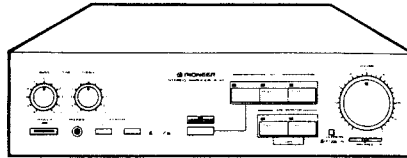


Service Manual

 **PIONEER®**

**CIRCUIT DESCRIPTIONS
REPAIR & ADJUSTMENTS**



**ORDER NO.
ARP1235-A**

STEREO AMPLIFIER

A-33(BK)

MODEL A-33 (BK) COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Power requirement	Export destination
HEZ	AC220V, 240V (switchable)	West Germany
HE	AC220V, 240V (switchable)	European continent
HB	AC220V, 240V (switchable)	United Kingdom

- This service manual is applicable to the A-33 (BK)/HEZ, HE and HB types.
- As to the HE and HB types, please refer to pages 17.

CONTENTS

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3. P.C. BOARDS CONNECTION DIAGRAM	7	6. FOR HE AND HB TYPES	17

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Line voltage selection (HE, HEZ and HB types)

Line voltage can be changed with following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection wire (To Power transformer) of Terminal No. 3 (WHITE) as follows.

Voltage	Terminal No. 3	Terminal No. 5
220V	White wire	.....
240V	.....	White wire

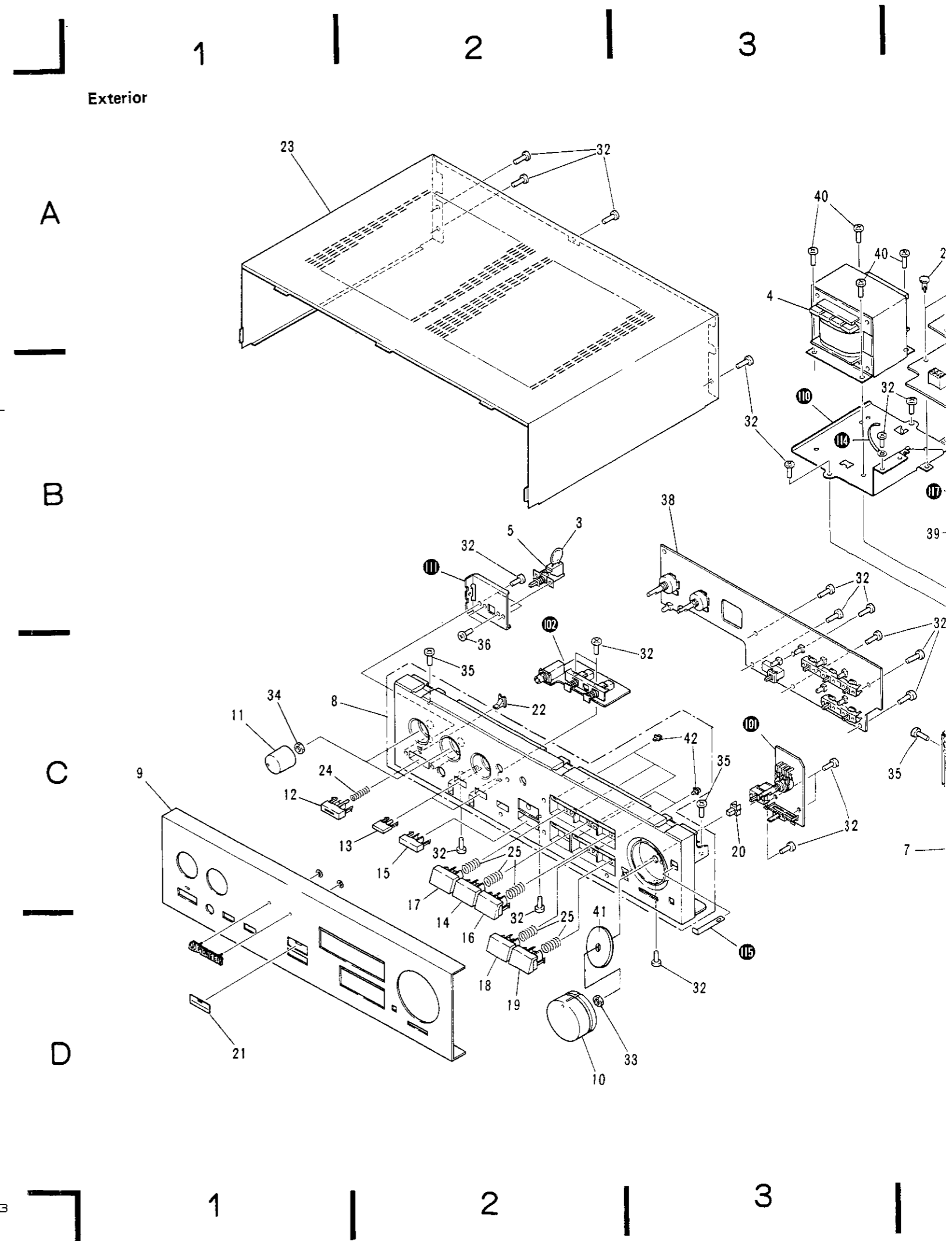
1. EXPLODED VIEWS AND PARTS LIST

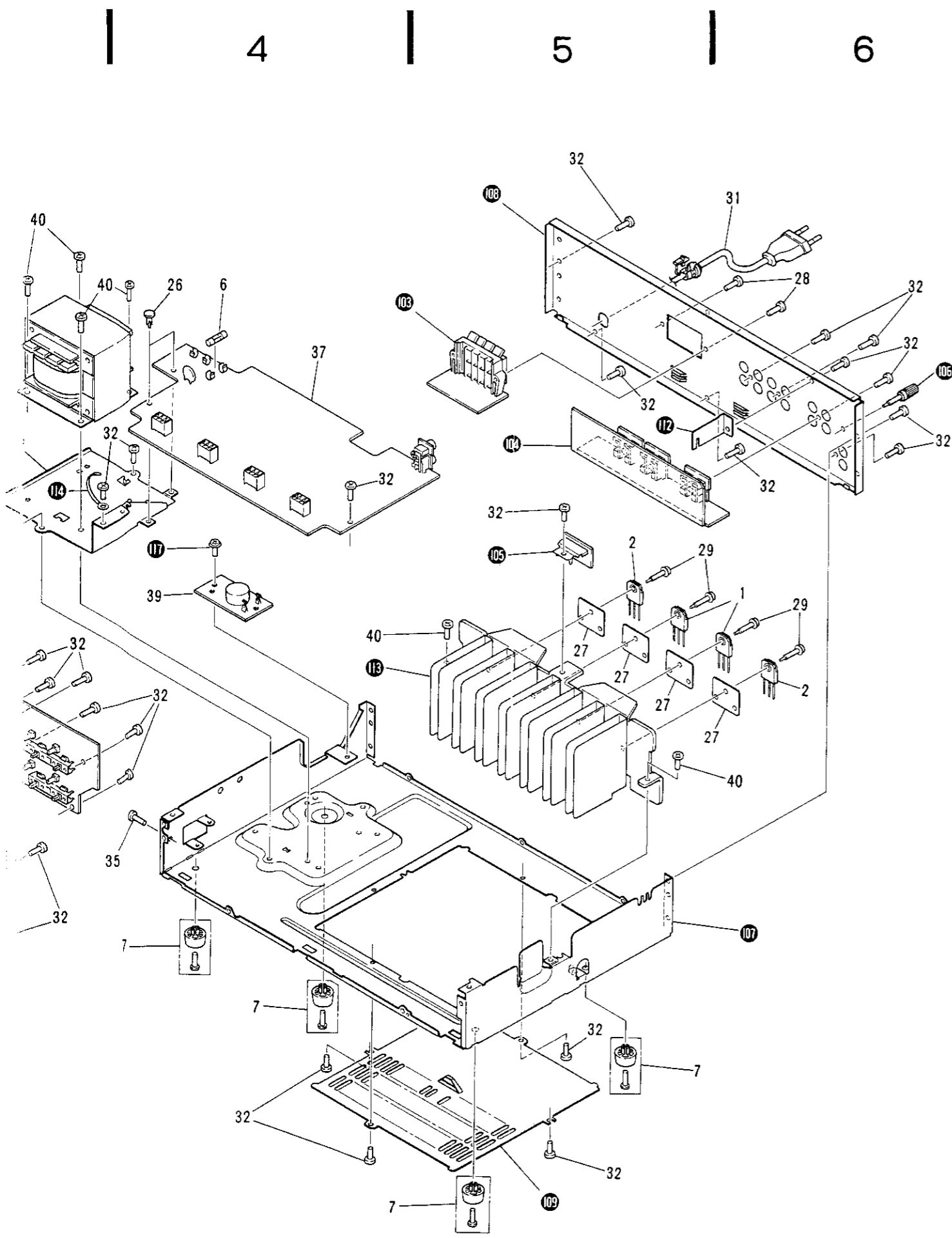
NOTES:

- Parts without part number cannot be supplied.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your Parts Stock Control, the fast moving items are indicated with the marks ****** and *****.
**** GENERALLY MOVES FASTER THAN ***
 This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Parts List of Exterior

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
Δ **	1	2SA1264N	Transistor (Q3, Q4)		40	BBZ30P080FCU	Screw
Δ **	2	2SC3181N	Transistor (Q1, Q2)		41	ANG1088	Earth ring
Δ	3	ACG1003	Power capacitor (C1)		42	AAT-118	Indicator lens C
Δ	4	ATS1041	Power transformer (T1)				
Δ **	5	ASG-552	Push switch (S1)		101		Volume assembly
Δ	6	AEK-405	Fuse (FU1)		102		Speaker switch assembly
	7	AEC1032	Leg assembly		103		SP Terminal assembly
	8	AMD1005	Panel Base assembly		104		Pin jack assembly
	9	ANB1052	Front panel assembly		105		Transistor assembly
	10	AAB1011	Knob (VOLUME)		106		Terminal (GND)
	11	AAB1012	Knob (TONE)		107		Chassis
	12	AAD1060	Knob (POWER)		108		Rear panel
	13	AAD1061	Knob (SPEAKER)		109		Bottom plate
	14	AAD1062	Function knob (PHONO)		110		Transframe
	15	AAD1063	Direct knob (CD)		111		Switch holder
	16	AAD1064	Function knob (TUNER)		112		P.C.B. Holder
	17	AAD1065	Function knob (CD)		113		Heat sink
	18	AAD1067	Function knob (TAPE1)		114		Binder
	19	AAD1068	Function knob (TAPE2)		115		Plate (EARTH)
	20	AAD1070	Knob (LOUDNESS)				
	21	AAK1124	CD Direct plate				
	22	AAT-110	Indicator Lens C				
	23	ANE1059	Bonnet				
	24	ABH1015	Coil spring				
	25	ABH1019	Coil spring				
	26	AEC-525	Nylon rivet				
	27	AEP-313	Mica seat				
	28	ABA-115	Screw				
	29	ABA-258	Screw				
	30	.....	.....		
Δ	31	ADG-068	AC Power cord				
	32	BBZ30P080FZK	Screw				
	33	NK70FUC	Nut				
	34	NK90FUC	Nut				
	35	VBZ30P080FMC	Screw				
	36	VMZ30P060FMC	Screw				
	37	AWZ1214	AF Complex assembly				
	38	AWZ1215	Tone, Function assembly				
	39	AWT1003	Line filter assembly				





2. PACKING

Parts List of Packing

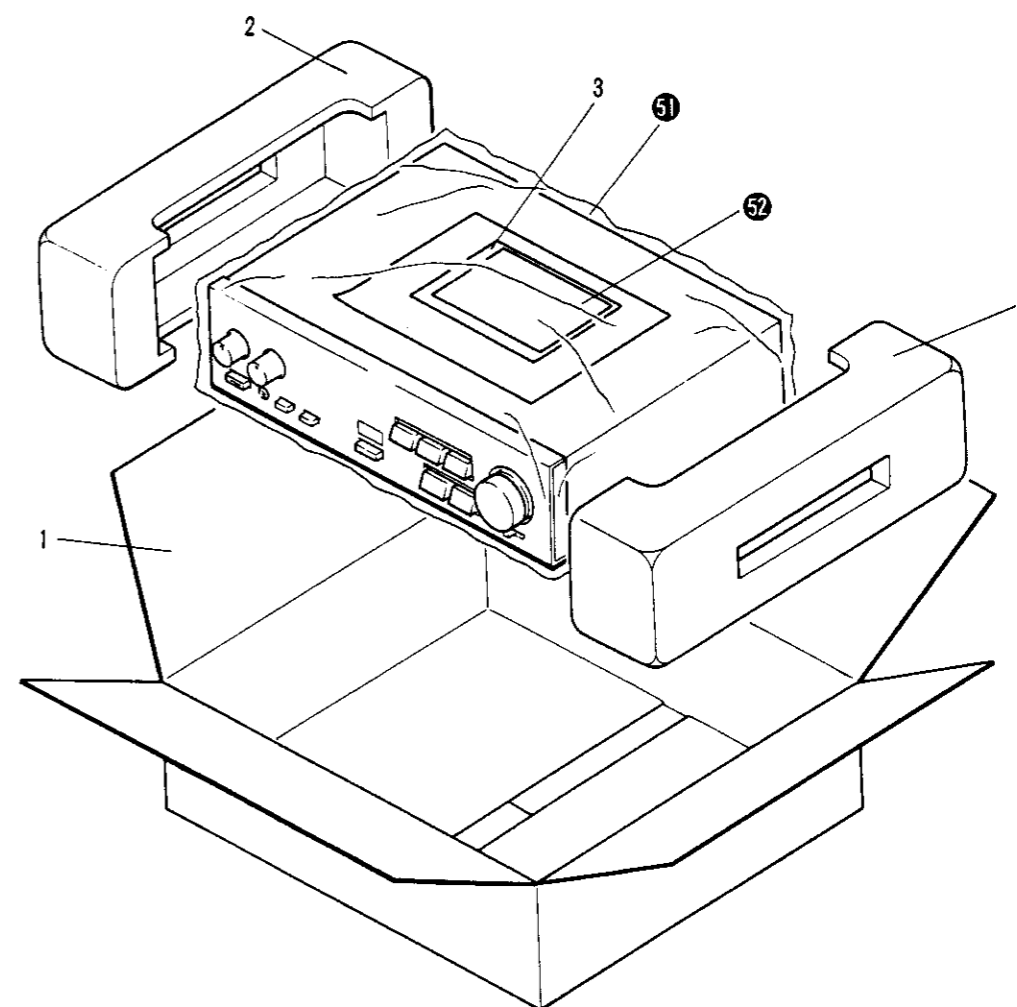
Mark	No.	Part No.	Description
	1	AHD1110	Packing case
	2	AHA1015	Front Rear pad
	3	ARC1019	Operating instructions
	51		Seat
	52		Warranty card

A

B

C

D



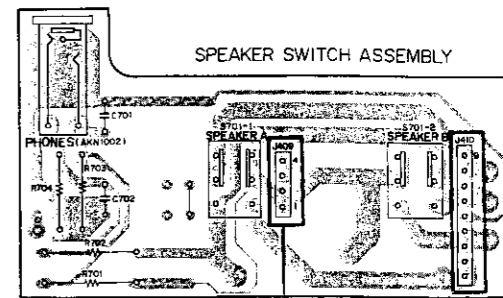
3. P.C. BOARDS CONNECTION DIAGRAM

TONE FUNCTION ASSEMBLY AWZ1215

D403 D402 D401
D406 D405

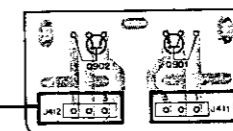
IC401

D408



TRANSISTOR ASSEMBLY

Q901, Q902 2SC2603



IC 401 M5210P
 D401-D403 AEL1018
 D405-D407 AEL1019
 D408 AEL1011

VOLUME ASSEMBLY

PINJACK ASSEMBLY

IC101 Q222 Q208 Q216 Q204 D206 Q202 Q204 D202 Q203 Q201 D201 D208 Q210 Q218 Q220 D210 Q217 Q304 Q304 Q305 Q303 Q306 Q221 D302 Q205 D203 Q215 Q207 Q209 D305 D306 D301 Q307 Q307 D307 D308 D309

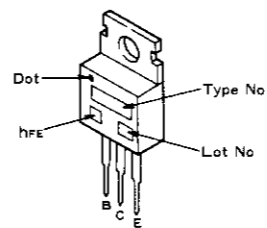
AF COMPLEX ASSEMBLY AWZ1214



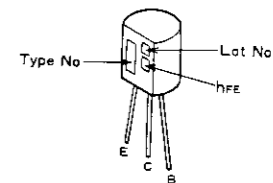
External Appearance of Transistors and ICs

A

2SC2591
2SA111

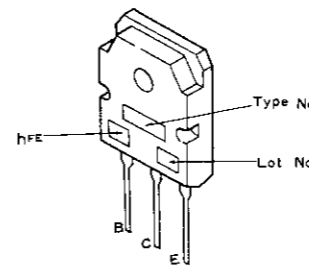


2SA992
2SC1845

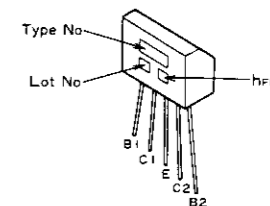


B

2SC3181N
2SA1264N

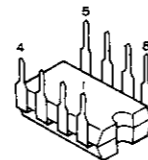


2SA979

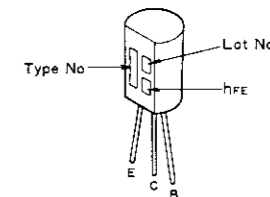


C

M5220P
M5210P

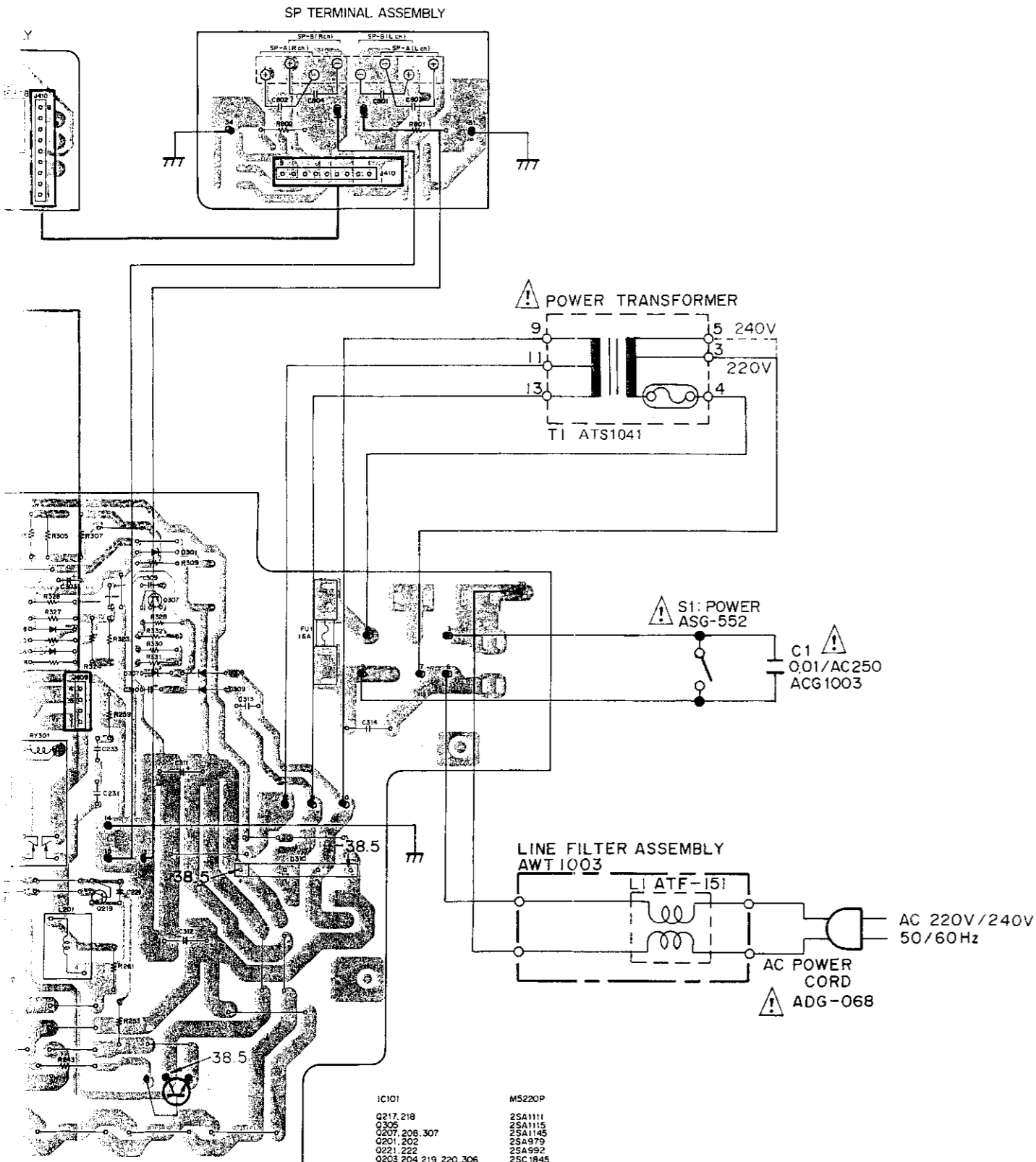
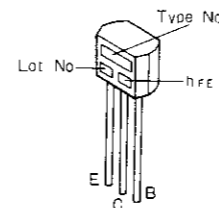


2SA1145
2SC1845



D

2SA1115
2SC2803

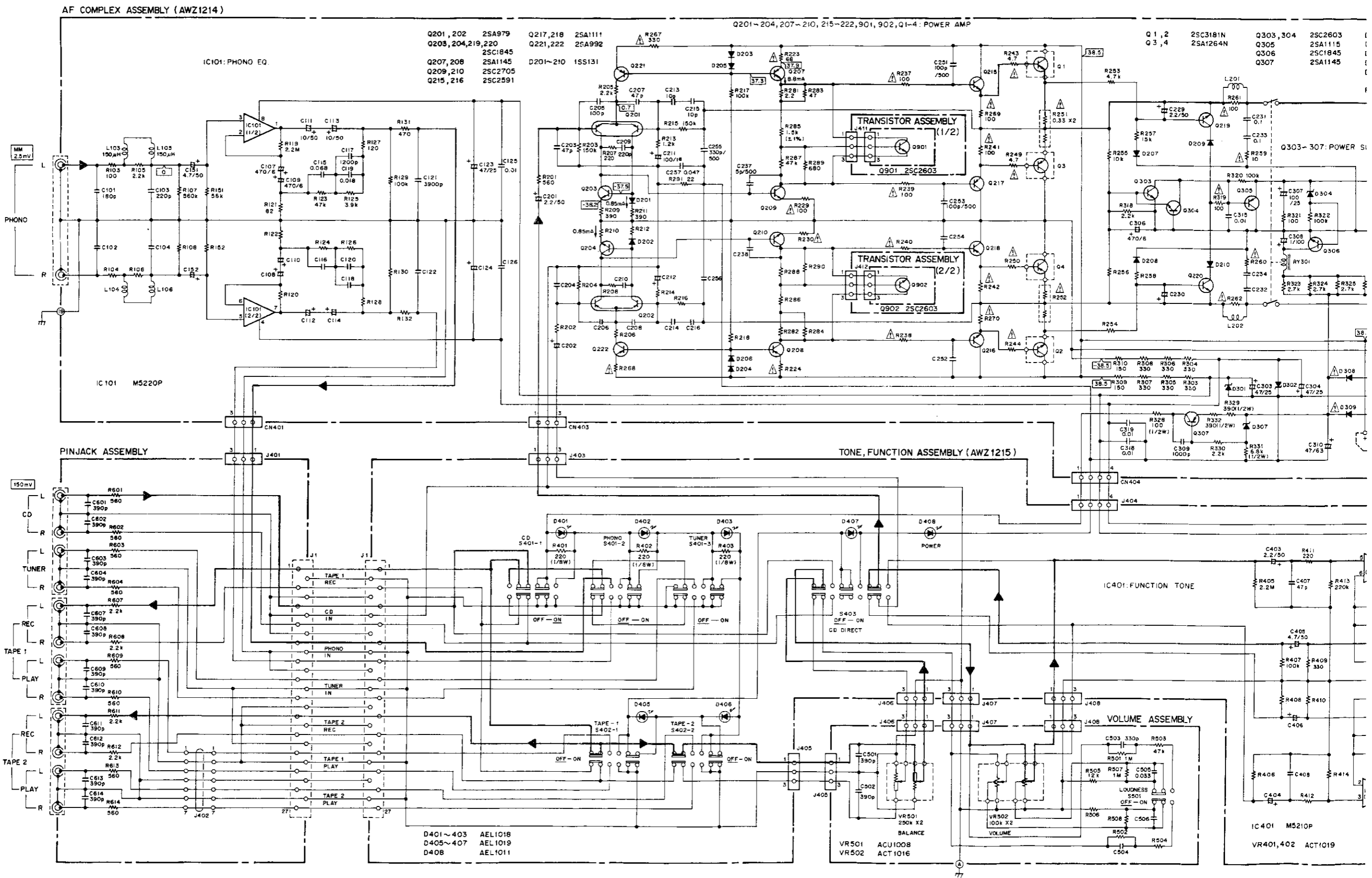


- | | |
|--------------------------|-------------------|
| IC101 | M5220P |
| Q217, 218 | 2SA1111 |
| Q305 | 2SA1115 |
| Q207, 208, 307 | 2SA1145 |
| Q201, 202 | 2SA979 |
| Q221, 222 | 2SA992 |
| Q203, 204, 219, 220, 306 | 2SC1845 |
| Q215, 216 | 2SC2591 |
| Q303, 304 | 2SC2803 (2SC2458) |
| Q209, 210 | 2SC2705 |
| Q310 | RBV602 |
| D304, 307 | RD16EB (HZ16EB) |
| D301, 302 | RD18EB |
| D308, 309 | S5666 (11E2) |
| D201-210, 305, 306 | 15S131 |

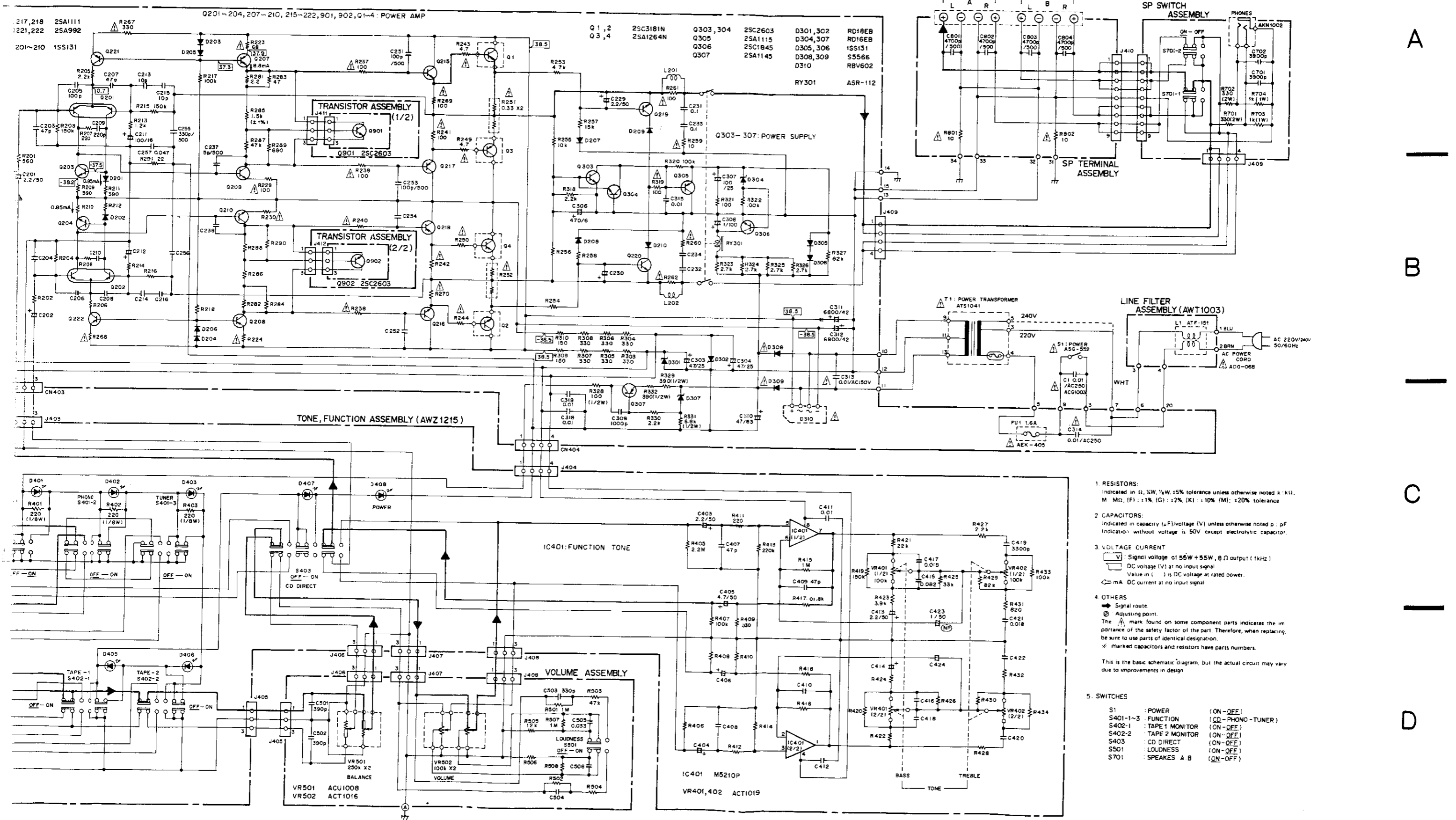
- D305 D306
Q301
Q307
D307 D308 D309
Q219



4. SCHEMATIC DIAGRAM



NOTE:
 The indicated semiconductors are representative ones only.
 Other alternative semiconductors may be used and are
 listed in the parts list.



- RESISTORS:**
 Indicated in (Ω, $\frac{1}{2}$ W, $\frac{1}{4}$ W, 5% tolerance unless otherwise noted k: k Ω , M: M Ω , (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$ (M): $\pm 20\%$ tolerance
 - CAPACITORS:**
 Indicated in capacity (pF)/voltage (V) unless otherwise noted p: pF
 Indication without voltage is 50V except electrolytic capacitor.
 - VOLTAGE CURRENT**
 Signal voltage of 55W + 55W, 8 Ω output (1 kHz)
 DC voltage (V) at no input signal
 Value in () is DC voltage at rated power.
 mA DC current at no input signal
 - OTHERS**
 Signal route.
 Adjusting point.
 The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 marked capacitors and resistors have parts numbers.
- This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.
- SWITCHES**
 S1 POWER (ON-OFF)
 S401-1-3 FUNCTION (SQ - PHONO - TUNER)
 S402-1 TAPE 1 MONITOR (ON-OFF)
 S402-2 TAPE 2 MONITOR (ON-OFF)
 S403 CD DIRECT (ON-OFF)
 S501 LOUDNESS (ON-OFF)
 S701 SPEAKERS A B (ON-OFF)

5. ELECTRICAL PARTS LIST

NOTES:

- When ordering resistors, first convert resistance values into code form as shown in the following examples.
 - Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560Ω	56 × 10 ¹	561	RD4PS	5	6	1	J
47kΩ	47 × 10 ³	473	RD4PS	4	7	3	J
0.5Ω	0R5		RN2H	0	R	5	K
1Ω	010		RS1P	0	1	0	K
 - Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562 × 10 ¹	5621	RN4SR	5	6	2	1	F
--------	-----------------------	------	-------	---	---	---	---	---
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your Parts Stock Control, the fast moving items are indicated with the marks ****** and *****. **** GENERALLY MOVES FASTER THAN ***
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by " \odot " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Miscellaneous Parts

P.C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	AF Complex assembly	AWZ1214
	Tone, Function assembly	AWZ1215
	Line filter assembly	AWT1003
	Volume assembly	Non supply
	Speaker switch assembly	Non supply
	SP Terminal assembly	Non supply
	Pin jack assembly	Non supply
	Transistor assembly	Non supply

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
Δ **	Q3, Q4	2SA1264N
Δ **	Q1, Q2	2SC3181N

SWITCH

Mark	Symbol & Description	Part No.
Δ **	S1 Push switch (POWER)	ASG-552

TRANSFORMER

Mark	Symbol & Description	Part No.
Δ *	T1 Power transformer (220V, 240V)	ATS1041

CAPACITOR

Mark	Symbol & Description	Part No.
Δ	C1 Power capacitor (0.01μF/400V)	ACG1003

FUSE

Mark	Symbol & Description	Part No.
Δ **	FU1 Fuse (T1.6A)	AEK-405

OTHERS

Mark	Symbol & Description	Part No.
Δ	AC Power cord	ADG-068

AF Complex Assembly (AWZ1214)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
**	IC101	M5220P
**	Q217, Q218	2SA1111
**	Q305	2SA1115
**	Q207, Q208, Q307	2SA1145
**	Q201, Q202	2SA979
**	Q221, Q222	2SA992
**	Q203, Q204, Q219, Q220, Q306	2SC1845
**	Q215, Q216	2SC2591
**	Q303, Q304	2SC2603 (2SC2458)
**	Q209, Q210	2SC2705

Mark	Symbol & Description	Part No.
*	D310	RBV602
*	D304, D307	RD16EB (HZ16EB)
*	D301, D302	RD18EB
*	D308, D309	S5566 (11E2)
*	D201-D210, D305, D306	1SS131

RELAY

Mark	Symbol & Description	Part No.
**	RY301	ASR-112 (ASR-107, 109)

COILS

Mark	Symbol & Description	Part No.
	L201, L202	ATH1009
	L103-L106	LAU151K

CAPACITORS

Mark	Symbol & Description	Part No.
Δ	C313	ACG-019
Δ	C314	ACG1003
	C311, C312	ACH1019
	C237, C238	CCCSL050C500
	C213-C216	CCCSL100D50
	C205, C206	CCCSL101J50
	C251-C254	CCCSL101K500
	C209-C210	CCCSL221J50
	C203, C204, C207, C208	CCCSL470J50
	C101, C102	CCDSL181J50
	C103, C104	CCDSL221J50
	C308	CEAS010M100
	C111-C114	CEAS100M50
	C211, C212	CEYA101M16
	C307	CEAS101M25
	C201, C202	CEYA2R2M50
	C229, C230	CEAS2R2M50
	C151, C152	CEAS4R7M50
	C123, C124, C303, C304	CEAS470M25
	C310	CEAS470M63
	C107-C110, C306	CEAS471M6
	C309	CKCYB102K50
	C315, C318, C319	CKCYF103Z50
	C255, C256	CKDYB331K500
	C125, C126	CKDYF103Z50
	C257	CKDYF473Z50
	C231-C234	CQMA104K50
	C117, C118	CQMA122J50
	C119, C120	CQMA183J50
	C121, C122	CQMA392K50
	C115, C116	CQMA683J50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
Δ	R251, R252	ACN-139
Δ	R328, R329, R332, R331	RD1/2PM□□□J
Δ	R237-R240, R243, R244, R249, R250	RFA1/4PS□□□J
Δ	R285, R286	RN1/4PQ1501F
Δ	R223, R224, R229, R230, R241, R242, R259-R262, R267-R270, R319	RD1/4PMF□□□J
	Other resistors	RD1/4PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 2P (PHONO)	AKB-119
	Transistor socket	AKH-017

Tone, Function Assembly (AWZ1215)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
**	IC401	M5210P
*	D408	AEL1011
*	D401-D403	AEL1018
*	D405-D407	AEL1019

SWITCHES

Mark	Symbol & Description	Part No.
**	S401 Push switch (FUNCTION)	SEA6V4B4B4L
**	S402 Push switch (TAPE1, TAPE2)	SEA6V4B4S
**	S403 Push switch (CD DIRECT)	SECV6S

CAPACITORS

Mark	Symbol & Description	Part No.
	C407-C410	CCCSL470J50
	C423, C424	CEANP010M50
	C403, C404, C413, C414	CEAS2R2M50
	C405, C406	CEAS4R7M50
	C411, C412	CKCYF103Z50
	C417, C418	CQMA153K50
	C421, C422	CQMA183K50
	C419, C420	CQMA332K50
	C415, C416	CQMA823K50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	VR401, VR402 Variable resistor	ACT1019
	R401-R403	RD1/8PM221J
	Other resistors	RD1/4PM□□□J

Line, Filter Assembly (AWT1003)

COIL

Mark	Symbol & Description	Part No.
	L1 Line filter	ATF-151

Volume Assembly

SWITCH

Mark	Symbol & Description	Part No.
★★	S501 (LOUDNESS)	SEAV25

CAPACITORS

Mark	Symbol & Description	Part No.
	C503, C504	CKCYB331K50
	C501, C502	CKCYB391K50
	C505, C506	CQMA333K50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR502 Variable resistor	ACT1016
★	VR501 Slide volume	ACU1008
	Other resistors	RD1/4PM□□□J

Speaker Switch Assembly

SWITCH

Mark	Symbol & Description	Part No.
★★	S701 Push switch (SPEAKERS)	SUL6LXBXS

CAPACITORS

Mark	Symbol & Description	Part No.
	C701, C702	CKCYB392K50

RESISTORS

Mark	Symbol & Description	Part No.
	R703, R704	RS1PMF102J
	R701, R702	RS2LMF331J

OTHERS

Mark	Symbol & Description	Part No.
	Jack (HEAD PHONE)	AKN1002

SP Terminal Assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C801-C804	CKDYB472K500

RESISTORS

Mark	Symbol & Description	Part No.
	R801, R802	RD1/4PMF100J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 8P (SPEAKERS)	AKE-111

Pin Jack Assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C601-C604, C607-C614	CKDYB391K50

RESISTORS

Mark	Symbol & Description	Part No.
	R607, R608, R611, R612	RD1/4PM222J
	R603, R604, R609, R610, R613, R614	RD1/4PM561J
	R601, R602	RDR1/4PM561J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 4P (CD, TUNER, TAPE1, TAPE2)	AKB-115

Transistor Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	Q901, Q902	2SC2603

6. FOR HE AND HB TYPES

6.1 CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts without part number cannot be supplied.
- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your Parts Stock Control, the fast moving items are indicated with the marks ****** and *****.
**** GENERALLY MOVES FASTER THAN ***
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by " \odot " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The HE and HB types are the same as the HEZ type with the exception of the following sections:

Mark	Symbol & Description	Part No.			Remarks
		A-33 [BK]/ HEZ type	A-33 [BK]/ HE type	A-33 [BK]/ HB type	
	AF Complex assembly	AWZ1214	AWZ1240	AWZ1240	
	SP Terminal assembly	Non supply	Non supply	Non supply	
	Pin jack assembly	Non supply	Non supply	Non supply	
	Line filter assembly	AWT1003	.....	.....
	Screw	ABA-115	.....	.....
	Chassis	Non supply	Non supply	Non supply	
	Rear panel	Non supply	Non supply	Non supply	
	Operating instructions (German)	ARC1019	.....	.....
	Operating instructions (English/German/French/Italian)	.....	ARE1038	ARE1038	
\triangle	AC Power cord	ADG-068	ADG-068	ADG-063	
\triangle **	FU1 Fuse (T1.6)	AEK-405	AEK-405	.....
\triangle **	FU1 Fuse (250V)	.....	.....	AEK-510	

6.2 ELECTRICAL PARTS LIST

NOTES:

- When ordering resistors, first convert resistance values into code form as shown in the following examples.
 - Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560Ω	56 × 10 ¹	561	RD4PS	5	6	1	J
47kΩ	47 × 10 ³	473	RD4PS	4	7	3	J
0.5Ω	0R5		RN2H	0	5		K
1Ω	010		RS1P	0	1	0	K
 - Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562 × 10 ¹	5621	RN4SR	5	6	2	1	F
--------	-----------------------	------	-------	---	---	---	---	---
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
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- Parts marked by " \odot " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

AF Complex Assembly (AWZ1240)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
**	IC101	M5220P
**	Q217C, Q218	2SA1111
**	Q305	2SA1115
**	Q207, Q208, Q307	2SA1145
**	Q201, Q202	2SA979
**	Q221, Q222	2SA992
**	Q203, Q204, Q219, Q220, Q306	2SC1845
**	Q215C, Q216C	2SC2591
**	Q303, Q304	2SC2603 (2SC2458)
**	Q209, Q210	2SC2705
Δ *	D310	RBV602
*	D304, D307	RD16EB (HZ16EB)
*	D301, D302	RD18EB (HZ182)
Δ *	D308, D309	S5566 (11E2)
*	D201-D210, D305, D306	1S5131

RELAY

Mark	Symbol & Description	Part No.
**	RY301	ASR-112 (ASR-107) (ASR-109)

COILS

Mark	Symbol & Description	Part No.
	L201, L202	ATH1004

CAPACITORS

Mark	Symbol & Description	Part No.
Δ	C313	ACG019
Δ	C314	ACG1003
	C311, C312	ACH1019
	C237, C238	CCCSL050C500
	C213-C216	CCCSL100D50
	C205, C206	CCCSL101J50
	C251-C254	CCCSL101K500
	C209-C210	CCCSL221J50
	C203, C204, C207, C208	CCCSL470J50
	C103, C104	CCDSL221J50
	C308	CEAS010M100
	C111-C114	CEAS100M50
	C211, C212	CEYA101M16
	C307	CEAS101M25
	C201, C202	CEYA2R2M50
	C229, C230	CEAS2R2M50
	C151, C152	CEAS4R7M50
	C123, C124, C303, C304	CEAS470M25
	C310	CEAS470M63
	C107-C110, C306	CEAS471M6
	C309	CKCYB102K50
	C315,	CKCYF103Z50
	C125, C126	CKDYF103Z50
	C231-C234	CQMA104K50
	C117, C118	CQMA122J50
	C119, C120	CQMA183J50
	C121, C122	CQMA392K50
	C115, C116	CQMA683J50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
Δ	R251, R252	ACN-139
	R328, R329, R332, R331	RD1/2PM□□□J
Δ	R223, R224, R261-R262, R267-R270	RD1/4PMF□□□J
Δ	R241, R242, R259, R260	RD1/4PMFL□□□J
	R229, R230, R237-R240, R243, R244, R249, R250	RFA1/4PS□□□J
	R285, R286	RN1/4PQ1501F
	Other resistors	RD1/4PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 2P (PHONO)	AKB-119
	Transistor socket	AKH-017

Pin Jack Assembly

RESISTORS

Mark	Symbol & Description	Part No.
	R607, R608, R611, R612	RD1/4PM222J
	R603, R604, R609, R610, R613, R614	RD1/4PM561J
	R601, R602	RDR1/4PM561J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 4P (CD, TUNER, TAPE1, TAPE2)	AKB-115

SP Terminal Assembly

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 8P (SPEAKERS)	AKE-111

6.3 SCHEMATIC DIAGRAM

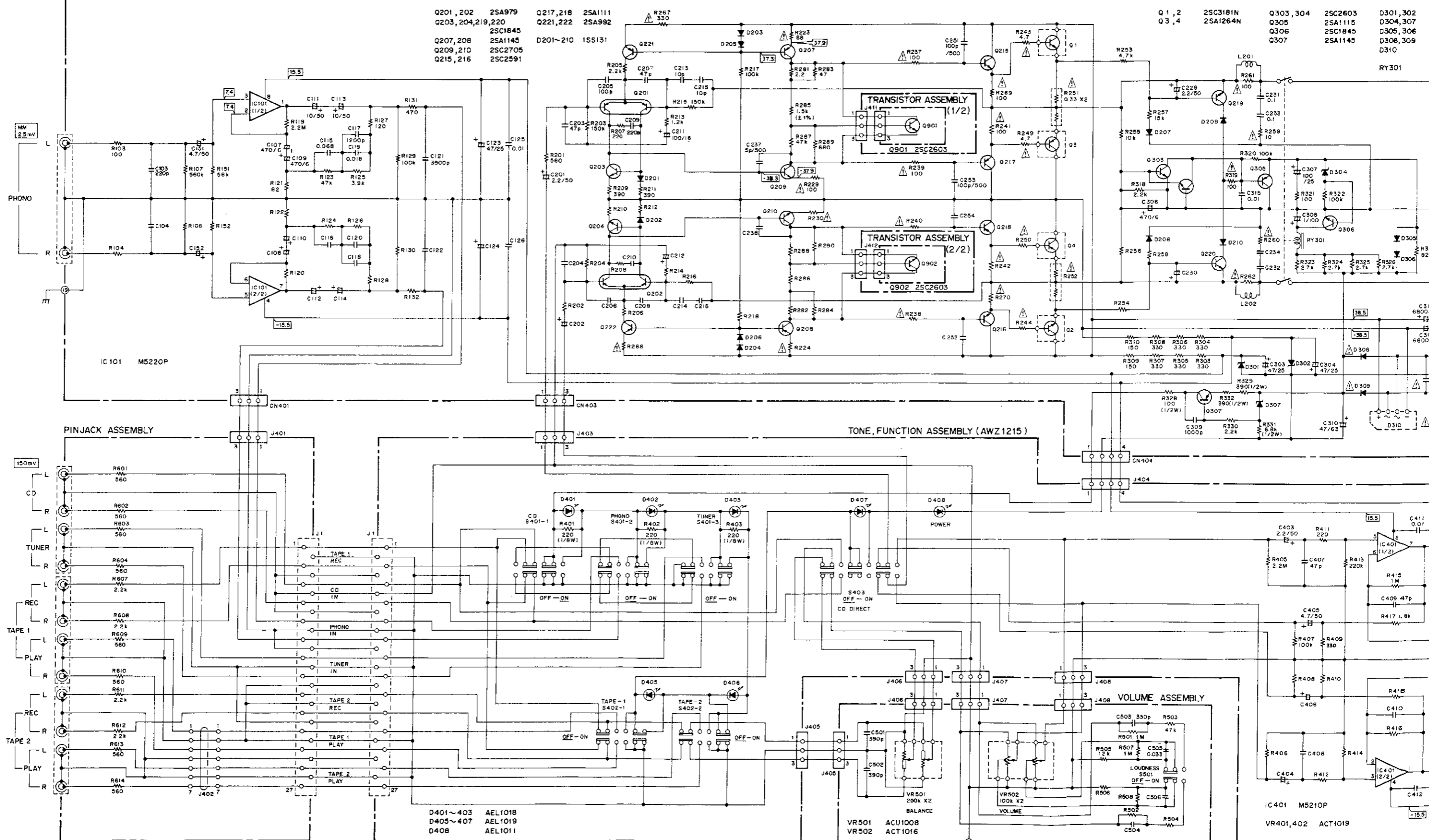
AF COMPLEX ASSEMBLY (AWZ1240)

A

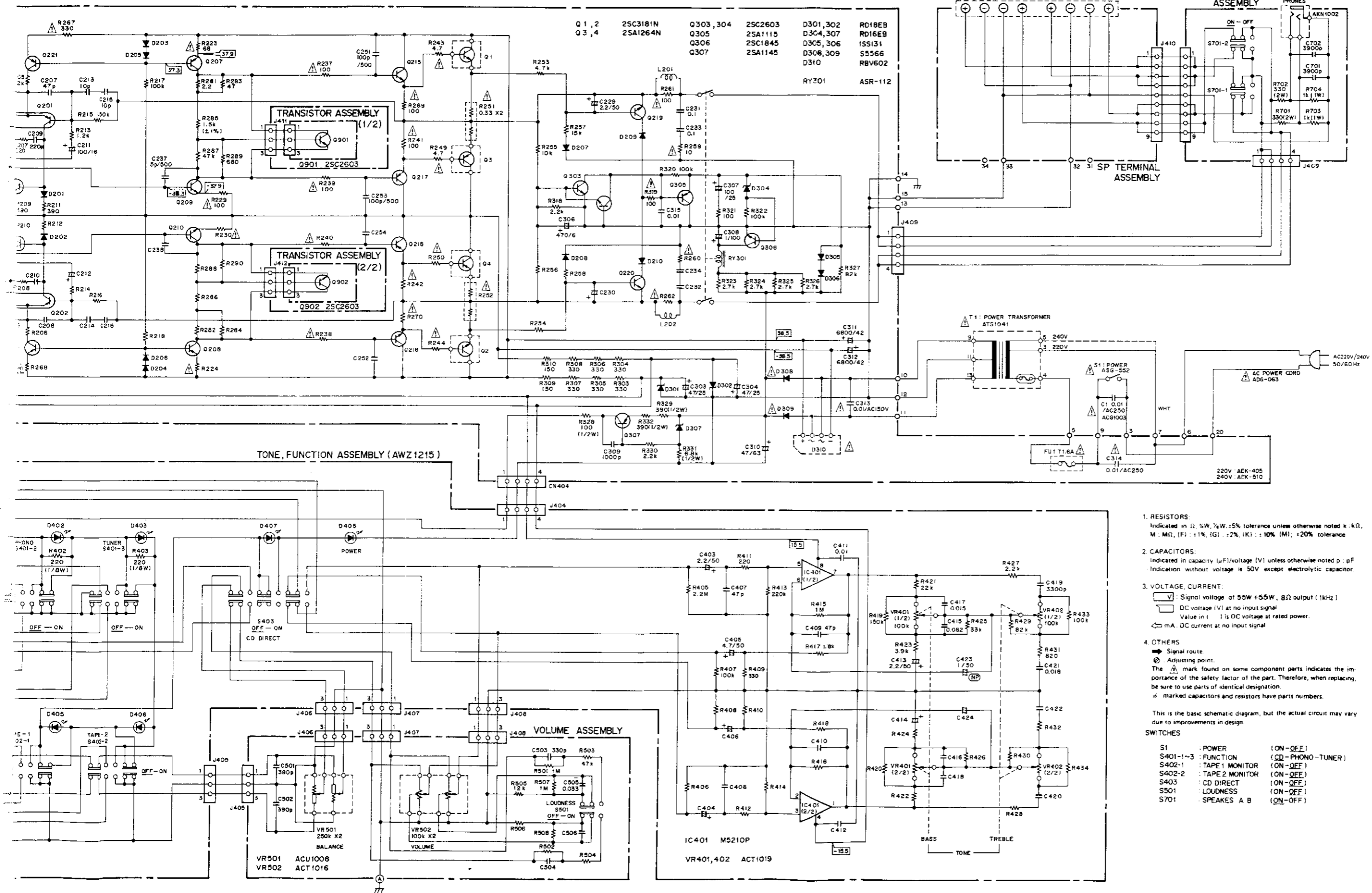
B

C

D



NOTE:
 The indicated semiconductors are representative ones only.
 Other alternative semiconductors may be used and are
 listed in the parts list.



A

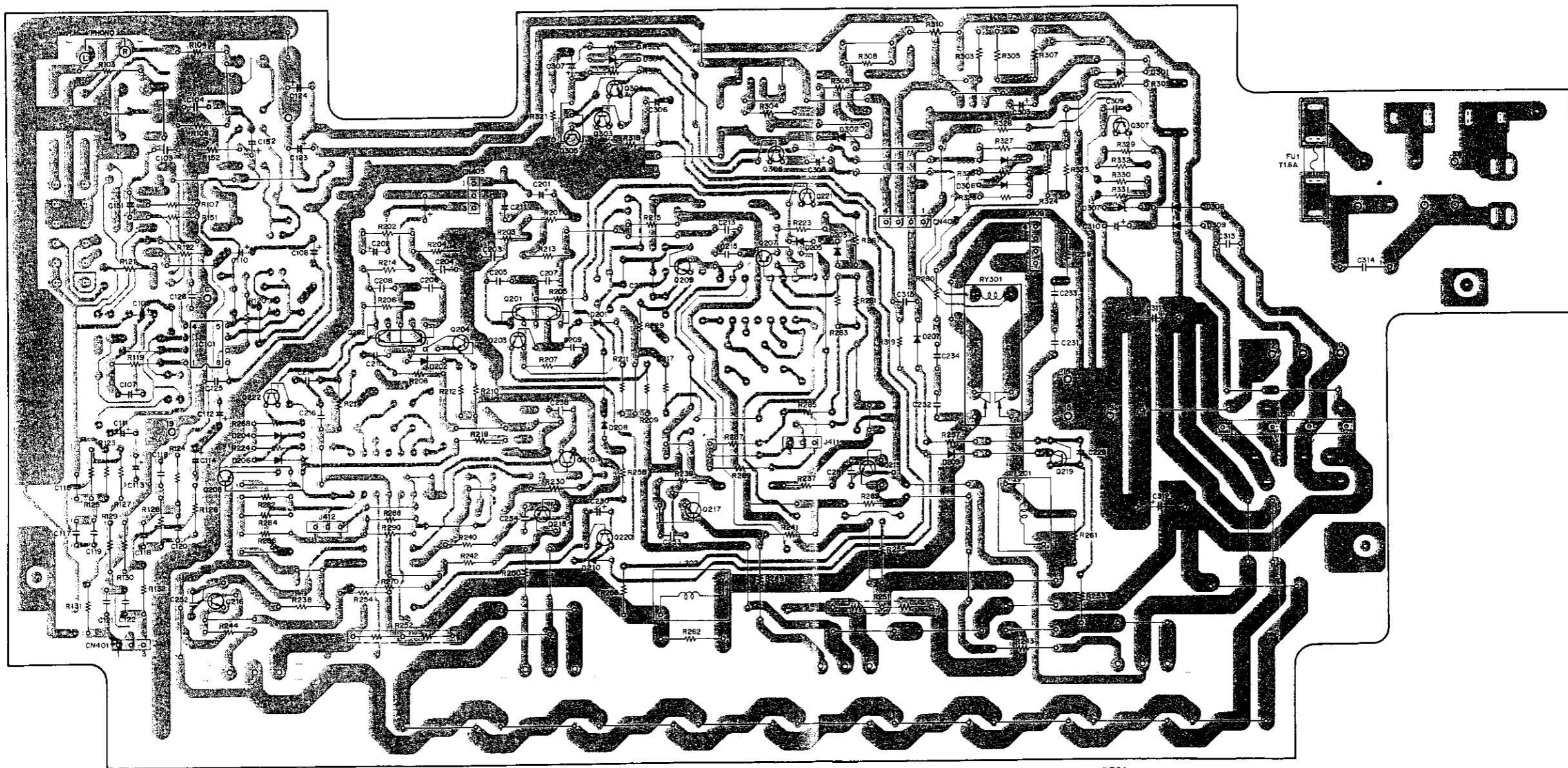
B

C

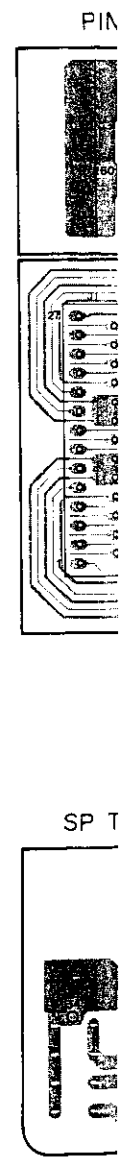
D

6.4 P.C. BOARD PATTERNS

AF COMPLEX ASSEMBLY (AWZ1240)



IC101 Q222 Q208 Q216 D204 D206 Q202 Q204 D202 Q203 Q201 D201 D208 Q210 Q218 Q220 D210 Q217 Q304 Q304 Q305 Q303 Q306 Q221 D302 D205 D203 Q215 D207 D209 Q219 D301 Q307 Q307 D308 D309



A
B
C
D

1 | 2 | 3 | 4 | 5 | 6

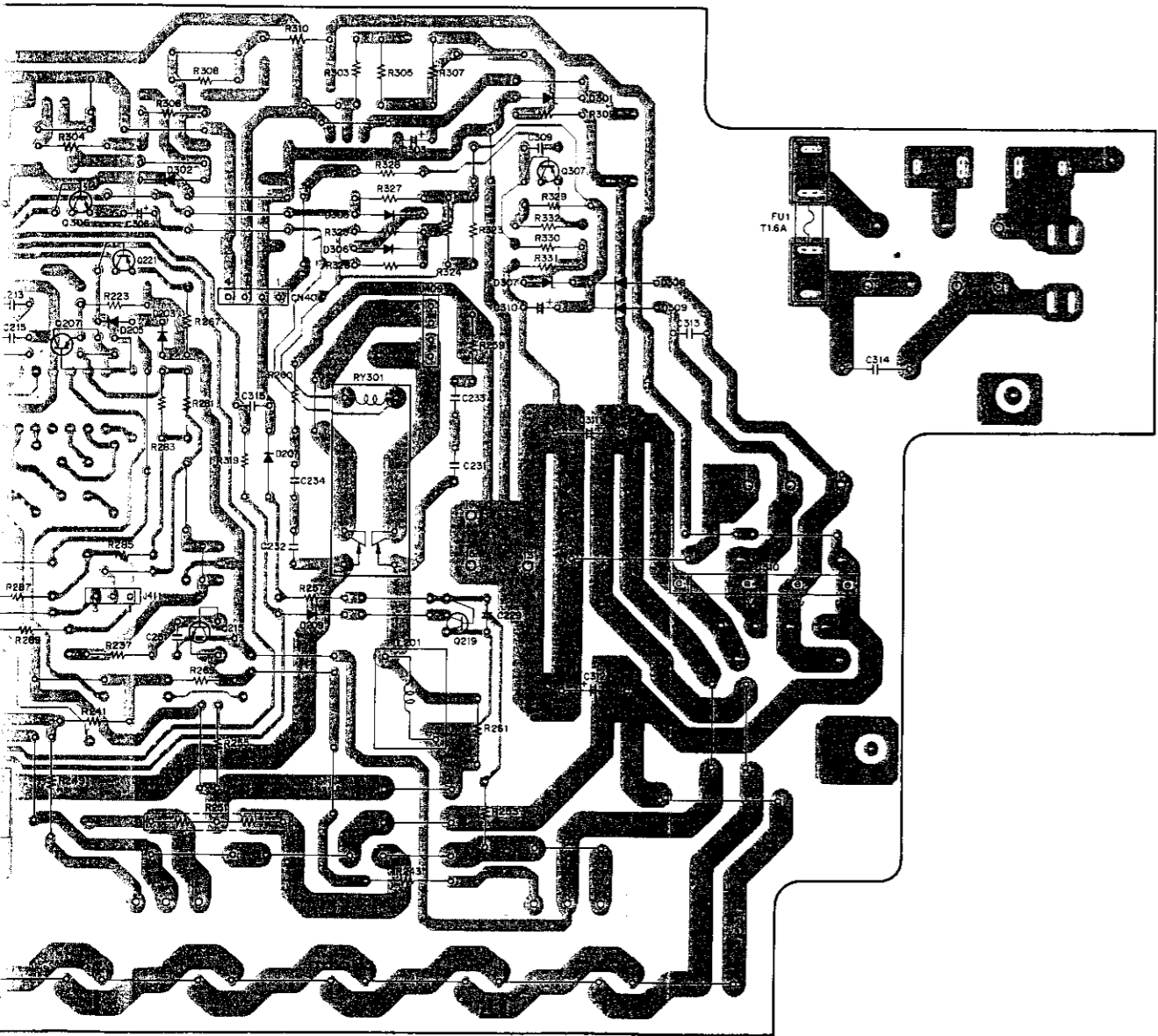
1 | 2 | 3 | 4 | 5 | 6

A

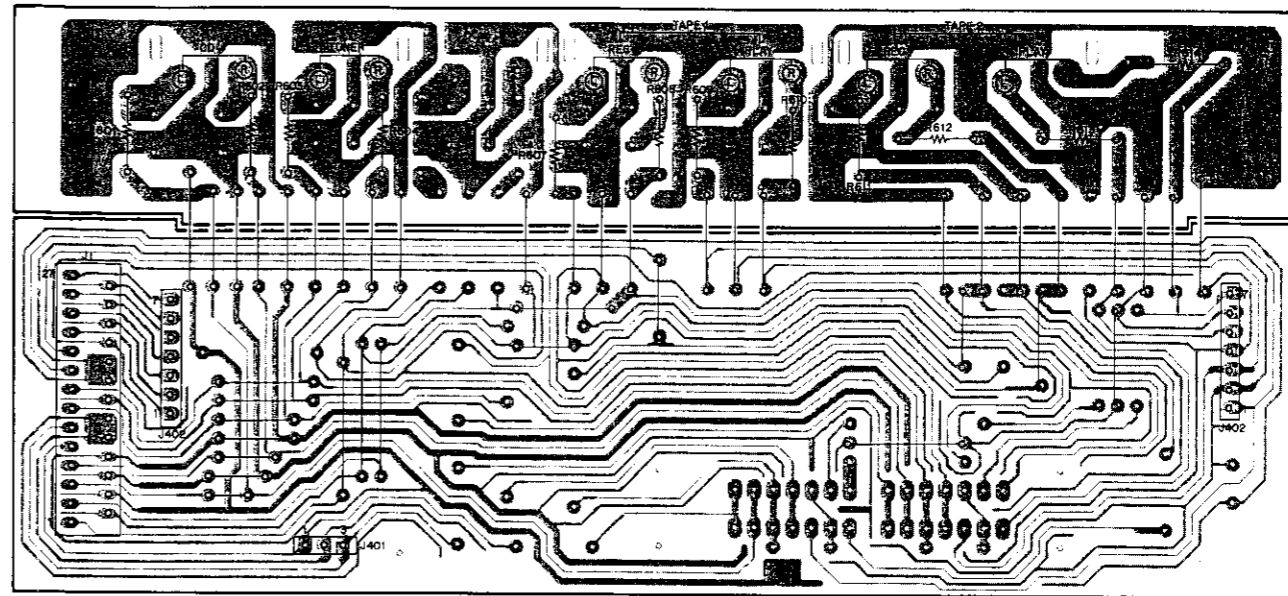
B

C

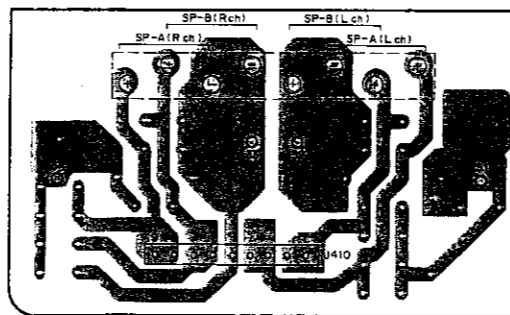
D



PINJACK ASSEMBLY



SP TERMINAL ASSMBLY



D301
Q307
D307 D308 D309
D306
D305
D207
D209
Q215
Q219