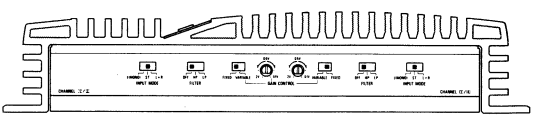
ALPINE SERVICE MANUAL

4/3/2 Channel Power Amplifier

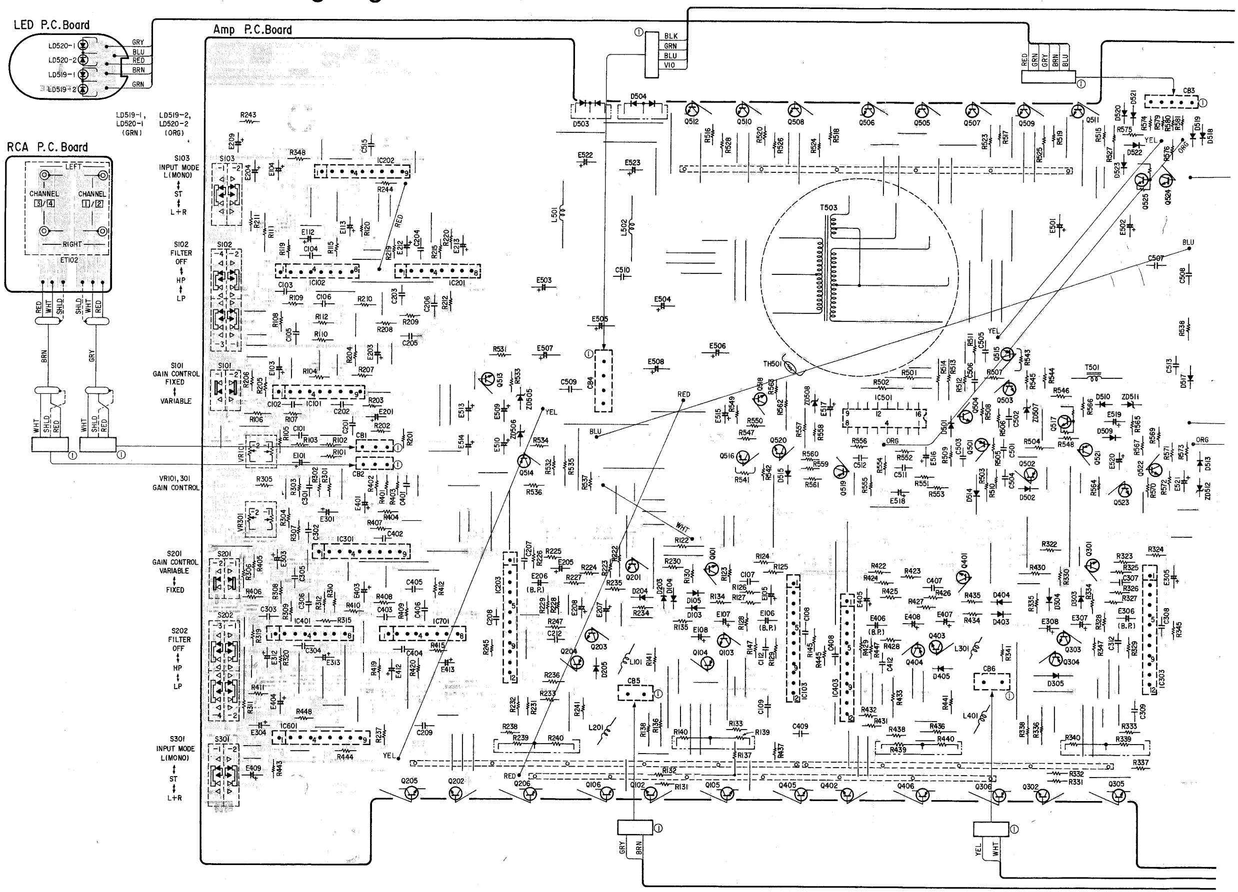
- **This service manual is based on Basic Model 3552.**
- **This service manual only contains parts of items to be modified. Therefore please refer to service manual 3552 (68P20604W02) for the unmentioned parts.**



3552s

Contents

Parts Layout on P.C.Boards and Wiring Diagram



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3
4
5

A | B | C | D | E | F | G | H

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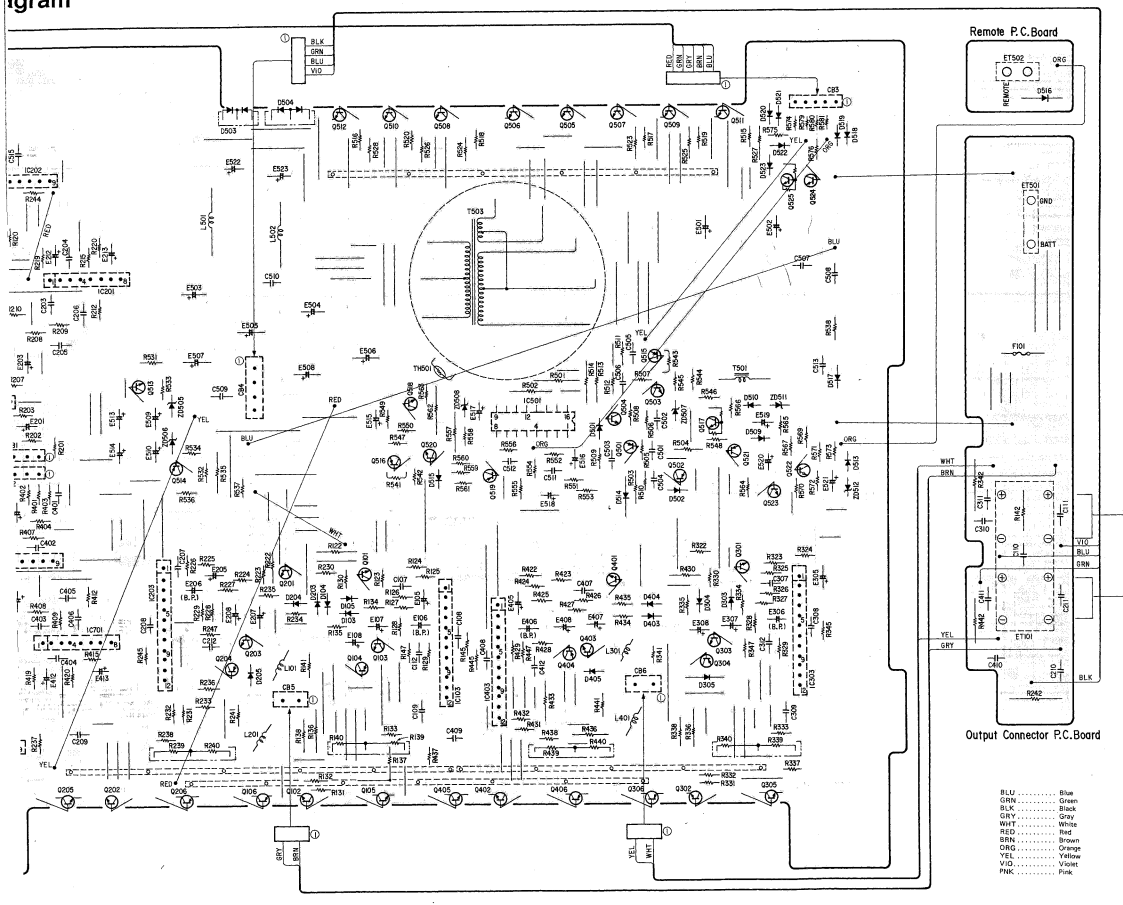
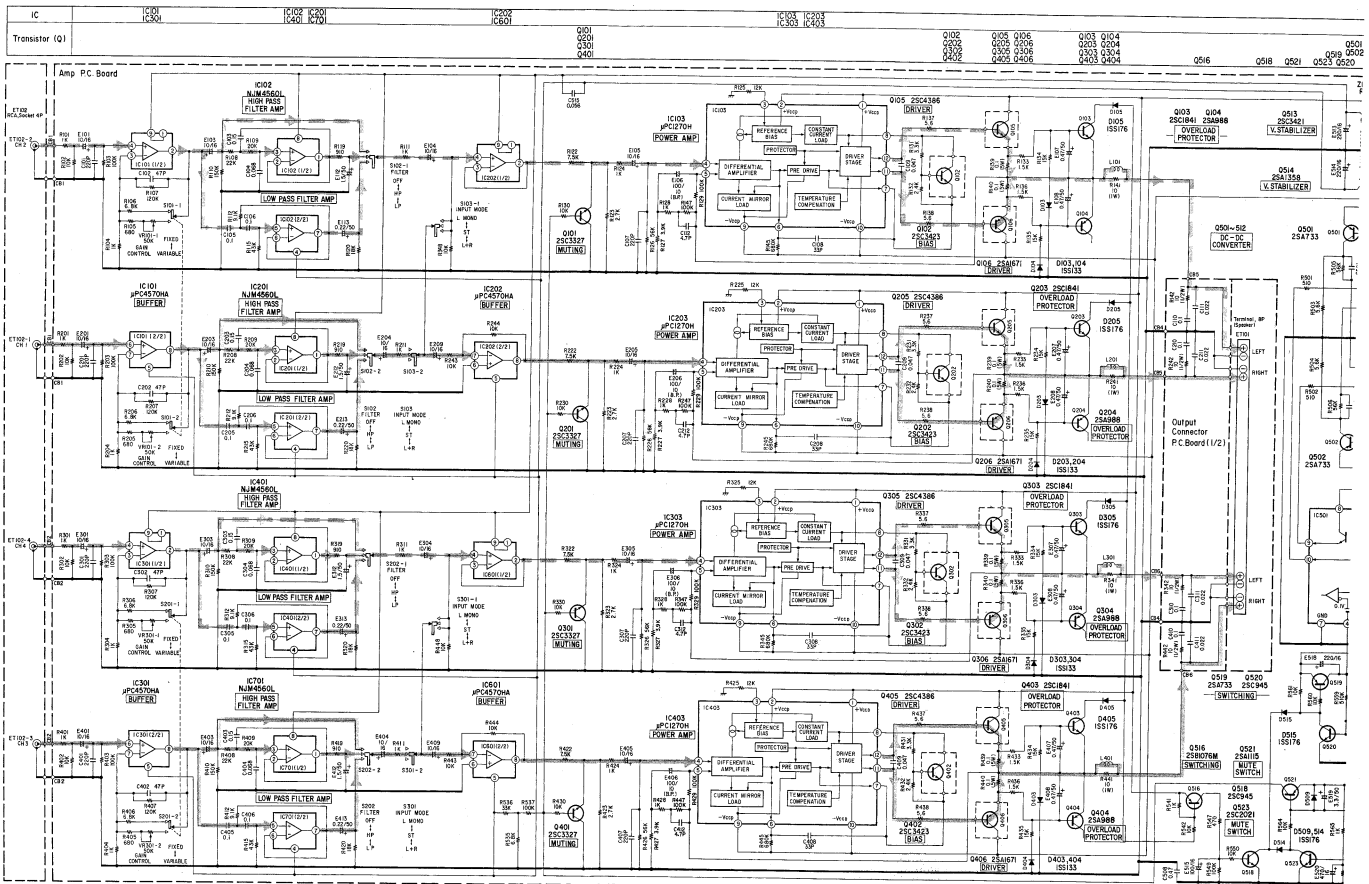

Remote P.C.Board
ET502
ORG
REMOTE
D516
ET501
GND
BATT
F101
WHT
BRN
YEL
GRY
LEFT
BRIDGE
RIGHT
VIO
BLU
GRN
BLK
Output Connector P.C.Board
BLU ..... Blue
GRN ..... Green
BLK ..... Black
GRY ..... Gray
WHT ..... White
RED ..... Red
BRN ..... Brown
ORG ..... Orange
YEL ..... Yellow
VIO ..... Violet
PNK ..... Pink

Schematic Diagram

(Refer to page 9 for IC's and Transistors voltage values.)

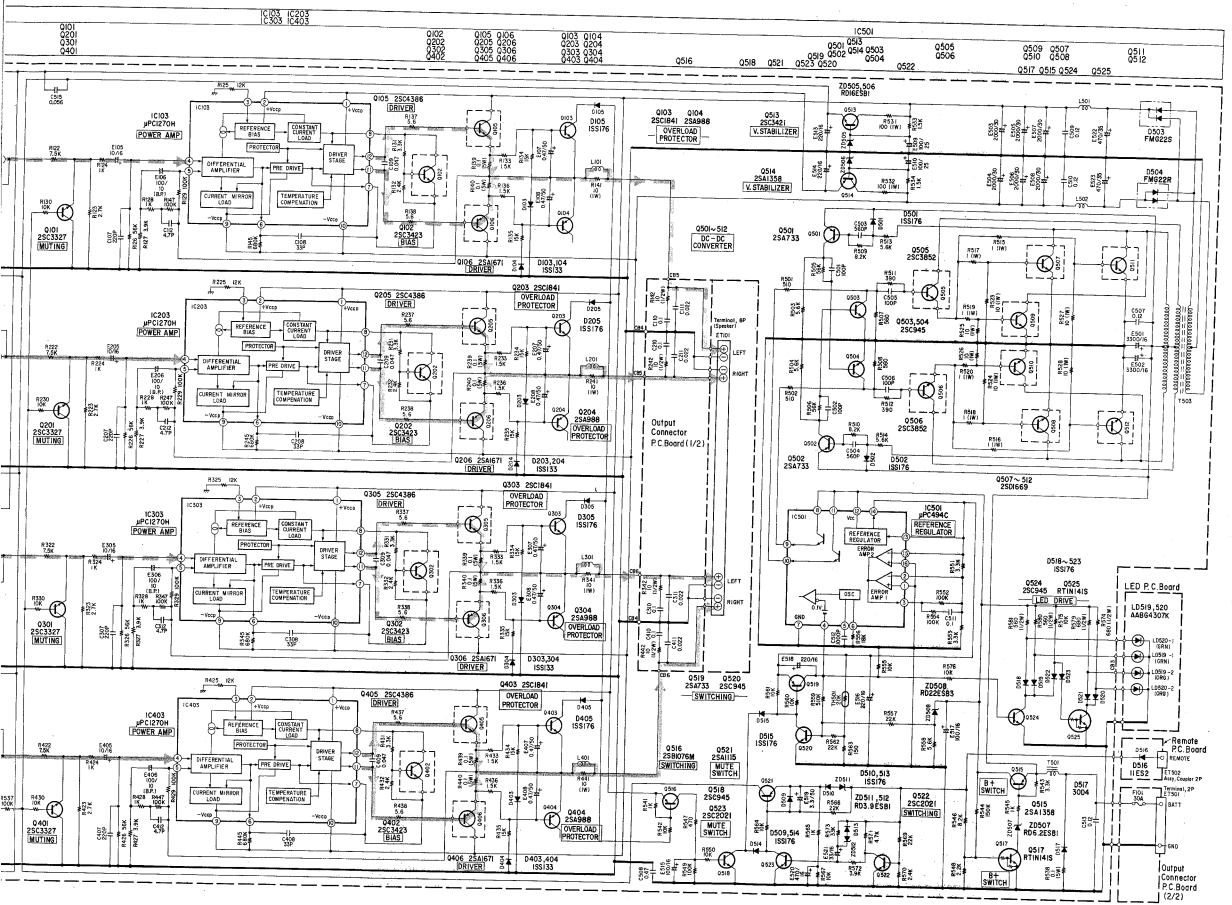
Note: ● TR. When replacing transistors Q105, Q205, Q305, Q405 and Q106, Q206, Q306, Q406, always use one with the same rank.
● TR. When replacing transistors Q505 and Q506, always use one with the same rank.



ge values.)

Note: ● TR. When replacing transistors Q105, Q205, Q305, Q405 and Q106, Q206, Q306, Q406, always use one with the same rank.
● TR. When replacing transistors Q505 and Q506, always use one with the same rank.

NOTE:
1. All resistance values are in ohms: K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000



D E F G H I J K L

IC'S And Transistors Voltage Values

IC Pin No.	IC101	IC102	IC201	IC202
1	15.3V	24mV	24mV	15.3V
2	22mV	24mV	24mV	24mV
3	22mV	45mV	45mV	24mV
4	47mV	−15.1V	−15.1V	45mV
5	−15.1V	45mV	45mV	−15.1V
6	47mV	24mV	24mV	45mV
7	22mV	24mV	24mV	24mV
8	22mV	15.3V	15.3V	24mV
9	15.3V	—	—	15.3V

IC Pin No.	IC103	IC203	IC303	IC403
1	28.8V	28.8V	28.8V	28.8V
2	28.8V	28.8V	28.8V	28.8V
3	21.8V	21.8V	21.8V	21.8V
4	0.1V	0.1V	0.1V	0.1V
5	0.1V	0.1V	0.1V	0.1V
6	−26.3V	−26.3V	−26.3V	−26.3V
7	−1.2V	−1.2V	−1.2V	−1.2V
8	0.48V	0.48V	0.48V	0.48V
9	−27.9V	−27.9V	−27.9V	−27.9V
10	−27.9V	−27.9V	−27.9V	−27.9V
11	−0.7V	−0.7V	−0.7V	−0.7V
12	0.48V	0.48V	0.48V	0.48V

IC Pin No.	IC301	IC401	IC601	IC701
1	15.3V	24mV	15.3V	24mV
2	22mV	24mV	24mV	24mV
3	22mV	45mV	24mV	45mV
4	47mV	−15.1V	45mV	−15.1V
5	−15.1V	45mV	−15.1V	45mV
6	47mV	24mV	47mV	23mV
7	22mV	24mV	22mV	23mV
8	22mV	15.3V	22mV	15.3V
9	15.3V	—	15.3V	—

IC Pin No.	IC501
1	0V
2	2.45V
3	0.09V
4	13mV
5	1.7V
6	3.7V
7	0V
8	14.3V
9	5.8V
10	6V
11	14.3V
12	14.3V
13	5V
14	5V
15	5V
16	0V

Pin No. Transistor	E	C	B
Q101	1.2mV	0V	−2.5V
Q102	−1.2V	0.4V	0.6V
Q103	0V	27.6V	0V
Q104	0V	−2.1V	0V
Q105	−98mV	28V	0.4V
Q106	−0.1V	−28V	−0.7V
Q201	1.2mV	0V	−2.5V
Q202	−1.2V	0.4V	0.6V
Q203	0V	27.6V	0V
Q204	0V	−2.1V	0V
Q205	−98mV	28V	0.4V
Q206	−0.1V	−28V	−0.7V
Q301	12mV	0V	−2.5V
Q302	−1.2V	0.4V	0.6V
Q303	0V	27.6V	0V
Q304	0V	−2.1V	0V
Q305	−98mV	28V	0.4V
Q306	−0.1V	−28V	−0.7V
Q401	1.2mV	0V	−2.5V
Q402	−1.2V	0.4V	0.6V
Q403	0V	27.6V	0V
Q404	0V	−2.1V	0V
Q405	−98mV	28V	0.4V
Q406	−0.1V	−28V	−0.7V
Q501	14.4V	8.1V	15V
Q502	14.4V	8.1V	15V
Q503	0V	0.1V	0.3V
Q504	0V	0.1V	0.3V
Q505	0.5V	14.4V	0.6V
Q506	0.5V	14.4V	0.6V
Q507	0V	14.6V	0.3V
Q508	0V	14.6V	0.3V
Q509	0V	14.6V	0.3V
Q510	0V	14.6V	0.3V
Q511	0V	14.6V	0.3V
Q512	0V	14.6V	0.3V
Q513	15.3V	23.6V	15.9V
Q514	−15.1V	−23.6V	−15.8V
Q515	14.4V	14.3V	13.6V
Q516	28V	0V	28V
Q517	0V	0V	2.7V
Q518	0V	5V	0V
Q519	5V	0V	5V
Q520	0V	5V	32mV
Q521	10V	0.1V	10.5V
Q522	0V	31.3mV	0.6V
Q523	0V	0V	10.5V
Q524	0V	0V	0V
Q525	0V	0V	14V

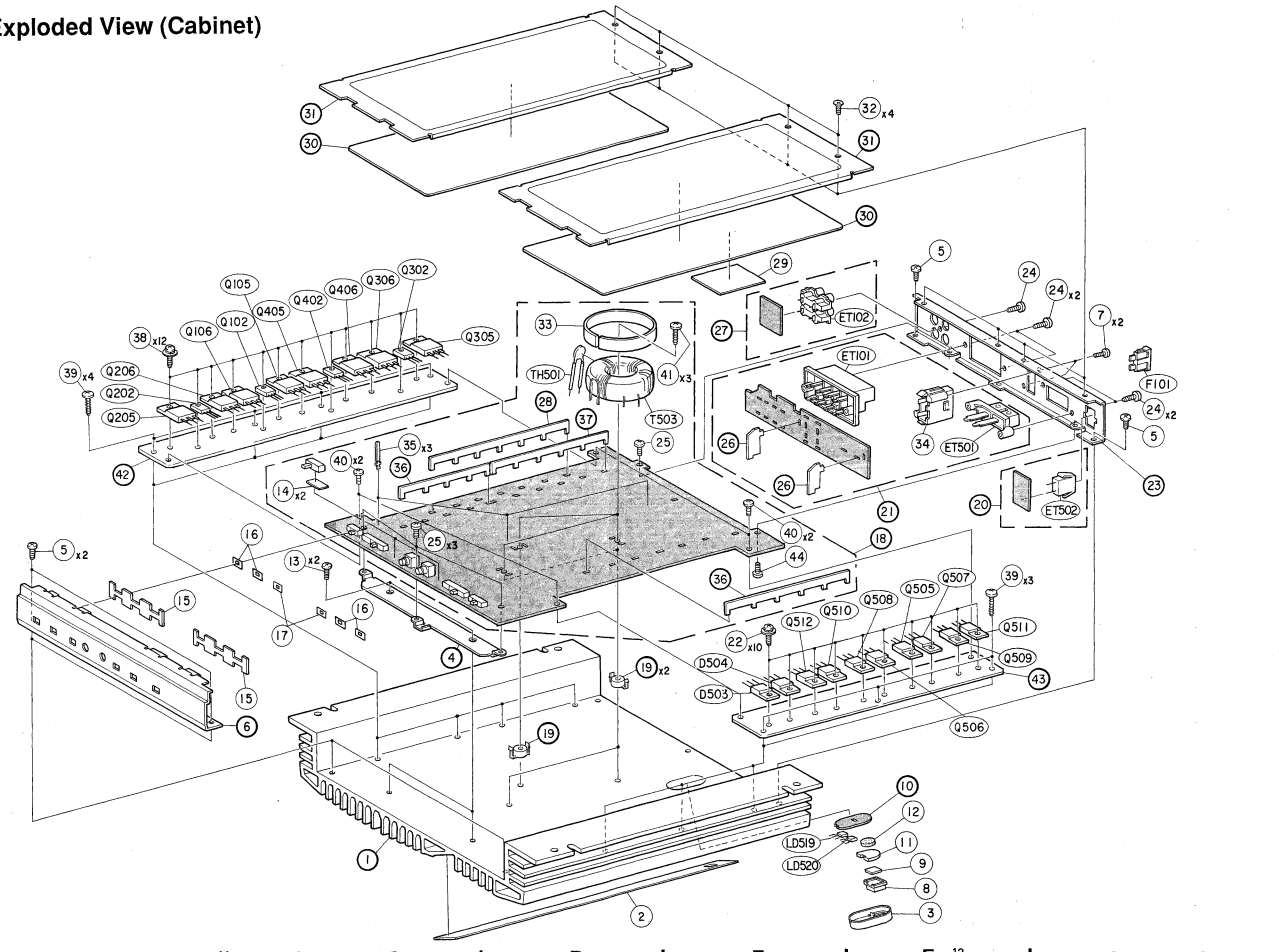
● Measuring Condition
1. Power Supply Voltage : DC14.4V.
2. Measuring Meter : Digital Multi Voltmeter.
3. Measuring Point Reference : Between Ground.
4. Measuring Conditions : No Signal Input.

Cabinet Assembly Parts List

Symbol No.	Index	Part No.	Description		
2	5-D	15E06677S01	Name Plate		
3	5-F	15E06495S01	Holder, LED		
5		03E06480S01	Screw, Pan (M3 × 6)		
7	2-G	03E08303S01	Screw, Pan (M2 × 6)		
8	5-F	61E06376S01	Lens, LED		
9	5-F	36E06482S01	Base, Lens		
11	5-F	15E06483S01	Spacer, LED		
12	5-F	75E06484S01	Cushion, LED		
13	4-B	03E06479S01	Screw, Pan (M3 × 6)		
14	3-B	43E06498S01	Spacer, Switch		
15	4-B	75E06485S01	Cushion, Switch		
16		43E06486S01	Cover, Switch		
17	4-B	43E06718S01	Cover, Switch A		
22	4-E	03E08304S01	Screw, Pan (M3 × 8.5) With Washer		
24		03E06490S01	Screw, Pan (M3 × 8)		
25		03E06492S01	Screw, Bind (M3 × 5)		
29	2-E	64E04065S01	Shield, Plate		
32	1-F	03E06493S01	Screw, Countersink (M3 × 6)		
33	2-D	26A81610F02	Shield, CU		
34	3-F	15E06453S01	Holder, Auto Fuse		
35	3-C	29C41045P06	Lug, Wrap Around		
38	2-B	03E08305S01	Screw, Pan (M3 × 9.5)		
39		03E06967S01	Screw, Pan (M3 × 10)		
40		03E08350S01	Screw, Pan (M3 × 6)		
41	3-E	03E07234S01	Screw, Pan (M3 × 12)		
44	3-E	03E06492S02	Screw, Bind (M3 × 5)		

NOTE: The parts without part numbers are not supplied.

Exploded View (Cabinet)



A | B | C | D | E | F | G | H

Electrical Parts List

Resistor: Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
μF = microfarads, pF = picofarads.

Symbol No.	Part No.	Description

Abbreviations

RES. = Resistor — CAP. = Capacitor
C.F. = Carbon Film — ELY. = Electrolytic
M.F. = Metal Film — CER. = Ceramic
M.O. = Metal Oxide Film — MYL. = Mylar
M.P. = Metal Plate — TAN. = Tantalum
TR. = Transistor — POLY. = Polystyrol
TRANS. = Transformer — PP. = Polypropylene
CP. = Chip — PLT. = Polyethylene

Amp P.C.Board

IC's

IC101	51T83403F03	μPC4570HA
IC102	51E08300S01	NJM4560L
IC103	51E03492S01	μPC1270H
IC201	51E08300S01	NJM4560L
IC202	51T83403F03	μPC4570HA
IC203	51E03492S01	μPC1270H
IC301	51T83403F03	μPC4570HA
IC303	51E03492S01	μPC1270H
IC401	51E08300S01	NJM4560L
IC403	51E03492S01	μPC1270H
IC501	51T70759F01	μPC494C
IC601	51T83403F03	μPC4570HA
IC701	51E08300S01	NJM4560L

Transistors

Q101	48E06355S01	2SC3327
Q102	48T64376F01	2SC3423
Q103	48E08295S01	2SC1841
Q104	48E08296S01	2SA988
★ Q105	48E06361S02	2SC4386-O
or	48E06361S01	2SC4386-P
or	48E06361S03	2SC4386-Y
★ Q106	48E06360S02	2SA1671-O
or	48E06360S01	2SA1671-P
or	48E06360S03	2SA1671-Y
Q201	48E06355S01	2SC3327
Q202	48T64376F01	2SC3423
Q203	48E08295S01	2SC1841
Q204	48E08296S01	2SA988
★ Q205	48E06361S02	2SC4386-O
or	48E06361S01	2SC4386-P
or	48E06361S03	2SC4386-Y
★ Q206	48E06360S02	2SA1671-O
or	48E06360S01	2SA1671-P
or	48E06360S03	2SA1671-Y
Q301	48E06355S01	2SC3327
Q302	48T64376F01	2SC3423
Q303	48E08295S01	2SC1841
Q304	48E08296S01	2SA988
★ Q305	48E06361S02	2SC4386-O
or	48E06361S01	2SC4386-P
or	48E06361S03	2SC4386-Y
★ Q306	48E06360S02	2SA1671-O
or	48E06360S01	2SA1671-P
or	48E06360S03	2SA1671-Y
Q401	48E06355S01	2SC3327
Q402	48T64376F01	2SC3423
Q403	48E08295S01	2SC1841
Q404	48E08296S01	2SA988
★ Q405	48E06361S02	2SC4386-O
or	48E06361S01	2SC4386-P
or	48E06361S03	2SC4386-Y
★ Q406	48E06360S02	2SA1671-O
or	48E06360S01	2SA1671-P
or	48E06360S03	2SA1671-Y
Q501	48E06356S01	2SA733
Q502	48E06356S01	2SA733
Q503	48S44578J02	2SC945
Q504	48S44578J02	2SC945
★ Q505	48E08293S01	2SC3852-O
or	48E08293S02	2SC3852-R
or	48E08293S03	2SC3852-Y
★ Q506	48E08293S01	2SC3852-O
or	48E08293S02	2SC3852-R
or	48E08293S03	2SC3852-Y
Q507	48E06359S01	2SD1669
Q508	48E06359S01	2SD1669
Q509	48E06359S01	2SD1669
Q510	48E06359S01	2SD1669
Q511	48E06359S01	2SD1669
Q512	48E06359S01	2SD1669
Q513	48T69176F02	2SC3421
Q514	48T70761F01	2SA1358
Q515	48T70761F01	2SA1358
Q516	48T81069F01	2SB1076M
Q517	48E06350S01	RT1N141S
Q518	48S44578J02	2SC945
Q519	48E06356S01	2SA733
Q520	48S44578J02	2SC945
Q521	48E06348S01	2SA1115
Q522	48E08294S01	2SC2021
Q523	48E08294S01	2SC2021
Q524	48S44578J02	2SC945
Q525	48E06350S01	RT1N141S

Diodes

D103	48T68829F01	1SS133
D104	48T68829F01	1SS133
D105	48T58583F01	1SS176
D203	48T68829F01	1SS133
D204	48T68829F01	1SS133
D205	48T58583F01	1SS176
D303	48T68829F01	1SS133
D304	48T68829F01	1SS133
D305	48T58583F01	1SS176
D403	48T68829F01	1SS133
D404	48T68829F01	1SS133
D405	48T58583F01	1SS176
D501	48T58583F01	1SS176
D502	48T58583F01	1SS176
D503	48T80987F01	FMG22S
D504	48T80987F02	FMG22R
D509	48T58583F01	1SS176
D510	48T58583F01	1SS176
D513	48T58583F01	1SS176
D514	48T58583F01	1SS176
D515	48T58583F01	1SS176
D517	48E06456S01	30D4
D518	48T58583F01	1SS176
D519	48T58583F01	1SS176
D520	48T58583F01	1SS176
D521	48T58583F01	1SS176
D522	48T58583F01	1SS176
D523	48T58583F01	1SS176
ZD505	48E06353S01	Zener, RD16ESB1
ZD506	48E06353S01	Zener, RD16ESB1
ZD507	48E06352S01	Zener, RD6.2ESB1
ZD508	48E06354S01	Zener, RD22ESB3
ZD511	48E06351S01	Zener, RD3.9ESB1
ZD512	48E06351S01	Zener, RD3.9ESB1

Capacitors

C101	21E06324S01	CER.,	220pF
E101	23E04816S01	ELY.,	10μF/16V
C102	21E06322S01	CER.,	47pF
C103	08E06460S01	MMT.,	0.15μF
E103	23E04816S01	ELY.,	10μF/16V
C104	08E06463S01	MMT.,	0.068μF
E104	23E04816S01	ELY.,	10μF/16V
C105	08E06459S01	MMT.,	0.1μF
E105	23E04816S01	ELY.,	10μF/16V
C106	08E06459S01	MMT.,	0.1μF
E106	23E06330S01	ELY., (B.P.)	100μF/10V
C107	21E06324S01	CER.,	220pF
E107	23E04826S01	ELY.,	0.47μF/50V
C108	21E06321S01	CER.,	33pF
E108	23E04826S01	ELY.,	0.47μF/50V
C109	08E06462S01	MMT.,	0.047μF
C112	21E03923S01	CER.,	4.7pF
E112	23E06329S01	ELY.,	1.5μF/50V
E113	23E06327S01	ELY.,	0.22μF/50V
C201	21E06324S01	CER.,	220pF
E201	23E04816S01	ELY.,	10μF/16V
C202	21E06322S01	CER.,	47pF
C203	08E06460S01	MMT.,	0.15μF
E203	23E04816S01	ELY.,	10μF/16V
C204	08E06463S01	MMT.,	0.068μF
E204	23E04816S01	ELY.,	10μF/16V
C205	08E06459S01	MMT.,	0.1μF
E205	23E04816S01	ELY.,	10μF/16V
C206	08E06459S01	MMT.,	0.1μF
E206	23E06330S01	ELY., (B.P.)	100μF/10V
C207	21E06324S01	CER.,	220pF
E207	23E04826S01	ELY.,	0.47μF/50V
C208	21E06321S01	CER.,	33pF
E208	23E04826S01	ELY.,	0.47μF/50V
C209	08E06462S01	MMT.,	0.047μF
E209	23E04816S01	ELY.,	10μF/16V
C212	21E03923S01	CER.,	4.7pF
E212	23E06329S01	ELY.,	1.5μF/50V
E213	23E06327S01	ELY.,	0.22μF/50V
C301	21E06324S01	CER.,	220pF
E301	23E04816S01	ELY.,	10μF/16V
C302	21E06322S01	CER.,	47pF
C303	08E06460S01	MMT.,	0.15μF
E303	23E04816S01	ELY.,	10μF/16V
C304	08E06463S01	MMT.,	0.068μF
E304	23E04816S01	ELY.,	10μF/16V
C305	08E06459S01	MMT.,	0.1μF
E305	23E04816S01	ELY.,	10μF/16V
C306	08E06459S01	MMT.,	0.1μF
E306	23E06330S01	ELY., (B.P.)	100μF/10V
C307	21E06324S01	CER.,	220pF
E307	23E04826S01	ELY.,	0.47μF/50V
C308	21E06321S01	CER.,	33pF
E308	23E04826S01	ELY.,	0.47μF/50V
C309	08E06462S01	MMT.,	0.047μF
C312	21E03923S01	CER.,	4.7pF
E312	23E06329S01	ELY.,	1.5μF/50V
E313	23E06327S01	ELY.,	0.22μF/50V
C401	21E06324S01	CER.,	220pF
E401	23E04816S01	ELY.,	10μF/16V
C402	21E06322S01	CER.,	47pF
C403	08E06460S01	MMT.,	0.15μF
E403	23E04816S01	ELY.,	10μF/16V
C404	08E06463S01	MMT.,	0.068μF
E404	23E04816S01	ELY.,	10μF/16V
C405	08E06459S01	MMT.,	0.1μF
E405	23E04816S01	ELY.,	10μF/16V
C406	08E06459S01	MMT.,	0.1μF
E406	23E06330S01	ELY., (B.P.)	100μF/10V
C407	21E06324S01	CER.,	220pF
E407	23E04826S01	ELY.,	0.47μF/50V
C408	21E06321S01	CER.,	33pF
E408	23E04826S01	ELY.,	0.47μF/50V
C409	08E06462S01	MMT.,	0.047μF
E409	23E04816S01	ELY.,	10μF/16V
C412	21E03923S01	CER.,	4.7pF
E412	23E06329S01	ELY.,	1.5μF/50V
E413	23E06327S01	ELY.,	0.22μF/50V

Note: ● TR. When replacing transistors Q105, Q205, Q305, Q405 and Q106, Q206, Q306, Q406, always use one with the same rank.
● TR. When replacing transistors Q505 and Q506, always use one with the same rank.

Symbol No.	Part No.	Description
C501	21E06323S01	CER., 100pF
E501	23E08297S02	ELY., 3300μF/16V
C502	21E06323S01	CER., 100pF
E502	23E08297S02	ELY., 3300μF/16V
C503	21E06325S01	CER., 560pF
E503	23E08298S01	ELY., 2000μF/30V
C504	21E06325S01	CER., 560pF
E504	23E08298S01	ELY., 2000μF/30V
C505	21E06323S01	CER., 100pF
E505	23E08298S01	ELY., 2000μF/30V
C506	21E06323S01	CER., 100pF
E506	23E08298S01	ELY., 2000μF/30V
C507	08E06458S01	TF., 0.12μF
E507	23E08298S01	ELY., 2000μF/30V
C508	08E06318S01	FILM, 0.47μF/63V
E508	23E08298S01	ELY., 2000μF/30V
C509	08E06458S01	TF., 0.12μF
E509	23E04821S01	ELY., 100μF/25V
C510	08E06458S01	TF., 0.12μF
E510	23E04821S01	ELY., 100μF/25V
C511	08E06457S01	TF., 0.1μF
C512	08E06317S01	FILM, 0.001μF
C513	08E06458S01	TF., 0.12μF
E513	23E06326S01	ELY., 220μF/16V
E514	23E06326S01	ELY., 220μF/16V
C515	08E04865S02	FILM, 0.056μF
E515	23E04833S01	ELY., 100μF/16V
E516	23E06337S01	ELY., 220μF/16V
E517	23E04833S01	ELY., 100μF/16V
E518	23E06326S01	ELY., 220μF/16V
E519	23E06328S01	ELY., 3.3μF/50V
E520	23E08297S01	ELY., 470μF/16V
E521	23E04866S01	ELY., 33μF/16V
E522	23E08302S01	ELY., 470μF/35V
E523	23E08302S01	ELY., 470μF/35V

Resistors

R139	06E06385S01	Plate, 0.1 ohm 5W× 2
R140		
R141	06E06383S01	SPR, 10 ohm 1W
R239	06E06385S01	Plate, 0.1 ohm 5W× 2
R240		
R241	06E06383S01	SPR, 10 ohm 1W
R339	06E06385S01	Plate, 0.1 ohm 5W× 2
R340		
R341	06E06383S01	SPR, 10 ohm 1W
R439	06E06385S01	Plate, 0.1 ohm 5W× 2
R440		
R441	06E06383S01	SPR, 10 ohm 1W
R515	06E06382S01	SPR, 1 ohm 1W
R516	06E06382S01	SPR, 1 ohm 1W
R517	06E06382S01	SPR, 1 ohm 1W
R518	06E06382S01	SPR, 1 ohm 1W
R519	06E06382S01	SPR, 1 ohm 1W
R520	06E06382S01	SPR, 1 ohm 1W
R523	06E06383S01	SPR, 10 ohm 1W
R524	06E06383S01	SPR, 10 ohm 1W
R525	06E06383S01	SPR, 10 ohm 1W
R526	06E06383S01	SPR, 10 ohm 1W
R527	06E06383S01	SPR, 10 ohm 1W
R528	06E06383S01	SPR, 10 ohm 1W
R531	06E06384S01	SPR, 100 ohm 1W
R532	06E06384S01	SPR, 100 ohm 1W
R536	17E08299S01	Cement, 0.1 ohm 5W
R574	06E06381S01	SPR, 680 ohm 1/2W
R579	06E06381S01	SPR, 680 ohm 1/2W
R580	06E06380S01	SPR, 560 ohm 1/2W
R581	06E06380S01	SPR, 560 ohm 1/2W

Volumes / Switches

S101	40E06346S01	Slide, SSSJ12 (FIX/VARIABLE)
S102	40E06344S01	Slide, SSSJ14 (FILTER)
S103	40E06345S01	Slide, SSSJ12 (INPUT MODE)
S201	40E06346S01	Slide, SSSJ12 (FIX/VARIABLE)
S202	40E06344S01	Slide, SSSJ14 (FILTER)
S301	40E06345S01	Slide, SSSJ12 (INPUT MODE)
VR101	18E06386S01	Volume, 50K ohm × 2
VR301	18E06386S01	Volume, 50K ohm × 2

Thermistor

TH501	48E06365S01	TD5-C320DA2 20K ohm

Coils / Transformers

L101	24E08301S01	Coil, 1.1μH
L201	24E08301S01	Coil, 1.1μH
L301	24E08301S01	Coil, 1.1μH
L401	24E08301S01	Coil, 1.1μH
L501	24E06339S01	Choke
L502	24E06339S01	Choke
T501	25E06342S01	Choke
T503	25E06340S01	Power, TRANS.

Symbol No.	Part No.	Description
Output Connector P.C.Board		
Capacitors		
C110	08E06459S01	MMT., 0.1μF
C111	08E06461S01	MMT., 0.022μF
C210	08E06459S01	MMT., 0.1μF
C211	08E06461S01	MMT., 0.022μF
C310	08E06459S01	MMT., 0.1μF
C311	08E06461S01	MMT., 0.022μF
C410	08E06459S01	MMT., 0.1μF
C411	08E06461S01	MMT., 0.022μF
Resistors		
R142	06E06379S01	SPR, 10 ohm 1/2W
R242	06E06379S01	SPR, 10 ohm 1/2W
R342	06E06379S01	SPR, 10 ohm 1/2W
R442	06E06379S01	SPR, 10 ohm 1/2W
Remote P.C.Board		
Diode		
D516	48T84052F01	11ES2
LED P.C.Board		
LED's		
LD519	48E06366S01	AABG4307K (ORG/GRN)
LD520	48E06366S01	AABG4307K (ORG/GRN)
Miscellaneous		
ET101	29E06476S01	Terminal, 8P (Speaker)
ET102	09E06320S01	RCA, Socket 4P
ET501	29E06475S01	Terminal, 2P (BATT/GND)
ET502	01E06307S01	Assy.,Coupler 2P (REMOTE)
F101	6SS58596F08	Fuse, Auto 30A

IC'S And Transistors Voltage Values

IC Pin No.	IC101	IC102	IC201	IC202
1	15.3V	24mV	24mV	15.3V
2	22mV	24mV	24mV	24mV
3	22mV	45mV	45mV	24mV
4	47mV	−15.1V	−15.1V	45mV
5	−15.1V	45mV	45mV	−15.1V
6	47mV	24mV	24mV	45mV
7	22mV	24mV	24mV	24mV
8	22mV	15.3V	15.3V	24mV
9	15.3V	—	—	15.3V

IC Pin No.	IC103	IC203	IC303	IC403
1	28.8V	28.8V	28.8V	28.8V
2	28.8V	28.8V	28.8V	28.8V
3	21.8V	21.8V	21.8V	21.8V
4	0.1V	0.1V	0.1V	0.1V
5	0.1V	0.1V	0.1V	0.1V
6	−26.3V	−26.3V	−26.3V	−26.3V
7	−1.2V	−1.2V	−1.2V	−1.2V
8	0.48V	0.48V	0.48V	0.48V
9	−27.9V	−27.9V	−27.9V	−27.9V
10	−27.9V	−27.9V	−27.9V	−27.9V
11	−0.7V	−0.7V	−0.7V	−0.7V
12	0.48V	0.48V	0.48V	0.48V

IC Pin No.	IC301	IC401	IC601	IC701
1	15.3V	24mV	15.3V	24mV
2	22mV	24mV	24mV	24mV
3	22mV	45mV	24mV	45mV
4	47mV	−15.1V	45mV	−15.1V
5	−15.1V	45mV	−15.1V	45mV
6	47mV	24mV	47mV	23mV
7	22mV	24mV	22mV	23mV
8	22mV	15.3V	22mV	15.3V
9	15.3V	—	15.3V	—

IC Pin No.	IC501
1	0V
2	2.45V
3	0.09V
4	13mV
5	1.7V
6	3.7V
7	0V
8	14.3V
9	5.8V
10	6V
11	14.3V
12	14.3V
13	5V
14	5V
15	5V
16	0V

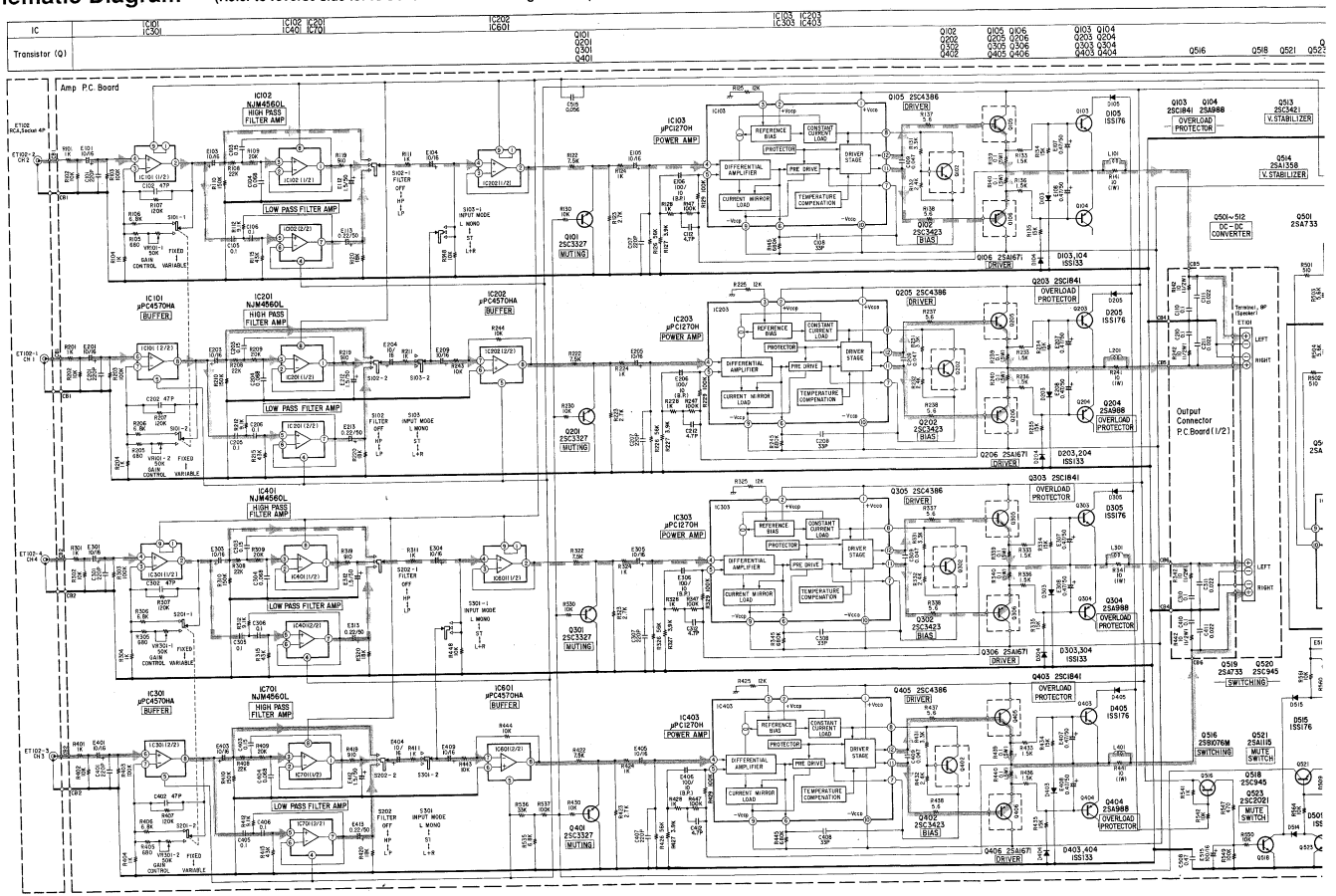
Pin No. Transistor	E	C	B
Q101	1.2mV	0V	−2.5V
Q102	−1.2V	0.4V	0.6V
Q103	0V	27.6V	0V
Q104	0V	−2.1V	0V
Q105	−98mV	28V	0.4V
Q106	−0.1V	−28V	−0.7V
Q201	1.2mV	0V	−2.5V
Q202	−1.2V	0.4V	0.6V
Q203	0V	27.6V	0V
Q204	0V	−2.1V	0V
Q205	−98mV	28V	0.4V
Q206	−0.1V	−28V	−0.7V
Q301	12mV	0V	−2.5V
Q302	−1.2V	0.4V	0.6V
Q303	0V	27.6V	0V
Q304	0V	−2.1V	0V
Q305	−98mV	28V	0.4V
Q306	−0.1V	−28V	−0.7V
Q401	1.2mV	0V	−2.5V
Q402	−1.2V	0.4V	0.6V
Q403	0V	27.6V	0V
Q404	0V	−2.1V	0V
Q405	−98mV	28V	0.4V
Q406	−0.1V	−28V	−0.7V
Q501	14.4V	8.1V	15V
Q502	14.4V	8.1V	15V
Q503	0V	0.1V	0.3V
Q504	0V	0.1V	0.3V
Q505	0.5V	14.4V	0.6V
Q506	0.5V	14.4V	0.6V
Q507	0V	14.6V	0.3V
Q508	0V	14.6V	0.3V
Q509	0V	14.6V	0.3V
Q510	0V	14.6V	0.3V
Q511	0V	14.6V	0.3V
Q512	0V	14.6V	0.3V
Q513	15.3V	23.6V	15.9V
Q514	−15.1V	−23.6V	−15.8V
Q515	14.4V	14.3V	13.6V
Q516	28V	0V	28V
Q517	0V	0V	2.7V
Q518	0V	5V	0V
Q519	5V	0V	5V
Q520	0V	5V	32mV
Q521	10V	0.1V	10.5V
Q522	0V	31.3mV	0.6V
Q523	0V	0V	10.5V
Q524	0V	0V	0V
Q525	0V	0V	14V

● Measuring Condition
1. Power Supply Voltage : DC14.4V.
2. Measuring Meter : Digital Multi Voltmeter.
3. Measuring Point Reference : Between Ground.
4. Measuring Conditions : No Signal Input.

Schematic Diagram

(Refer to reverse side for IC's and Transistors voltage values.)

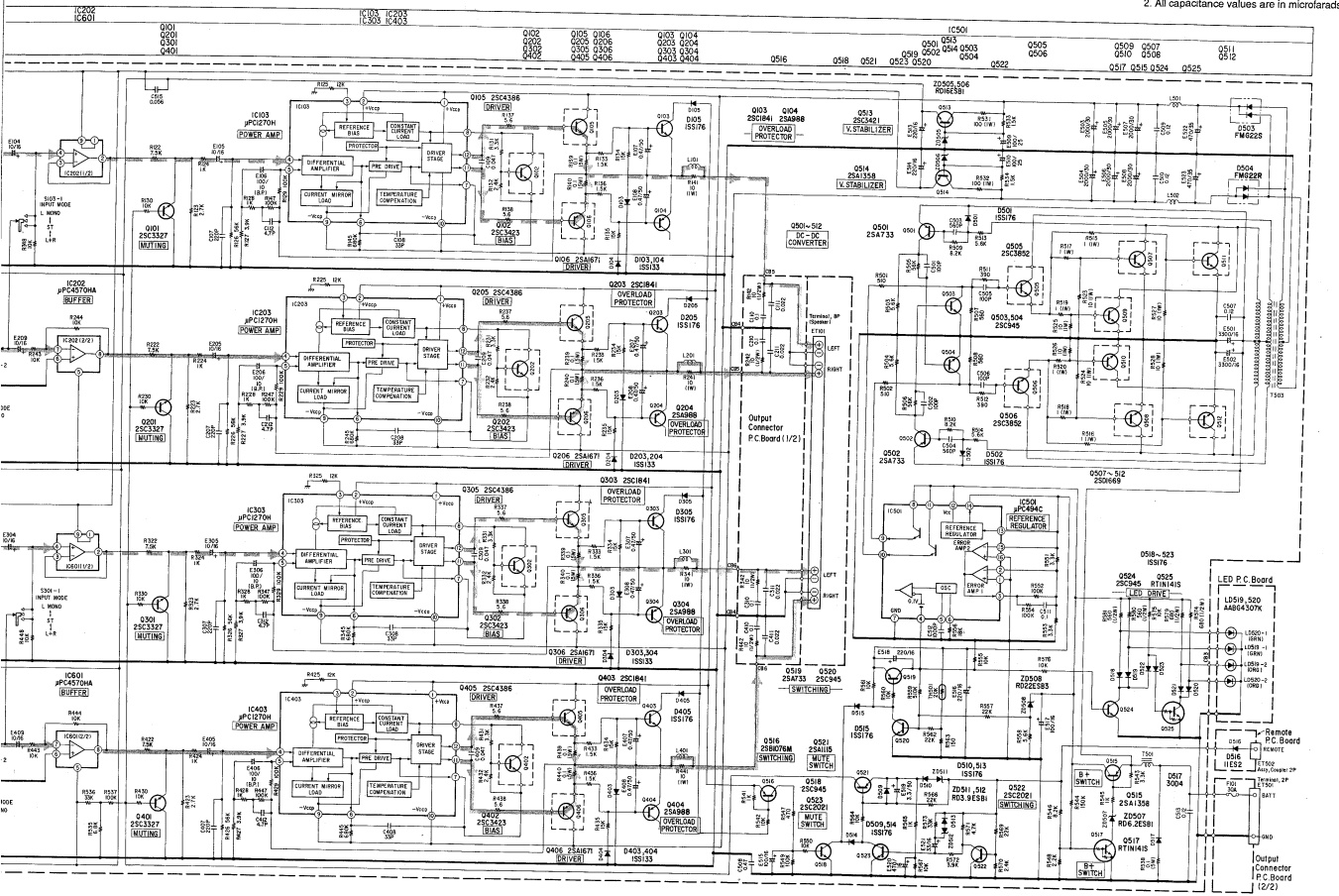
Note: ● TR. When replacing transistors Q105, Q205, Q305, Q405 and Q106, Q206, Q306, Q406, always use one with the same rank.
● TR. When replacing transistors Q505 and Q506, always use one with the same rank.



Transistors voltage values.)

Note: ● TR. When replacing transistors Q105, Q205, Q305, Q405 and Q106, Q206, Q306, Q406, always use one with the same rank.
● TR. When replacing transistors Q505 and Q506, always use one with the same rank.

NOTE:
1. All resistance values are in ohms. K= 1,000 M= 1,000,000
2. All capacitance values are in microfarads. P= 1/1,000,000 .



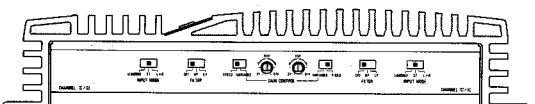
Packing Assembly Parts List

Symbol No.	Part No.	Description		
● 101	56E08288S01	Carton, Packing		
■ 101	56E08289S01	Carton, Packing		
103	56D13222W02	Tray, Packing (R)		
104	56D13222W01	Tray, Packing (L)		
105	56B72811F08	Sack, Polyethylene		
● 106	68P22001W07	Owners, Manual		
■ 106	68P22001W12	Owners, Manual		
107	01E06310S01	Assy, Remote Cord		
109	01E06306S01	Assy, Power Cord		
111	65S58596F08	Auto, Fuse (30A)		
112	01E06497S01	Assy, Screw Kit		

NOTE: ● : For North America Model Only (AA)
■ : For General Export Model Only (GA)
Others Common

ALPINE SERVICE MANUAL

4/3/2 Channel Power Amplifier



3552

Contents

Specifications

Power Source	14.4VDC (11 – 16V)
Current Drain (No signal)	2.5A
Power Output (1 kHz, 0.8% THD)	80W/4ch
Input Sensitivity	Fixed: 0.5V± 2 dB Variable: 2V± 2 dB
Frequency Response (-1 dB)	20 Hz – 40 kHz
Signal to Noise Ratio	100 dB
Separation	56 dB
Input Impedance	10 kohm ± 2 kohm
Output Impedance	4 ohm
Output Noise	1 mV
Semiconductors	13 IC's, 49 Transistors, 29 Diodes, 6 Zener Diodes, 2 LED's
Dimensions	285(W)× 55(H) × 270(D) mm
Weight	3.6 kg

NOTE: Due to continuing product improvement, specifications and design are subject to change without notice.

Features

- **4/3/2-Channel Operation:**
The 3552 can be used in 3 ways as:

a. 4-channel full-range amplifier, producing 30W per channel into 4 ohms, or 40W per channel into 2 ohms. The amplifier can be used in a 4-speaker full range system or in a bi-amped, dual subwoofer and dual satellite combination.

b. 3-channel amplifier, producing 30W (4 ohms) or 40W (2 ohms) into channels 1 & 2, and 85W (4 ohms) into the third channel. This combination is perfect for a single subwoofer, dual satellite (right and left) system.

c. 2-channel full-range amplifier, producing 85W per channel into 4 ohms. The amplifier can be used as full range, low-pass (sub-woofer amp), or high-pass (satellite amp).

- **Status Monitor:**
This indicator illuminates in green when the 3552 is on and operational. This light will turn orange if any protection circuitry is activated. It can be used as a troubleshooting aide should an installation problem develop.

- **Active Dividing Network:**
A built-in, switchable electronic crossover network at 80 Hz, 18 dB per octave can be used to set up the amplifier for low-pass (subwoofer) or high-pass (tweeter/midrange satellite) applications. This network can also be switched off to allow full-range signal amplification.

- **Duo-β Feedback Circuitry:**
Duo-Beta is a patented and technologically advanced form of negative feedback. Negative feedback is used to minimize distortion and stabilize the amplifier. Too much feedback, however, increases the transient intermodulation distortion (T.I.M.), decreases the amplifier slew factor, and reduces its musicality. The Duo-Beta circuitry supplies low negative feedback throughout the audio frequency and very high negative feed-back at DC. This stabilizes the amplifier, removes DC offset, and offers excellent total harmonic distortion (T.H.D.) characteristics. It also provides low T.I.M., with excellent slew factor, stability, and musicality.

- **No Current Limiting:**
Current limiting circuitries used in conventional amplifiers may cause premature clipping and inferior transient response. Absence of current limiters in the audio section ensures low T.I.M., excellent transient response, and superb sonic quality.

- **S.T.A.R. Circuitry:**
Alpine proprietary Signal Transit for Accurate Response circuit topology improves sonic properties by reducing interaction between different sections of the circuitry.

- **Input Mode Selector:**
This switch allows the user to specify the input signal entering the amplifier:

a. **Stereo Mode:**
Allows the right and left channel signals to reach their designated amplifier channels. This mode provides a stereo output or a center channel common information output (when used in the bridged configuration).

b. **L (MONO) Mode:**
Disables the right channel input connector and routes the signal through the left channel input to all sections of the amplifier. This mode can be used when a single (mono) signal is amplified (either in stereo or bridged operation).

c. **L+R Mode:**
Sums the right and left channel input signals and routes the result to all sections of the amplifier. It can be used in stereo or bridged operation to provide a summed (mono) output.

- **DC-to-DC Switching Mode Power Supply:**
Provides excellent power output throughout the audio bandwidth (20 Hz to 20 kHz). Its soft clipping characteristics ensure superb transient response and musicality.

- **Fully Complementary, Discrete Output Circuitry:**
For excellent reliability, superb sonic performance and high current capability for accurate transient response.

- **Continuously Adjustable, Independent Front and Rear Input Gain Controls:**
Allow different level settings for the two different audio sections.

- **Heavy Duty Construction:**
Glass-epoxy printed circuit boards for excellent thermal stability and long-term reliability.

- **Gold-Plated RCA Input Connectors:**
For most accurate signal transmission and lowest possible loss. Gold-plated terminals are immune to signal deterioration caused by corrosion in the connectors that can develop over time.

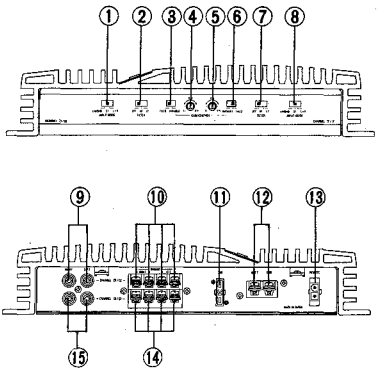
- **Gold-Plated Speaker Output and Power Connectors:**
For high definition, minimum loss power transfer and oxidization resistance.

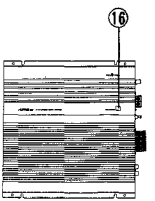
- **High Performance, Low Noise, Audiophile Quality Active and Passive Components.**

- **Capacitive/Inductive Power Supply Input and Output Filtering:**
For low radio frequency interference (RFI) and immunity to system noises (such as alternator whine).

- **Fully Protected Against Wiring Errors.**

Switches And Terminals





① Input Mode Selector Switch (Channels 1/2)
② Active Dividing Network Mode Selector Switch (Channels 1/2)
③ Input Gain Selector Switch (Channels 1/2)
④ Input Gain Adjustment Control (Channels 1/2)
⑤ Input Gain Adjustment Control (Channels 3/4)
⑥ Input Gain Selector Switch (Channels 3/4)
⑦ Active Dividing Network Mode Selector Switch (Channels 3/4)
⑧ Input Mode Selector Switch (Channels 3/4)
⑨ Input RCA Jacks (Channels 1/2)
⑩ Speaker Output Terminals (Channels 1/2)
⑪ Fuse Blocks
⑫ Power Terminals
⑬ Remote On Connector
⑭ Speaker Output Terminals (Channels 3/4)
⑮ Input RCA Jacks (Channels 3/4)
⑯ Status Monitor

Switch Settings

Input Mode Selector Switches ① and ⑥:

a) Set to the "ST" position (center) when the amplifier is used as a 4-channel stereo system.

b) Set to the "L (MONO)" position when the amplifier is used for one channel of a stereo or bridged system.

c) Set to the "L+R" position when the amplifier is used for the subwoofer system which uses the right channel and left channel signals summed.

Active Dividing Network Selector Switches ② and ⑦

a) Set to the "LP" position when the amplifier is used for the low-pass (sub-woofer) system. The frequencies higher than 80 Hz will be cut (at a rate of 18 dB per octave).

b) Set to the "HP" position when the 3552 is used for the high-pass (tweeter/midrange and subwoofer) system. The frequencies lower than 80 Hz will be cut (at a rate of 18 dB per octave).

c) Set to the "OFF" position when the 3552 is used for the regular stereo system with full-range speakers. The full bandwidth will be output without cutting the high or low frequencies.

Fixed/Variable Input Selector Switches ③ and ⑥:

a) Set to the "FIXED" position when connecting the 3552 to other Alpine products. This position sets the input sensitivity to 500 mV which corresponds to the pre-amp output of Alpine products.

b) Set to the "VARIABLE" position when connecting the 3552 to a non-Alpine product with an output voltage other than 500 mV. This position should also be used when adjustment of input sensitivity is required to obtain certain imaging requirements or to compensate for different speaker efficiencies.

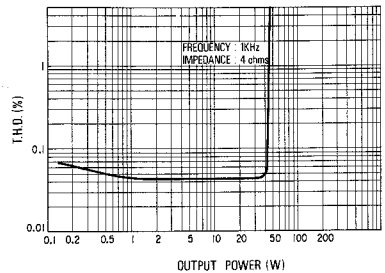
Input Gain Controls ④ and ⑤:
After setting the Input Select Switches ③ and ⑥ to the "VARIABLE" position, rotate the Input Gain Controls ④ and ⑤ with a #0 screwdriver and adjust the input gain to the point where there is maximum volume with no distortion.

Status Monitor:
This indicator lights green when the power is on. The 3552 has built-in protection circuitry. If, for some reason, this protection circuit is activated, the indicator turns orange. If this happens, turn the system off, find the cause of the problem and remedy the situation. This includes checking all your connections and wiring. If the indicator remains orange when the system is turned on, consult your authorized Alpine dealer.

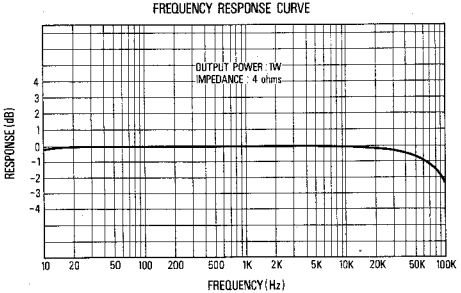
Note: The indicator will illuminate in orange for a few seconds when the power is turned on as the protection circuit will be activated. This is normal.

Characteristic Curves

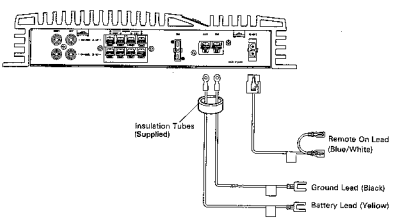
POWER VS. DISTORTION CURVE



FREQUENCY RESPONSE CURVE



Connections



Before making connections, be sure to turn the power off to all audio components. Insulation tubes for the speaker leads and the power supply leads are supplied with the 3552, route the speaker leads and the power supply leads separately through these tubes.

1. Speaker Output Terminal
The 3552 has two sets of speaker outputs for the Front and Rear speakers. Be sure to observe correct speaker output connections and phasing. In the stereo mode connect the right speaker output to the right speaker, and the left to left. Connect the positive output to the positive speaker terminal,and the negative to negative. In the bridged mode, connect the left positive to the positive terminal on the speaker and the right negative to the negative terminal of the speaker. Do not use the speaker (-) terminal commonly for the right and left speakers or connect it to the vehicle's chassis ground.

Note: Do not connect speaker leads together or to chassis ground.

2. Ground Lead (Black)
Connect this lead securely to a clean, bare metal spot on the vehicle's chassis. Verify this point to be a true ground by checking for continuity between that point and the negative (-) terminal of the vehicle's battery.

3. Battery Lead (Yellow)
Connect this lead directly to the positive (+) terminal of the vehicle's battery.

Do not connect this lead to the vehicle's electrical system.

4. Remote Turn-On Lead (Blue/White)
Connect this lead to the remote turn on lead of your head unit.

5. Input RCA Jacks
Connect these jacks to the line out leads on your head unit using optional RCA extension patch cords. Be sure to observe correct channel connections; Left to Left, Right to Right, Front to Front, and Rear to Rear.

Three simple and typical system combinations are illustrated. For wiring connections, carefully follow the instructions provided with each component.

Precautions

1. Improper wiring connections could cause damage to your vehicle's electrical system and/or the 3552 amplifier. Carefully follow the wiring instructions in this manual.
2. Attaching the battery lead to the positive (+) terminal of the battery should be the last connection after all other connections are made.
3. Due to the high power output of the 3552, it is important that all connections are clean and well secured, or damage could result.
4. Be sure that the 3552 is mounted in a way that will allow for free air circulation and heat dissipation.
5. When changing fuses, be sure to replace the old fuse with one of the same amperage. Use of improper fuses can lead to serious damage to components.

Disassembly Instructions

1. Removal of Bottom Cover.

(1) Remove four screws marked " ○ " as shown in Figure 1.

(2) The Bottom Cover will be removed by pulling out in the arrow direction as shown in Figure 1.

2. Removal of Amp P.C.Board.

(1) After removal of the Bottom Cover, remove 31 screws marked " ● ". Then, the Main P.C.Board will be removed from heat tank together with Rear Chassis and RCA, Output Connector, Remote P.C.Board as shown in Figure 2.

(2) Remove two screws marked " ■ " and the solders located two places as shown in Figure 3.

(3) After removal of fuse, remove seven screws marked " ▲ " and the hooks located at four places as shown in Figure 4.

(4) After the above procedures are completed, RCA, Output Connector and Remote P.C.Board is ready to be removed from Rear Chassis together with the Amp P.C.Board.

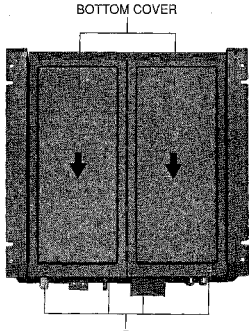


Figure 1

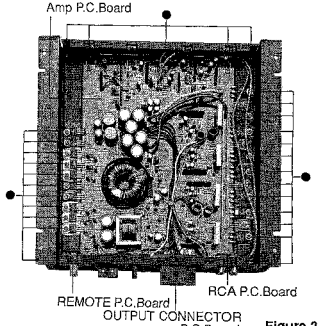


Figure 2

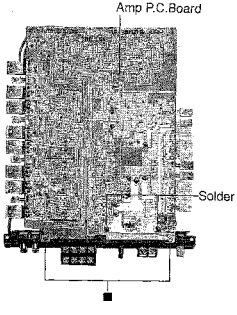


Figure 3

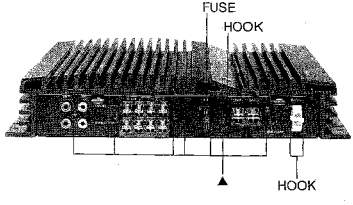
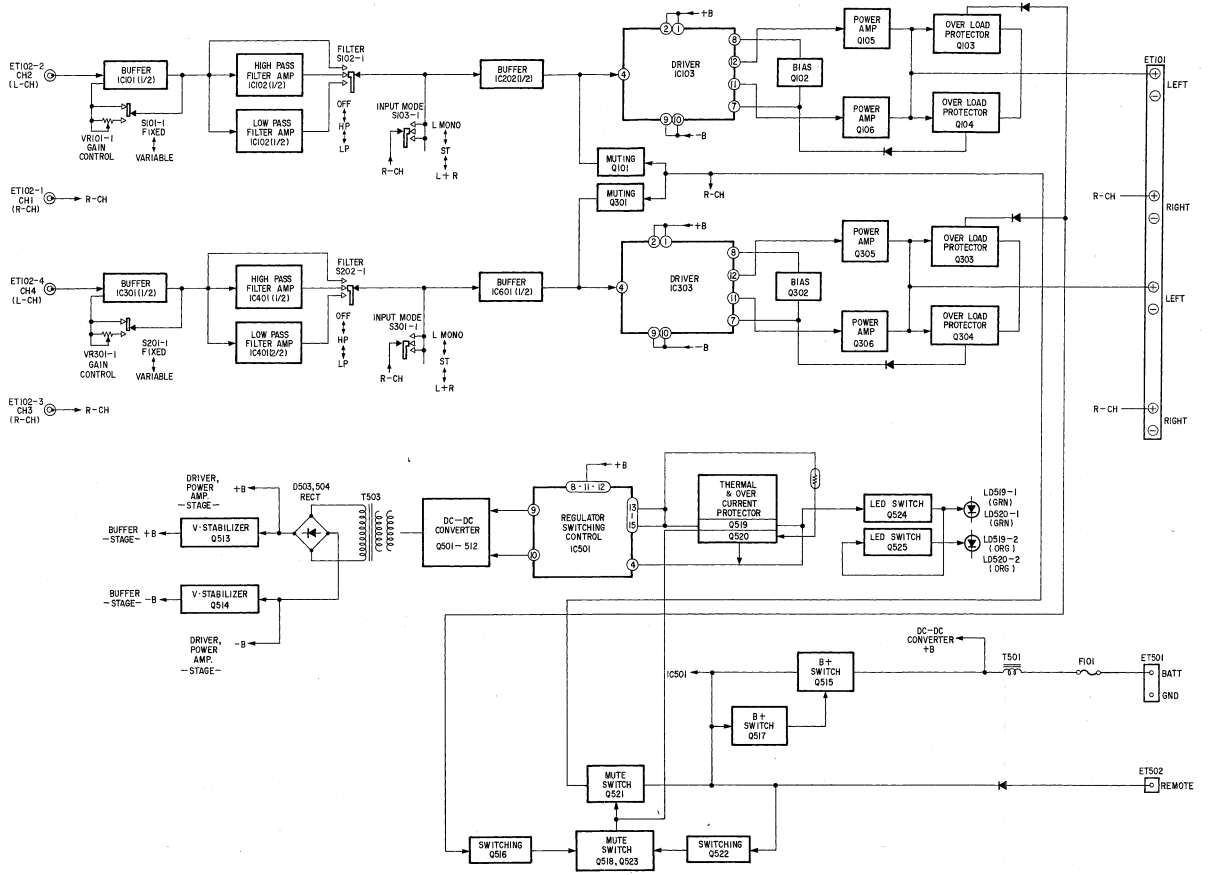
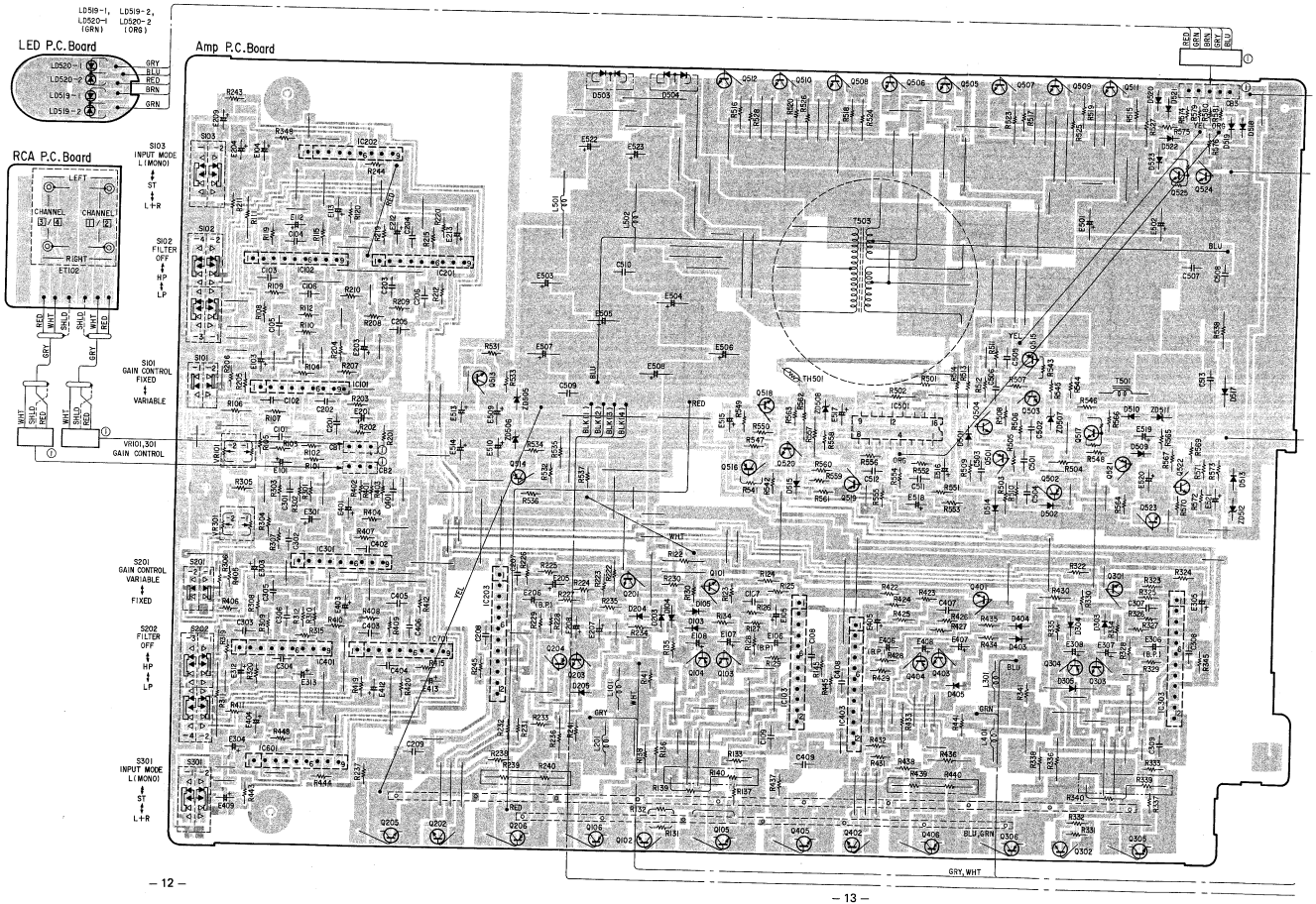


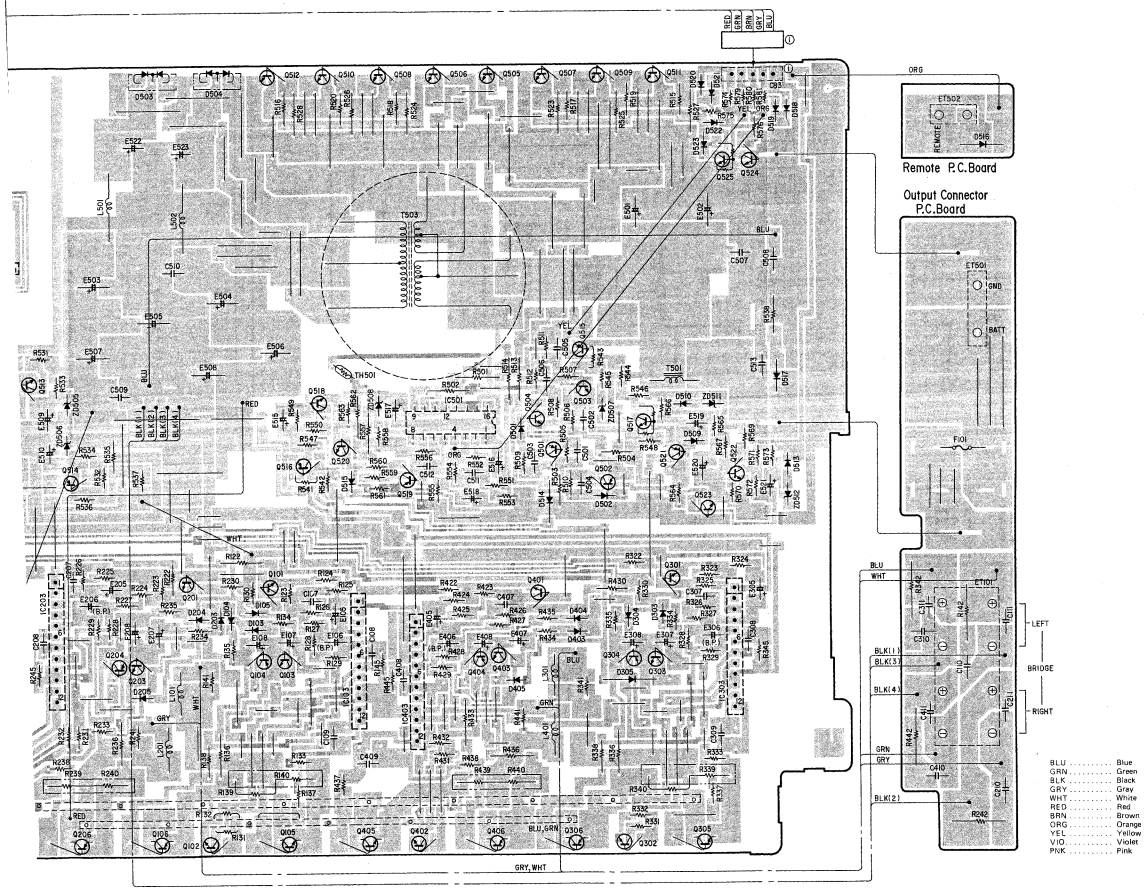
Figure 4

Block Diagram



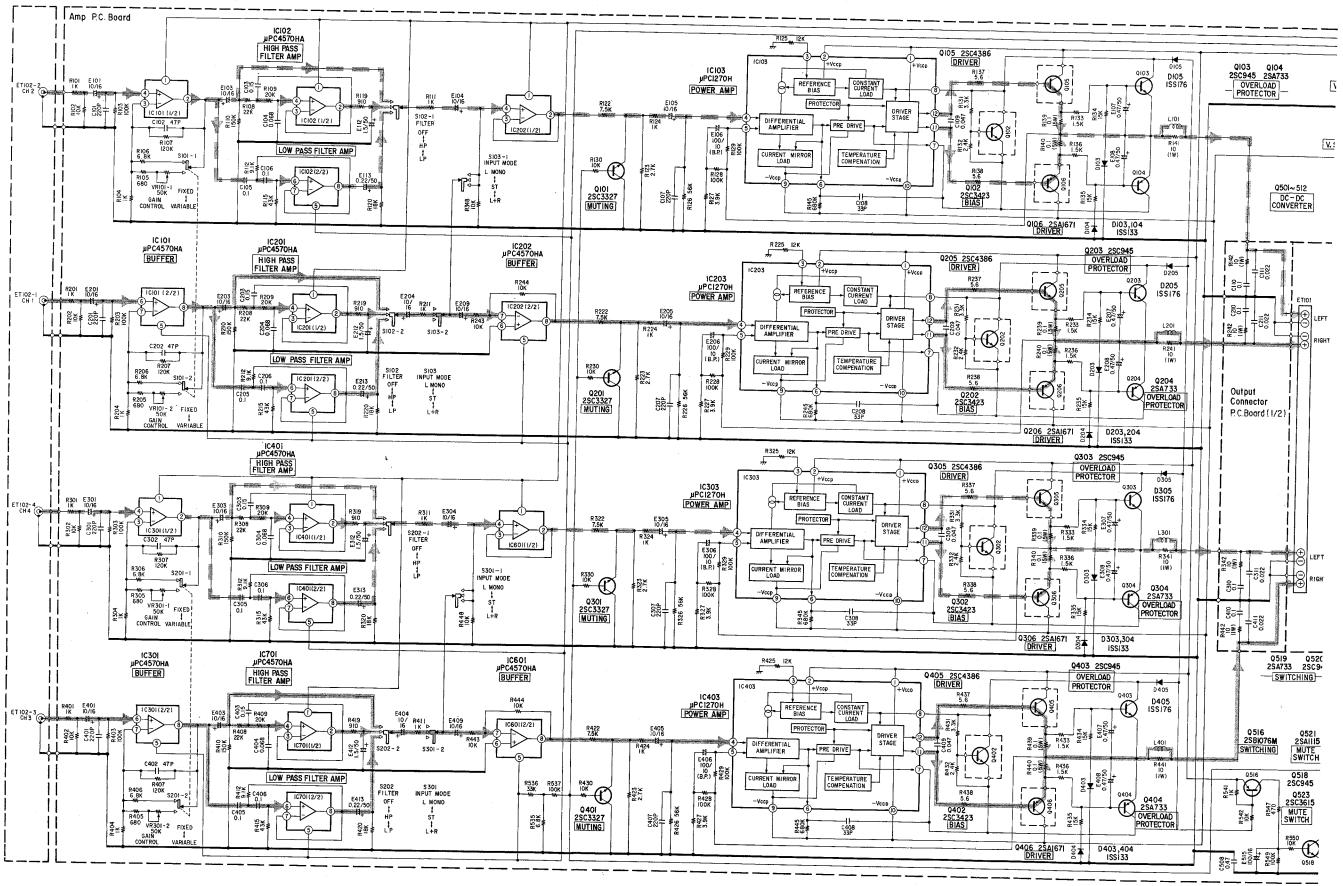
Parts Layout on P.C.Boards and Wiring Diagram





BLU ..... Blue
GRN ..... Green
BLK ..... Black
GRY ..... Gray
WHT ..... White
RED ..... Red
BRN ..... Brown
ORG ..... Orange
YEL ..... Yellow
VIO ..... Violet
PNK ..... Pink

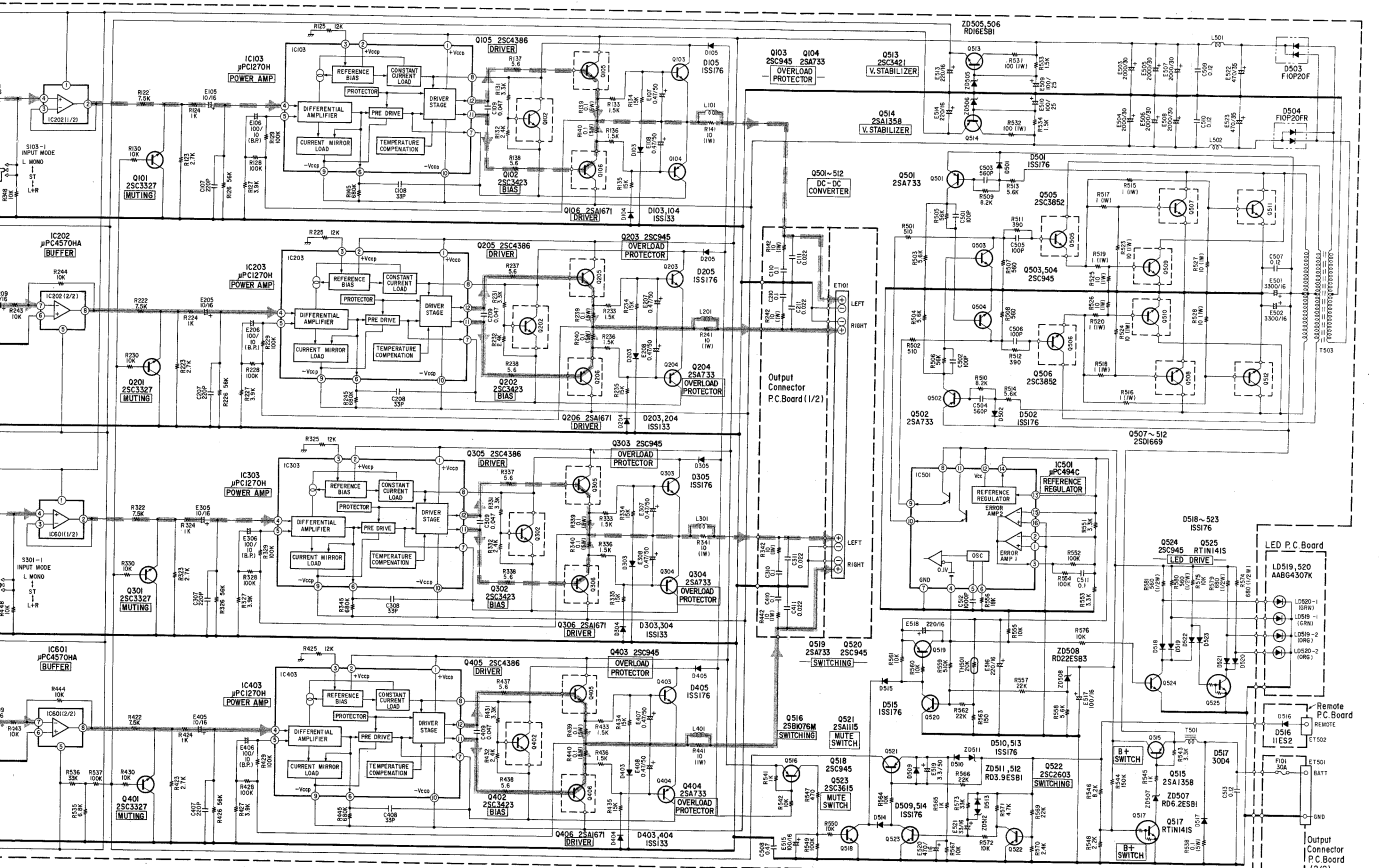
Schematic Diagram (Refer to reverse side for IC's and Transistors voltage values.)



A | B | C | D | E | F | G | H

istors voltage values.)

NOTE:
1.All resistance values are in ohms. K=1,000 M=1,000,000
2.All capacitance values are in microfarads. P=1/1,000,000



D | E | F | G | H | I | J | K

– 16 –

– 17 –

IC'S And Transistors Voltage Values

IC Pin No.	IC101	IC102	IC201	IC202
1	15.3V	15.3V	15.3V	15.3V
2	22mV	24mV	24mV	24mV
3	22mV	24mV	24mV	24mV
4	47mV	45mV	45mV	45mV
5	-15.1V	-15.1V	-15.1V	-15.1V
6	47mV	45mV	45mV	45mV
7	22mV	24mV	24mV	24mV
8	22mV	24mV	24mV	24mV

IC Pin No.	IC103	IC203	IC303	IC403
1	28.8V	28.8V	28.8V	28.8V
2	28.8V	28.8V	28.8V	28.8V
3	21.8V	21.8V	21.8V	21.8V
4	0.1V	0.1V	0.1V	0.1V
5	0.1V	0.1V	0.1V	0.1V
6	-26.3V	-26.3V	-26.3V	-26.3V
7	-1.2V	-1.2V	-1.2V	-1.2V
8	0.48V	0.48V	0.48V	0.48V
9	-27.9V	-27.9V	-27.9V	-27.9V
10	-27.9V	-27.9V	-27.9V	-27.9V
11	-0.7V	-0.7V	-0.7V	-0.7V
12	0.48V	0.48V	0.48V	0.48V

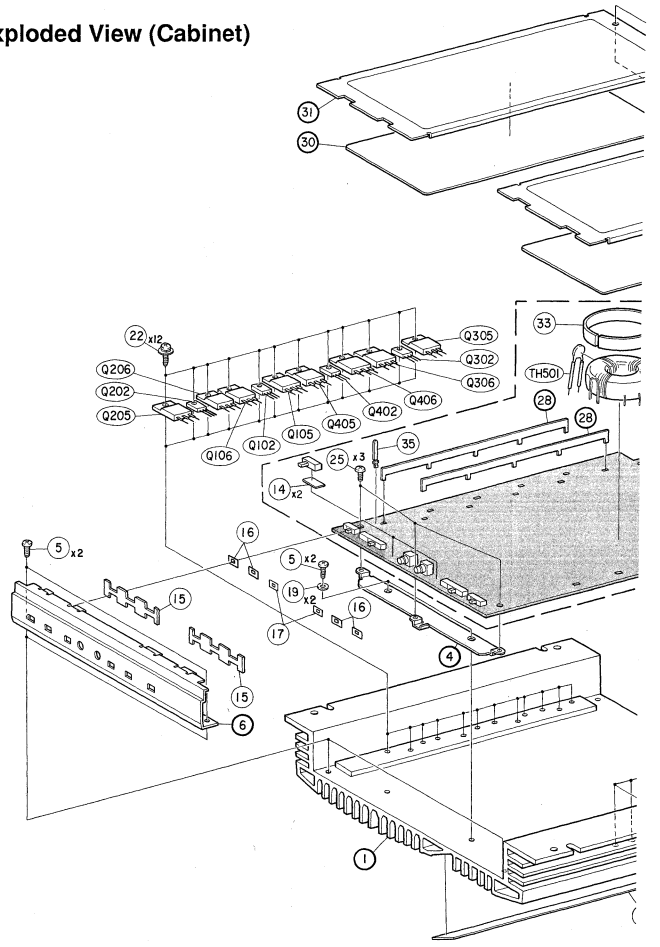
IC Pin No.	IC301	IC401	IC601	IC701
1	15.3V	15.3V	15.3V	15.3V
2	22mV	24mV	24mV	24mV
3	22mV	24mV	24mV	24mV
4	47mV	45mV	45mV	45mV
5	-15.1V	-15.1V	-15.1V	-15.1V
6	47mV	45mV	47mV	45mV
7	22mV	24mV	22mV	23mV
8	22mV	24mV	22mV	23mV

IC Pin No.	IC501
1	0V
2	2.45V
3	0.09V
4	13mV
5	1.7V
6	3.7V
7	0V
8	14.3V
9	5.8V
10	6V
11	14.3V
12	14.3V
13	5V
14	5V
15	5V
16	0V

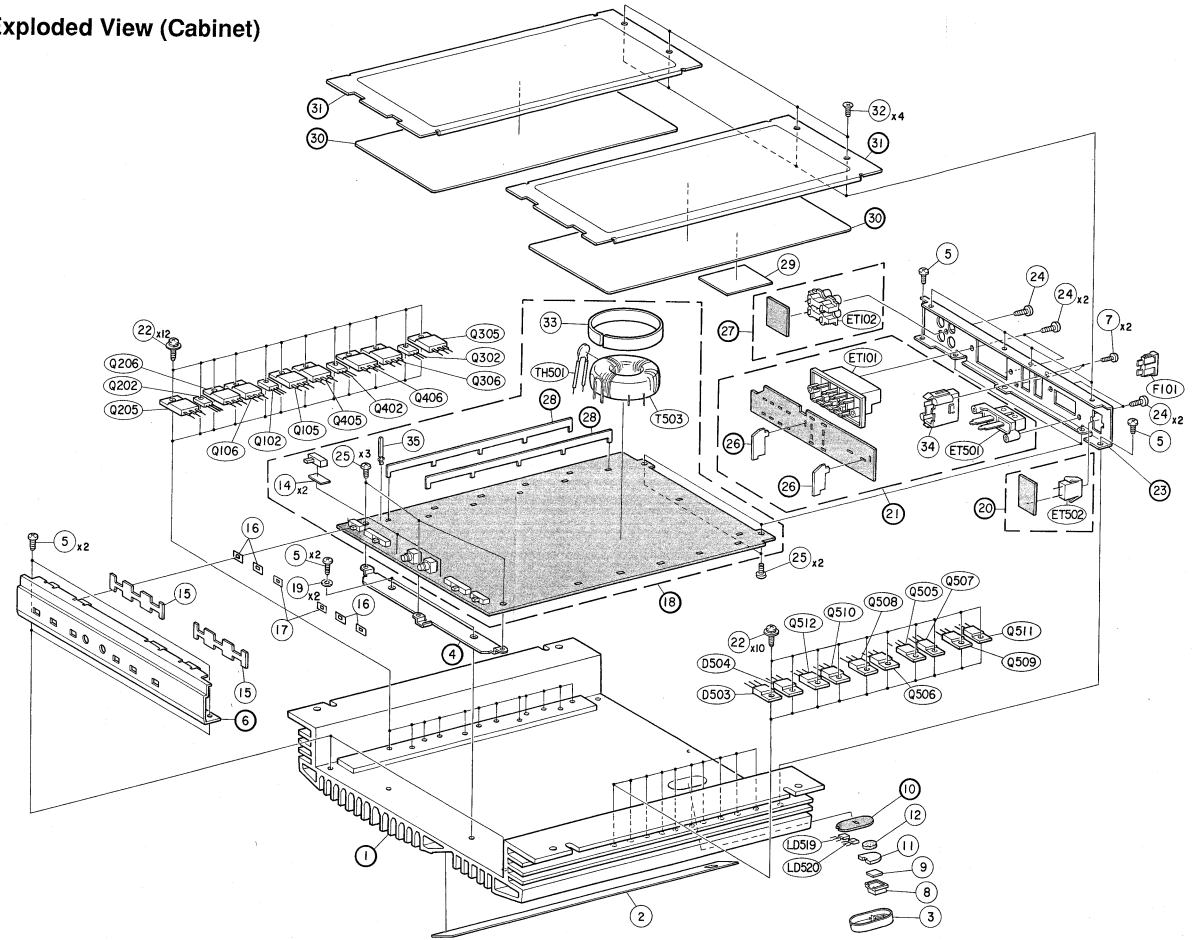
Pin No. Transistor	E	C	B
Q101	1.2mV	0V	-2.5V
Q102	-1.2V	0.4V	0.6V
Q103	0V	27.6V	0V
Q104	0V	-2.1V	0V
Q105	-98mV	28V	0.4V
Q106	-0.1V	-28V	-0.7V
Q201	1.2mV	0V	-2.5V
Q202	-1.2V	0.4V	0.6V
Q203	0V	27.6V	0V
Q204	0V	-2.1V	0V
Q205	-98mV	28V	0.4V
Q206	-0.1V	-28V	-0.7V
Q301	12mV	0V	-2.5V
Q302	-1.2V	0.4V	0.6V
Q303	0V	27.6V	0V
Q304	0V	-2.1V	0V
Q305	-98mV	28V	0.4V
Q306	-0.1V	-28V	-0.7V
Q401	1.2mV	0V	-2.5V
Q402	-1.2V	0.4V	0.6V
Q403	0V	27.6V	0V
Q404	0V	-2.1V	0V
Q405	-98mV	28V	0.4V
Q406	-0.1V	-28V	-0.7V
Q501	14.4V	8.1V	15V
Q502	14.4V	8.1V	15V
Q503	0V	0.1V	0.3V
Q504	0V	0.1V	0.3V
Q505	0.5V	14.4V	0.6V
Q506	0.5V	14.4V	0.6V
Q507	0V	14.6V	0.3V
Q508	0V	14.6V	0.3V
Q509	0V	14.6V	0.3V
Q510	0V	14.6V	0.3V
Q511	0V	14.6V	0.3V
Q512	0V	14.6V	0.3V
Q513	15.3V	23.6V	15.9V
Q514	-15.1V	-23.6V	-15.8V
Q515	14.4V	14.3V	13.6V
Q516	28V	0V	28V
Q517	0V	0V	2.7V
Q518	0V	5V	0V
Q519	5V	0V	5V
Q520	0V	5V	32mV
Q521	10V	0.1V	10.5V
Q522	0V	31.3mV	0.6V
Q523	0V	0V	10.5V
Q524	0V	0V	0V
Q525	0V	0V	14V

- Measuring Conditions
1.Power Supply Voltage : DC14.4V.
2.Measuring Meter : Digital Multi Voltmeter.
3.Measuring Point Reference : Between Ground.
4.Measuring Condition : No Signal Input.

Exploded View (Cabinet)



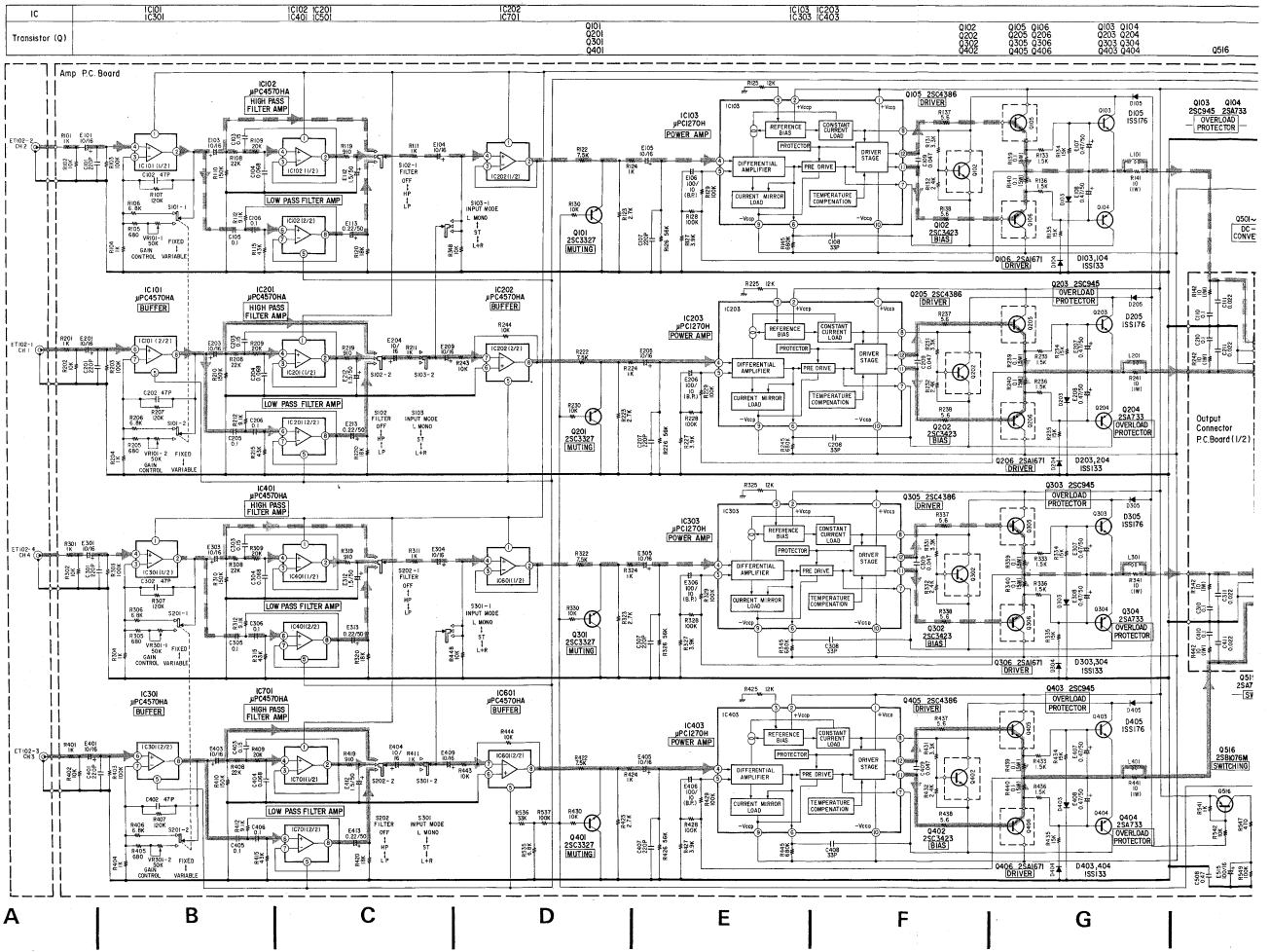
Exploded View (Cabinet)



A | B | C | D | E | F | G

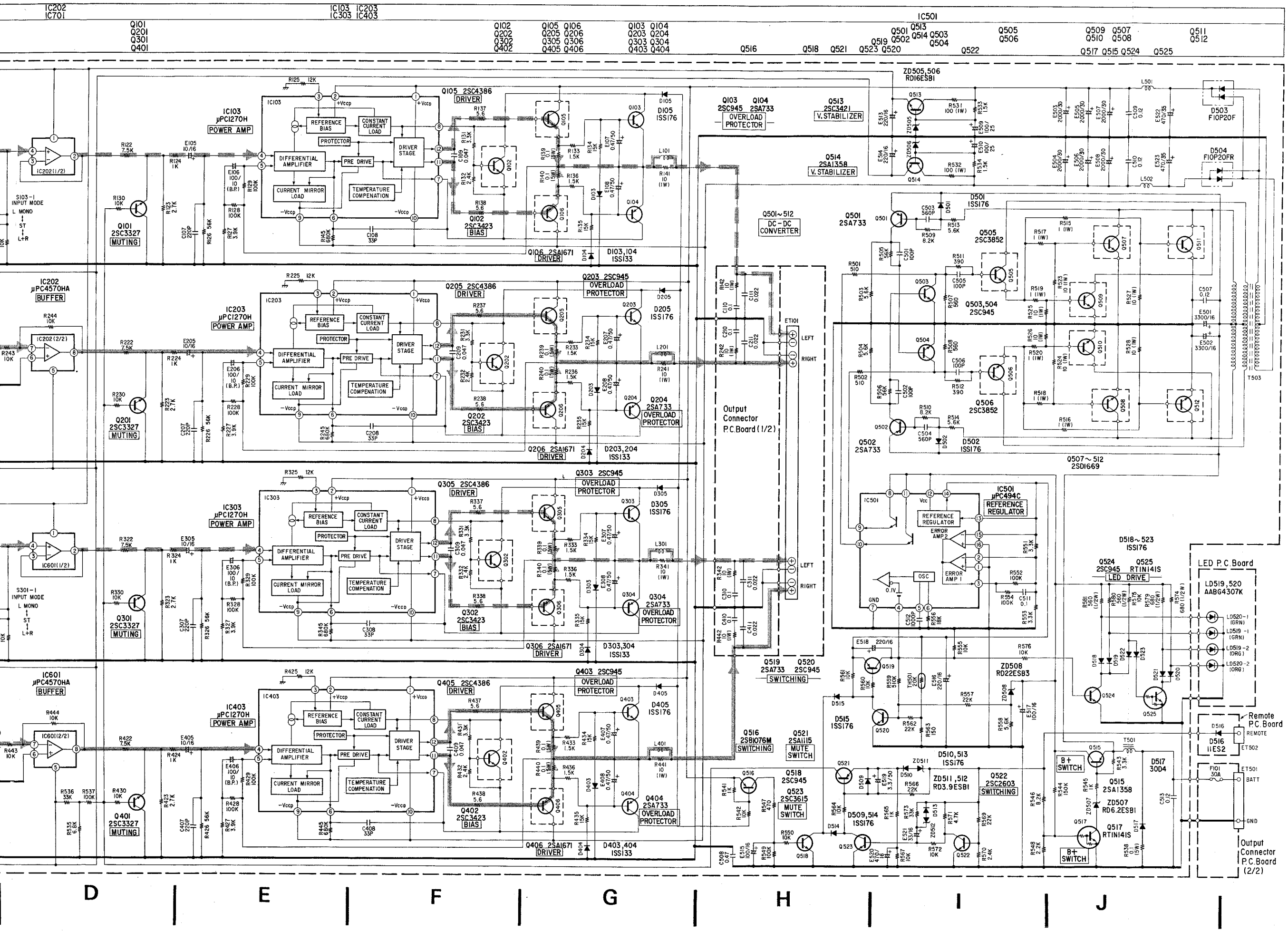
Schematic Diagram

(Refer to reverse side for IC's and Transistors voltage values.)

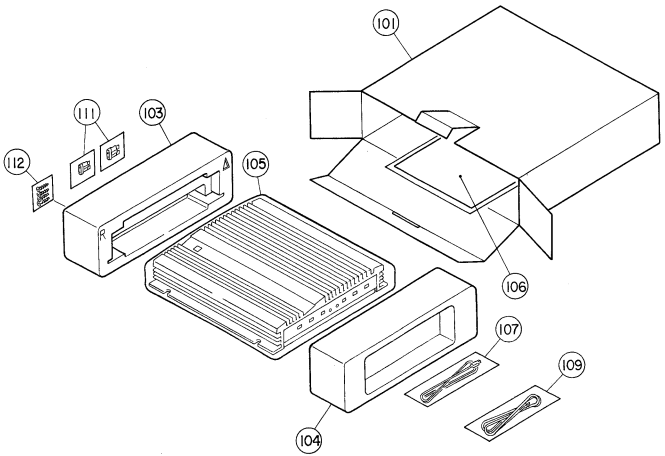


ansistors voltage values.)

NOTE:
1.All resistance values are in ohms. K=1,000 M=1,000,000
2.All capacitance values are in microfarads. P=1/1,000,000



Packing Method View



Packing Assembly Parts List

Symbol No.	Part No.	Description		
● 101	56E06368S01	Carton, Packing		
■ 101	56E06370S01	Carton, Packing		
103	56D13222W02	Tray, Packing (R)		
104	56D13222W01	Tray, Packing (L)		
105	56B72811F08	Sack, Polyethylene		
● 106	68P94789F35	Owners, Manual		
■ 106	68P94789F37	Owners, Manual		
107	01E06310S01	Assy, Remote Cord		
109	01E06306S01	Assy, Power Cord		

Symbol No.	Part No.	Description		
111	65E06378S01	Auto, Fuse (30A)		
112	01E06497S01	Assy, Screw Kit		

NOTE: ● : For North America Model Only (A0)
■ : For General Export Model Only (G0)
Others Common