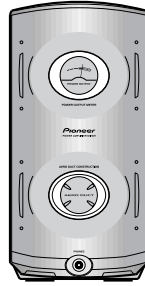


# Service Manual

Pioneer



ORDER NO.  
RRV2143

## STEREO POWER AMPLIFIER M-IS21

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	M-IS21		
KUCXJ	○	AC120V	

- This product is a component of a system.  
For the accessories, instruction manuals etc., refer to the service manuals RRV2149 for XC-IS21MD and RRV2148 for XC-IS21T.
- This product does not function properly when independent; to avoid malfunctions, be sure to connect it to the prescribed system component(s), otherwise damage may result.

Component	System		Service Manual	Remarks
	IS-21MD	IS-21T		
CD MD TUNER	XC-IS21MD	—	RRV2149	
CD TUNER DECK	—	XC-IS21T	RRV2148	
STEREO POWER AMPLIFIER	M-IS21	M-IS21	RRV2143	This Service Manual
SPEAKER SYSTEM	S-IS21	S-IS21	RRV2141	

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# 1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

## WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65



## NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

## REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

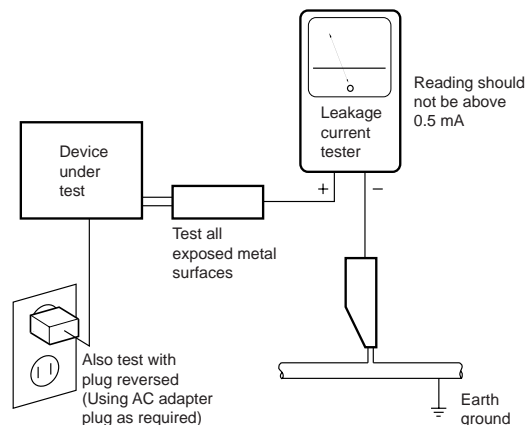
## (FOR USA MODEL ONLY)

### 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

#### LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

**ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.**

### 2. PRODUCT SAFETY NOTICE



Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a  $\Delta$  on the schematics and on the parts list in this Service Manual.

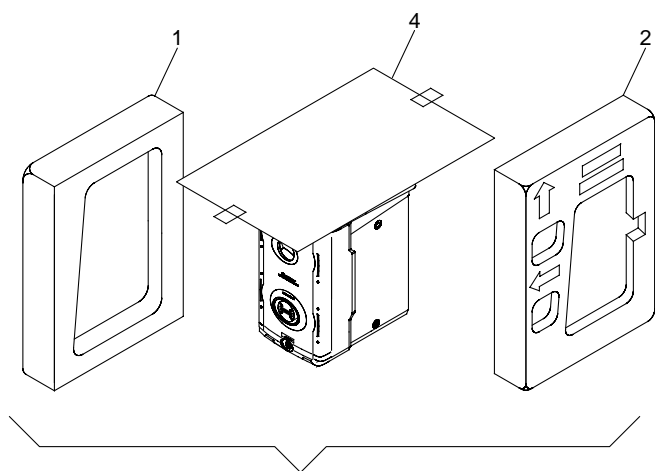
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

## 2. EXPLODED VIEWS AND PARTS LIST

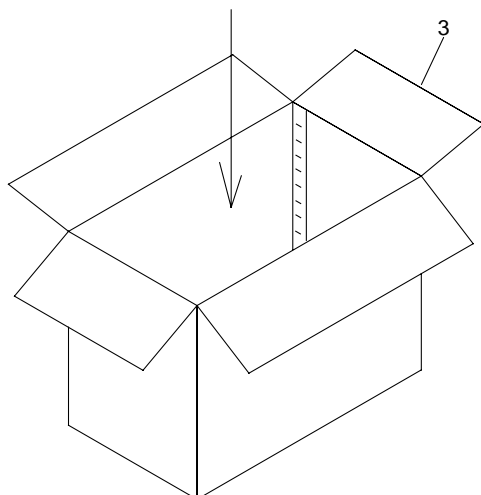
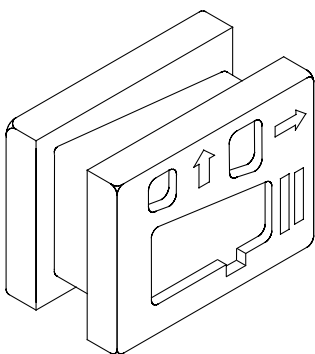
- NOTES:
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
  - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
  - Screws adjacent to  mark on product are used for disassembly.

### 2.1 PACKING

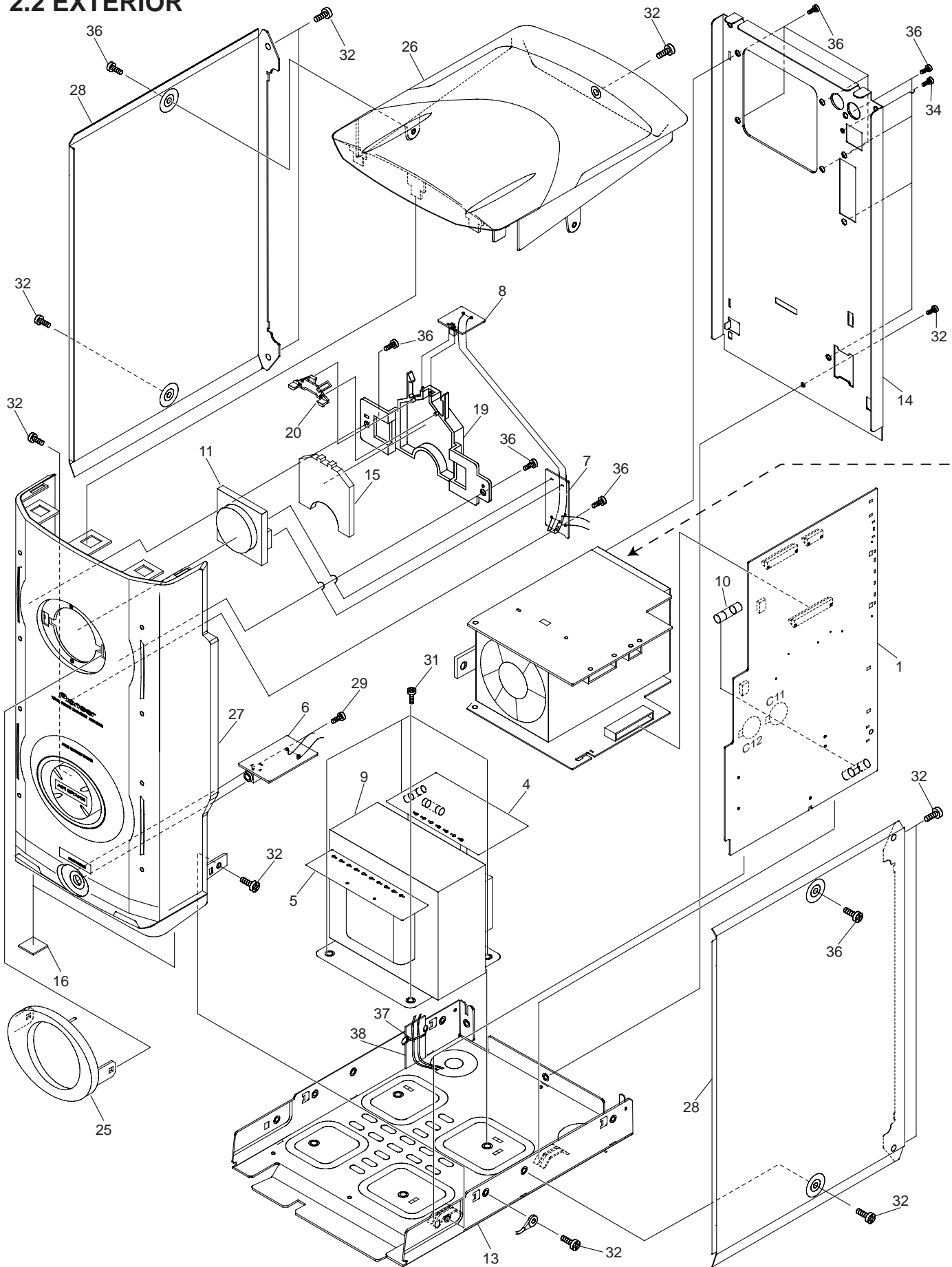


#### ● PACKING PARTS LIST

Mark	No.	Description	Part No.
	1	Side Pad AL	AHA7238
	2	Side Pad AR	AHA7239
	3	Packing Case AMP MY	AHD7748
	4	Packing Sheet	AHG7053



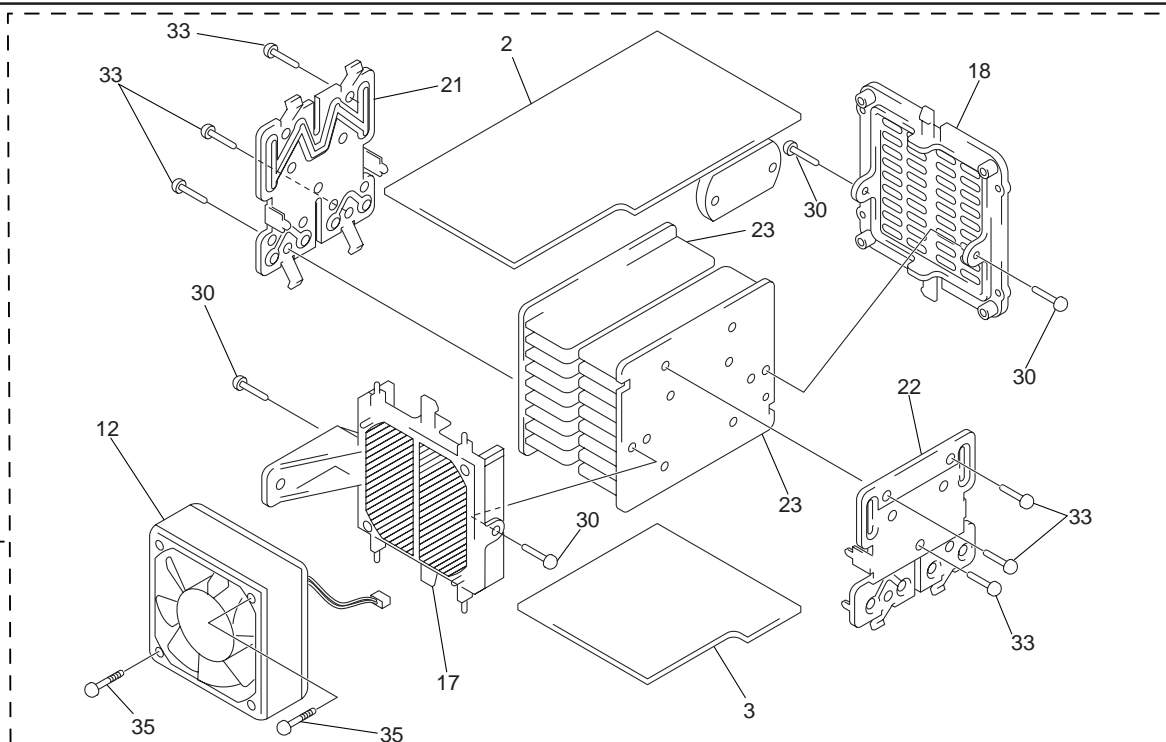
2.2 EXTERIOR



Caution when disassemble.

Even if the power supply code is pulled out from the outlet, neither C11 nor C12 of AF ASSY are discharged.

Please discharge C11 and C12 of AF ASSY by the resistor of 100 Ω or more before removing AF ASSY or POWER SUPPLY ASSY. There is a possibility to destroy the transistor, and Please discharge by the resistor of 100 Ω or more.



● EXTERIOR PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	AF Assy	AWU7343	21	Holder	ANG7009	
	2	AMP Assy	AWU7342	22	Power PAC Holder	ANG7109	
	3	POWER SUPPLY Assy	AWU7344	23	Heat Sink	ANH7058	
NSP	4	PRIMARY Assy	AWU7348	24	•••••		
NSP	5	SECONDARY Assy	AWU7350	25	Escutcheon A	AAK7617	
	6	HP Assy	AWU7352	26	Top Panel	AAN7192	
	7	METER Assy	AWU7353	27	Front Panel A	AMB7564	
	8	METER CONNECT Assy	AWU7356	28	Side Bonnet	ANE7242	
	9	Power Transformer	ATS7250	29	Screw With Washer	ABA1005	
△	10	Fuse (FU1 : 5A)	REK1067	30	Screw	ABA1021	
	11	VU Meter	AAW7002	31	Screw	FBT40P060FZK	
	12	DC FAN Motor	AXM7003	32	Screw	BBZ30P080FMC	
NSP	13	Chassis A	ANA7086	33	Screw	BBZ30P180FMC	
	14	Rear Panel	ANC7824	34	Screw	BMZ30P060FZK	
	15	Lens A	AAK7614	35	Screw	BPZ30P350FZK	
	16	Rubber Sheet	AEB1111	36	Screw	VPZ30P080FMC	
	17	Mold A	AMR7005	37	Binder	ZCA-SKB90BK	
	18	Mold B	AMR7006	NSP 38	BIND Assy	AWU7349	
	19	Lens Holder A	AMR7245				
	20	Reflector	AMR7248				

Caution :

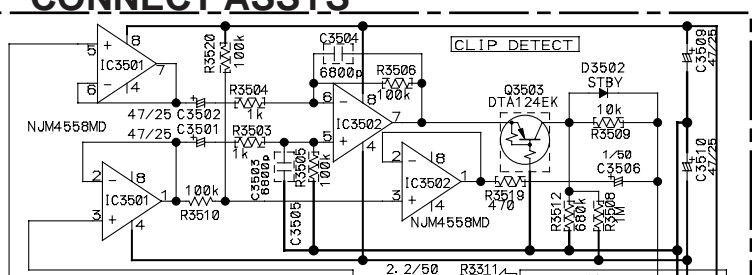
Be careful when No.10 Fuse(FU1:5A) is exchanged.

Please remove No.32 Screw of Rear Panel, remove No.1 AF Assy backward with No.14 Rear Panel, and exchange No.10 Fuse(FU1:5A). (Fuse Caution is displayed in SIDE B of No.1 AF Assy. )

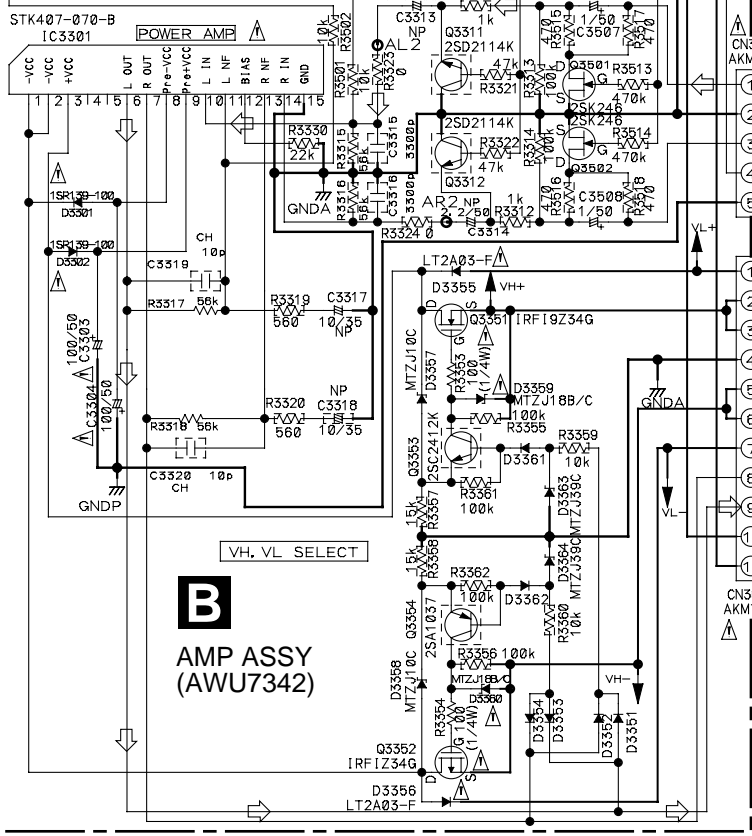
# 3. SCHEMATIC DIAGRAM

## 3.1 AF, AMP, POWER SUPPLY, PRIMARY, SECONDARY, HP, METER and METER CONNECT ASSYS

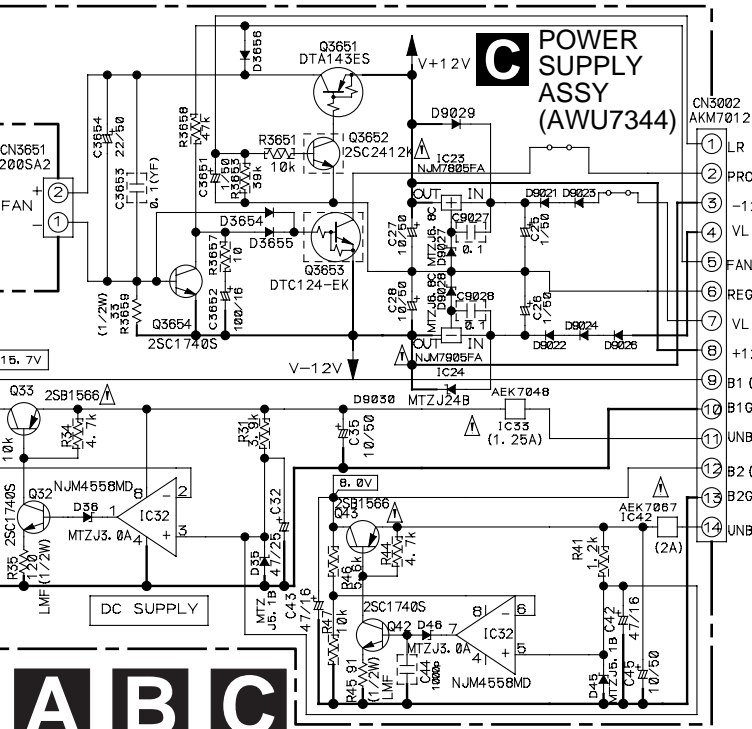
A



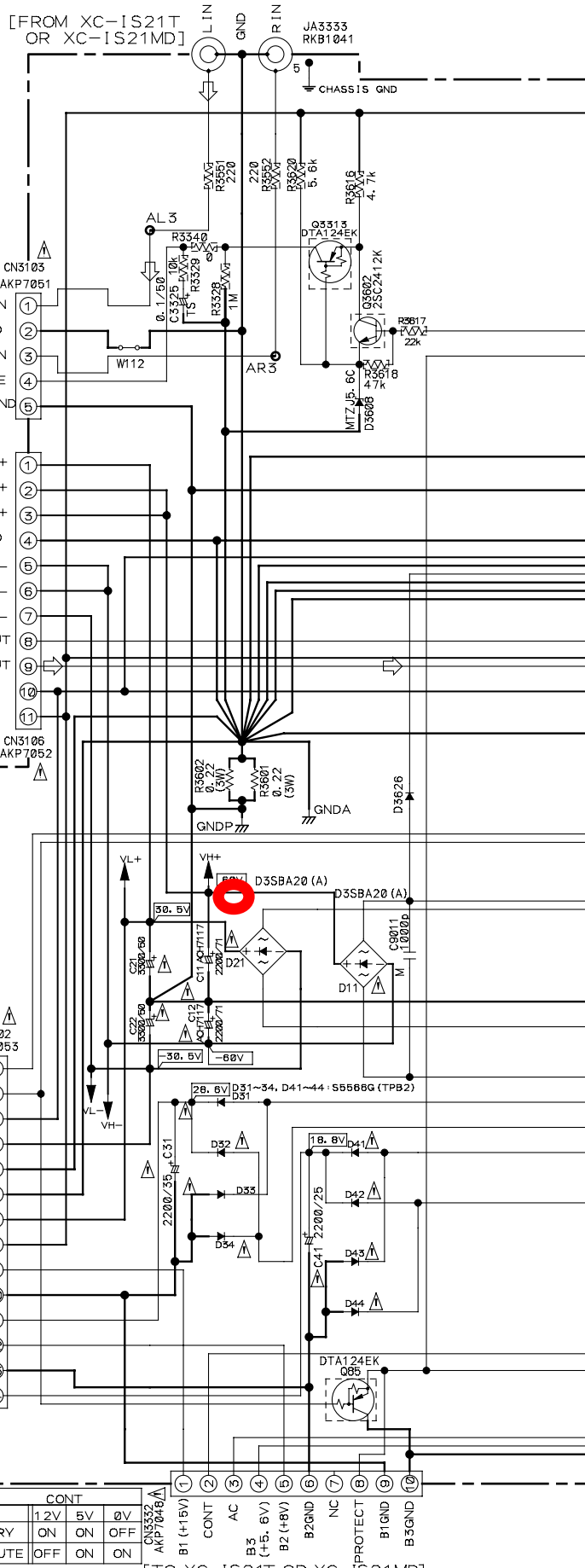
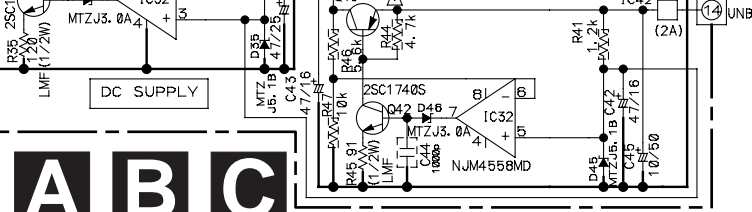
B



C



D



CONT			
RY	ON	ON	OFF
MUTE	OFF	ON	ON

6 **A B C**

1

2

3

4



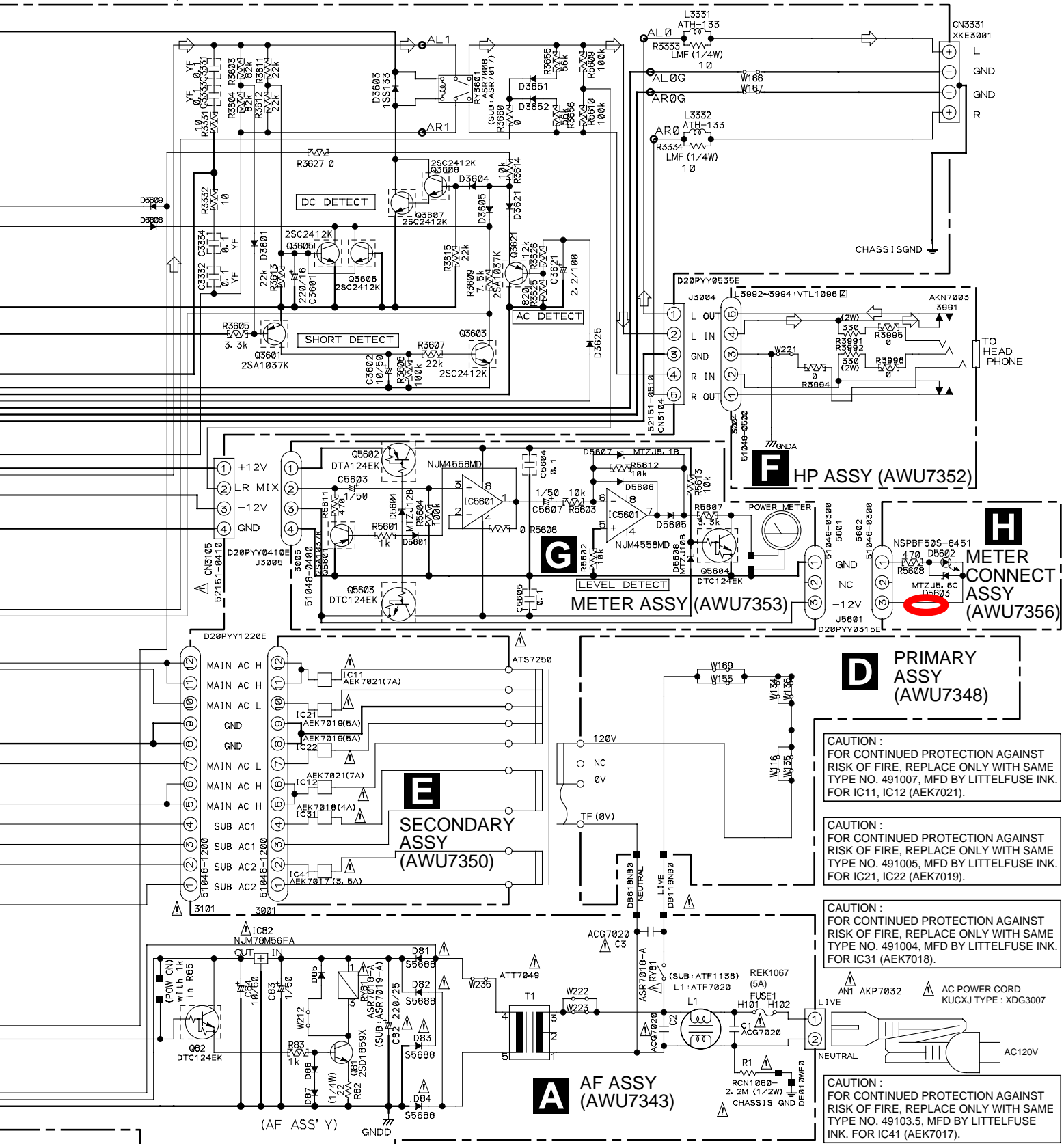
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. 491002F, MFD BY LITTELFUSE INK. FOR IC42 (AEK7067).

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. 4911.25, MFD BY LITTELFUSE INK. FOR IC33 (AEK7048).

⇨ : AUDIO SIGNAL ROUTE

Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST"

- NOTES
1. RESISTORS Indicated in Ω, 1/10W±5% tolerance unless otherwise noted k:kΩ, M:MΩ.
  2. CAPACITORS Indicated in capacity (μF)/voltage (V) unless otherwise noted p:pF.
  3. DIODES No mark diode is 1SS133.



NOTE FOR FUSE REPLACEMENT  
**CAUTION** -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE AND RATINGS ONLY.

**A D E F G H**







4.3 AF ASSY

A

B

C

D

XC-IS21MD  
or XC-IS21T

IC3302

IC82  
IC81  
Q81

**A**  
AF  
ASSY

L BROWN

N BLUE

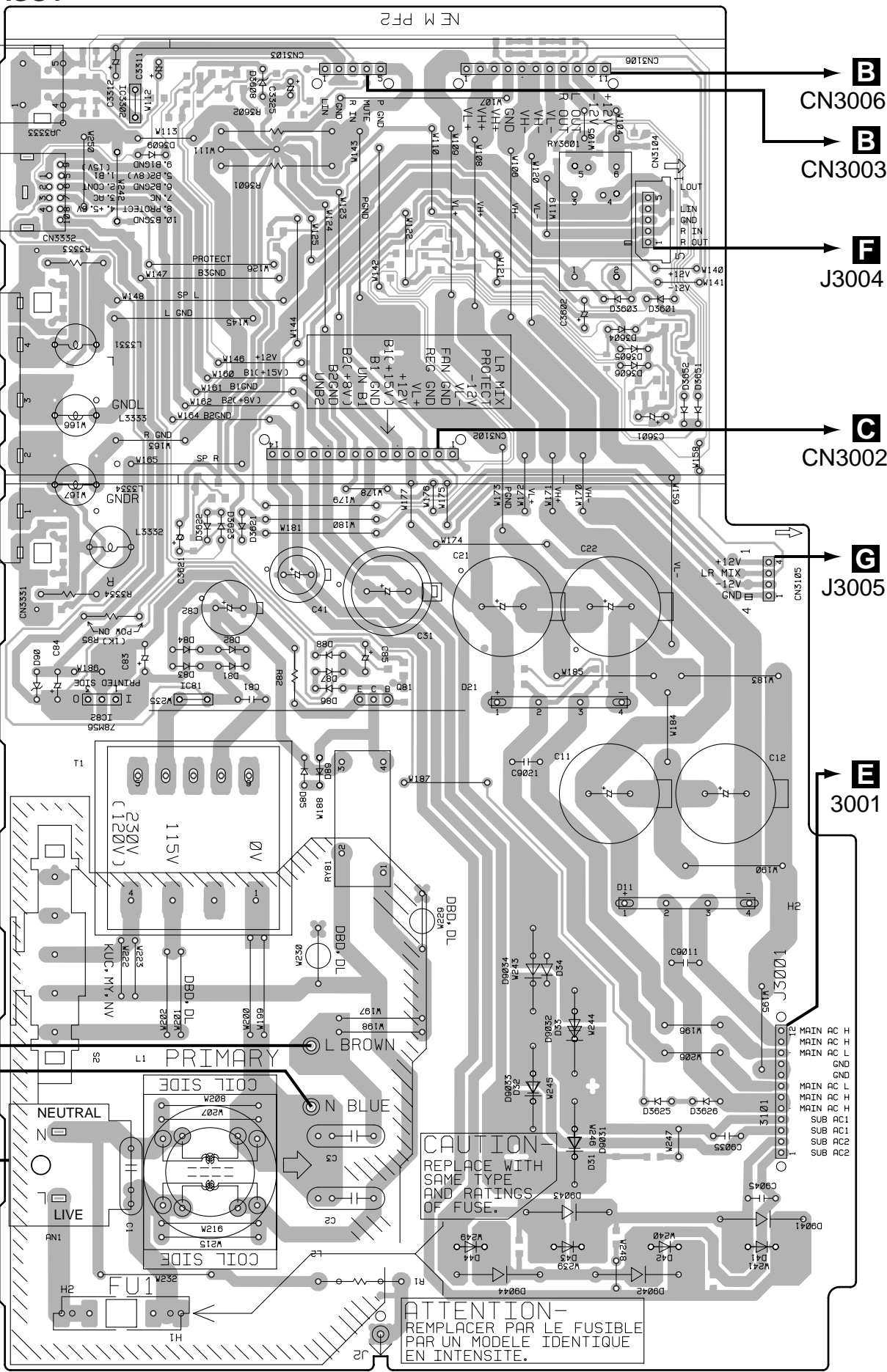
AC IN

**SIDE A**

(ANP7300-C)

10

**A**



**B**  
CN3006

**B**  
CN3003

**F**  
J3004

**C**  
CN3002

**G**  
J3005

**E**  
3001

**CAUTION**  
REPLACE WITH  
SAME TYPE  
AND RATINGS  
OF FUSE.

**ATTENTION**  
REPLACER PAR LE FUSIBLE  
PAR UN MODELE IDENTIQUE  
EN INTENSITE.

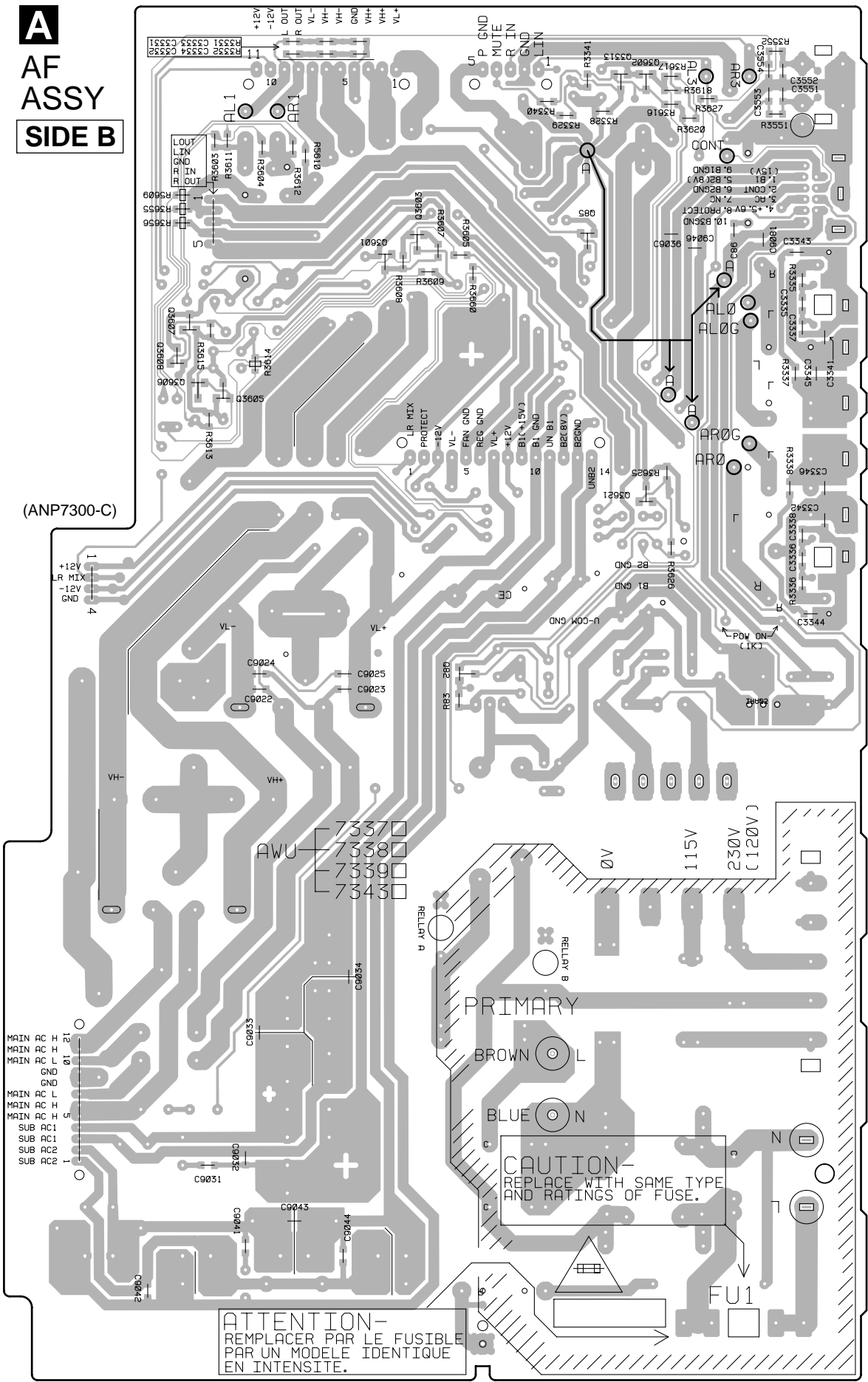
1

2

3

4

**A**  
AF  
ASSY  
SIDE B



- Q3313
- Q3602
- Q85
- Q3603
- Q3601
- Q3607
- Q3608
- Q3606
- Q3605
- Q3621
- Q82

ATTENTION-  
REPLACER PAR LE FUSIBLE  
PAR UN MODELE IDENTIQUE  
EN INTENSITE.

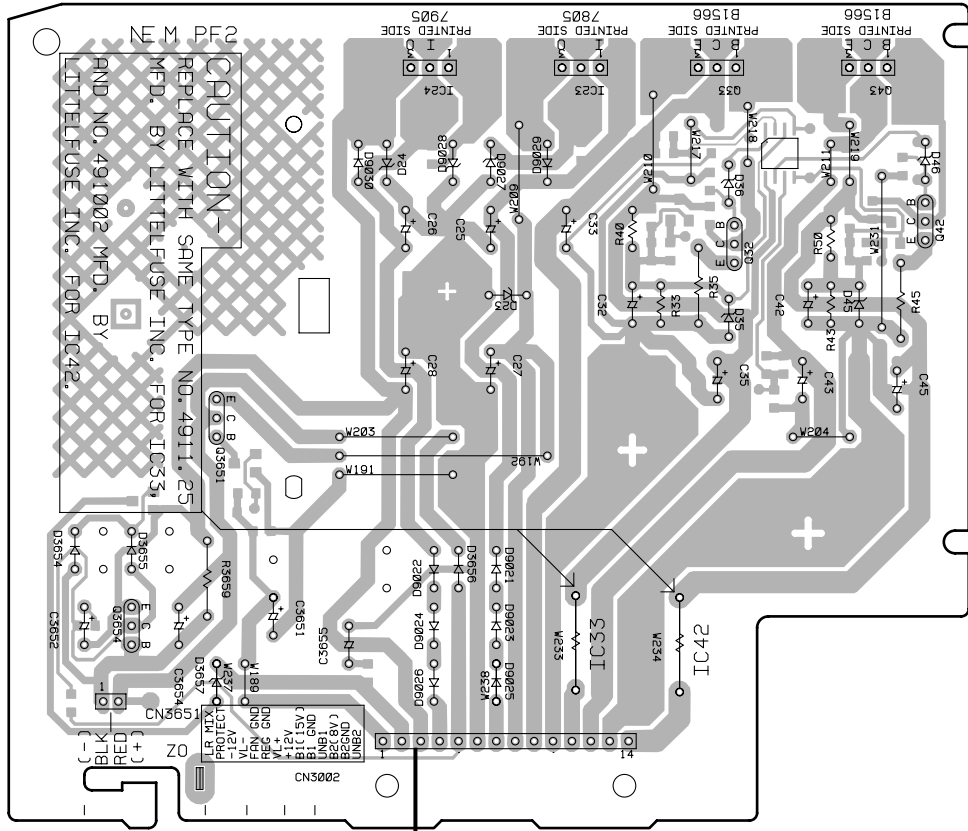
CAUTION-  
REPLACE WITH SAME TYPE  
AND RATINGS OF FUSE.

- MAIN AC H 20
- MAIN AC H 10
- MAIN AC L 10
- GND
- GND
- MAIN AC L 5
- MAIN AC H 5
- SUB AC1 5
- SUB AC1 1
- SUB AC2 1
- SUB AC2 1

- 7337
- 7338
- 7339
- 7343

### 4.4 AMP and POWER SUPPLY ASSYS

## C POWER SUPPLY ASSY



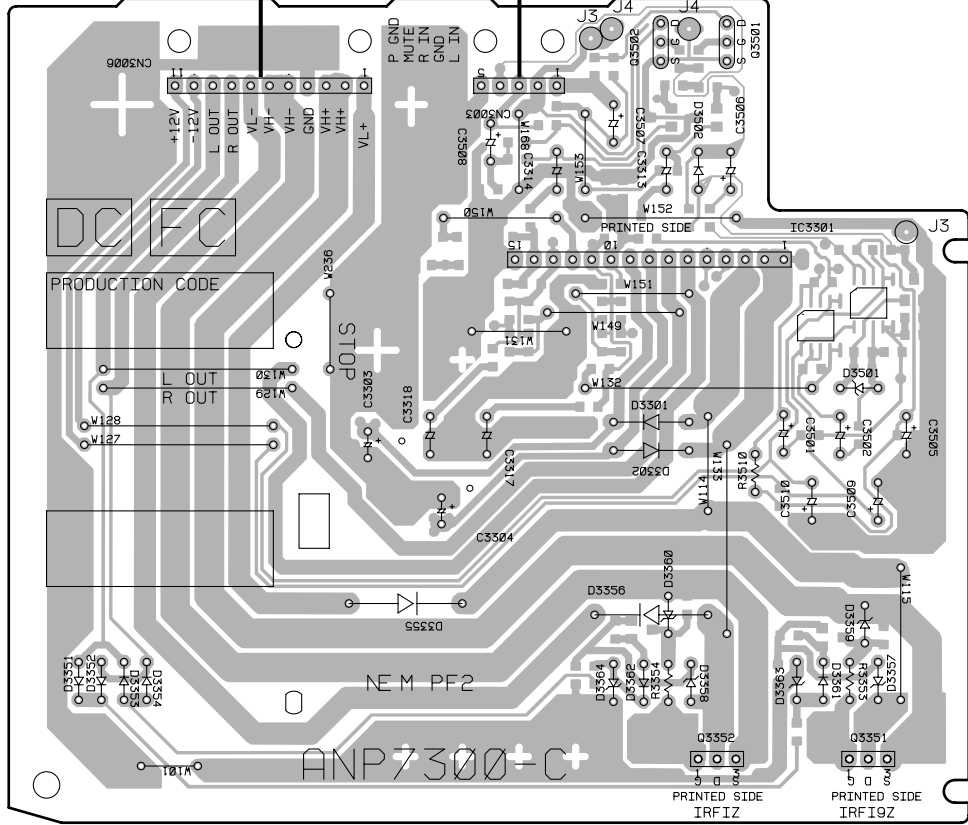
- IC24
- IC23
- Q33
- Q43
- Q42
- Q32
- Q3651
- Q3654
- IC33
- IC42

**A** CN3102

**A** CN3106

**A** CN3103

## B AMP ASSY



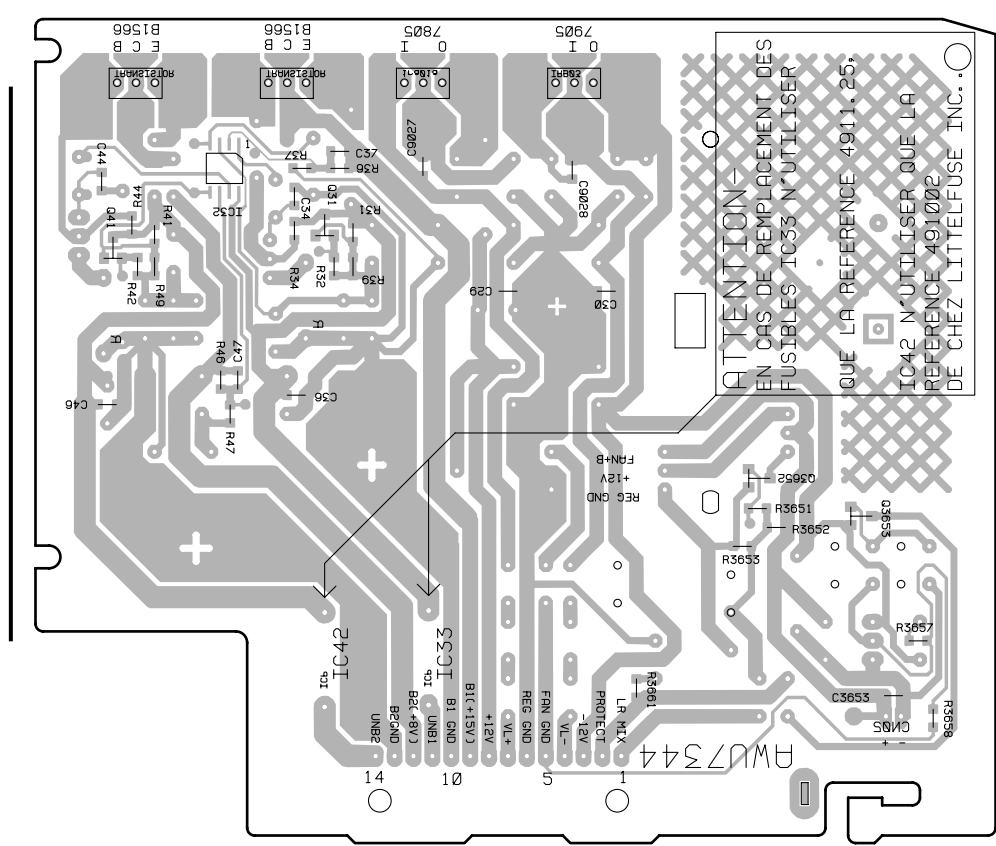
- Q3502
- Q3501
- IC3301
- Q3352
- Q3351

**SIDE A**  
(ANP7300-C)

## B C

IC32  
Q31  
Q41

Q3652  
Q3653

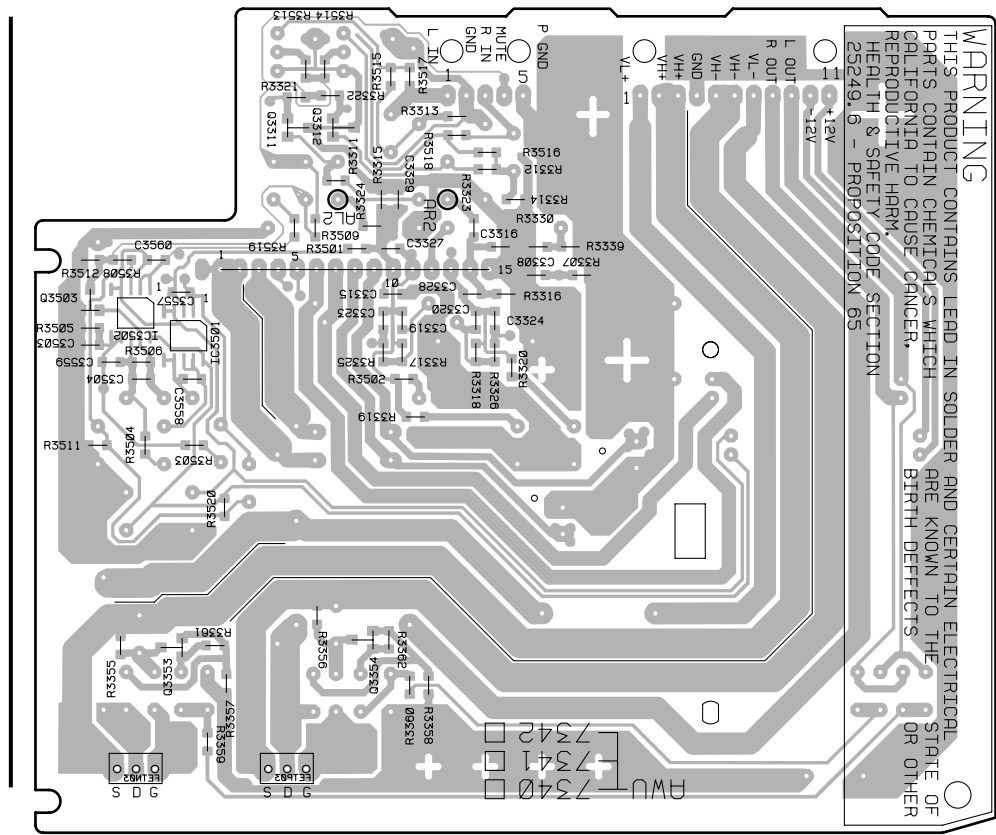


**C**  
POWER  
SUPPLY  
ASSY

Q3311  
Q3312

Q3503  
IC3502  
IC3501

Q3353  
Q3354



**B**  
AMP  
ASSY

**SIDE B**  
(ANP7300-C)

**B C**

# 5. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

●The  $\Delta$  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.

●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%).

560	→	56 x 10 <sup>1</sup>	→	561	.....	RD1/4PU	$\overline{5}$ $\overline{6}$ $\overline{7}$ J
47k	→	47 x 10 <sup>3</sup>	→	473	.....	RD1/4PU	$\overline{4}$ $\overline{7}$ $\overline{3}$ J
0.5	→	R50	.....		.....	RN2H	$\overline{R}$ $\overline{5}$ $\overline{0}$ K
1	→	1R0	.....		.....	RS1P	$\overline{7}$ $\overline{R}$ $\overline{0}$ K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k	→	562 x 10 <sup>1</sup>	→	5621	.....	RN1/4PC	$\overline{5}$ $\overline{6}$ $\overline{2}$ $\overline{1}$ F
-------	---	-----------------------	---	------	-------	---------	---

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
<b>LIST OF ASSEMBLIES</b>				$\Delta$	C82		CEAT221M25
NSP	MAIN ASSY		AWK7515	$\Delta$	C41		CEAT222M25
	AF ASSY		AWU7343	$\Delta$	C31		CEAT222M35
	AMP ASSY		AWU7342		C3621		CEAT2R2M2A
	POWER SUPPLY ASSY		AWU7344	$\Delta$	C21, C22		CEAT332M50
NSP	PRIMARY ASSY		AWU7348		C3325		CEATR10M50
NSP	SECONDARY ASSY		AWU7350		C3331-C3334		CKSQYF104Z50
	HP ASSY		AWU7352		C9011		CQMA102K2E
	METER ASSY		AWU7353				
	METER CONNECT ASSY		AWU7356				

## **A** AF ASSY

### SEMICONDUCTORS

$\Delta$	IC82	NJM78M56FA
	Q3601, Q3621	2SA1037K
	Q3602, Q3603, Q3605-Q3608	2SC2412K
	Q81	2SD1859X
	Q3313, Q85	DTA124EK
	Q82	DTC124EK
	D3601, D3603-D3606, D3609, D3621	1SS133
	D3625, D3626, D3651, D3652	1SS133
	D85-D87	1SS133
$\Delta$	D11, D21	D3SBA20(A)
	D3608	MTZJ5.6C
$\Delta$	D31-D34, D41-D44	S5566G(TPB2)
$\Delta$	D81-D84	S5688G

### COILS AND FILTERS

L1	LINE FILTER	ATF7020
L3331, L3332	(1 $\mu$ H)	ATH-133

### TRANSFORMERS

$\Delta$	T1	STANDBY TRANSFORMER	ATT7049
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### SWITCHES AND RELAYS

$\Delta$	RY3601	SP RELAY/12V	ASR7008
$\Delta$	RY81		ASR7018

### CAPACITORS

$\Delta$	C1-C3 (10000pF/AC250V)	ACG7020
$\Delta$	C11, C12 (2200 $\mu$ F/71v)	ACH7117
	C3602, C84	CEAT100M50
	C83	CEAT1R0M50
	C3601	CEAT221M16

### RESISTORS

R1 (2.2M $\Omega$ / 1/2W)	RCN1080
R3333, R3334	RD1/4LMF100J
R82	RD1/4PU220J
R3601, R3602	RS3LMFR22J
Other Resistors	RS1/10S□□□□

### OTHERS

$\Delta$	3101	12P CABLE HOLDER	51048-1200
$\Delta$	CN3105	4PJUMPER CONNECTOR	52151-0410
	JA3333	2P PIN JACK	AKB7043
$\Delta$	CN3332	10P SOCKET	AKP7048
$\Delta$	CN3103	5P SOCKET	AKP7051
$\Delta$	CN3106	11P SOCKET	AKP7052
$\Delta$	CN3102	14P SOCKET	AKP7053
	H1, H2	FUSE CLIP	AKR7001
$\Delta$	AN1	AC INLET 1P	AKP7032
	J3001	JUMPER WIRE	D20PYY1220E
	CN3331	4P SPEAKER TERMINAL	XKE3001

## **B** AMP ASSY

### SEMICONDUCTORS

	IC3501, IC3502	NJM4558MD
$\Delta$	IC3301	STK407-070B
	Q3354	2SA1037K
	Q3353	2SC2412K
	Q3311, Q3312	2SD2114K
	Q3501, Q3502	2SK246
	Q3503	DTA124EK
$\Delta$	Q3351	IRFI9Z34G
$\Delta$	Q3352	IRFIZ34G
$\Delta$	D3301, D3302	1SR139-100







<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
<b>OTHERS</b>			
	5601	3P CABLE HOLDER	51048-0300
	3005	4P CABLE HOLDER	51048-0400
	J3005	4P JUMPER WIRE	D20PYY0410E

## **H** METER CONNECT ASSY

### **SEMICONDUCTORS**

D5603	MTZJ5.6C
D5602	NSPBF50S-8451

### **RESISTORS**

All Resistors	RS1/10S□□□J
---------------	-------------

### **OTHERS**

5602	3P CABLE HOLDER	51048-0300
J5601	3P JUMPER WIRE	D20PYY0315E

## 6. ADJUSTMENT

There is no information to be shown in this chapter.



## 8. PANEL FACILITIES AND SPECIFICATIONS

### ● PANEL FACILITIES



③② POWER OUTPUT METER

③③ PHONES jack

### ● SPECIFICATIONS

#### ■ Amplifier Section

**Continuous average power output of 55 watts\* per channel, min., at 6 ohms, from 60 Hz to 15,000 Hz with no more than 1.0 %\*\* total harmonic distortion.**

\* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.

\*\* Measured by Audio Spectrum Analyzer.

#### ■ Miscellaneous

Power Requirements ..... AC120 V, 60 Hz

Power Consumption ..... 120 W, 160 VA

Power Consumption in standby mode ..... 1 W

Dimensions:

Power Amplifier ..... 150 (W) x 300 (H) x 233 (D) mm

5-7/8 (W) x 11-13/16 (H) x 9-3/16 (D) in.

Weight:

Power Amplifier ..... 4.0 kg (8 lb 13 oz)

#### NOTE:

Specifications and design subject to possible modification without notice, due to improvements.