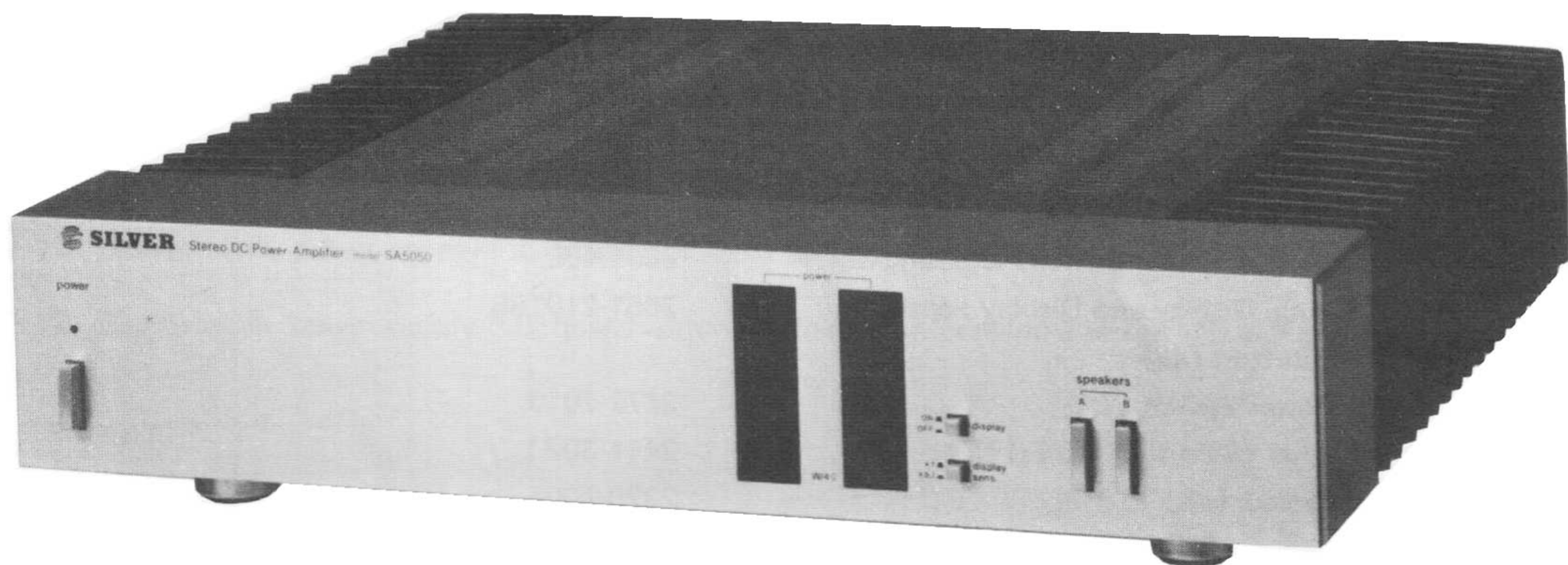


SERVICE MANUAL SILVER

MODEL SA5050

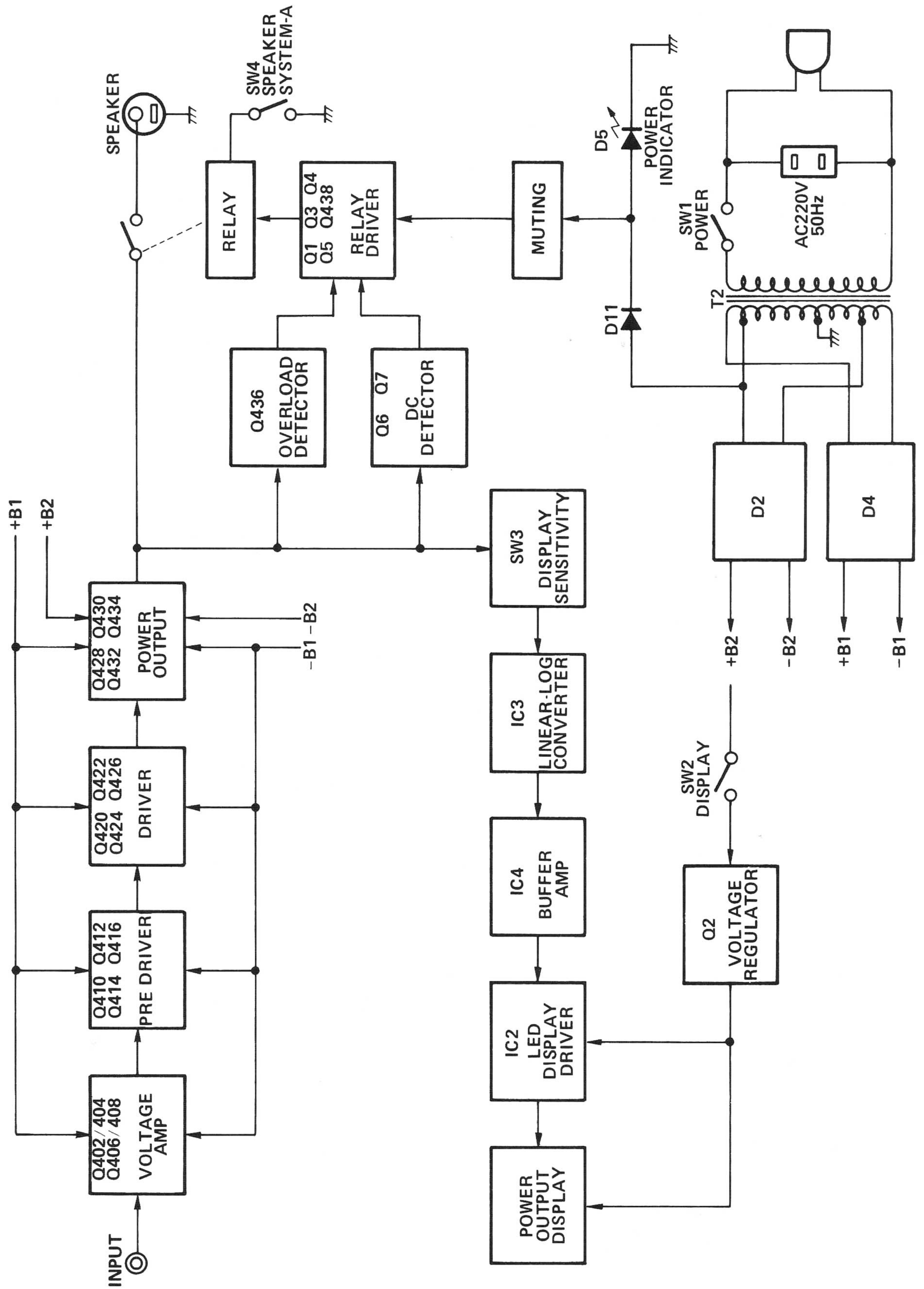


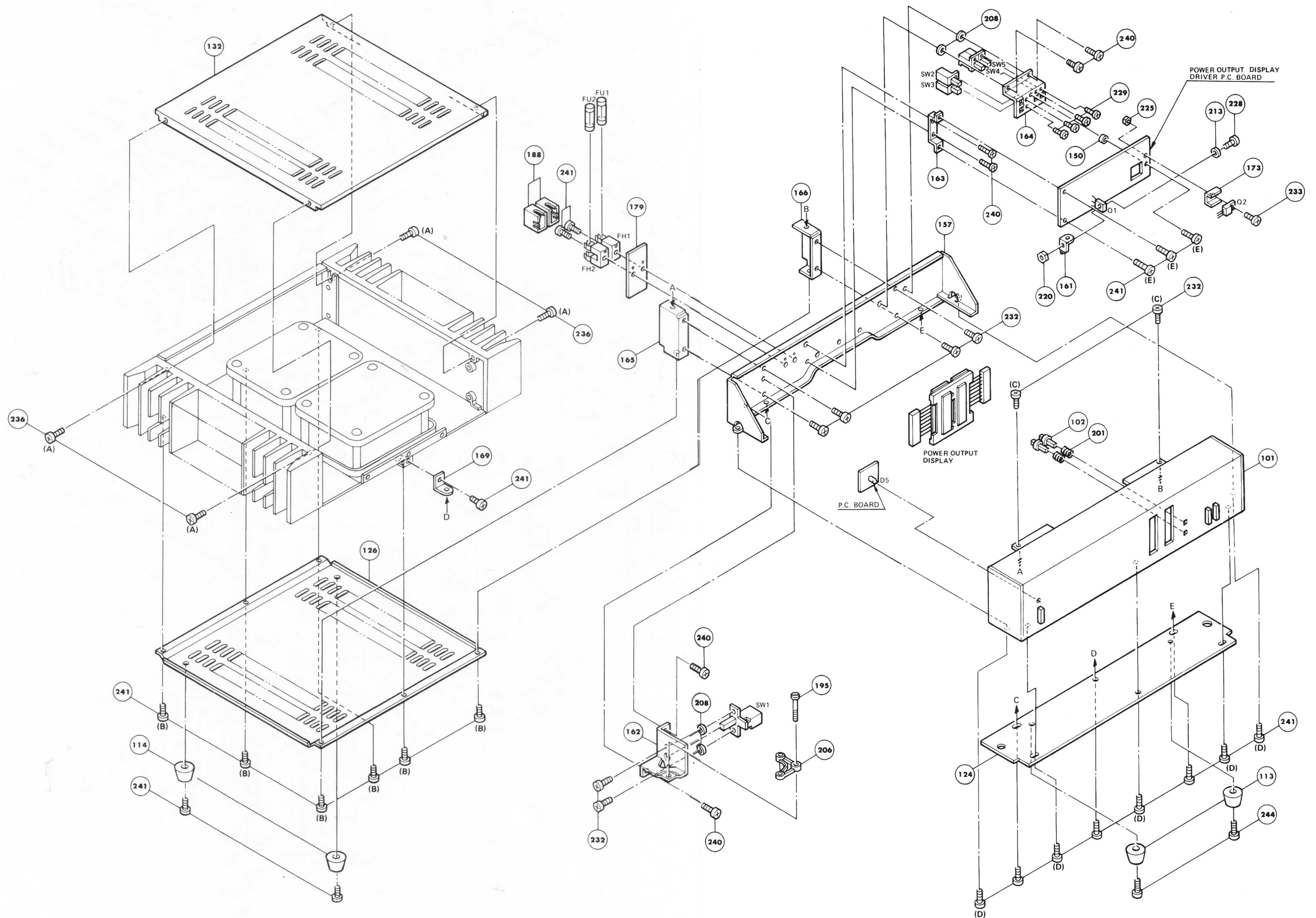
SPECIFICATIONS

POWER SUPPLY	AC220V 50Hz
POWER CONSUMPTION	600 watts
DIMENSIONS	385(W) x 72.5(H) x 320(D) mm
WEIGHT	10.1 kg
CONTINUOUS POWER OUTPUT	100 + 100 watts at 1 kHz, 4 ohm not more than 0.005% THD
INPUT SENSITIVITY/IMPEDANCE	1.15V/35 k ohm
TOTAL HARMONIC DISTORTION	0.0025% (1 kHz, 1/2 rated power)
INTERMODULATION DISTORTION	0.005%
POWER BANDWIDTH	10 Hz–100 kHz (0.03%THD)
FREQUENCY RESPONSE	<0.1 Hz–250 kHz
SIGNAL/NOISE RATIO	124 dB (IHF–A)
DAMPING FACTOR	55 (4 ohm)
CHANNEL SEPARATION	80 dB
SLEW RATE	150V/μ SEC.

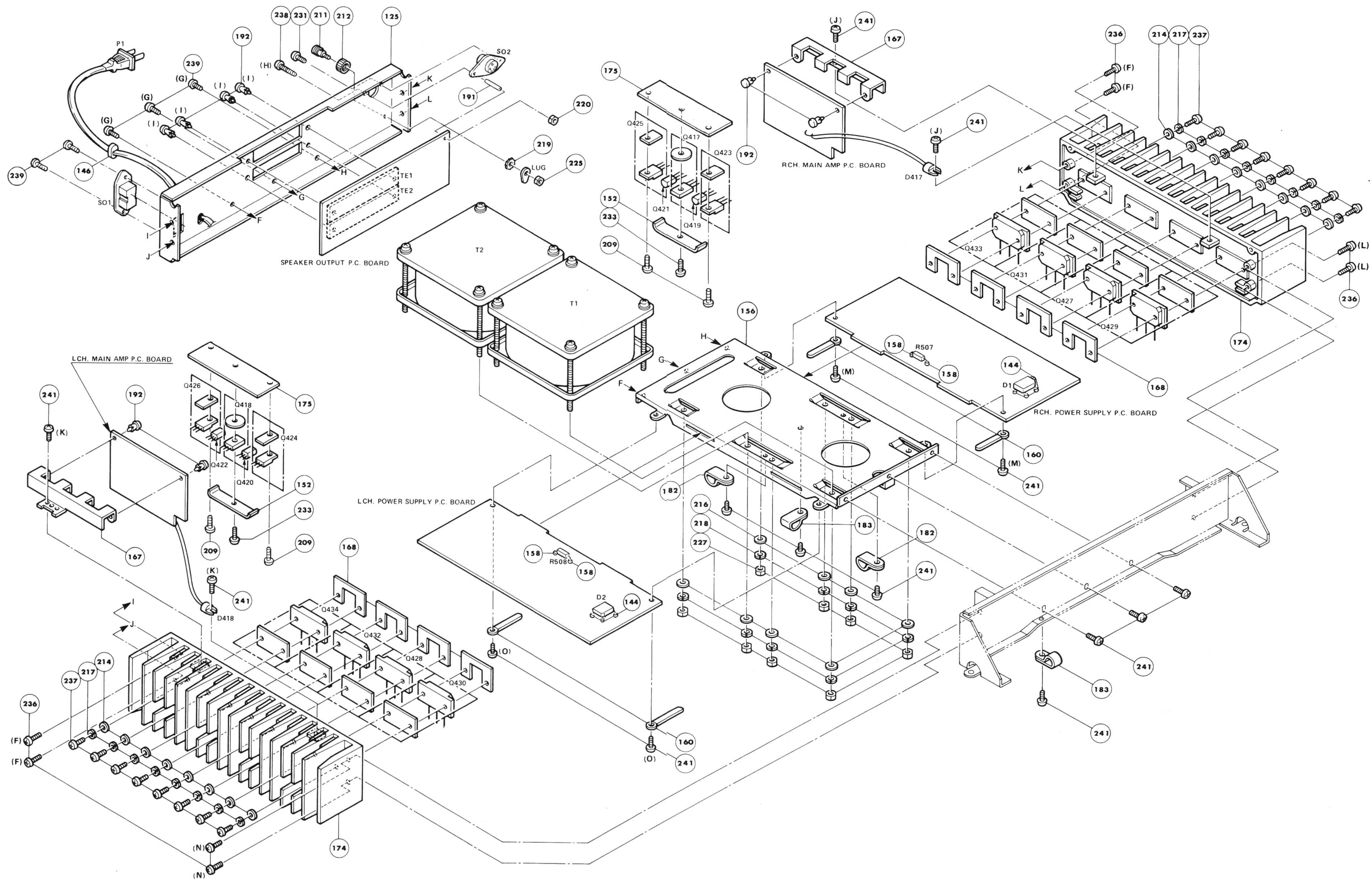
Specifications may be changed without notice.

NOTE: When spare parts are needed, type the quantity desired in the “ORDER Q'TY” column of the order form in this Service Manual and send copy.





GENERAL UNIT EXPLODED VIEW



ALIGNMENT PROCEDURES

DC VOLTAGE BALANCE ADJUSTMENT

Equipment Required : DC V.T.V.M.

- NOTE: 1. Connect 4 ohm dummy load to terminal of speaker system-A.
2. Press in speaker system-A push button to ON (button in) position.

Step	Connect Output Indicator To-	Adjust-	Adjust For-
1	DC V.T.V.M. to L ch terminal of speaker system-A	VR402	0V ± 10 mV
2	DC V.T.V.M. to R ch terminal of speaker system-A	VR401	Same as above

IDLING CURRENT ADJUSTMENT

Equipment Required : Audio Signal Generator, AC V.T.V.M and Distortion Meter

- NOTE: 1. Connect signal source to input socket.
2. Connect 4 ohm dummy load to terminal of speaker system-A.
3. Press in speaker system-A push button to ON (button in) position.

Step	Signal Source	Connect Output Indicator To-	Adjust-	Adjust For-
1	1 kHz of audio signal generator	AC V.T.V.M. to terminal of speaker system-A	Input level of audio signal generator	20V (100W)
2		Distortion meter to L ch terminal of speaker system-A	VR404	Minimum distortion
3		Distortion meter to R ch terminal of speaker system-A	VR403	

POWER OUTPUT DISPLAY SENSITIVITY ADJUSTMENT

Equipment Required : Audio Signal Generator and AC V.T.V.M.

- NOTE: 1. Connect signal source to input socket.
2. Connect 4 ohm dummy load and AC V.T.V.M. to terminal of speaker system-A.
3. Press in display sensitivity push button to x0.1 (button in) position.
4. Press in speaker system-A push button to ON (button in) position.

Step	Signal Source	Output Indicator	Adjust-	Adjust For-
1	1 kHz of audio signal generator	AC V.T.V.M.	Input level of audio signal generator	8.94V (20W)
2	1dB decrease input level of audio signal generator	L ch 200W LED of power output display	VR52	LED light
3		R ch 200W LED of power output display	VR51	

SCHEMATIC DIAGRAM NOTES

- 1. All resistances are 1/4W carbon unless otherwise noted. Values are in ohms. k = 1000 M = 1000 k
- 2. All capacitance values are in MF unless otherwise noted. pF = MMF
- 3. This is a standard schematic diagram. Some set may be modified slightly for better performance.

TRANSISTOR/IC ELEMENTS VOLTAGE CHART

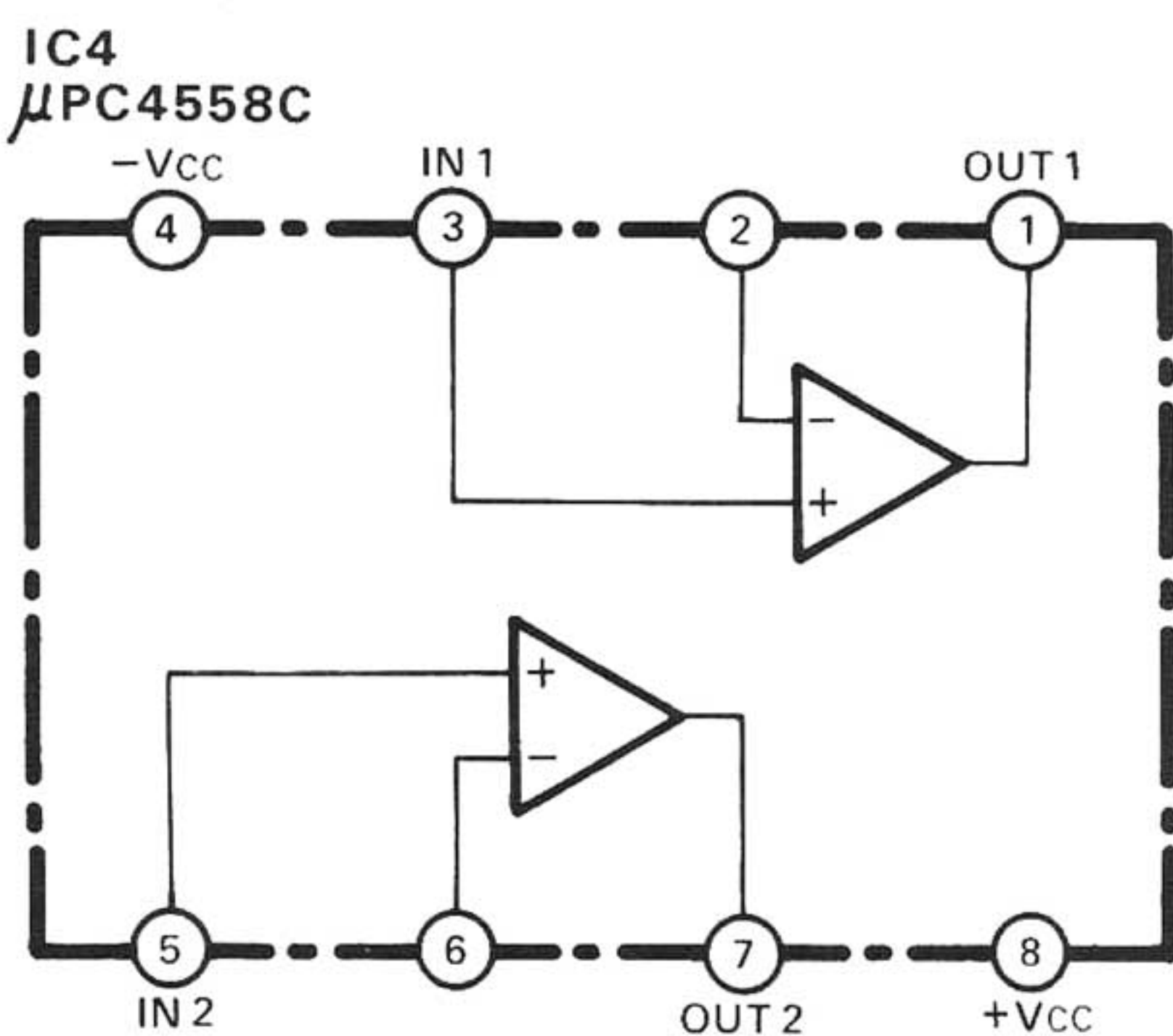
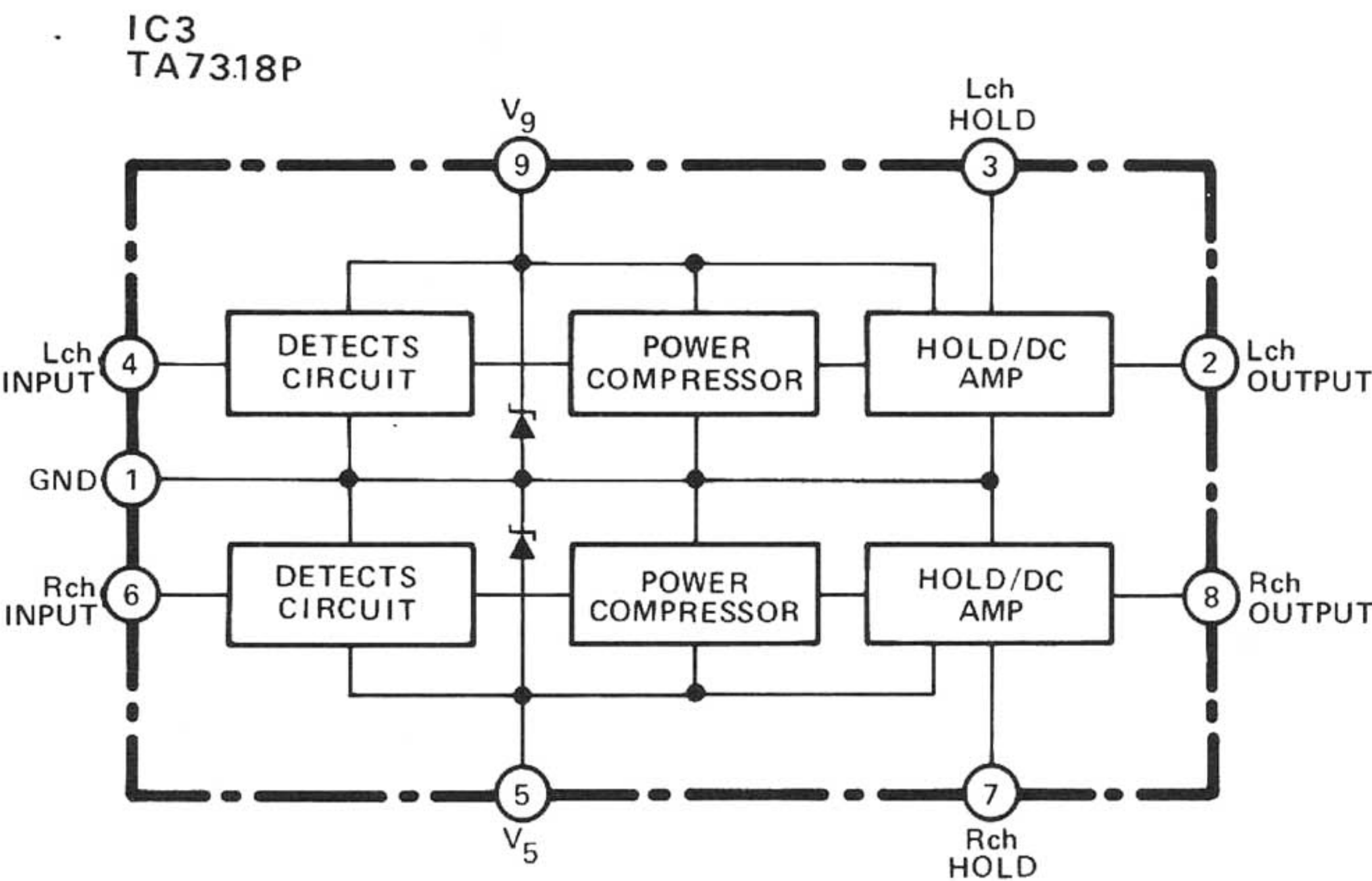
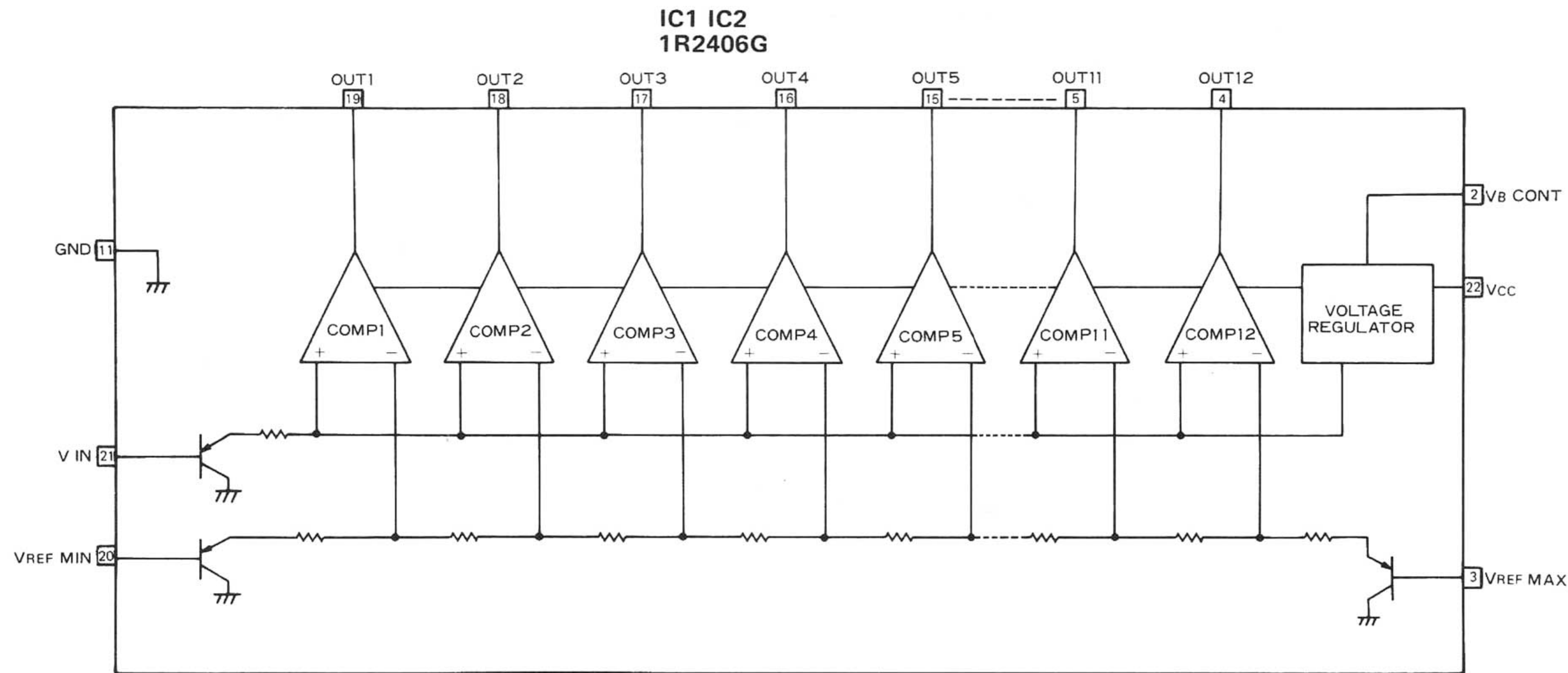
Q' NO.	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q401 Q402	Q403 Q404	Q405 Q406	Q407 Q408	Q409 Q410	Q411 Q412	Q413 Q414	Q415 Q416
BASE	27	10	0	0.7	0.1	0	0.1	0	0	0	0	-40	40	-40	40
EMIT.	27	9.2	0	0	0	0.1	0	0.4	0.5	-0.5	-0.5	-40	40	-40	40
COLL.	47	30	3.8	0.1	27	50	50	-40	-40	40	40	0	0	-1.2	0.3

Q' NO.	Q417 Q418	Q419 Q420	Q421 Q422	Q423 Q424	Q425 Q426	Q427 Q428	Q429 Q430	Q431 Q432	Q433 Q434	Q435 Q436	Q437 Q438
BASE	-0.3	-1.2	0.3	-40	40	-0.6	-0.6	-0.3	-0.3	-0.3	50
EMIT.	0.3	-0.7	-0.3	-40	40	-0.3	-0.3	0.3	0.3	-0.3	48
COLL.	-1.2	-40	40	-0.6	-0.3	-36	-36	38	38	50	0

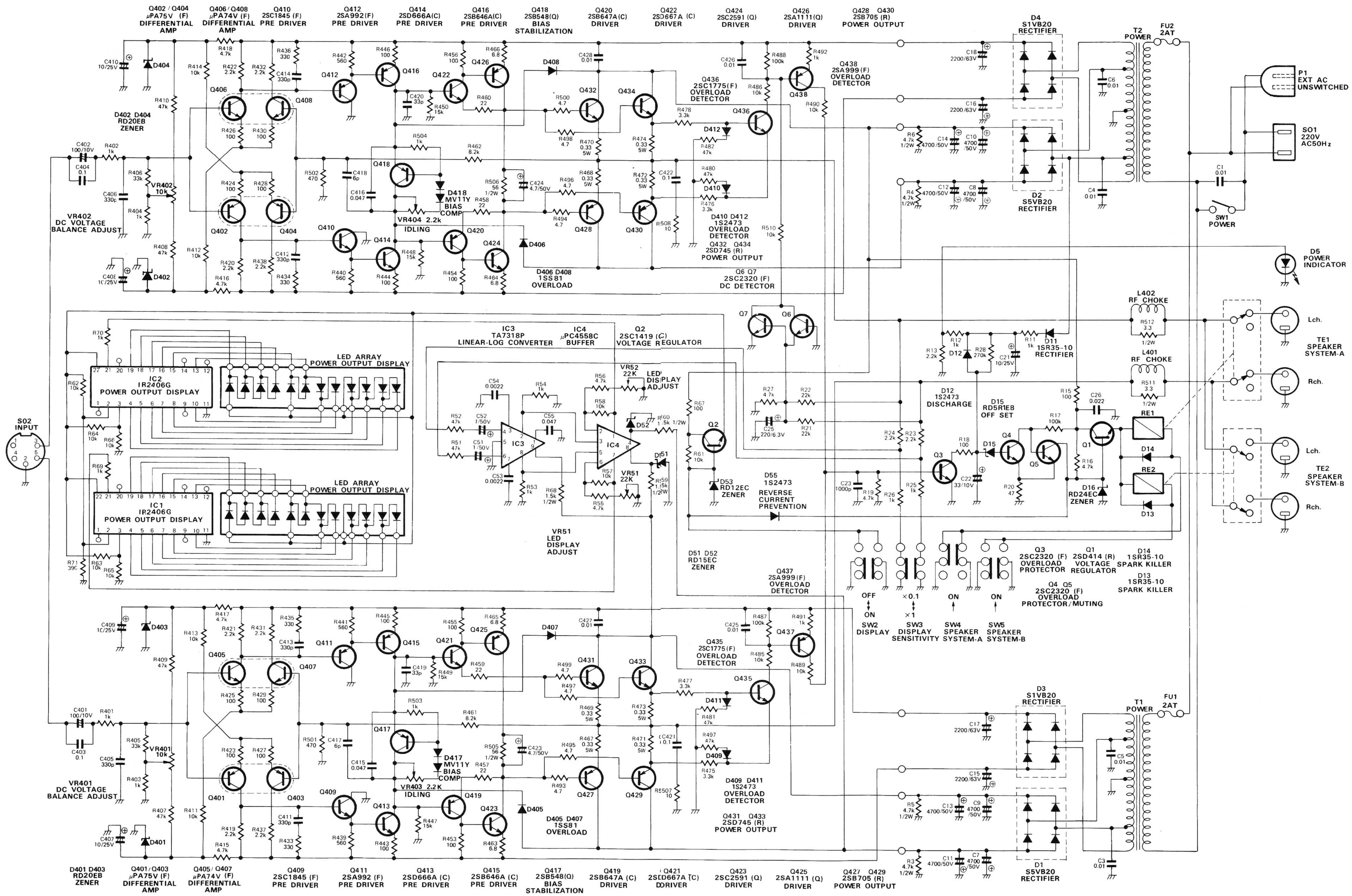
TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
IC1,IC2	0	0.3	4.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.2
IC3	6.5	0	1.4	6.4	0	6.4	1.4	0	12													
IC4	0	0	0	-11.5	0	0	0	-11.5														

NOTE: All voltage readings from chassis are measured with V.T.V.M. under no signal conditions.

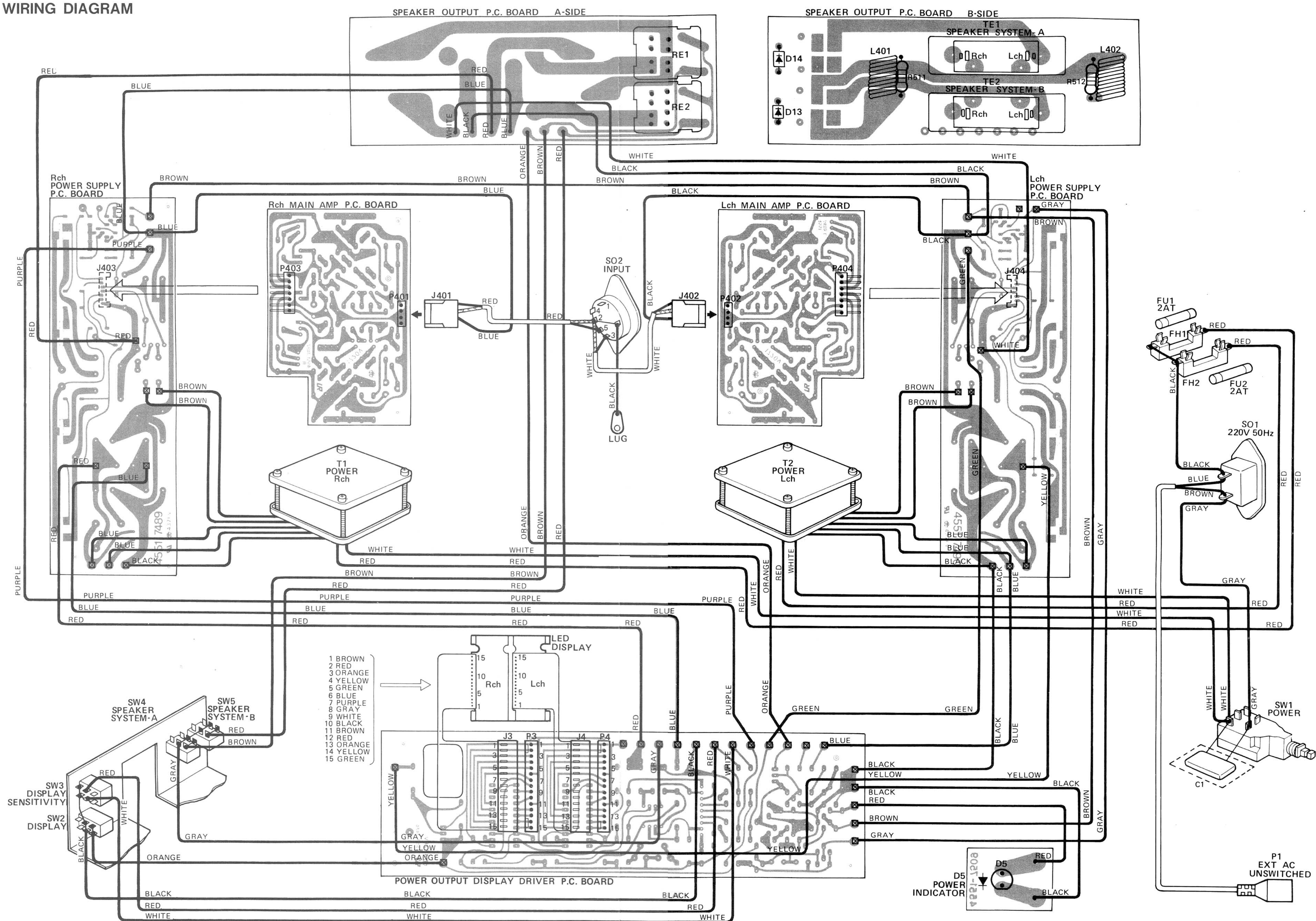
IC BLOCK DIAGRAM



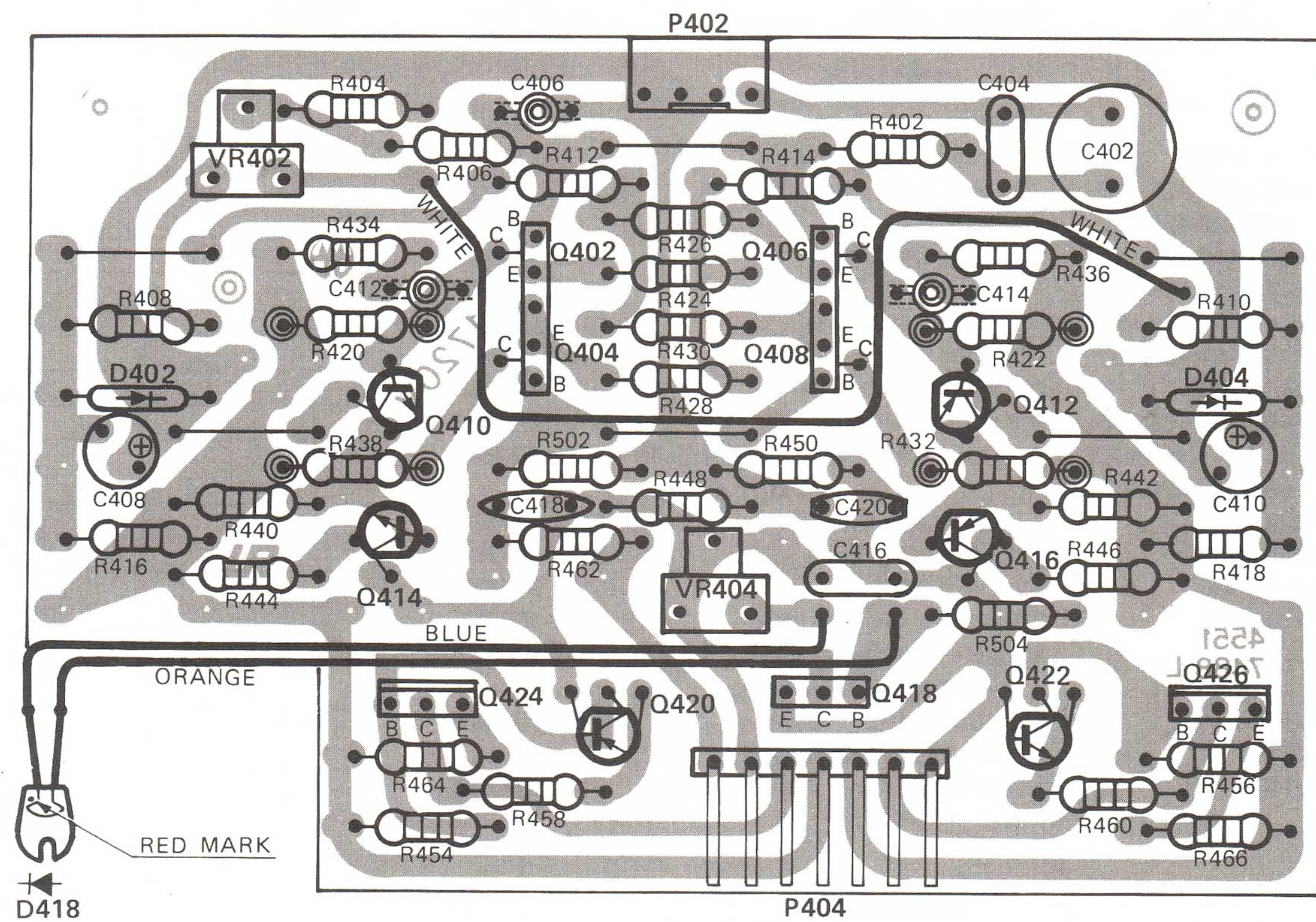
SCHEMATIC DIAGRAM



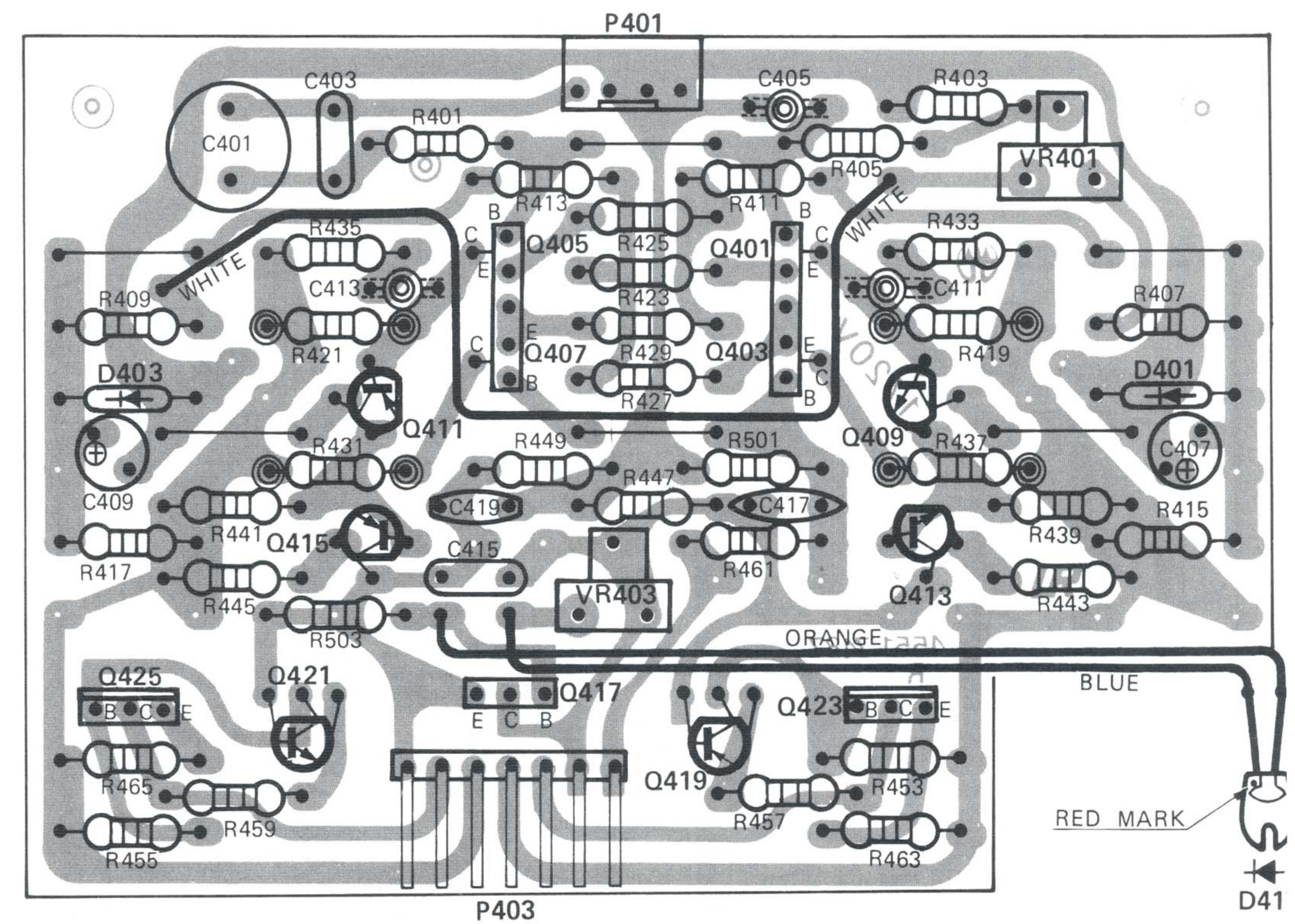
WIRING DIAGRAM



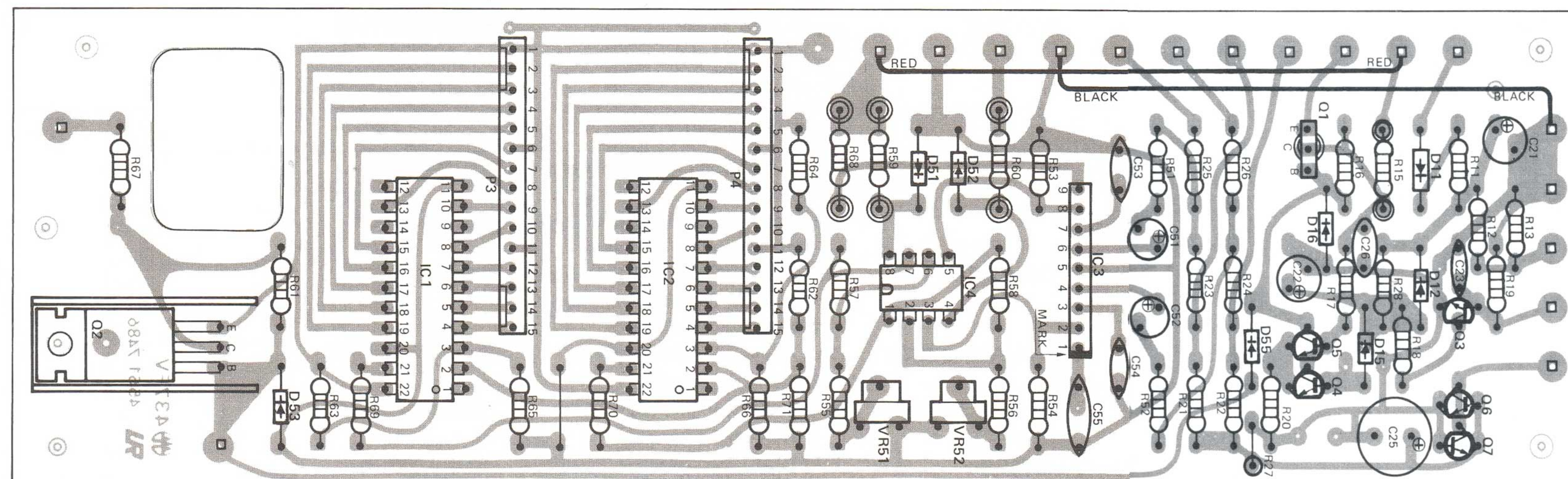
L CH MAIN AMP P.C. BOARD



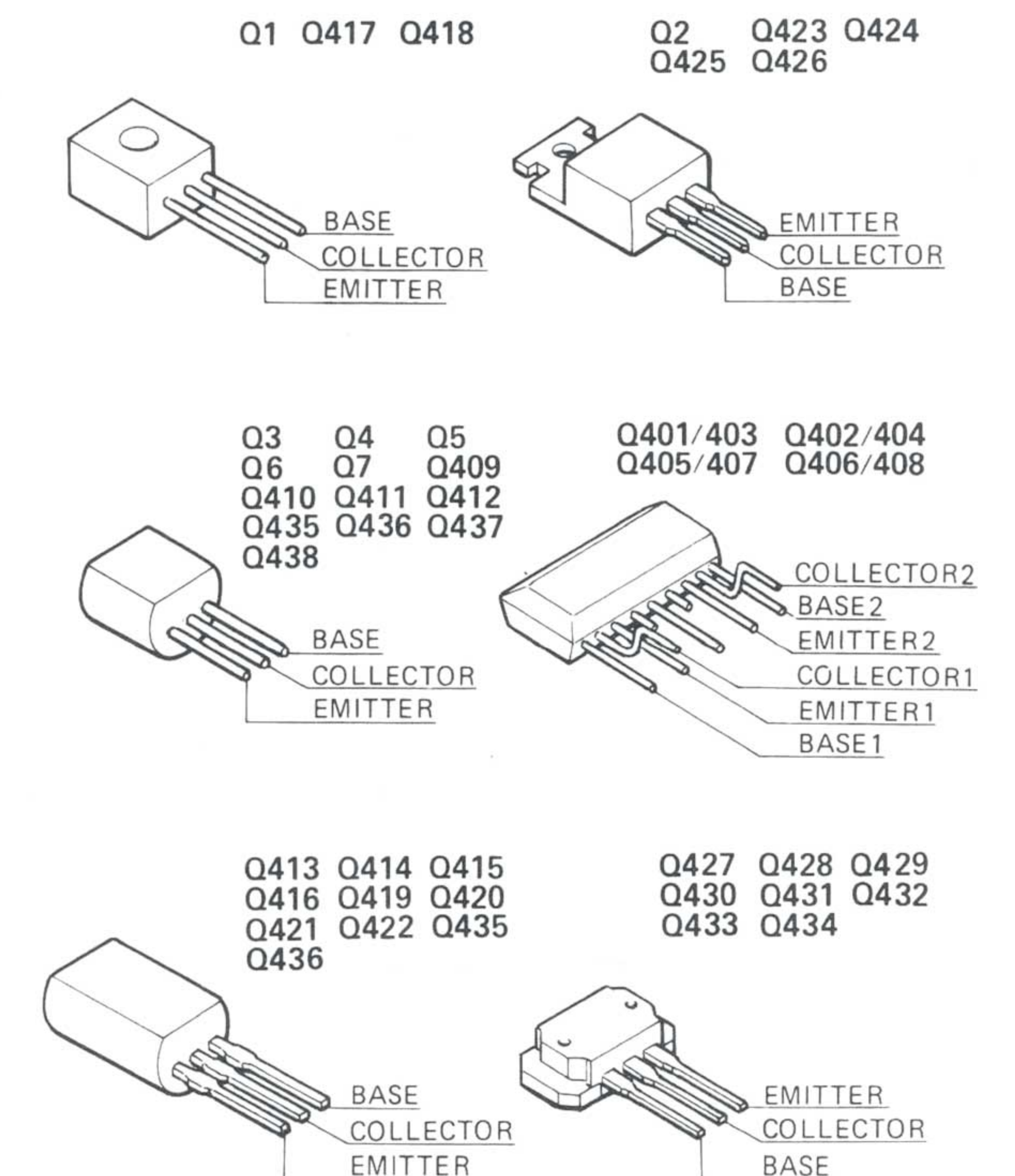
R CH MAIN AMP P.C. BOARD



POWER OUTPUT DISPLAY DRIVER P.C. BOARD



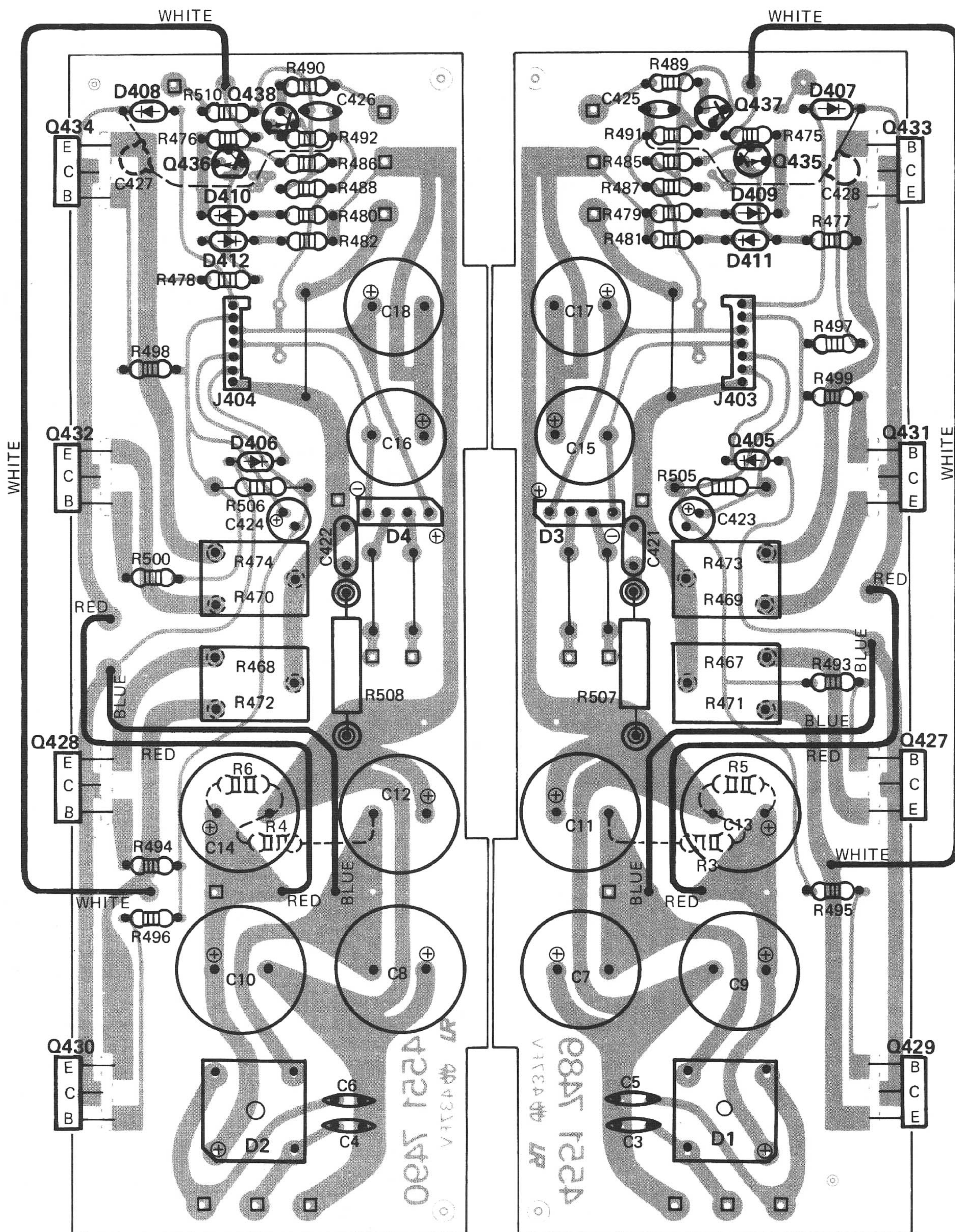
TRANSISTOR VIEW



POWER SUPPLY P.C. BOARD

L CH

R CH



ELECTRICAL PARTS LIST

SER. NO.	REF. NO.	DESCRIPTION	PART NO.	ORDER Q'TY
RESISTORS				
755	R15,67	100 ohm 1/4W Fuse	5102-101579	
754	R59,60,68	1.5 k ohm 1/2W Metal	5176-152582	
651	R423,424,425,426,427,428,429,430	100 ohm 1/4W Metal	5174-101381	
641	R439,440,441,442	560 ohm 1/4W Fuse	5102-5614713	
640	R443,444,445,446	100 ohm 1/4W Fuse	5102-101579	
655	R447,448,449,450	15 k ohm 1/4W Metal	5174-153381	
639	R453,454,455,456	100 ohm 1/4W Fuse	5102-101579	
654	R461,462	8.2 k ohm 1/4W Metal	5174-822381	
638	R463,464,465,466	6.8 ohm 1W Fuse	5102-6R85711	
623	R467/471,468/472,469/473,470/474	0.33 ohm 5W Cement (Special Dual)	5275-R33671	
702	R491,492	1 k ohm 1/4W Fuse	5102-1024713	
653	R501,502	470 ohm 1/4W Metal	5174-471381	
637	R505,506	56 ohm 1/2W Fuse	5102-5605710	
624	R507,508	10 ohm 5W Cement	5275-100681	
751	VR51,52	Variable Resistor, 22 k ohm, LED Display Adjustment	5101-2238575	
618	VR401,402	Variable Resistor, 10 k ohm, DC Voltage Balance Adjustment	5101-1038375	
617	VR403,404	Variable Resistor, 2.2 k ohm, Idling	5101-2227275	

CAPACITORS				
828	C1	0.01MF AC250V Metalized Polyester	5352-1030955	
782	C7,8,9,10,11,12,13,14	4700MF 50V Electrolytic	5341-478F0266	
787	C15,16,17,18	2200MF 63V Electrolytic	5341-228G0269	
628	C403,404	0.1MF 50V Mylar	5354-104K1HM	
627	C405,406,411,412,413,414	330PF 50V Stylor	5355-331J1HS	
630	C415,416	0.047MF 50V Mylar	5354-473K1HM	
626	C419,420	33PF 300V Mica	5353-330232	
629	C421,422	0.1MF 50V Mylar	5354-104K1HM	

SEMICONDUCTORS				
772	Q1	Transistor (2SD414(R)), Voltage Regulator	5614-414(R)	
744	Q2	Transistor (2SC1419(C)), Voltage Regulator	5613-1419(C)	
683	Q3,4,5,6,7	Transistor (2SC2320(F)), Overload Protector, Overload Protector/Muting, DC Detector	5613-2320(F)	
591	Q401/403,402/404	Dual Transistor (μ PA75V(F)), Differential Amp.	5611- μ PA75V(F)	
592	Q405/407,406/408	Dual Transistor (μ PA74V(F)), Differential Amp.	5613- μ PA74V(F)	
594	Q409,410	Transistor (2SC1845(F)), Predriver	5613-1845(F)	
593	Q411,412	Transistor (2SA992(F)), Predriver	5611-992(F)	
596	Q413,414	Transistor (2SD666A(C)), Predriver	5614-666A(C)	
595	Q415,416	Transistor (2SB646A(C)), Predriver	5612-646A(C)	
609	Q417,418	Transistor (2SB548(Q)), Bias Stabilization	5612-548(Q)	
597	Q419,420	Transistor (2SB647A(C)), Driver	5612-647A(C)	

SER. NO.	REF. NO.	DESCRIPTION	PART NO.	ORDER Q'TY
598	Q421,422	Transistor (2SD667A(C)), Driver	5614-667A(C)	
601	Q423,424	Transistor (2SC2591(Q)), Driver	5613-2591(Q)	
599	Q425,426	Transistor (2SA1111(Q)), Driver	5611-1111(Q)	
603	Q427,428,429,430	Transistor (2SB705(R)), Power Output	5612-705(R)	
606	Q431,432,433,434	Transistor (2SD745(R)), Power Output	5614-745(R)	
684	Q435,436	Transistor (2SC1775(F)), Overload Detector	5613-1775(F)	
682	Q437,438	Transistor (2SA999(F)), Overload Detector	5611-999(F)	
743	IC1,2	Integrated Circuit, Power Output Display	5652-IR2406G	
741	IC3	Integrated Circuit, Linear-Log Converter	5652-TA7318P	
742	IC4	Integrated Circuit, Buffer	5652-μPC4558C	
776	D1,2	Bridge Silicon Diode, Rectifier	5685-S5VB20	
773	D3,4	Bridge Silicon Diode, Rectifier	5685-S1VB20	
805	D5	Light Emitting Diode, Power Indicator	5637-GL2PR1	
690	D11,13,14	Diode, Rectifier, Spark Killer	5632-1SR35-10	
689	D12, 55, 409, 410, 411, 412	Diode, Discharge, Reverse Current Prevention, Overload Detector	5636-1S2473	
692	D15	Zener Diode (5.1V ± 0.3V) , Off Set	5635-RD5R1EB	
777	D16	Zener Diode (25.8V ± 1.8V)	5635-RD24EC	
747	D51,52	Zener Diode (15.6V ± 0.9V)	5635-RD15EC	
748	D53	Zener Diode (12.7V ± 0.8V)	5635-RD12EC	
612	D401,402,403,404	Zener Diode (20V ± 1.2V)	5635-RD20EB	
613	D405,406,407,408	Diode, Overload	5636-1SS81	
615	D417,418	Varistor, Bias Compensation	5641-MV11Y	
806	D709, 710	LED Display, Power Output	5623-S-5014BT	

COILS AND TRANSFORMERS

621	L401,402	Coil, RF Choke	5991-7125	
771	T1,2	Transformer, Power	5584-701253	

MISCELLANEOUS

801	SW1	Push Switch, Power	4431-01017658	
803	SW2,3,4,5	Push Switch, Display, Display Sensitivity, Speaker System-A, Speaker System-B	4431-01027169	
815	TE1,2	Speaker Output Terminal	4474-65	
813	SO1	AC Socket	4474-126	
816	SO2	DIN Socket, Input	4474-46	
809	FU1,2	Fuse, 2AT	5732-20202	
808	FH1,2	Fuse Holder	4472-416	
693	RE1,2	Relay, Speaker ON/OFF	4331-20247110	
825	J3/4	Connector with Lead Wire (15 Pin)	4163-71327	
826	J401	Connector with Lead Wire (4 Pin)	4163-71627	
824	J402	Connector with Lead Wire (4 Pin)	4163-71227	
791	J403,404	Connector (7 Pin)	4443-077149	
811	P1	Cord with Plug, Ext. AC Unswitched	4161-71107	
769	P3,4	Connector (15 Pin)	4443-157114	
619	P401,402	Connector (4 Pin)	4443-047114	
620	P403,404	Connector (7 Pin)	4443-07418	
810		AC Line Cord with Plug	4161-71108	