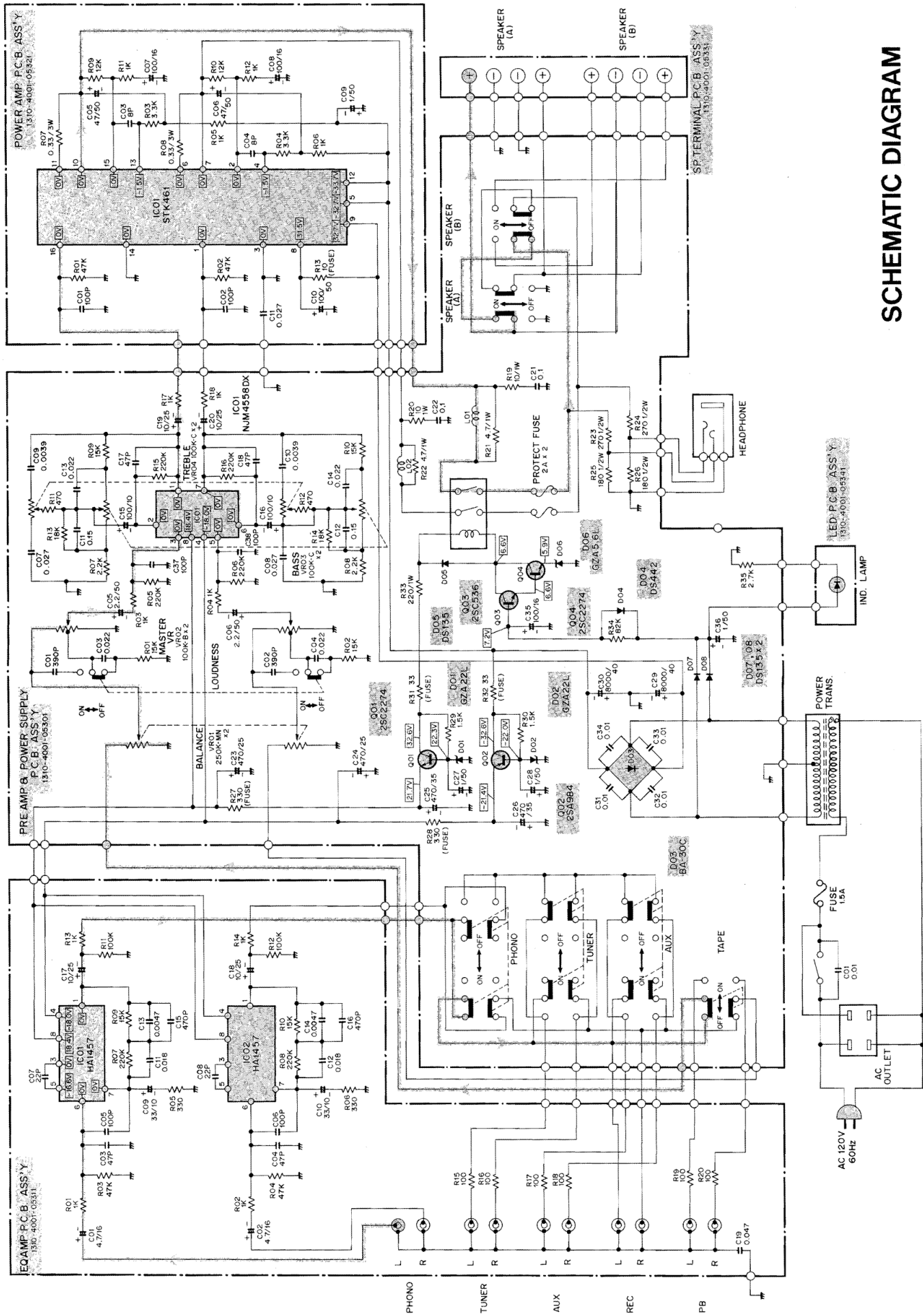
CAPACITORS

C01,02	C1HCZK391BPA	Ceramic 390 pF 50V ±10%
C03,04	C1HFYK223APA	Mylar 0.022 μF 50V ±10%
C05,06	C1HRY-225LPA	Electrolytic 2.2 μF 50V
C07,08	C1HFYK273APA	Mylar 0.027 μF 50V ±10%
C09,10	C1HFYK392APA	Mylar 0.0039 μF 50V ±10%
C11,12	C1HFAJ154A	Mylar 0.15 μF 50V ±5%
C13,14	C1HFYK223APA	Mylar 0.022 μF 50V ±10%
C15,16	C1ARY-107APA	Electrolytic 100 μF 10V
C17,18	C1HCYK470APA	Ceramic 47 pF 50V ±10%
C19,20	C1ERY-106LPA	Electrolytic 10 μF 25V
C21,22	C1HFAK104A	Mylar 0.1 μF 50V ±10%
C23,24	C1ERF-477A	Electrolytic 470 μF 25WV
C25,26	C1VRE-477A	Electrolytic 470 μF 35V
C27,28	C1HRY-105APA	Electrolytic 1 μF 50V
C29,30	4 2232 00470	Electrolytic 8000 μF 40V
C31,32	C2HYSP103A	Ceramic 0.01 μF 500V +100,-0%
33,34		
C35	C1CRY-107APA	Electrolytic 100 μF 16V
C36	C1HRY-105APA	Electrolytic 1 μF 50V
C37,38	C1HCDK101SL	Ceramic 100 pF 50V ±10%

Ref. No.	Parts Number	Description
SEMICONDUCTORS		
D01,02	202 5 3210 22010	Diode, GZA22 L, U
D03	202 5 2620 03010	Bridge Diode, BA-30C
D04	205 5 9040 44210	Diode, DS-442
D05	202 5 2470 13540	Diode, DS-135
D06	202 5 3210 05610	Diode, GZA5.6 L, U
D07,08	202 5 2470 13540	Diode, DS-135
IC01	IJJ-NJM4558DX	IC, NJM4558D
Q01	203 5 7252 27450	TR 2SC2274 E, F
Q02	203 5 6820 98450	TR 2SA984 E, F
Q03	203 5 5000 53660	TR 2SC536 F, G
Q04	203 5 7252 27450	TR 2SC2274 E, F

RESISTORS

R01,02	R2EDZJ153APA	Carbon 15k 1/4W ±5%
R03,04	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R05,06	R2EDZJ224APA	Carbon 220k 1/4W ±5%
R07,08	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R09,10	R2EDZJ153APA	Carbon 15k 1/4W ±5%
R11,12	R2EDZJ471APA	Carbon 470 1/4W ±5%
R13,14	R2EDZJ183APA	Carbon 18k 1/4W ±5%
R15,16	R2EDZJ224APA	Carbon 220k 1/4W ±5%
R17,18	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R19,20	R3XBJ100A	Oxide Metal Film 10 1W ±5%
R21,22	R3XBJ4R7A	Oxide Metal Film 4.7 1W ±5%
R23,24	R2HCPK271A	Solid 270 1/2W ±10%
R25,26	R2HCPK181A	Solid 180 1/2W ±10%
R27,28	R2HZPK331A	Fuse 330 1/2W ±10%
R29,30	R2EDZJ152APA	Carbon 1.5k 1/4W ±5%
R31,32	R2HZPK330A	Fuse 33 1/2W ±10%
R33	R3XBJ221A	Oxide Metal Film 220 1W ±5%
R34	R2EDZJ823APA	Carbon 82k 1/4W ±5%
R35	R2HCPK272A	Solid 2.7k 1/2W ±10%



SCHEMATIC DIAGRAM

NOTES:
 1. All resistor values are indicated in "ohm" ($K=10^3$, $M=10^6$).
 2. All capacitor values are indicated in " μF " ($P=10^{-12}$).
 3. All voltages indicated on the schematics are measured under the following conditions.
 a. Use a V.T.V.M.
 b. All voltages $\pm 10\%$ with respect to chassis ground
 c. No signals at input terminals
 d. AC input at 120 volts 60 Hz

4. This is a basic schematic diagram.
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