

# POWER AMPLIFIER XH150

## SERVICE MANUAL



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### IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

**WARNING:** Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components, and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

**IMPORTANT:** The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

**WARNING:** Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

**IMPORTANT:** Turn the unit OFF during disassembly and part replacement. Recheck all work before you apply power to the unit.

### WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and /or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

**DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!**

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

## SPECIFICATIONS

### •General Specifications

Power Output Level 20 Hz-20 kHz THD+N= 0.1 %		150 W+150 W RL= 64 ohm (100 V) RL= 32 ohm (70 V)
Power Bandwidth	Halfpower	10 Hz- 40 kHz (THD + N= 0.1 %)
THD+N 20 Hz-20 kHz, Half Power		0.1 %
Frequency Responce		0 dB,+0.5 dB,-1 dB F= 20 Hz-50 kHz
Intermodulation Distortion 60 Hz:7 kHz,4:1,Half Power		0.1 %
Channel Separation Half Power ATT.max input 600 ohm shunt		>/- 65 dB 20 Hz-20 kHz
Residual Noise Att,min	12.7 kHz LPF IHF-A Network	</- -65 dB </- -65 dB
S/N ratio		100 dB
Slew Rate		+/-35 V/uS
Sensitivity(Att.max)Rated Power		+4 dBu (100 V)+1 dBu (70 V)
Voltage GAIN	Att.max	38.2 dB
Input Impeddance		30 kohm (balance) 15 kohm (unbalance)
Controls	Front Panel Rear Panel	POWER switch (push on/push off) Attenuator (31position)x2 MODE switch(STEREO/BRIDGE/PARALLEL) Filter switch LOW CUTx2 (-12 dB/oct) HIGH CUTx2 (-6 dB/oct)
Connectors	Input Output	Barrier strip terminal XLR-3-31 type Barrier strip terminal
Indicators	POWER PROTECTION CLIP SLGNAL	Green x2 (Red) x2 (Red) x2 (Green)
Protection circuit		POWER switch on/off mute DC detection TEMP (heatsink temp>/-90°C)
Fan Circuit		Low Speed (50°C) Variable, High Speed (70°C)
PC Limitter		RL</-16 ohm
Power Requirements		Japan model 100 V, 50/60 Hz US and Canada model 120 V, 60 Hz Europe model 230 V, 50/60 Hz AT model 240 V, 50/60 Hz
Idle Power Consumption		45 W
1/8 Power Consumption (32 ohm)		350 W
Maximum Power Consumption (32 ohm)		850 W
Dimention (W x H x D)		480 x 132.0 x 319 mm
Weight		16 Kg

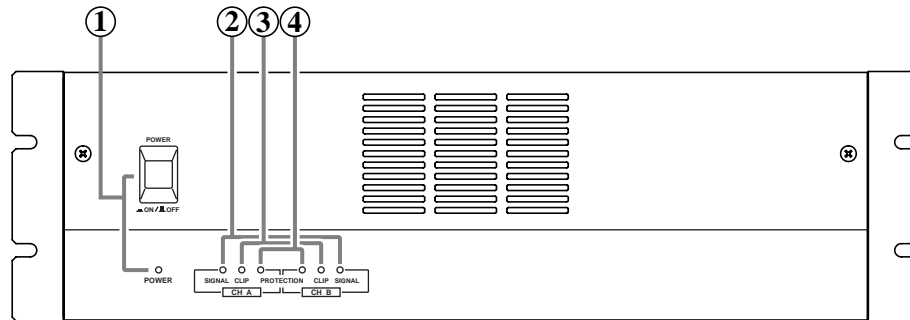
0 dB=0.775 V

Half power= 1/2 Power output level



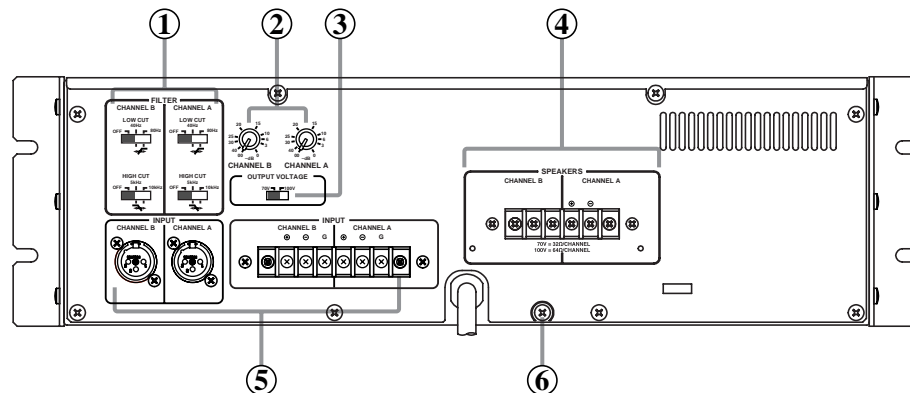
## ■ PANEL LAYOUT

### • Front Panel



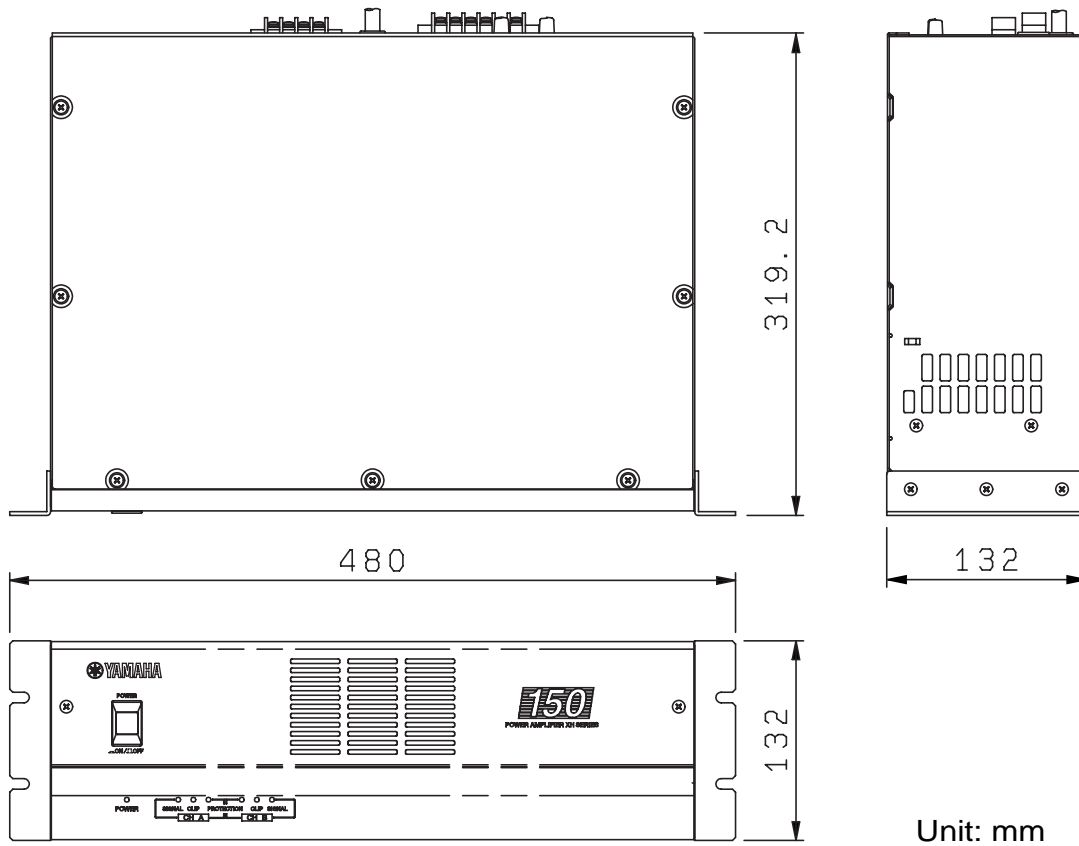
- ① POWER switch and indicator
- ② SIGNAL indicators
- ③ CLIP indicators
- ④ PROTECTION indicator

### • Rear Panel

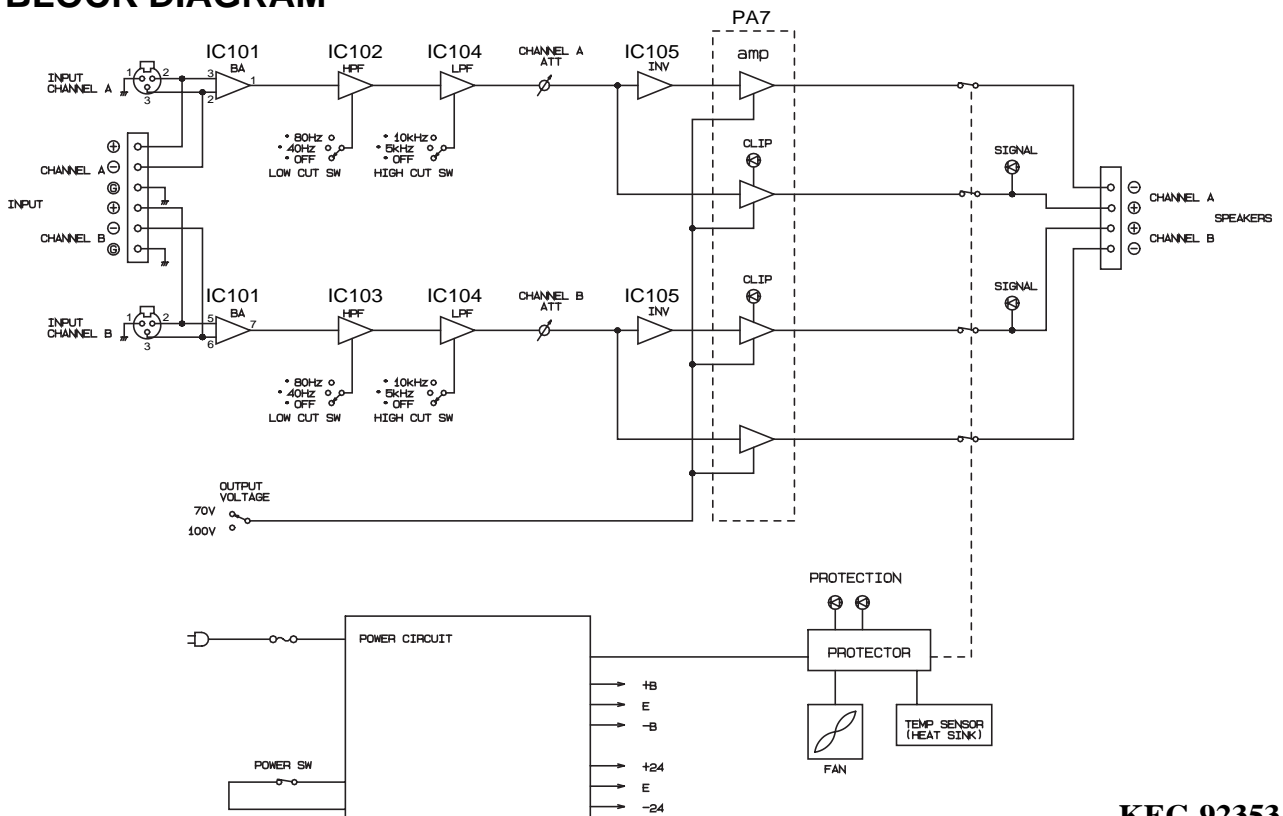


- ① FILTER switches (CHANNEL A,B)
- ② Volume controls (CHANNEL A,B)
- ③ OUTPUT VOLTAGE switch
- ④ SPEAKERS terminals (CHANNEL A,B)
- ⑤ INPUT terminals (CHANNEL A,B)
- ⑥ GND terminals

## DIMENSIONS

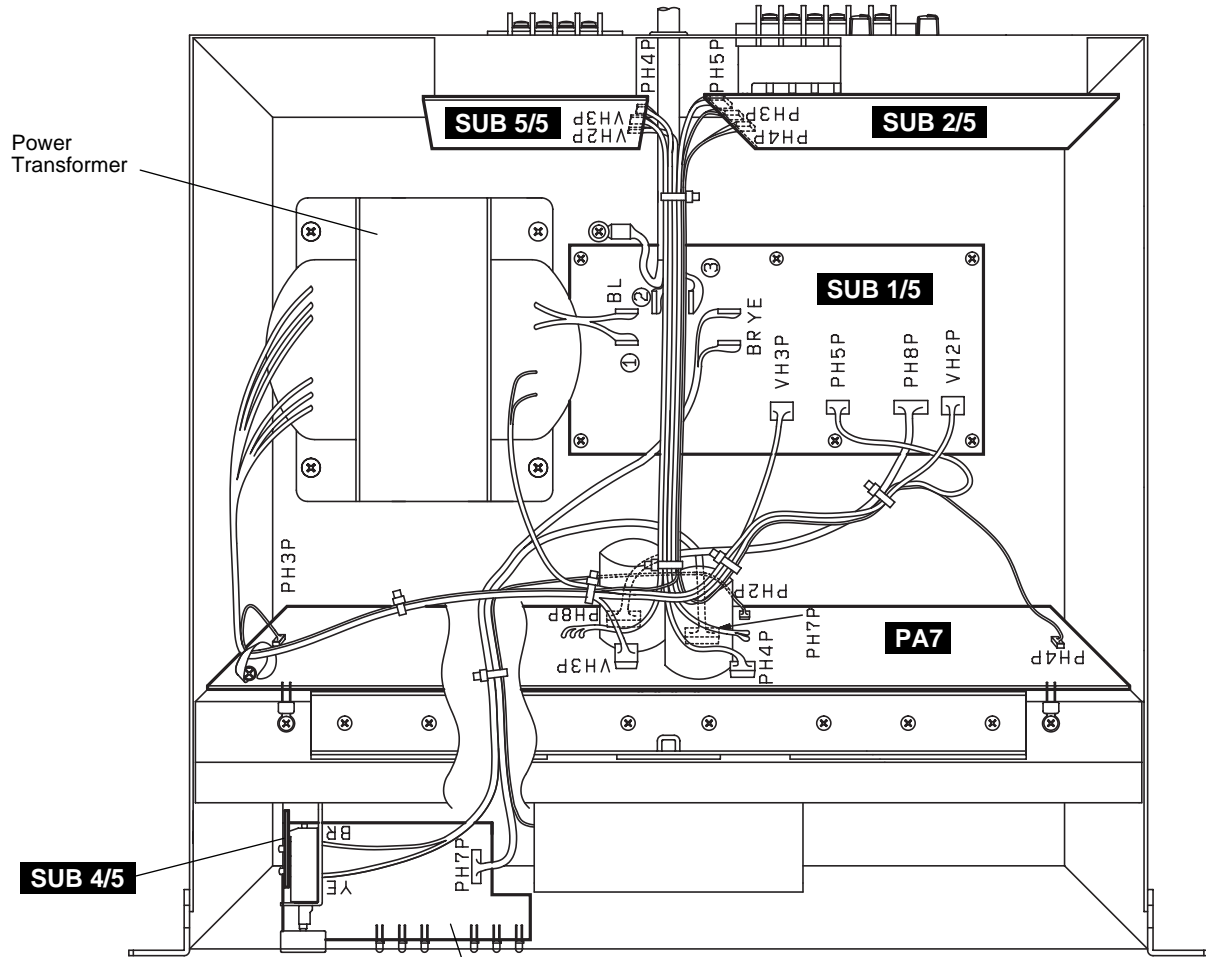


## BLOCK DIAGRAM

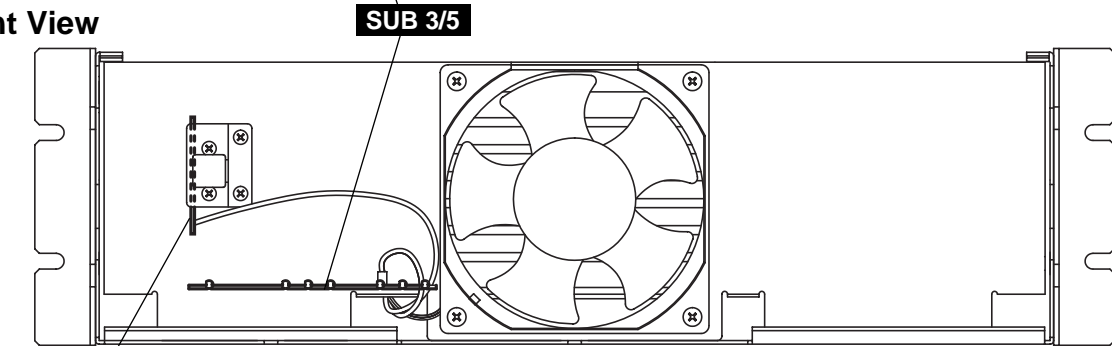


# CIRCUIT BOARD LAYOUT & WIRING

## • Top View



## • Front View



• ① ② ③ Wire color

	J	U / C	H / B	A
①	YE	BR	BE	RE
②	WH	WH	BE	BE
③	BL	BL	BR	BR

3NC2-V294100

## ■ DISASSEMBLY PROCEDURE

### 1. Top Cover

1-1 Remove the nine (9) screws marked [410]. The top cover can then be removed. (Fig. 1, 2)

### 2. Power Transformer

2-1 Remove the top cover. (See Procedure 1)

2-2 Remove the four (4) screws marked [70]. The power transformer can then be removed. (Fig. 1)

### 3. SUB7 1/5 Circuit Board

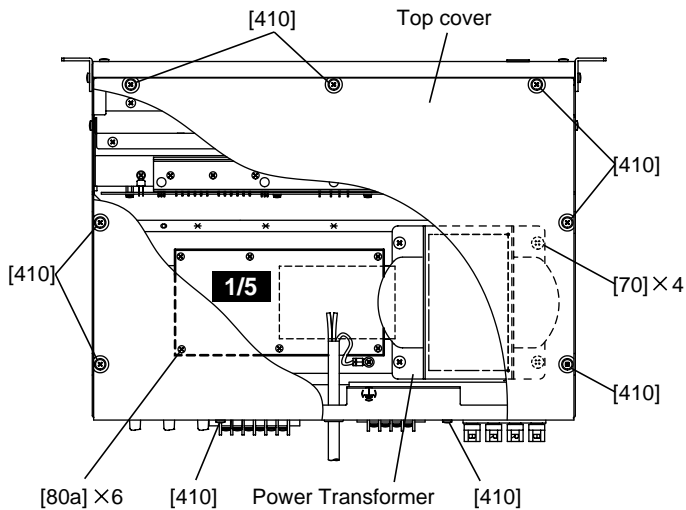
3-1 Remove the top cover. (See Procedure 1)

3-2 Remove the six (6) screws marked [80a]. The SUB 1/5 circuit board can then be removed. (Fig. 1)

### 4. SUB 2/5 Circuit Board

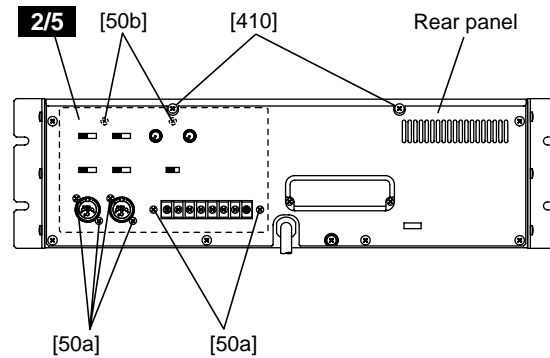
4-1 Remove the top cover. (See Procedure 1)

4-2 Remove the six (6) screws marked [50a] and the two (2) screws marked [50b]. The SUB 2/5 circuit board can then be removed. (Fig. 2, 7)



[70]: Bind Head Screw SP 5.0X10 MFZN2BL (VU688100)  
 [80]: Bind Head Tapping Screw-B 3.0X8 MFZN2BL (EP600190)  
 [410]: Bind Head Tapping Screw-B 4.0X8 MFZN2BL (EG340190)

(Fig. 1)



[50]: Bind Head Screw A4.0X8 MFZN2BL (VP156800)  
 [410]: Bind Head Tapping Screw-B 4.0X8 MFZN2BL (EG340190)

(Fig. 2)



**5. Panel Assembly**

- 5-1 Remove the top cover. (See Procedure 1)
- 5-2 Remove the three (3) screws marked [380a] and the two (2) screws marked [380b]. The panel assembly can then be removed. (Fig. 3)

**6. SUB 3/5 Circuit Board**

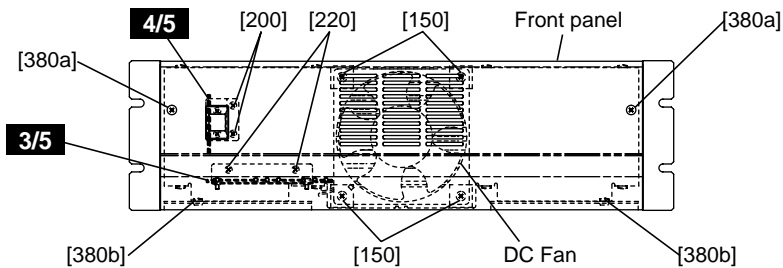
- 6-1 Remove the top cover. (See Procedure 1)
- 6-2 Remove the panel assembly. (See Procedure 5)
- 6-3 Remove the two (2) screws marked [200]. The SUB 3/5 circuit board can then be removed. (Fig. 3)

**7. SUB 4/5 Circuit Board**

- 7-1 Remove the top cover. (See Procedure 1)
- 7-2 Remove the panel assembly. (See Procedure 5)
- 7-3 Remove the two (2) screws marked [220]. The SUB 4/5 circuit board can then be removed. (Fig. 3)

**8. DC Fan**

- 8-1 Remove the top cover. (See Procedure 1)
- 8-2 Remove the panel assembly. (See Procedure 5)
- 8-3 Remove the four (4) screws marked [150]. The DC fan can then be removed. (Fig. 3)

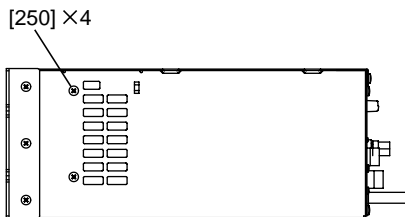


- [150]: Bind Head Screw 4.0X45 MFZN2BL (VB857700)
- [200][220]: Bind Head Tapping Screw-B 3.0X8 MFZN2BL (EP600190)
- [380]: Bind Head Tapping Screw-B 4.0X8 MFZN2BL (EG340190)

(Fig. 3)

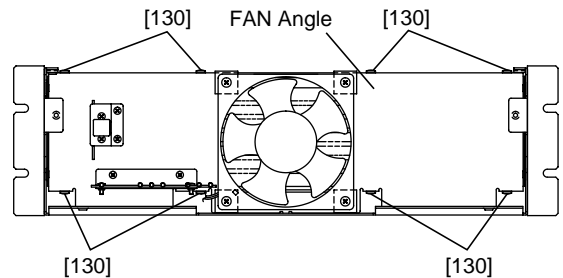
**9. PA7 Unit**

- 9-1 Remove the top cover. (See Procedure 1)
- 9-2 Remove the panel assembly. (See Procedure 5)
- 9-3 Remove the four (4) screws marked [250]. The PA7 unit with the chassis can then be removed. (Fig. 4)
- 9-4 Remove the eight (8) screws marked [130]. The PA7 unit can then be removed. (Fig. 5)



- [250]: Bonding Tapping Screw-B 4.0X8 MFZN2BL (VR779900)

(Fig. 4)

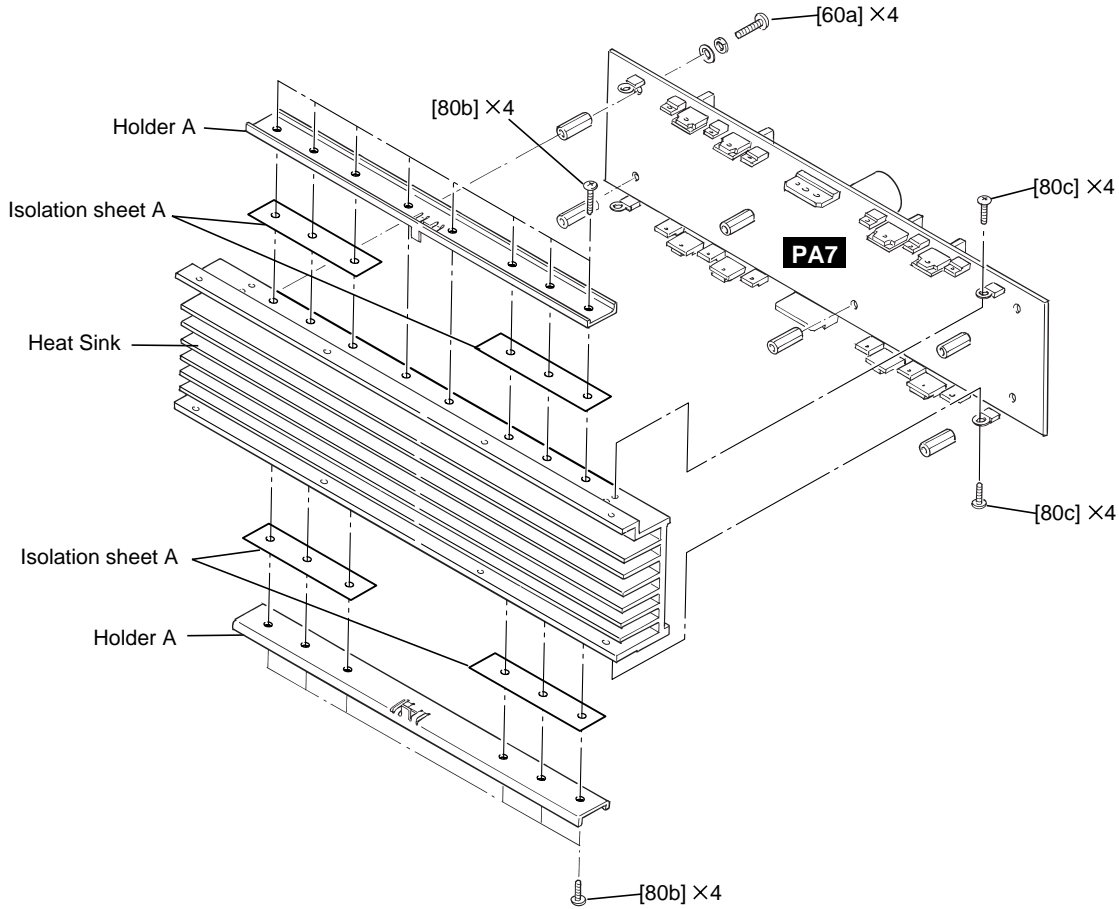


- [130]: Bind Head Tapping Screw-B 4.0X8 MFZN2BL (EG340190)

(Fig. 5)

**10. PA7 Circuit Board**

- 10-1 Remove the top cover. (See Procedure 1)
- 10-2 Remove the panel assembly. (See Procedure 5)
- 10-3 Remove the PA7 unit. (See Procedure 9)
- 10-4 Remove the sixteen (16) screws marked [80b]; the four (4) screws marked [80c] and the six (6) screws marked [60a]. The PA7 circuit board can then be removed. (Fig. 6)

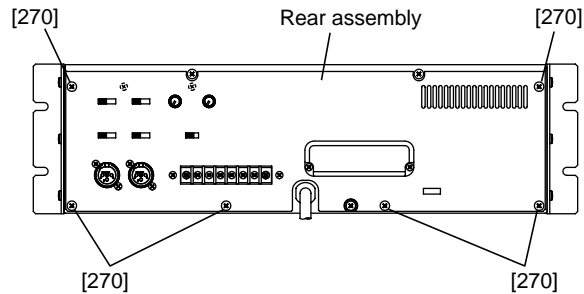


[60]: Bind Head Screw SP 3.0X8 MFZN2Y (EG330290)  
 [80]: Bind Head Tapping Screw-B 3.0X12 MFZN2BL (VQ074600)

(Fig. 6)

**11. Rear Assembly**

- 11-1 Remove the top cover. (See Procedure 1)
- 11-2 Remove the six (6) screws marked [270]. The rear assembly can then be removed. (Fig. 7)



[270]: Bonding Tapping Screw-B 4.0X8 MFZN2BL (VR779900)

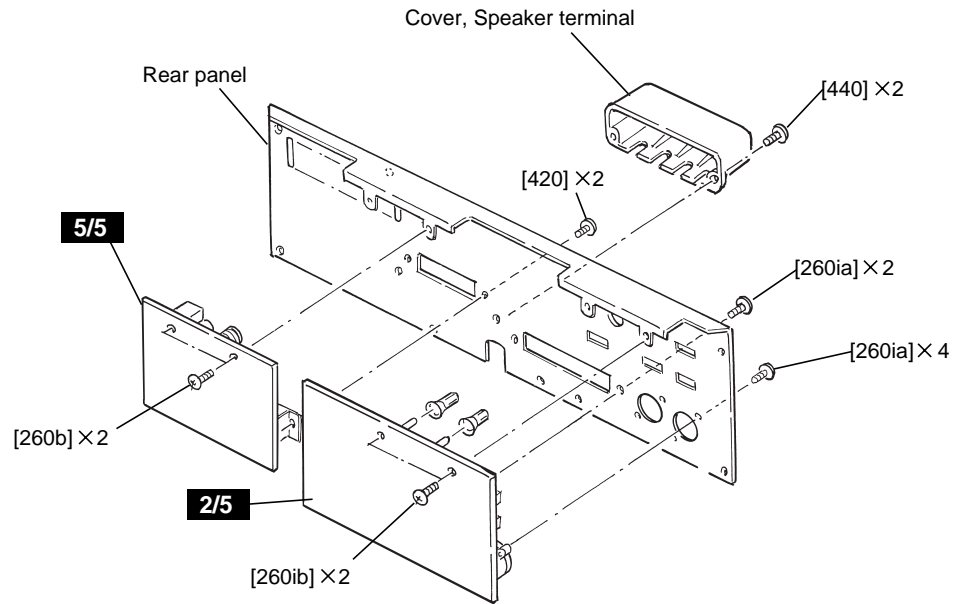
(Fig. 7)

## 12. SUB 5/5 Circuit Board

12-1 Remove the top cover. (See Procedure 1)

12-2 Remove the rear assembly. (See Procedure 11)

12-3 Remove the two (2) screws marked [440] and the two (2) screws marked [420] and the two (2) screws marked [260b].  
The SUB 5/5 circuit board can then be removed. (Fig. 8)

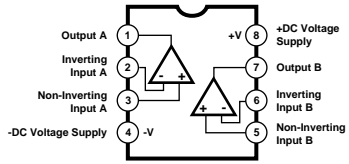


- [260]: Bind Head Tapping Screw-B 3.0X12 MFZN2BL (VQ074600)  
 [260ia]: Bind Head Screw A4.0X8 MFZN2BL (VP156800)  
 [260ib]: Bind Head Tapping Screw-B 3.0X8 MFZN2BL (EP600190)  
 [420]: Bonding Tapping Screw-B 3.0X8 MFZN2BL (VN413300)  
 [440]: Bind Head Tapping Screw-B 3.0X8 MFZN2BL (EP600190)

(Fig. 8)

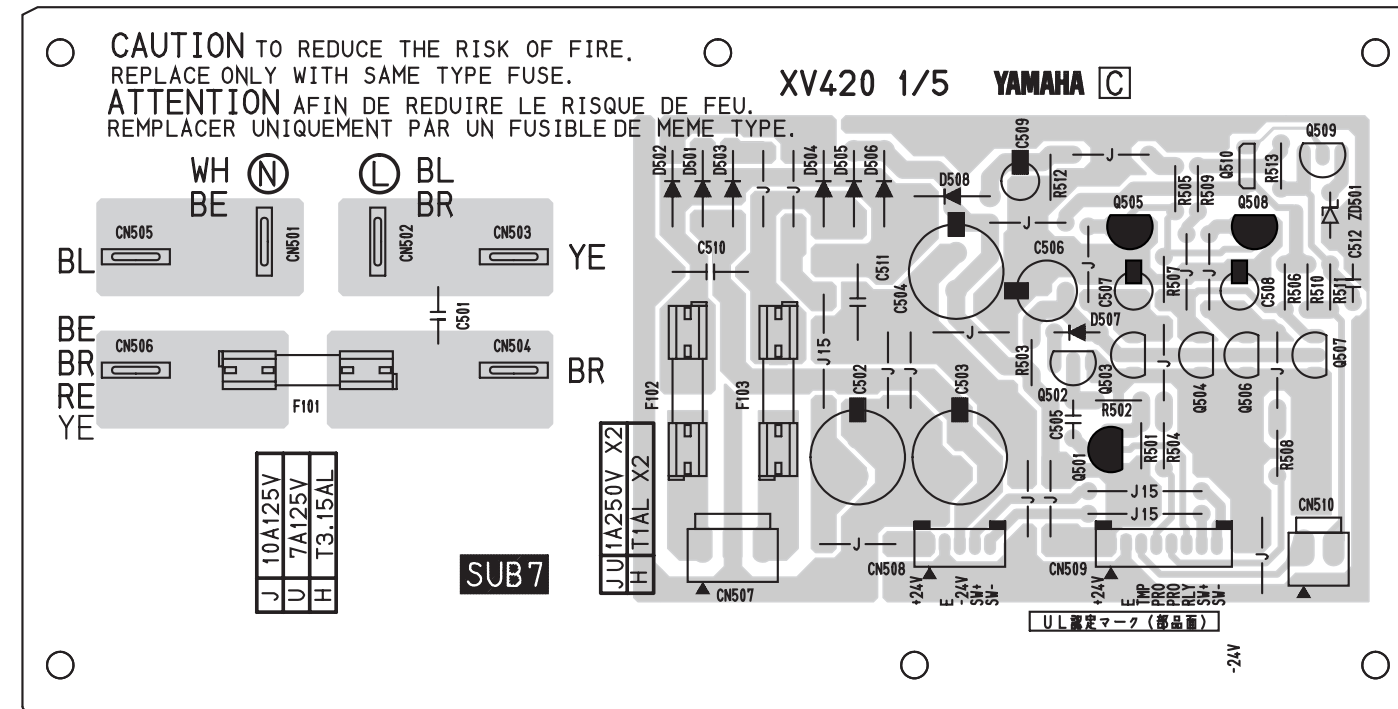
## ■ IC BLOCK DIAGRAM

- **M5238AP** (XM085A00)  
Operational Amplifier  
IC101



■ CIRCUIT BOARDS

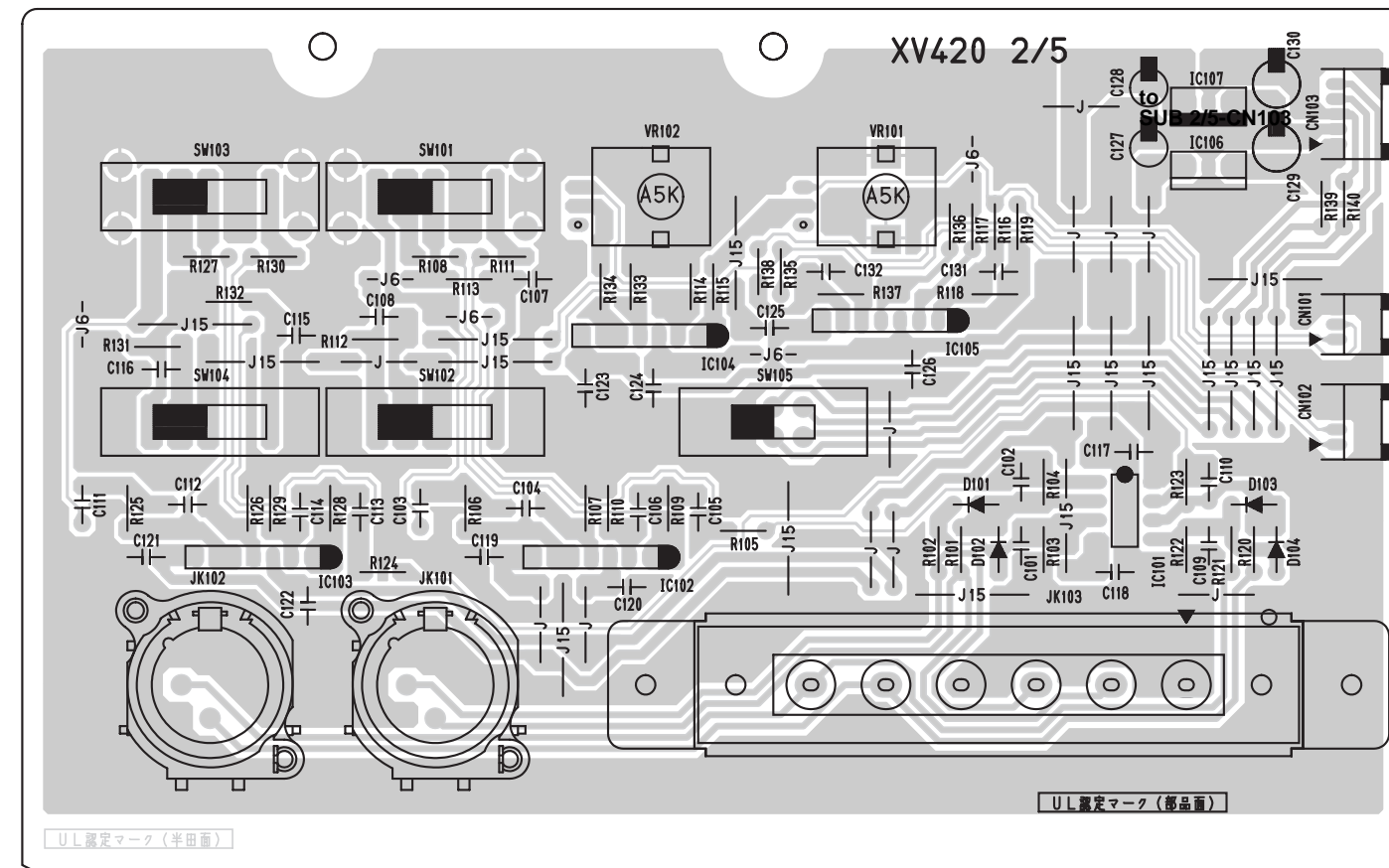
● SUB 1/5 Circuit Board



from T101 to SUB 2/5-CN103 to PA7-CN702 from T101

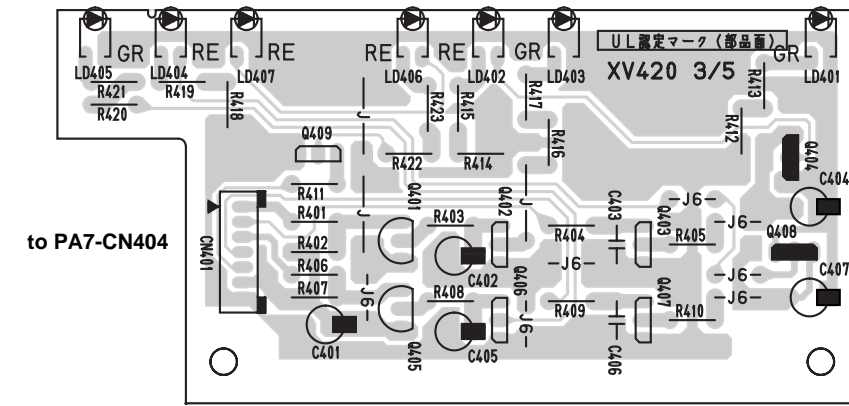
Components side

● SUB 2/5 Circuit Board



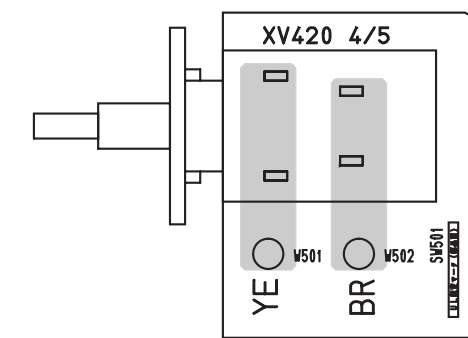
Components side

● SUB 3/5 Circuit Board



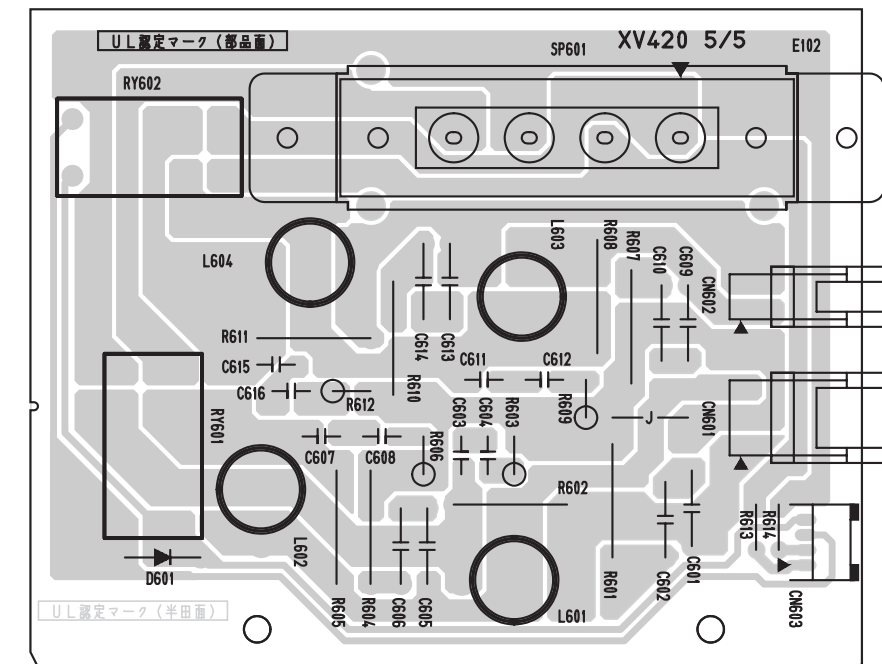
Components side

● SUB 4/5 Circuit Board



Components side

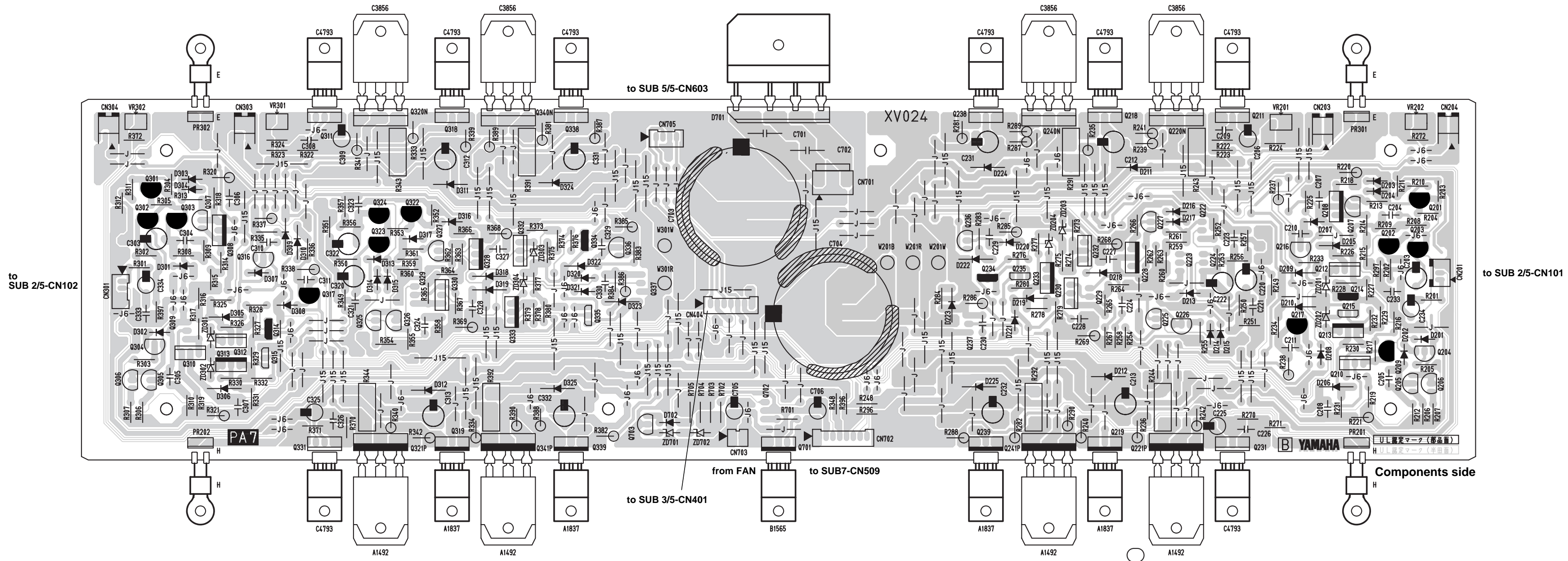
● SUB 5/5 Circuit Board



Components side

SUB(J) :3NA-V290020  
 SUB(U) :3NA-V290030  
 SUB(H) :3NA-V290040

●PA7 Circuit Board





## INSPECTIONS

### A STEREO and PARALLEL Operation

Before performing any of the following adjustments, set the unit as follows:

1. ATTENUATIONS Maximum
2. Input terminal: Cannon connector pin 2 is HOT, pins 1 and 3 are GROUND
3. OUTPUT VOLTAGE switch: 100 V
4. Output terminal: RL = 32 and 64 ohm/more than 150 W
5. Others: Both Channel operations are required, if there is no particular indication. In addition, turn off the filter switches if there is no particular indication. Do not connect the ground of the speaker terminal to the ground on the input side.

### Adjustment Specifications

#### 1. Fan Test

When turning on the power switch, confirm that both fans on the right and left sides regulate at low speed.

#### 2. Muting Test

After applying power to the unit, the PROTECTION indicator should remain ON for 2.5 +/- 1 second, to indicate that the protection circuitry is operating and the indicator should go out. NO signal is output while this indicator is lit.

#### 3. Idle Current Test

Connect the input terminal to the GROUND and adjust the VR201 (A channel +), VR202 (A channel -), VR301 (B channel +) and VR302 (B channel -) so that the DC voltage Vb between pin 1 and pin 2 of the CN203 (A channel +), CN204 (A channel -), the CN303 (B channel +) and the CN304 (B channel -) should be 1.0 +/- 0.2 mV. After finishing all tests, adjust the Vb again to 1.0 +/- 0.2 mV.

#### 4. Input Terminal DC offset

Connect the input terminal to the GROUND and check that the DC voltage Vdc of the output terminal is 0 +/- 75 mV.

#### 5. Gain Test

Check that the OUTPUT is + 28.2 +/- 0.5 dBu when a sine wave of 1 kHz at -10 dBu is applied to the INPUT.

#### 6. Frequency Response Test

HIGH CUT switch and LOW CUT switch OFF:

When a sine wave of 20 Hz, 1 kHz or 20 kHz at -10 dBu is applied to the INPUT, check that the output is 0.0 +/- 0.5 dB at 20 Hz and - 0.5 +/- 0.5 dB at 20 kHz using 1 kHz as a reference.

##### <5 kHz>

When a sine wave of 5 kHz, - 10 dBu is applied to the INPUT, check that the output is - 3.5 +/- 1.0 dB using 1 kHz as a reference at the filter switch OFF.

##### <10 kHz>

When a sine wave of 10 kHz, - 10 dBu is applied to the INPUT, check that the output is - 3.0 +/- 1.0 dB using 1 kHz as a reference at the filter switch OFF.

##### <40 Hz>

When a sine wave of 40 Hz, - 10 dBu is applied to the INPUT, check that the output is - 3.0 +/- 1.0 dB using 1 kHz as a reference at the filter switch OFF.

##### <80 Hz>

When a sine wave of 80 Hz, - 10 dBu is applied to the INPUT, check that the output is - 3.5 +/- 1.0 dB using 1 kHz as a reference at the filter switch OFF.

#### 7. Harmonic Distortion Test

When a high quality sine wave is applied at 20 Hz, 1 kHz, or 20 kHz, the harmonic distortion should be as follows:

Power output level		THD		
		20 Hz	1 kHz	20 kHz
XH150	150 W + 150 W (39.0 dBu/ch, 32 ohm, switch=70V)	<= 0.1 %	<= 0.1 %	<= 0.1 %
	150 W + 150 W (42.0 dBu/ch, 64 ohm, switch=100V)	<= 0.1 %	<= 0.1 %	<= 0.1 %

*\*This test should be finished within 30 minutes.*

### 8. Channel Separation Test

8-1 Apply a - 5 dBu, 20kHz sine wave into the channel A input.

8-2 Short the input to channel B with a 600 ohm load.

8-3 Set the output of channel A at a reference of 0 dB.

8-4 If the channel B attenuator is set to the same as channel A, channel B output should be less than -65 dB. (RL = 64 ohm)

### 9. Noise Test

9-1 Set the input attenuator at maximum.

9-2 Short the input to the GROUND with a 600 ohm load.

9-3 The output noise level should be less than - 61 dBm.

9-4 Set the input attenuator at "∞," the noise level should be less than - 65 dBu.

*\* Be careful that this is not affected by noise induced during the inspection.*

### 10. Stability Test

When a rectangular wave of 10 kHz, - 10 dBu is applied to the input and a capacitor of 10 pF - 0.47 μ F is connected with a 32 ohm load resistor in parallel, the overshoot and the ringing should be as follows.

Overshoot:  $V_p/V_o \leq 1.8$

Ringing: less than 5 waves

Next, when the 32 ohm load resistor is removed and the load is only the capacitor 10 pF - 0.47 μ F, the overshoot and the ringing should be as follows.

Overshoot:  $V_p/V_o \leq 2.5$

Ringing: fades away in less than 7 waves and no oscillation

### 11. Protection Circuitry Test

Check that the relay does not work when you apply a sine wave of + 3.0 dBu at 10 Hz to the input and adjust the input level to obtain a clipped output wave form.

Next, check that when you apply a sine wave of 1 Hz, 6.3 dBu to the input, the signal is cut off within 2 seconds, and the PROTECTION indicator lights up.

Finally, check that when no signal is applied, the amplifier resumes to normal operation within 10 seconds.

### 12. PC Limiter Circuitry Test

Check with an oscilloscope that the OUTPUT is as follows when a sine wave of -14 dBu at 1 kHz is applied to the INPUT and the output is shorted with an 8 ohm load (+/- 5 %). At this time, check that the CLIP indicator lights up.

Output level:  $V_{p-p} \leq 30$  V

*\*This test should be finished within 30 minutes.*

### 13. OUTPUT VOLTAGE Switch Check

OUTPUT VOLTAGE switch 70V:

Check that the OUTPUT is  $V_{p-p} \leq 230$  V, when a sine wave of 1 kHz at 6.0 dBu is applied to the INPUT.

### 14. Signal Indicator Test

When a sine wave of 1 kHz, -23 dBu is applied to the input, the SIGNAL indicator should light up.

Check the output terminal without load.

### B. Settings after the test

The attenuator should be set to "∞."

The MODE switch should be set at STEREO.

OUTPUT VOLTAGE SWITCH: set to 70 V

### C. Others

0 dBu = 0.775 V

When measuring the noise level, use a DIN audio filter.



# POWER AMPLIFIER

# XH150

# PARTS LIST

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## Notes: DESTINATION ABBREVIATIONS

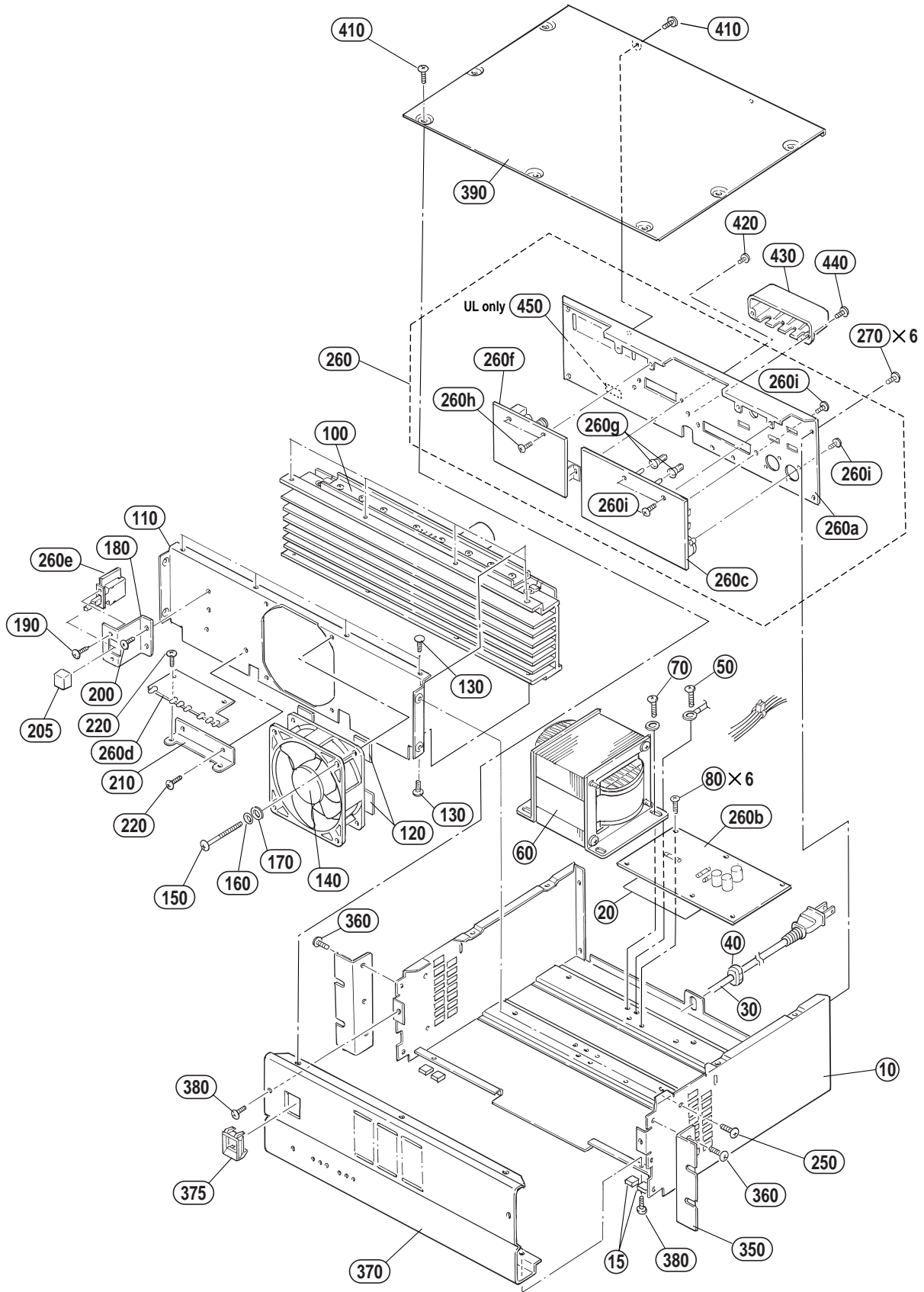
A : Australian model	J : Japanese model
B : British model	U : U.S. model
C : Canadian model	V : General export model ( 110V )
E : European model	W : General export model ( 220V )
H : North European model	X : General export model
I : Indonesian model	Y : Export model

- The numbers in "QTY" shows quantities for each unit.
- The parts with "--" in "Parts No." are not available as spare parts.
- The mark "}" in the remarks column indicates that these parts are interchangeable.

## ■ WARINIG

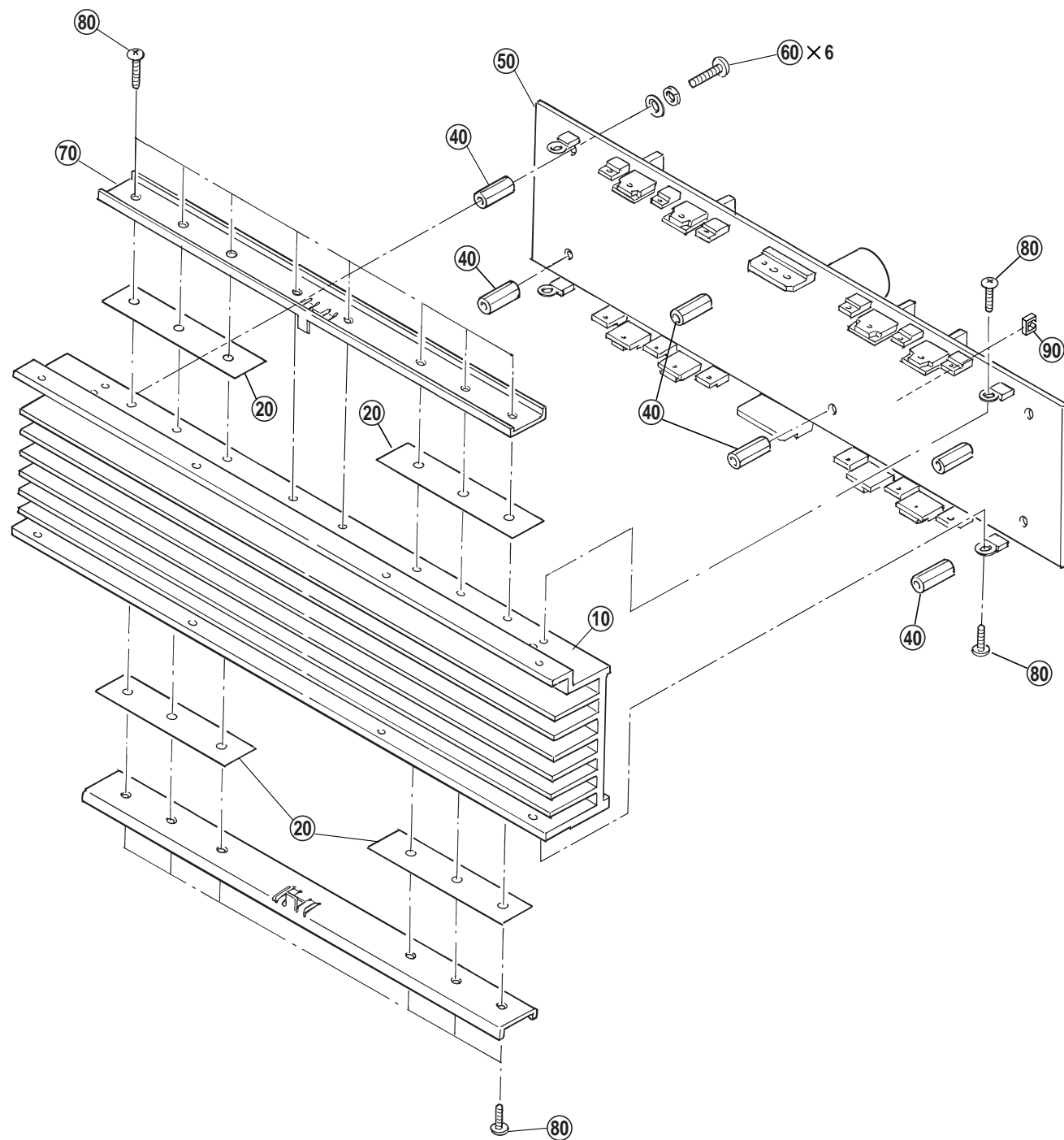
Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.

# OVERALL ASSEMBLY





■ PA UNIT



REF NO.	PART NO.	DESCRIPTION	部 品 名	REMARKS	QTY	RANK
*	<b>V2941700</b>	PA Unit	PAユニット	PA 7		
10	--	Heat Sink	ヒートシンク	(V294560)	4	
* 20	<b>V3303100</b>	Insulation Sheet	放熱シート			
30	--	Grease	シリコングリス	(0412125)		
40	<b>VV086500</b>	Support	支柱		6	01
* 50	<b>V2899700</b>	Circuit Board	シート			
60	<b>EG330290</b>	Bind Head Screw	+ バインド小ネジ		6	01
65	--	Cord Binder	束線止め	(V362150)		
70	--	Holder Angle	Tr押え金具 B	(V294380)	2	
80	<b>VQ074600</b>	Bind Head Tapping Screw-B	+ バインド B タイト		20	01

\*: New parts

RANK: Japan only

## ELECTRICAL PARTS

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		ELECTRICAL PARTS		XH150		
*	V2899700	Circuit Board	PA7	(XV024B0)		
*	AAX00030	Circuit Board	SUB7 1/5	J (XV420C0)		
*	AAX00040	Circuit Board	SUB7 1/5	U,V (XV420C0)		
*	AAX00050	Circuit Board	SUB7 1/5	H,W,B,A (XV420C0)		
*	AAX00060	Circuit Board	SUB7 2/5	(XV420C0)		
*	AAX00070	Circuit Board	SUB7 3/5	(XV420C0)		
*	AAX00080	Circuit Board	SUB7 4/5	(XV420C0)		
*	AAX00090	Circuit Board	SUB7 5/5	(XV420C0)		
	--	Jumper Wire		(VV29140)		01
C203	UJ828100	Electrolytic Cap.	100.00 10.0V			01
C204	FU451330	Mica Capacitor	33P 500V J			01
C205	VV060100	Mylar Capacitor	1500P 50V J			08
C206	UJ847100	Electrolytic Cap.	10μF/25V			01
C207	FU451220	Mica Capacitor	22P 500V J			01
C208	FU451220	Mica Capacitor	22P 500V J			01
C209	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
-211	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C212	VZ004000	Electrolytic Cap.	2.2 200.0V			01
C213	VZ004000	Electrolytic Cap.	2.2 200.0V			01
C220	UJ847470	Electrolytic Cap.	47.00 25.0V			01
C221	VZ353500	Ceramic Capacitor-SL	100P 50V J			01
C222	VF760000	Electrolytic Cap.	100.00 10.0V			01
C223	FU451330	Mica Capacitor	33P 500V J			01
C224	VV060100	Mylar Capacitor	1500P 50V J			08
C225	UM417100	Electrolytic Cap.	10.00 25.0V			01
C226	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C227	FU451220	Mica Capacitor	22P 500V J			01
C228	FU451220	Mica Capacitor	22P 500V J			01
C229	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C230	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C231	VZ004000	Electrolytic Cap.	2.2 200.0V			01
C232	VZ004000	Electrolytic Cap.	2.2 200.0V			01
C233	VZ353500	Ceramic Capacitor-SL	100P 50V J			01
C234	UJ847470	Electrolytic Cap.	47.00 25.0V			01
C303	VF760000	Electrolytic Cap.	100.00 10.0V			01
C304	FU451330	Mica Capacitor	33P 500V J			01
C305	VV060100	Mylar Capacitor	1500P 50V J			08
C306	FU451220	Mica Capacitor	22P 500V J			01
C307	FU451220	Mica Capacitor	22P 500V J			01
C308	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C309	UM417100	Electrolytic Cap.	10.00 25.0V			01
C310	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C311	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C312	VZ004000	Electrolytic Cap.	2.2 200.0V			01
C313	VZ004000	Electrolytic Cap.	2.2 200.0V			01
C320	UJ847470	Electrolytic Cap.	47.00 25.0V			01
C321	VZ353500	Ceramic Capacitor-SL	100P 50V J			01
C322	VF760000	Electrolytic Cap.	100.00 10.0V			01
C323	FU451330	Mica Capacitor	33P 500V J			01
C324	VV060100	Mylar Capacitor	1500P 50V J			08
C325	UM417100	Electrolytic Cap.	10.00 25.0V			01
C326	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C327	FU451220	Mica Capacitor	22P 500V J			01
C328	FU451220	Mica Capacitor	22P 500V J			01
C329	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C330	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C331	VZ004000	Electrolytic Cap.	2.2 200.0V			01
C332	VZ004000	Electrolytic Cap.	2.2 200.0V			01
C333	VZ353500	Ceramic Capacitor-SL	100P 50V J			01
C334	UJ847470	Electrolytic Cap.	47.00 25.0V			01
C701	VZ004400	Mylar Capacitor	0.1000 400V M			01
C702	VZ004400	Mylar Capacitor	0.1000 400V M			01
C703	VY897100	Electrolytic Cap.	2200 160V			08
C704	VY897100	Electrolytic Cap.	2200 160V			08
C705	UM416470	Electrolytic Cap.	4.70 50.0V			01
C706	UM416470	Electrolytic Cap.	4.70 50.0V			01
D201	VD631600	Diode	1SS133,176,HSS104			01
-204	VD631600	Diode	1SS133,176,HSS104			01

\*: New parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
D205	IF005560	Diode	1SS82TD		01
D206	IF005560	Diode	1SS82TD		01
D207	VD631600	Diode	1SS133,176,HSS104		01
D208	VD631600	Diode	1SS133,176,HSS104		01
D209	IF005560	Diode	1SS82TD		01
D210	IF005560	Diode	1SS82TD		01
D211	VU801600	Diode	1N4004L 26		01
D212	VU801600	Diode	1N4004L 26		01
D213	VD631600	Diode	1SS133,176,HSS104		01
-217	VD631600	Diode	1SS133,176,HSS104		01
D218	IF005560	Diode	1SS82TD		01
D219	IF005560	Diode	1SS82TD		01
D220	VD631600	Diode	1SS133,176,HSS104		01
D221	VD631600	Diode	1SS133,176,HSS104		01
D222	IF005560	Diode	1SS82TD		01
D223	IF005560	Diode	1SS82TD		01
D224	VU801600	Diode	1N4004L 26		01
D225	VU801600	Diode	1N4004L 26		01
D301	VD631600	Diode	1SS133,176,HSS104		01
-304	VD631600	Diode	1SS133,176,HSS104		01
D305	IF005560	Diode	1SS82TD		01
D306	IF005560	Diode	1SS82TD		01
D307	VD631600	Diode	1SS133,176,HSS104		01
D308	VD631600	Diode	1SS133,176,HSS104		01
D309	IF005560	Diode	1SS82TD		01
D310	IF005560	Diode	1SS82TD		01
D311	VU801600	Diode	1N4004L 26		01
D312	VU801600	Diode	1N4004L 26		01
D313	VD631600	Diode	1SS133,176,HSS104		01
-317	VD631600	Diode	1SS133,176,HSS104		01
D318	IF005560	Diode	1SS82TD		01
D319	IF005560	Diode	1SS82TD		01
D320	VD631600	Diode	1SS133,176,HSS104		01
D321	VD631600	Diode	1SS133,176,HSS104		01
D322	IF005560	Diode	1SS82TD		01
D323	IF005560	Diode	1SS82TD		01
D324	VU801600	Diode	1N4004L 26		01
D325	VU801600	Diode	1N4004L 26		01
D701	VR149900	Diode Stack	D25XB60 25.0A 600V		06
D702	VD631600	Diode	1SS133,176,HSS104		01
Q201	IA097000	Transistor	2SA970 GR,BL		01
-203	IA097000	Transistor	2SA970 GR,BL		01
Q204	IC224030	Transistor	2SC2240 GR,BL		01
Q206	IC224030	Transistor	2SC2240 GR,BL		01
Q207	IC181501	Transistor	2SC1815 Y,GR		01
Q208	VR152800	Transistor	2SA1480 E,F		02
Q209	IA101590	Transistor	2SA1015 O,Y		01
Q210	VR152900	Transistor	2SC3790 E,F		02
Q211	VQ547300	Transistor	2SC4793 (HFE)		03
Q212	VR152900	Transistor	2SC3790 E,F		02
Q213	VR152800	Transistor	2SA1480 E,F		02
Q214	VD678700	Digital Transistor	DTC114ES		01
Q215	VD678500	Digital Transistor	DTA114ES		01
Q216	V2797700	Transistor	2SC5395 E,F		01
Q217	V2797600	Transistor	2SA1993 E,F		01
Q218	VQ547300	Transistor	2SC4793 (HFE)		03
Q219	VQ547200	Transistor	2SA1837 (HFE)		03
Q222	IA097000	Transistor	2SA970 GR,BL		01
-224	IA097000	Transistor	2SA970 GR,BL		01
Q225	IC224030	Transistor	2SC2240 GR,BL		01
Q226	IC224030	Transistor	2SC2240 GR,BL		01
Q227	IC181501	Transistor	2SC1815 Y,GR		01
Q228	VR152800	Transistor	2SA1480 E,F		02
Q229	IA101590	Transistor	2SA1015 O,Y		01
Q230	VR152900	Transistor	2SC3790 E,F		02
Q231	VQ547300	Transistor	2SC4793 (HFE)		03
Q232	VR152900	Transistor	2SC3790 E,F		02
Q233	VR152800	Transistor	2SA1480 E,F		02
Q234	VD678700	Digital Transistor	DTC114ES		01
Q235	VD678500	Digital Transistor	DTA114ES		01

\*: New parts

RANK: Japan only



REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
Q236	<b>V2797700</b>	Transistor	2SC5395 E,F		01
Q237	<b>V2797600</b>	Transistor	2SA1993 E,F		01
Q238	<b>VQ547300</b>	Transistor	2SC4793 (HFE)		03
Q239	<b>VQ547200</b>	Transistor	2SA1837 (HFE)		03
Q301	<b>IA097000</b>	Transistor	2SA970 GR,BL		01
-303	<b>IA097000</b>	Transistor	2SA970 GR,BL		01
Q304	<b>IC224030</b>	Transistor	2SC2240 GR,BL		01
-306	<b>IC224030</b>	Transistor	2SC2240 GR,BL		01
Q307	<b>IC181501</b>	Transistor	2SC1815 Y,GR		01
Q308	<b>VR152800</b>	Transistor	2SA1480 E,F		02
Q309	<b>IA101590</b>	Transistor	2SA1015 O,Y		01
Q310	<b>VR152900</b>	Transistor	2SC3790 E,F		02
Q311	<b>VQ547300</b>	Transistor	2SC4793 (HFE)		03
Q312	<b>VR152900</b>	Transistor	2SC3790 E,F		02
Q313	<b>VR152800</b>	Transistor	2SA1480 E,F		02
Q314	<b>VD678700</b>	Digital Transistor	DTC114ES		01
Q315	<b>VD678500</b>	Digital Transistor	DTA114ES		01
Q316	<b>V2797700</b>	Transistor	2SC5395 E,F		01
Q317	<b>V2797600</b>	Transistor	2SA1993 E,F		01
Q318	<b>VQ547300</b>	Transistor	2SC4793 (HFE)		03
Q319	<b>VQ547200</b>	Transistor	2SA1837 (HFE)		03
Q322	<b>IA097000</b>	Transistor	2SA970 GR,BL		01
-324	<b>IA097000</b>	Transistor	2SA970 GR,BL		01
Q325	<b>IC224030</b>	Transistor	2SC2240 GR,BL		01
Q326	<b>IC224030</b>	Transistor	2SC2240 GR,BL		01
Q327	<b>IC181501</b>	Transistor	2SC1815 Y,GR		01
Q328	<b>VR152800</b>	Transistor	2SA1480 E,F		02
Q329	<b>IA101590</b>	Transistor	2SA1015 O,Y		01
Q330	<b>VR152900</b>	Transistor	2SC3790 E,F		02
Q331	<b>VQ547300</b>	Transistor	2SC4793 (HFE)		03
Q332	<b>VR152900</b>	Transistor	2SC3790 E,F		02
Q333	<b>VR152800</b>	Transistor	2SA1480 E,F		02
Q334	<b>VD678700</b>	Digital Transistor	DTC114ES		01
Q335	<b>VD678500</b>	Digital Transistor	DTA114ES		01
Q336	<b>V2797700</b>	Transistor	2SC5395 E,F		01
Q337	<b>V2797600</b>	Transistor	2SA1993 E,F		01
Q338	<b>VQ547300</b>	Transistor	2SC4793 (HFE)		03
Q339	<b>VQ547200</b>	Transistor	2SA1837 (HFE)		03
Q701	<b>VS883300</b>	Transistor	2SB1565 E,F		02
Q702	<b>V2797600</b>	Transistor	2SA1993 E,F		01
Q703	<b>V2797700</b>	Transistor	2SC5395 E,F		01
R201	<b>HF455100</b>	Carbon Resistor	100.0 1/4 J		01
R202	<b>VV312900</b>	Metal Film Resistor	22K 1/4 F		01
R203	<b>HF455560</b>	Carbon Resistor	560.0 1/4 J		01
R204	<b>HF857470</b>	Carbon Resistor	47.0K 1/4 J		01
R205	<b>HF458330</b>	Carbon Resistor	330.0K 1/4 J		01
R206	<b>HF455560</b>	Carbon Resistor	560.0 1/4 J		01
R207	<b>HF455560</b>	Carbon Resistor	560.0 1/4 J		01
R208	<b>VV065600</b>	Metal Film Resistor	11K 1/4 F		05
R209	<b>VV065600</b>	Metal Film Resistor	11K 1/4 F		05
R210	<b>HF857470</b>	Carbon Resistor	47.0K 1/4 J		01
R211	<b>HF857470</b>	Carbon Resistor	47.0K 1/4 J		01
R212	<b>HF455220</b>	Carbon Resistor	220.0 1/4 J		01
R213	<b>HF455330</b>	Carbon Resistor	330.0 1/4 J		01
R214	<b>HF857470</b>	Carbon Resistor	47.0K 1/4 J		01
-217	<b>HF857470</b>	Carbon Resistor	47.0K 1/4 J		01
R218	<b>HF455330</b>	Carbon Resistor	330.0 1/4 J		01
R219	<b>HF455330</b>	Carbon Resistor	330.0 1/4 J		01
R220	<b>VZ008800</b>	Flame Proof C. Resistor	22.0 1/4 J		01
R221	<b>VZ008800</b>	Flame Proof C. Resistor	22.0 1/4 J		01
R222	<b>HF456220</b>	Carbon Resistor	2.2K 1/4 J		01
R223	<b>HF455680</b>	Carbon Resistor	680.0 1/4 J		01
R224	<b>HF455270</b>	Carbon Resistor	270.0 1/4 J		01
R225	<b>HF457150</b>	Carbon Resistor	15.0K 1/4 J		01
R226	<b>VZ033800</b>	Metal Film Resistor	150K 1/4 F		01
R227	<b>VV065800</b>	Metal Film Resistor	20K 1/4 F		05
R228	<b>VV066000</b>	Metal Film Resistor	33K 1/4 F		01
R229	<b>VV065800</b>	Metal Film Resistor	20K 1/4 F		05
R230	<b>VZ033800</b>	Metal Film Resistor	150K 1/4 F		01
R231	<b>HF457150</b>	Carbon Resistor	15.0K 1/4 J		01

\*: New parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
R232	VV066000	Metal Film Resistor	33K 1/4F		01
R233	HF457820	Carbon Resistor	82.0K 1/4 J		01
R234	HF457820	Carbon Resistor	82.0K 1/4 J		01
R235	VV276800	Flame Proof C. Resistor	100 1/4 J		01
R236	VV276800	Flame Proof C. Resistor	100 1/4 J		01
R237	VZ008700	Flame Proof C. Resistor	2.2K 1/4 J		01
R238	VZ008700	Flame Proof C. Resistor	2.2K 1/4 J		01
R239	VZ009100	Flame Proof C. Resistor	33.0 1/4 J		01
R240	VZ009100	Flame Proof C. Resistor	33.0 1/4 J		01
R241	VZ008800	Flame Proof C. Resistor	22.0 1/4 J		01
R242	VZ008800	Flame Proof C. Resistor	22.0 1/4 J		01
R243	VZ370100	Wire Wound Resistor	0.47 5W K		02
R244	VZ370100	Wire Wound Resistor	0.47 5W K		02
R248	HF458150	Carbon Resistor	150.0K 1/4 J		01
R249	HF455100	Carbon Resistor	100.0 1/4 J		01
R250	VV312900	Metal Film Resistor	22K 1/4 F		01
R251	VZ010600	Metal Film Resistor	560.0 1/4 F		01
R252	HF455560	Carbon Resistor	560.0 1/4 J		01
R253	HF857470	Carbon Resistor	47.0K 1/4 J		01
R254	HF455560	Carbon Resistor	560.0 1/4 J		01
R255	HF455560	Carbon Resistor	560.0 1/4 J		01
R256	VV065600	Metal Film Resistor	11K 1/4 F		05
R257	VV065600	Metal Film Resistor	11K 1/4 F		05
R258	HF455220	Carbon Resistor	220.0 1/4 J		01
R259	HF857470	Carbon Resistor	47.0K 1/4 J		01
R260	HF857470	Carbon Resistor	47.0K 1/4 J		01
R261	HF455330	Carbon Resistor	330.0 1/4 J		01
R262	HF857470	Carbon Resistor	47.0K 1/4 J		01
-265	HF857470	Carbon Resistor	47.0K 1/4 J		01
R266	HF455330	Carbon Resistor	330.0 1/4 J		01
R267	HF455330	Carbon Resistor	330.0 1/4 J		01
R268	VZ008800	Flame Proof C. Resistor	22.0 1/4 J		01
R269	VZ008800	Flame Proof C. Resistor	22.0 1/4 J		01
R270	HF456220	Carbon Resistor	2.2K 1/4 J		01
R271	HF455680	Carbon Resistor	680.0 1/4 J		01
R272	HF455270	Carbon Resistor	270.0 1/4 J		01
R273	HF457150	Carbon Resistor	15.0K 1/4 J		01
R274	VZ033800	Metal Film Resistor	150K 1/4 F		01
R275	VV065800	Metal Film Resistor	20K 1/4 F		05
R276	VV066000	Metal Film Resistor	33K 1/4 F		01
R277	VV065800	Metal Film Resistor	20K 1/4 F		05
R278	VZ033800	Metal Film Resistor	150K 1/4 F		01
R279	HF457150	Carbon Resistor	15.0K 1/4 J		01
R280	VV066000	Metal Film Resistor	33K 1/4 F		01
R281	VV276800	Flame Proof C. Resistor	100 1/4 J		01
R282	VV276800	Flame Proof C. Resistor	100 1/4 J		01
R283	HF457820	Carbon Resistor	82.0K 1/4 J		01
R284	HF457820	Carbon Resistor	82.0K 1/4 J		01
R285	VZ008700	Flame Proof C. Resistor	2.2K 1/4 J		01
R286	VZ008700	Flame Proof C. Resistor	2.2K 1/4 J		01
R287	VZ009100	Flame Proof C. Resistor	33.0 1/4 J		01
R288	VZ009100	Flame Proof C. Resistor	33.0 1/4 J		01
R289	VZ008800	Flame Proof C. Resistor	22.0 1/4 J		01
R290	VZ008800	Flame Proof C. Resistor	22.0 1/4 J		01
R291	VZ370100	Wire Wound Resistor	0.47 5W K		02
R292	VZ370100	Wire Wound Resistor	0.47 5W K		02
R296	HF458150	Carbon Resistor	150.0K 1/4 J		01
R297	VZ010600	Metal Film Resistor	560.0 1/4 F		01
R301	HF455100	Carbon Resistor	100.0 1/4 J		01
R302	VV312900	Metal Film Resistor	22K 1/4 F		01
R303	HF458330	Carbon Resistor	330.0K 1/4 J		01
R304	HF455560	Carbon Resistor	560.0 1/4 J		01
R305	HF857470	Carbon Resistor	47.0K 1/4 J		01
R306	HF455560	Carbon Resistor	560.0 1/4 J		01
R307	HF455560	Carbon Resistor	560.0 1/4 J		01
R308	VV065600	Metal Film Resistor	11K 1/4 F		05
R309	VV065600	Metal Film Resistor	11K 1/4 F		05
R310	HF455220	Carbon Resistor	220.0 1/4 J		01
R311	HF857470	Carbon Resistor	47.0K 1/4 J		01
R312	HF857470	Carbon Resistor	47.0K 1/4 J		01

\*: New parts

RANK: Japan only



REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R313	HF455330	Carbon Resistor	330.0 1/4 J			01
R314	HF857470	Carbon Resistor	47.0K 1/4 J			01
-317	HF857470	Carbon Resistor	47.0K 1/4 J			01
R318	HF455330	Carbon Resistor	330.0 1/4 J			01
R319	HF455330	Carbon Resistor	330.0 1/4 J			01
R320	VZ008800	Flame Proof C. Resistor	22.0 1/4 J			01
R321	VZ008800	Flame Proof C. Resistor	22.0 1/4 J			01
R322	HF456220	Carbon Resistor	2.2K 1/4 J			01
R323	HF455680	Carbon Resistor	680.0 1/4 J			01
R324	HF455270	Carbon Resistor	270.0 1/4 J			01
R325	HF457150	Carbon Resistor	15.0K 1/4 J			01
R326	VZ033800	Metal Film Resistor	150K 1/4 F			01
R327	VV065800	Metal Film Resistor	20K 1/4 F			05
R328	VV066000	Metal Film Resistor	33K 1/4 F			01
R329	VV065800	Metal Film Resistor	20K 1/4 F			05
R330	VZ033800	Metal Film Resistor	150K 1/4 F			01
R331	HF457150	Carbon Resistor	15.0K 1/4 J			01
R332	VV066000	Metal Film Resistor	33K 1/4 F			01
R333	VV276800	Flame Proof C. Resistor	100 1/4 J			01
R334	VV276800	Flame Proof C. Resistor	100 1/4 J			01
R335	HF457820	Carbon Resistor	82.0K 1/4 J			01
R336	HF457820	Carbon Resistor	82.0K 1/4 J			01
R337	VZ008700	Flame Proof C. Resistor	2.2K 1/4 J			01
R338	VZ008700	Flame Proof C. Resistor	2.2K 1/4 J			01
R339	VZ009100	Flame Proof C. Resistor	33.0 1/4 J			01
R340	VZ009100	Flame Proof C. Resistor	33.0 1/4 J			01
R341	VZ008800	Flame Proof C. Resistor	22.0 1/4 J			01
R342	VZ008800	Flame Proof C. Resistor	22.0 1/4 J			01
R343	VZ370100	Wire Wound Resistor	0.47 5W K			02
R344	VZ370100	Wire Wound Resistor	0.47 5W K			02
R348	HF458150	Carbon Resistor	150.0K 1/4 J			01
R349	HF455100	Carbon Resistor	100.0 1/4 J			01
R350	VV312900	Metal Film Resistor	22K 1/4 F			01
R351	VZ010600	Metal Film Resistor	560.0 1/4 F			01
R352	HF455560	Carbon Resistor	560.0 1/4 J			01
R353	HF857470	Carbon Resistor	47.0K 1/4 J			01
R354	HF455560	Carbon Resistor	560.0 1/4 J			01
R355	HF455560	Carbon Resistor	560.0 1/4 J			01
R356	VV065600	Metal Film Resistor	11K 1/4 F			05
R357	VV065600	Metal Film Resistor	11K 1/4 F			05
R358	HF455220	Carbon Resistor	220.0 1/4 J			01
R359	HF857470	Carbon Resistor	47.0K 1/4 J			01
R360	HF857470	Carbon Resistor	47.0K 1/4 J			01
R361	HF455330	Carbon Resistor	330.0 1/4 J			01
R362	HF857470	Carbon Resistor	47.0K 1/4 J			01
-365	HF857470	Carbon Resistor	47.0K 1/4 J			01
R366	HF455330	Carbon Resistor	330.0 1/4 J			01
R367	HF455330	Carbon Resistor	330.0 1/4 J			01
R368	VZ008800	Flame Proof C. Resistor	22.0 1/4 J			01
R369	VZ008800	Flame Proof C. Resistor	22.0 1/4 J			01
R370	HF456220	Carbon Resistor	2.2K 1/4 J			01
R371	HF455680	Carbon Resistor	680.0 1/4 J			01
R372	HF455270	Carbon Resistor	270.0 1/4 J			01
R373	HF457150	Carbon Resistor	15.0K 1/4 J			01
R374	VZ033800	Metal Film Resistor	150K 1/4 F			01
R375	VV065800	Metal Film Resistor	20K 1/4 F			05
R376	VV066000	Metal Film Resistor	33K 1/4 F			01
R377	VV065800	Metal Film Resistor	20K 1/4 F			05
R378	VZ033800	Metal Film Resistor	150K 1/4 F			01
R379	HF457150	Carbon Resistor	15.0K 1/4 J			01
R380	VV066000	Metal Film Resistor	33K 1/4 F			01
R381	VV276800	Flame Proof C. Resistor	100 1/4 J			01
R382	VV276800	Flame Proof C. Resistor	100 1/4 J			01
R383	HF457820	Carbon Resistor	82.0K 1/4 J			01
R384	HF457820	Carbon Resistor	82.0K 1/4 J			01
R385	VZ008700	Flame Proof C. Resistor	2.2K 1/4 J			01
R386	VZ008700	Flame Proof C. Resistor	2.2K 1/4 J			01
R387	VZ009100	Flame Proof C. Resistor	33.0 1/4 J			01
R388	VZ009100	Flame Proof C. Resistor	33.0 1/4 J			01
R389	VZ008800	Flame Proof C. Resistor	22.0 1/4 J			01

\*: New parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R390	VZ008800	Flame Proof C. Resistor	22.0 1/4 J			01
R391	VZ370100	Wire Wound Resistor	0.47 5W K			02
R392	VZ370100	Wire Wound Resistor	0.47 5W K			02
R396	HF458150	Carbon Resistor	150.0K 1/4 J			01
R397	VZ010600	Metal Film Resistor	560.0 1/4 F			01
R701	HF455220	Carbon Resistor	220.0 1/4 J			01
R702	HF455220	Carbon Resistor	220.0 1/4 J			01
R703	HF456820	Carbon Resistor	8.2K 1/4 J			01
R704	HF456820	Carbon Resistor	8.2K 1/4 J			01
R705	HF457100	Carbon Resistor	10.0K 1/4 J			01
W201	--	Connector Assembly	OUT7A	(V295080)		
W301	--	Connector Assembly	OUT7B	(V295110)		
CN201	VV066300	Connector Base Post	M2426XX 3P TE			01
CN203	VV067600	Connector Base Post	M2426XXR 2P SE			01
CN204	VV067600	Connector Base Post	M2426XXR 2P SE			01
CN301	VV066400	Connector Base Post	M2426XX 4P TE			01
CN303	VV067600	Connector Base Post	M2426XXR 2P SE			01
CN304	VV067600	Connector Base Post	M2426XXR 2P SE			01
CN404	VV066700	Connector Base Post	M2426XX 7P TE			01
CN701	LB932030	Base Post Connector	VH- 3P TE			01
CN702	VV066800	Connector Base Post	M2426XX 8P TE			01
CN703	VV066200	Connector Base Post	M2426XX 2P TE			01
CN705	VV066400	Connector Base Post	M2426XX 4P TE			01
PR201	VL964800	Positive Thermistor	PTH9M04BH222TS2			04
PR202	VL964800	Positive Thermistor	PTH9M04BH222TS2			04
PR301	VL965100	Positive Thermistor	PTH9M04BE222TS2			04
PR302	VL965100	Positive Thermistor	PTH9M04BE222TS2			04
Q220N	VZ222300	Pair Transistor	A1492C3856(Z)(210)			06
Q221P	VZ222300	Pair Transistor	A1492C3856(Z)(210)			06
Q240N	VZ222300	Pair Transistor	A1492C3856(Z)(210)			06
Q241P	VZ222300	Pair Transistor	A1492C3856(Z)(210)			06
Q320N	VZ222300	Pair Transistor	A1492C3856(Z)(210)			06
Q321P	VZ222300	Pair Transistor	A1492C3856(Z)(210)			06
Q340N	VZ222300	Pair Transistor	A1492C3856(Z)(210)			06
Q341P	VZ222300	Pair Transistor	A1492C3856(Z)(210)			06
VR201	VZ352000	Trimmer Potentiometer	B 500 3P			01
VR202	VZ352000	Trimmer Potentiometer	B 500 3P			01
VR301	VZ352000	Trimmer Potentiometer	B 500 3P			01
VR302	VZ352000	Trimmer Potentiometer	B 500 3P			01
ZD201	VG437700	Zener Diode	MTZ J 5.6B 5.6V			01
-204	VG437700	Zener Diode	MTZ J 5.6B 5.6V			01
ZD301	VG437700	Zener Diode	MTZ J 5.6B 5.6V			01
-304	VG437700	Zener Diode	MTZ J 5.6B 5.6V			01
ZD701	VG438900	Zener Diode	MTZ J 8.2B 8.2V			01
ZD702	VG437700	Zener Diode	MTZ J 5.6B 5.6V			01
*	AAX00030	Circuit Board	SUB7 1/5	J (XV420B0)		
*	AAX00040	Circuit Board	SUB7 1/5	U,V (XV420B0)		
*	AAX00050	Circuit Board	SUB7 1/5	H,W,B,A (XV420B0)		
*	AAX00060	Circuit Board	SUB7 2/5	(XV420B0)		
*	AAX00070	Circuit Board	SUB7 3/5	(XV420B0)		
*	AAX00080	Circuit Board	SUB7 4/5	(XV420B0)		
*	AAX00090	Circuit Board	SUB7 5/5	(XV420B0)		
	EP600140	Bind Head Tapping Screw-B	3.0X10 MFZN2BL			01
	VV319600	Fuse Holder	CQ-05CT			01
*	V2927500	Sheet Holder				
	VV291400	Jumper Wire	0.6			01
C101	VZ353300	Ceramic Capacitor-SL	56P 50V J			
C102	VZ353300	Ceramic Capacitor-SL	56P 50V J			
C103	VV062800	Mylar Capacitor	0.1 50V J			01
C104	VV062800	Mylar Capacitor	0.1 50V J			01
C105	VV062400	Mylar Capacitor	0.047 50V J			01
C106	VV062400	Mylar Capacitor	0.047 50V J			01
C107	VV061800	Mylar Capacitor	0.015 50V J			01
*	C108	VV062200	Mylar Capacitor	0.033 50V J		
C109	VZ353300	Ceramic Capacitor-SL	56P 50V J			
C110	VZ353300	Ceramic Capacitor-SL	56P 50V J			
C111	VV062800	Mylar Capacitor	0.1 50V J			01
C112	VV062800	Mylar Capacitor	0.1 50V J			01
C113	VV062400	Mylar Capacitor	0.047 50V J			01

\*: New parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C114	VV062400	Mylar Capacitor	0.047 50V J			01
C115	VV061800	Mylar Capacitor	0.015 50V J			01
C116	VV062200	Mylar Capacitor	0.033 50V J			01
C117	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
-126	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C127	UM417100	Electrolytic Cap.	10.00 50.0V			01
C128	UM417100	Electrolytic Cap.	10.00 50.0V			01
C129	UJ667470	Electrolytic Cap.	47.00 50.0V			01
C130	UJ667470	Electrolytic Cap.	47.00 50.0V			01
C131	VZ352800	Ceramic Capacitor-SL	22P 50V J			01
C132	VZ352800	Ceramic Capacitor-SL	22P 50V J			01
C401	UM416470	Electrolytic Cap.	4.70 50.0V			01
C402	VJ839100	Electrolytic Cap.	1.00 50.0V			01
C403	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C404	VJ839100	Electrolytic Cap.	1.00 50.0V			01
C405	VJ839100	Electrolytic Cap.	1.00 50.0V			01
C406	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C407	VJ839100	Electrolytic Cap.	1.00 50.0V			01
C501	VV314800	Capacitor	1000P 400V J.U.C.S			01
C502	VH520500	Electrolytic Cap.	1000 35.0V			01
-504	VH520500	Electrolytic Cap.	1000 35.0V			01
C505	VZ353900	Ceramic Cap.-B	1000P 50V K			01
C506	VV330700	Electrolytic Cap.	470.00 10.0V			01
C507	UJ667470	Electrolytic Cap.	47.00 25.0V			01
C508	UJ667470	Electrolytic Cap.	47.00 25.0V			01
C509	UM416470	Electrolytic Cap.	4.70 50.0V			01
C510	VZ004200	Mylar Capacitor	0.1000 100V M			01
C511	VZ004200	Mylar Capacitor	0.1000 100V M			01
C512	VZ354000	Ceramic Capacitor-F	0.0100 50V Z			01
C601	VZ004200	Mylar Capacitor	0.1000 100V M			01
C602	VZ004200	Mylar Capacitor	0.1000 100V M			01
C603	VZ012200	Ceramic Capacitor-B	0.001 500V K			01
C604	VZ012200	Ceramic Capacitor-B	0.001 500V K			01
C605	VZ004200	Mylar Capacitor	0.1000 100V M			01
C606	VZ004200	Mylar Capacitor	0.1000 100V M			01
C607	VZ012200	Ceramic Capacitor-B	0.001 500V K			01
C608	VZ012200	Ceramic Capacitor-B	0.001 500V K			01
C609	VZ004200	Mylar Capacitor	0.1000 100V M			01
C610	VZ004200	Mylar Capacitor	0.1000 100V M			01
C611	VZ012200	Ceramic Capacitor-B	0.001 500V K			01
C612	VZ012200	Ceramic Capacitor-B	0.001 500V K			01
C613	VZ004200	Mylar Capacitor	0.1000 100V M			01
C614	VZ004200	Mylar Capacitor	0.1000 100V M			01
C615	VZ012200	Ceramic Capacitor-B	0.001 500V K			01
C616	VZ012200	Ceramic Capacitor-B	0.001 500V K			01
D101	VD631600	Diode	1SS133,176,HSS104			01
-104	VD631600	Diode	1SS133,176,HSS104			01
D501	VU801600	Diode	1N4004L 26			01
-506	VU801600	Diode	1N4004L 26			01
D507	VD631600	Diode	1SS133,176,HSS104			01
D508	VU801600	Diode	1N4004L 26			01
D601	VU801600	Diode	1N4004L 26			01
E101	V2520600	Sheet Holder				01
F101	VS823400	Fuse	T 10.00A JUC	J		01
F101	VV314500	Fuse	SIC(TL) 7.00A JU	U,V		01
F101	VV071700	Fuse	TSD 3.15A 250V SEM	H,W,B,A		01
F102	VV070300	Fuse	TDS 1A 250V J/U/C	J,U,V		01
F102	VV071200	Fuse	TSD 1A 250V SEMKO	H,W,B,A		01
F103	VV070300	Fuse	TDS 1A 250V J/U/C	J,U,V		01
F103	VV071200	Fuse	TSD 1A 250V SEMKO	H,W,B,A		01
L601	GD900470	Coil	RZ-001 1.5UH			01
-604	GD900470	Coil	RZ-001 1.5UH			01
Q401	V2797700	Transistor	2SC5395 E,F			01
Q402	VD678500	Digital Transistor	DTA114ES			01
Q403	VD678500	Digital Transistor	DTA114ES			01
Q404	VD678700	Digital Transistor	DTC114ES			01
Q405	V2797700	Transistor	2SC5395 E,F			01
Q406	VD678500	Digital Transistor	DTA114ES			01
Q407	VD678500	Digital Transistor	DTA114ES			01
Q408	VD678700	Digital Transistor	DTC114ES			01

\*: New parts

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REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
Q409	<b>VD678500</b>	Digital Transistor	DTA114ES		01
Q501	<b>V2797600</b>	Transistor	2SA1993 E,F		01
Q502	<b>V2797700</b>	Transistor	2SC5395 E,F		01
-504	<b>V2797700</b>	Transistor	2SC5395 E,F		01
Q505	<b>V2797600</b>	Transistor	2SA1993 E,F		01
Q506	<b>V2797700</b>	Transistor	2SC5395 E,F		01
Q507	<b>V2797700</b>	Transistor	2SC5395 E,F		01
Q508	<b>V2797600</b>	Transistor	2SA1993 E,F		01
Q509	<b>V2797700</b>	Transistor	2SC5395 E,F		01
Q510	<b>VD678500</b>	Digital Transistor	DTA114ES		01
R101	<b>VZ009900</b>	Metal Film Resistor	15K 1/4 F		01
-104	<b>VZ009900</b>	Metal Film Resistor	15K 1/4 F		01
R105	<b>HF454180</b>	Carbon Resistor	18.0 1/4 J		01
R106	<b>V2440500</b>	Metal Film Resistor	27K 1/4 F		01
* R107	<b>V3028900</b>	Metal Film Resistor	56K 1/4 F		01
R108	<b>HF454180</b>	Carbon Resistor	18.0 1/4 J		01
R109	<b>V2440500</b>	Metal Film Resistor	27K 1/4 F		01
* R110	<b>V3028900</b>	Metal Film Resistor	56K 1/4 F		01
R111	<b>HF454180</b>	Carbon Resistor	18.0 1/4 J		01
* R112	<b>V3029000</b>	Metal Film Resistor	1K 1/4 F		01
* R113	<b>V3029000</b>	Metal Film Resistor	1K 1/4 F		01
R114	<b>V2348800</b>	Metal Film Resistor	100K 1/4 F		01
R115	<b>HF454180</b>	Carbon Resistor	18.0 1/4 J		01
R116	<b>VV065200</b>	Metal Film Resistor	4.7K 1/4 F		05
-118	<b>VV065200</b>	Metal Film Resistor	4.7K 1/4 F		05
R119	<b>HF454180</b>	Carbon Resistor	18.0 1/4 J		01
R120	<b>VZ009900</b>	Metal Film Resistor	15K 1/4 F		01
-123	<b>VZ009900</b>	Metal Film Resistor	15K 1/4 F		01
R124	<b>HF454180</b>	Carbon Resistor	18.0 1/4 J		01
R125	<b>V2440500</b>	Metal Film Resistor	27K 1/4 F		01
* R126	<b>V3028900</b>	Metal Film Resistor	56K 1/4 F		01
R127	<b>HF454180</b>	Carbon Resistor	18.0 1/4 J		01
R128	<b>V2440500</b>	Metal Film Resistor	27K 1/4 F		01
* R129	<b>V3028900</b>	Metal Film Resistor	56K 1/4 F		01
R130	<b>HF454180</b>	Carbon Resistor	18.0 1/4 J		01
* R131	<b>V3029000</b>	Metal Film Resistor	1K 1/4 F		01
* R132	<b>V3029000</b>	Metal Film Resistor	1K 1/4 F		01
R133	<b>V2348800</b>	Metal Film Resistor	100K 1/4 F		01
R134	<b>HF454180</b>	Carbon Resistor	18.0 1/4 J		01
R135	<b>VV065200</b>	Metal Film Resistor	4.7K 1/4 F		05
-137	<b>VV065200</b>	Metal Film Resistor	4.7K 1/4 F		05
R138	<b>HF454180</b>	Carbon Resistor	18.0 1/4 J		01
R139	<b>HF456470</b>	Carbon Resistor	4.7K 1/4 J		01
-401	<b>HF456470</b>	Carbon Resistor	4.7K 1/4 J		01
R402	<b>HF457100</b>	Carbon Resistor	10.0K 1/4 J		01
R403	<b>HF455220</b>	Carbon Resistor	220.0 1/4 J		01
R404	<b>HF456470</b>	Carbon Resistor	4.7K 1/4 J		01
R405	<b>HF455220</b>	Carbon Resistor	220.0 1/4 J		01
R406	<b>HF456470</b>	Carbon Resistor	4.7K 1/4 J		01
R407	<b>HF457100</b>	Carbon Resistor	10.0K 1/4 J		01
R408	<b>HF455220</b>	Carbon Resistor	220.0 1/4 J		01
R409	<b>HF456470</b>	Carbon Resistor	4.7K 1/4 J		01
R410	<b>HF455220</b>	Carbon Resistor	220.0 1/4 J		01
R411	<b>HF457820</b>	Carbon Resistor	82.0K 1/4 J		01
R412	<b>HF456120</b>	Carbon Resistor	1.2K 1/4 J		01
-423	<b>HF456120</b>	Carbon Resistor	1.2K 1/4 J		01
R501	<b>HF457220</b>	Carbon Resistor	22.0K 1/4 J		01
R502	<b>HF857470</b>	Carbon Resistor	47.0K 1/4 J		01
R503	<b>HF458150</b>	Carbon Resistor	150.0K 1/4 J		01
R504	<b>HF457100</b>	Carbon Resistor	10.0K 1/4 J		01
R505	<b>HF857560</b>	Carbon Resistor	56.0K 1/4 J		01
R506	<b>HF858100</b>	Carbon Resistor	100.0K 1/4 J		01
R507	<b>HF457100</b>	Carbon Resistor	10.0K 1/4 J		01
R508	<b>HF457100</b>	Carbon Resistor	10.0K 1/4 J		01
R509	<b>HF857560</b>	Carbon Resistor	56.0K 1/4 J		01
R510	<b>HF457680</b>	Carbon Resistor	68.0K 1/4 J		01
R511	<b>HF456120</b>	Carbon Resistor	1.2K 1/4 J		01
R512	<b>HF457150</b>	Carbon Resistor	15.0K 1/4 J		01
R513	<b>HF456220</b>	Carbon Resistor	2.2K 1/4 J		01
R601	<b>V2961000</b>	Metal Oxide Film Resistor	4.7 2W J		01

\*: New parts

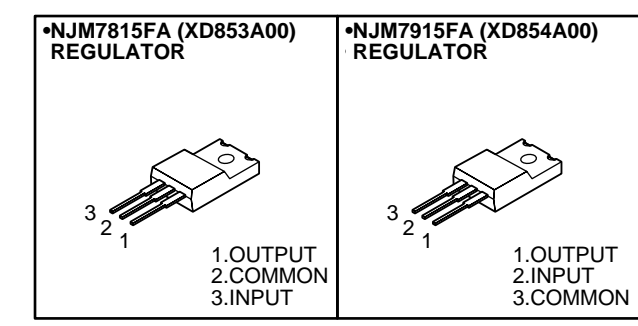
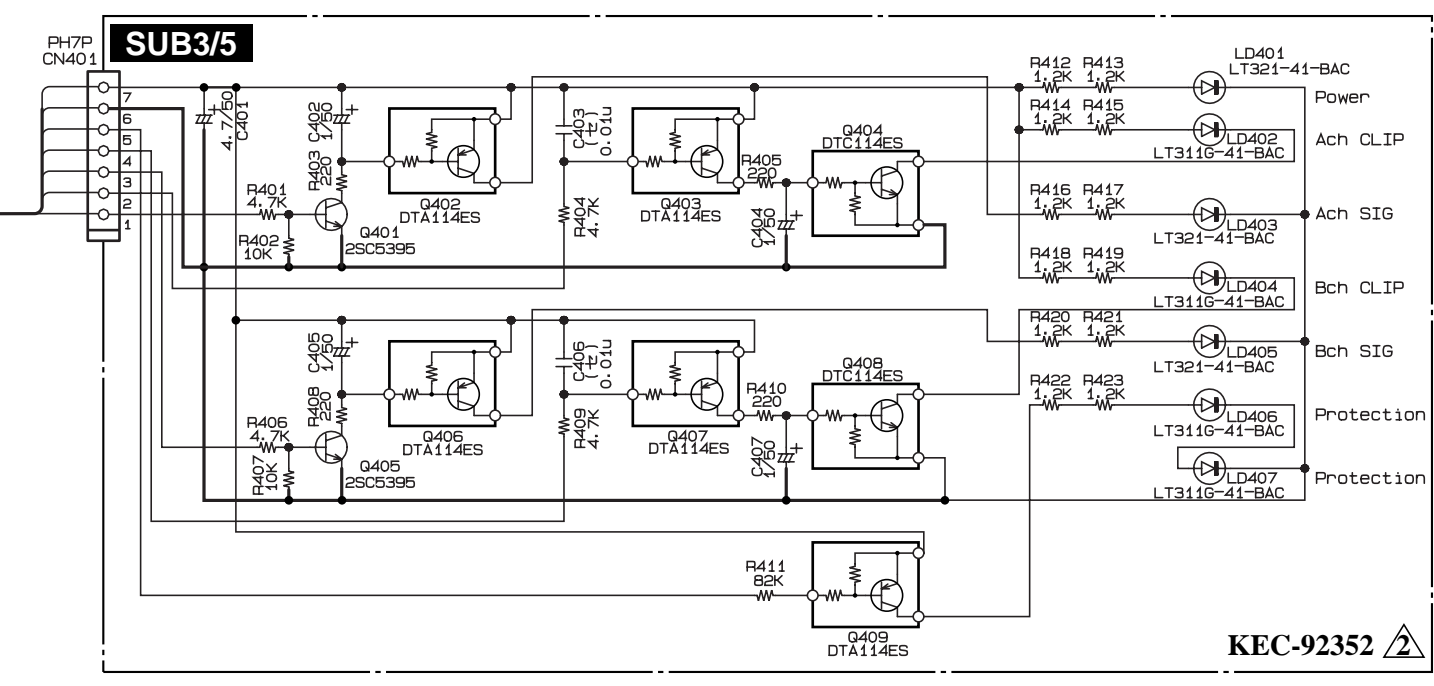
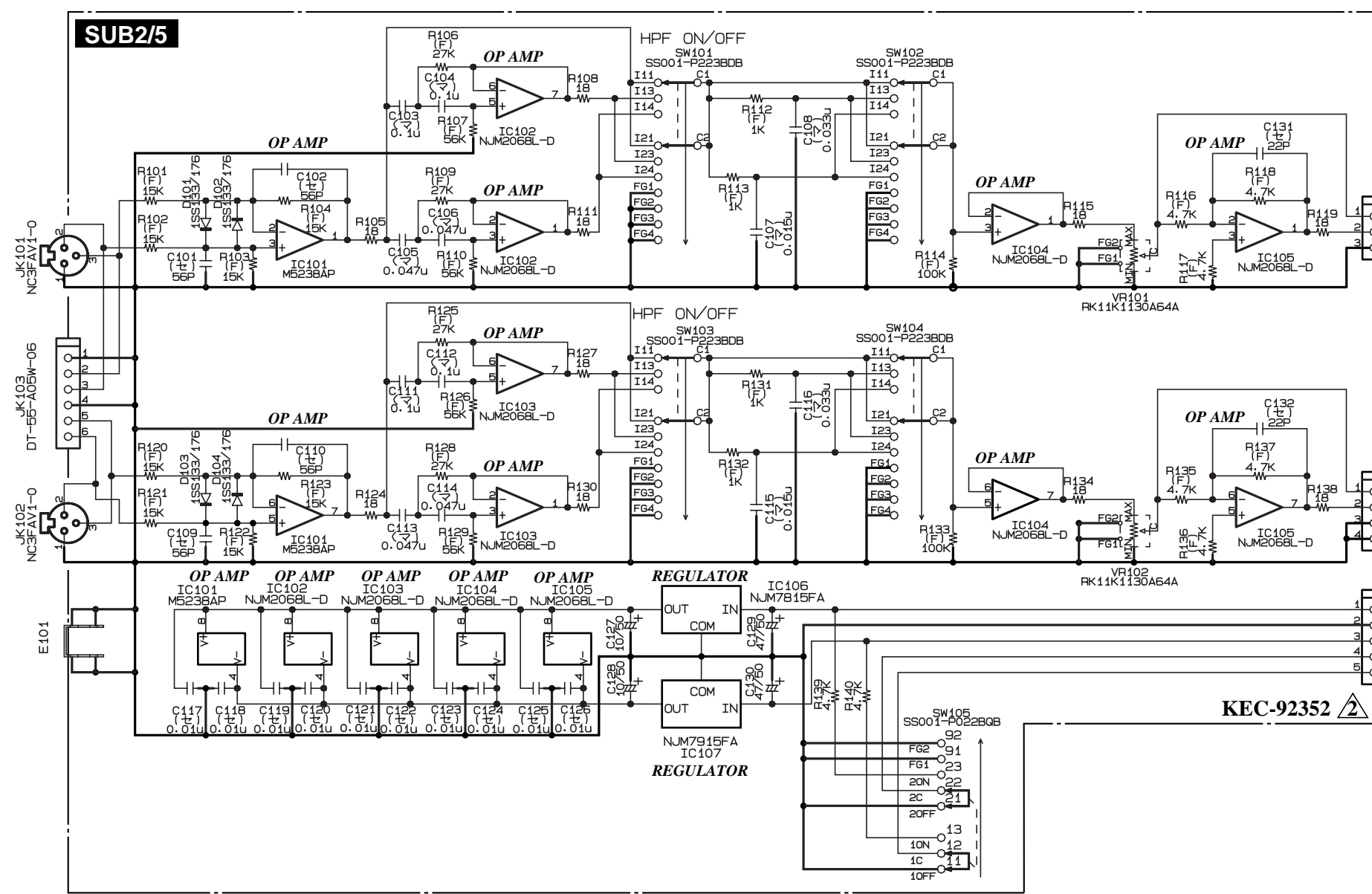
RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R602	V2961000	Metal Oxide Film Resistor	4.7 2W J			01
R603	VV276700	Flame Proof C. Resistor	4.7 1/4 J			01
R604	V2961000	Metal Oxide Film Resistor	4.7 2W J			
R605	V2961000	Metal Oxide Film Resistor	4.7 2W J			
R606	VV276700	Flame Proof C. Resistor	4.7 1/4 J			01
R607	V2961000	Metal Oxide Film Resistor	4.7 2W J			
R608	V2961000	Metal Oxide Film Resistor	4.7 2W J			
R609	VV276700	Flame Proof C. Resistor	4.7 1/4 J			01
R610	V2961000	Metal Oxide Film Resistor	4.7 2W J			
R611	V2961000	Metal Oxide Film Resistor	4.7 2W J			
R612	VV276700	Flame Proof C. Resistor	4.7 1/4 J			01
R613	HF457270	Carbon Resistor	27.0K 1/4 J			01
R614	HF457270	Carbon Resistor	27.0K 1/4 J			01
W501	--	Connector Assembly	AC1	(V295030)		
W502	--	Connector Assembly	AC2	(V295040)		
CN101	VV067700	Connector Base Post	M2426XXR 3P SE			
CN102	VV067800	Connector Base Post	M2426XXR 4P SE			
CN103	VV067900	Connector Base Post	M2426XXR 5P SE			
CN401	VV066700	Connector Base Post	M2426XX 7P TE			01
CN501	VZ005700	Fasten Terminal	TP82223-22			01
-506	VZ005700	Fasten Terminal	TP82223-22			01
CN507	LB932030	Base Post Connector	VH- 3P TE			01
CN508	VV066500	Connector Base Post	M2426XX 5P TE			01
CN509	VV066800	Connector Base Post	M2426XX 8P TE			01
CN510	LB932020	Base Post Connector	VH- 2P TE			01
CN601	LB933030	Base Post Connector	VH- 3P SE			01
CN602	LB933020	Base Post Connector	VH- 2P SE			01
CN603	VV067800	Connector Base Post	M2426XXR 4P SE			
IC101	XM085A00	IC	M5238AP	OP AMP		03
IC102	XM356A00	IC	NJM2068L-D	OP AMP		02
-105	XM356A00	IC	NJM2068L-D	OP AMP		02
IC106	XD853A00	IC	NJM7815FA	REGULATOR		03
IC107	XD854A00	IC	NJM7915FA	REGULATOR		03
JK101	VU805200	XLM Connector	XLR JACK NC3FAV1-0	INPUT CHANNEL A		04
JK102	VU805200	XLM Connector	XLR JACK NC3FAV1-0	INPUT CHANNEL B		04
JK103	V2472100	Lug Terminal	DT-55-A05W-06	INPUT		
LD401	VV621000	LED	LT321-41-C13 GR	POWER		01
LD402	VV620800	LED	LT311G-41-C13 RE	A.CLIP		01
LD403	VV621000	LED	LT321-41-C13 GR	A.SIG		01
LD404	VV620800	LED	LT311G-41-C13 RE	B.CLIP		01
LD405	VV621000	LED	LT321-41-C13 GR	B.SIG		01
LD406	VV620800	LED	LT311G-41-C13 RE	PROTECTION		01
LD407	VV620800	LED	LT311G-41-C13 RE	PROTECTION		01
RY601	VV315400	Relay	DC OSA-SH-224DM3M			06
RY602	VV315400	Relay	DC OSA-SH-224DM3M			06
* SP601	V2945900	Lug Terminal	DT-55-A05W-04	SPEAKERS CHANNEL A,B		
SW101	V2802500	Slide Switch	SS001-P223BDB-PA14	FILTER CHANNEL A LOW CUT		
SW102	V2802500	Slide Switch	SS001-P223BDB-PA14	FILTER CHANNEL A HIGH CUT		
SW103	V2802500	Slide Switch	SS001-P223BDB-PA14	FILTER CHANNEL B LOW CUT		
SW104	V2802500	Slide Switch	SS001-P223BDB-PA14	FILTER CHANNEL B HIGH CUT		
* SW105	V2802400	Slide Switch	SS001-P022BQB-PA14	OUTPUT VOLTAGE		
SW501	VY898100	Push Switch	SDDFA3107U-YL UCS	POWER SWITCH		05
VR101	V2479500	Rotary Variable Resistor	A 5K RK11K113	CHANNEL A		
VR102	V2479500	Rotary Variable Resistor	A 5K RK11K113	CHANNEL B		
ZD501	VG437700	Zener Diode	MTZ J 5.6B 5.6V			01
*	V2943900	AC Cord	J VCTF 1.25X2 12A	J		06
*	VZ021200	AC Cord	UC SJT 3X#18 10A	U,V		
*	V2944000	AC Cord	H H05VV-F0.75X3 6A	H,W,A		08
*	VZ021600	AC Cord	BS H05VV-F 13A	B		01
*	XU906B00	Power Transformer		J		
*	XU907A00	Power Transformer		U,V		
*	XU908B00	Power Transformer		H,W,B		
*	XU909B00	Power Transformer		A		01
	V2945700	Fan	KDE2412PMS3-6A/A47			01

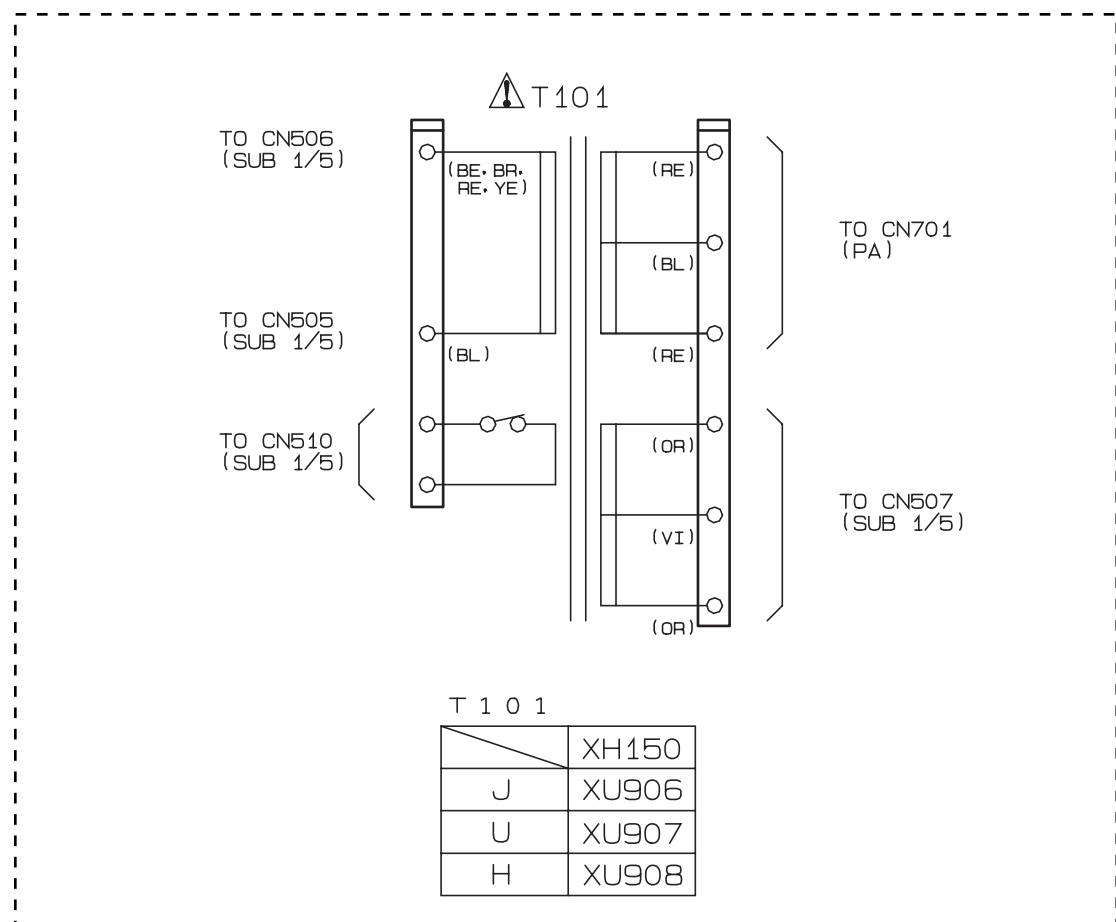
\*: New parts

RANK: Japan only

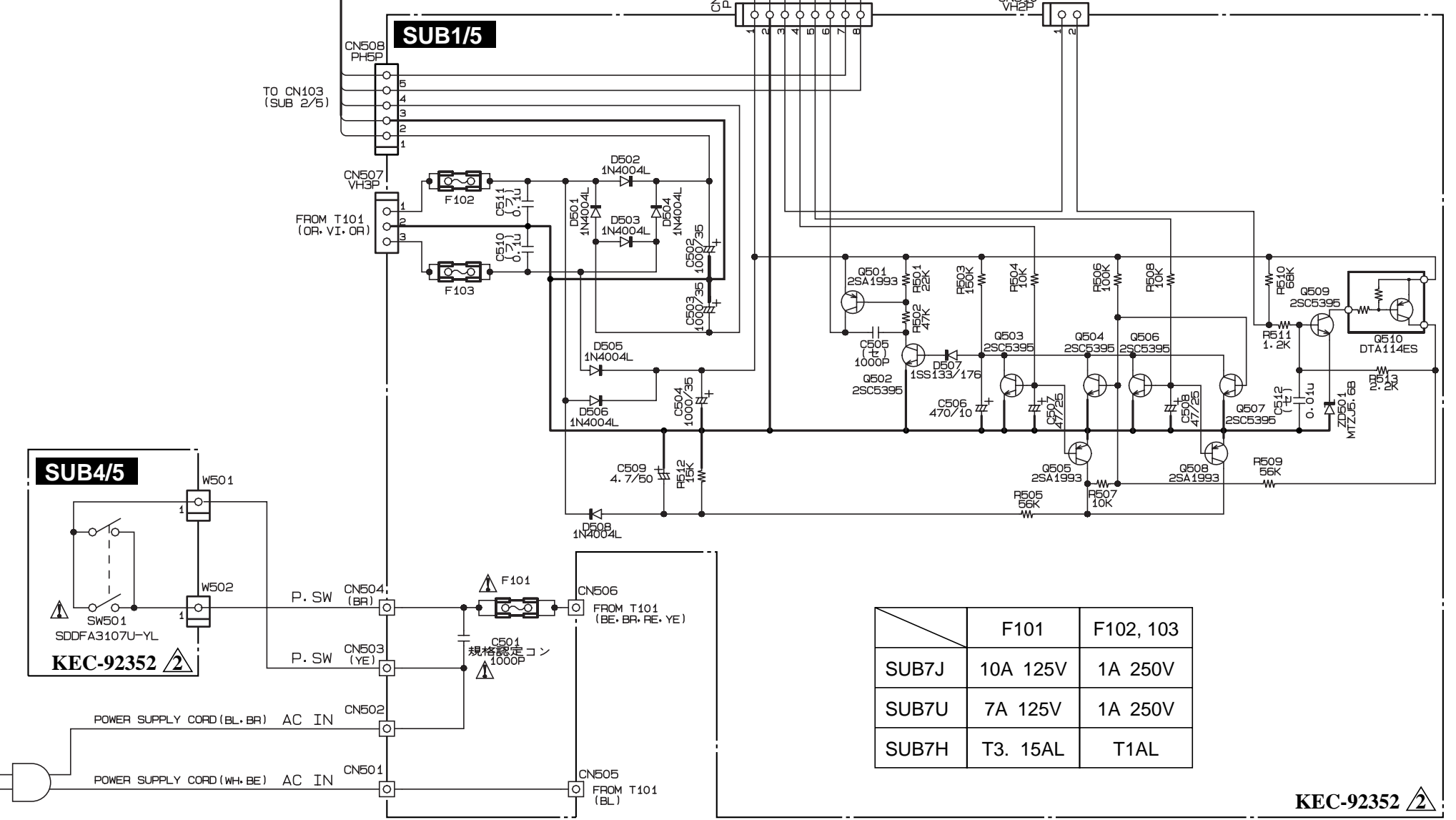
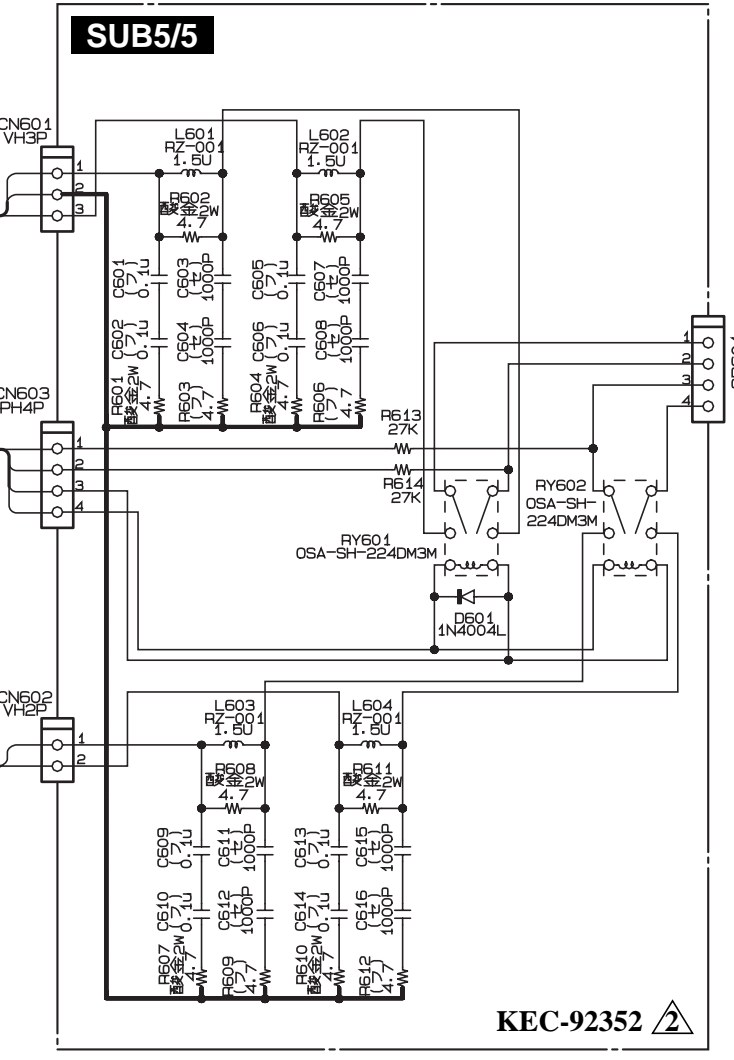
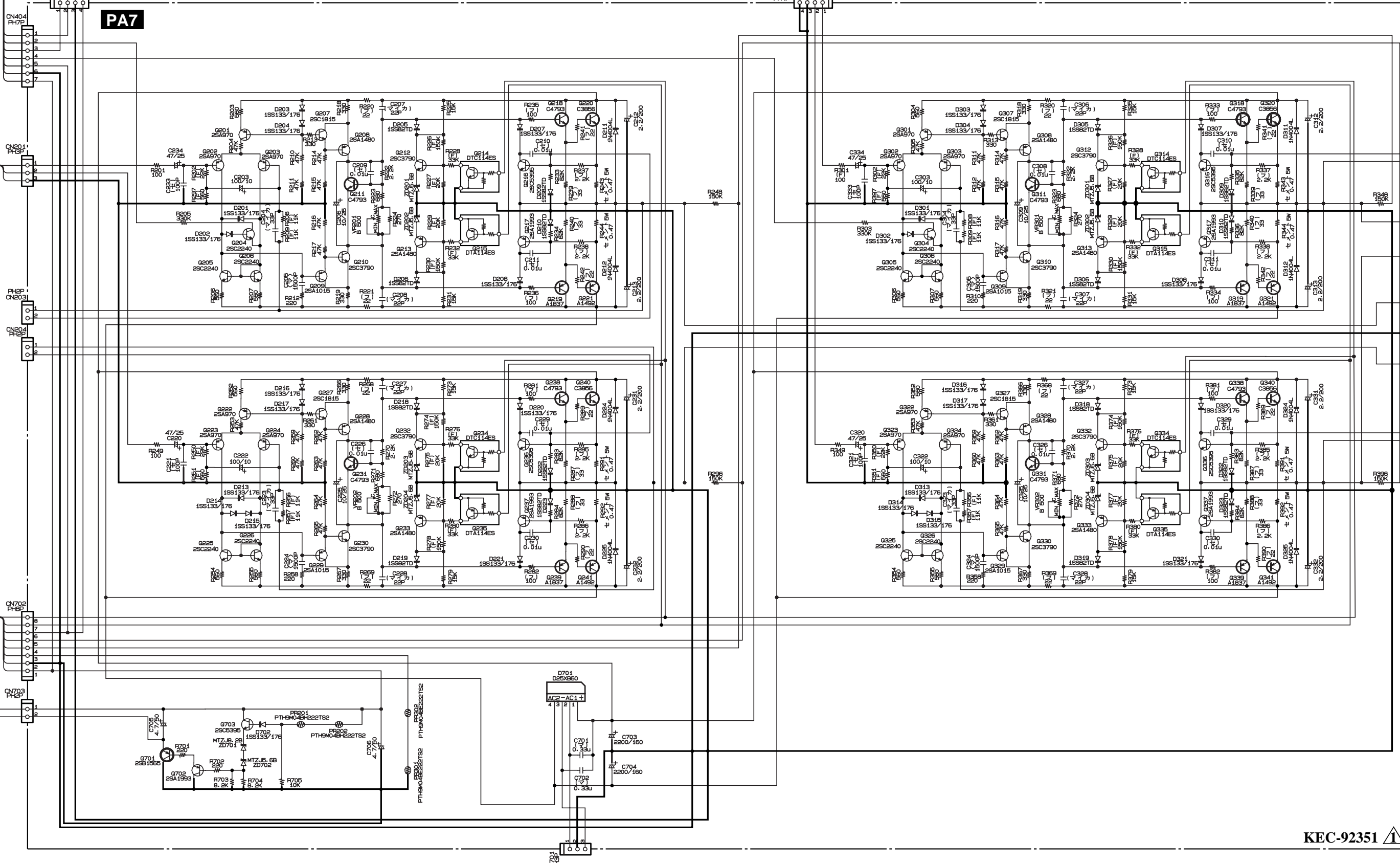




- Capactor (フ): Mylar Capacitor  
 (マ): Mylar Capacitor  
 (セ): Ceramic Capacitor  
 (マイカ): Mica Capacitor
- Resistor (フ): Flame Proof C. Resistor  
 (セメント): Wire Wound Resistor  
 酸金: Metal Oxide Film Resistor



T 1 0 1	XH150
J	XU906
U	XU907
H	XU908



F101	F102, 103
SUB7J	10A 125V 1A 250V
SUB7U	7A 125V 1A 250V
SUB7H	T3. 15AL T1AL