

# **ROTEL***hifi*

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STEREO POWER AMPLIFIER

## **RB-960BX**

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# **TECHNICAL MANUAL**

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**ROTEL ELECTRONICS CO., LTD.**

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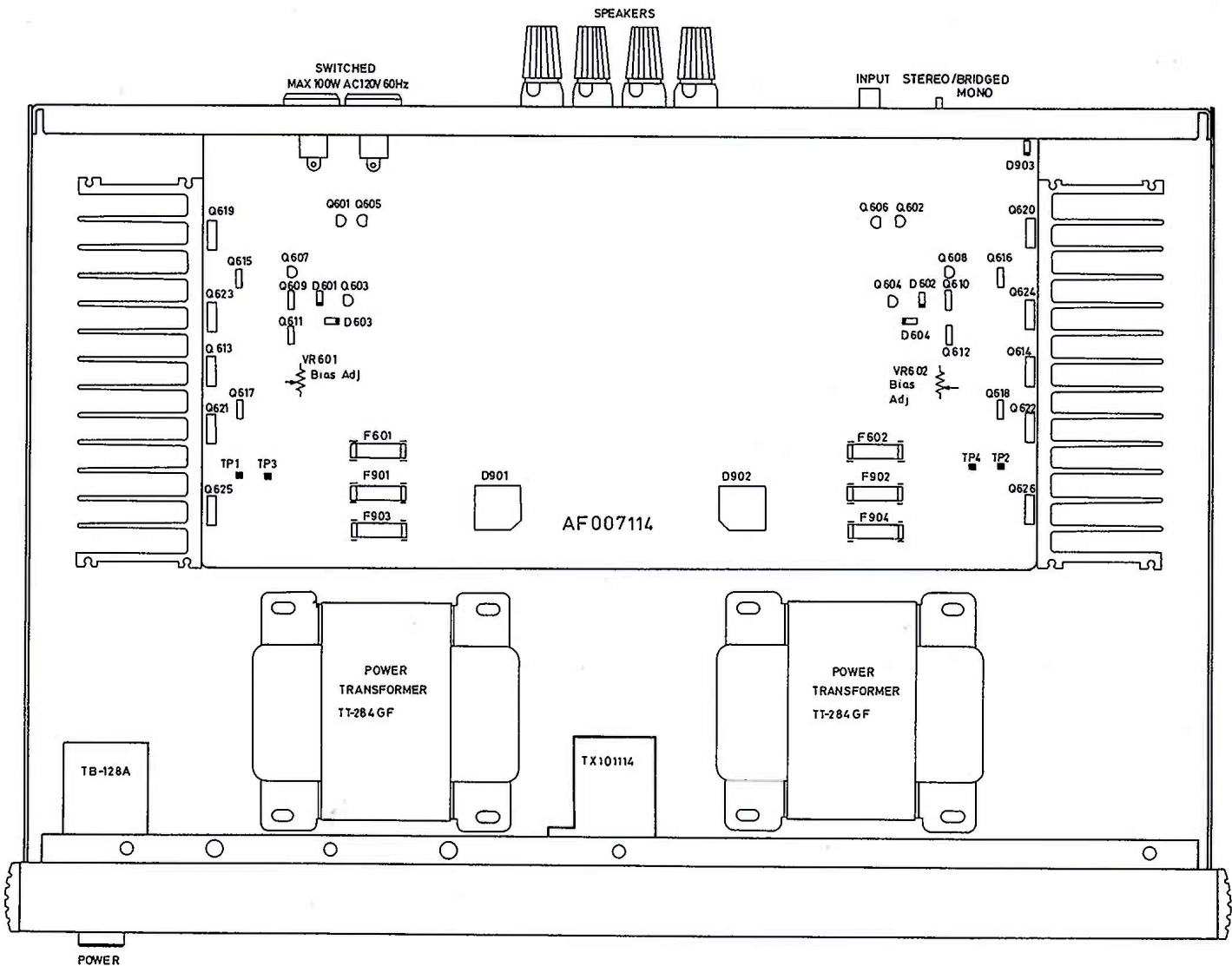
MN20001901

# Power Amplifier Bias Adjustment

Instruments: DC milli-voltmeter  
Notes: Prior to Bias Adjustment, run about 5 minutes with rated output (8 ohm) and warm up Power Transistor and Heat Sink.  
Set Volume control to minimum.

Step	Coupling		Adjust	Adjust for
	Plus Lead	Minus Lead		
1	TP3	TP1	VR601	DC milli-voltmeter reads 4 mV
2	TP4	TP2	VR602	

# Chassis Layout



# Specifications

RB-960BX

Continuous Power Output...60 watts\* per channel, min.  
RMS both channels driven into  
8 ohms from 20 to 20,000 Hz  
with no more than 0.03% total  
harmonic distortion.

DIN Output.....110 watts per channel (1 kHz, 4  
ohms, 1% THD)

Peak Current.....30 A (0.1 ohms, 10 usec,  
1 pulse)

Power Output (BTL).....180 watts (mono) min. RMS  
driven into 8 ohms from 20 to  
20,000 Hz with no more than  
0.03% total harmonic distortion.

Total Harmonic Distortion...No more than 0.03% (contin-  
(20 to 20,000Hz) uous rated power output) No  
more than 0.03% (continuous  
1/2 rated power output) No  
more than 0.05% (1 watt per  
channel power output, 8 ohms)

Intermodulation Distortion...No more than 0.05% (contin-  
(60 Hz: 7 kHz=4:1) uous rated power output) No  
more than 0.05% (continuous  
1/2 rated power output) No  
more than 0.05% (1 watt per  
channel power output, 8 ohms)

Output: Speaker.....8 ohms nominal

Damping Factor.....280 (20 to 20,000 Hz, 8 ohms)

Input Sensitivity/ Impedance.....1.0 V/ 27 kohms

Frequency Response.....15 to 100,000 Hz, +0 dB, -1.0  
dB

Signal to Noise Ratio.....116 dB  
(IHF, A network)

## MISCELLANEOUS

Power Requirement.....120 V/ 60 Hz, 220 V/ 50 Hz,  
,240 V/ 50 Hz (depending on  
destinations)

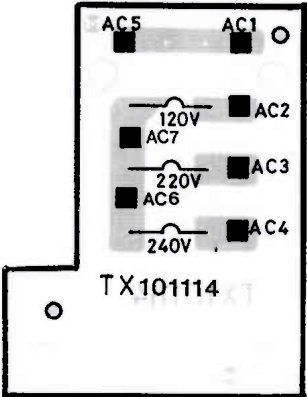
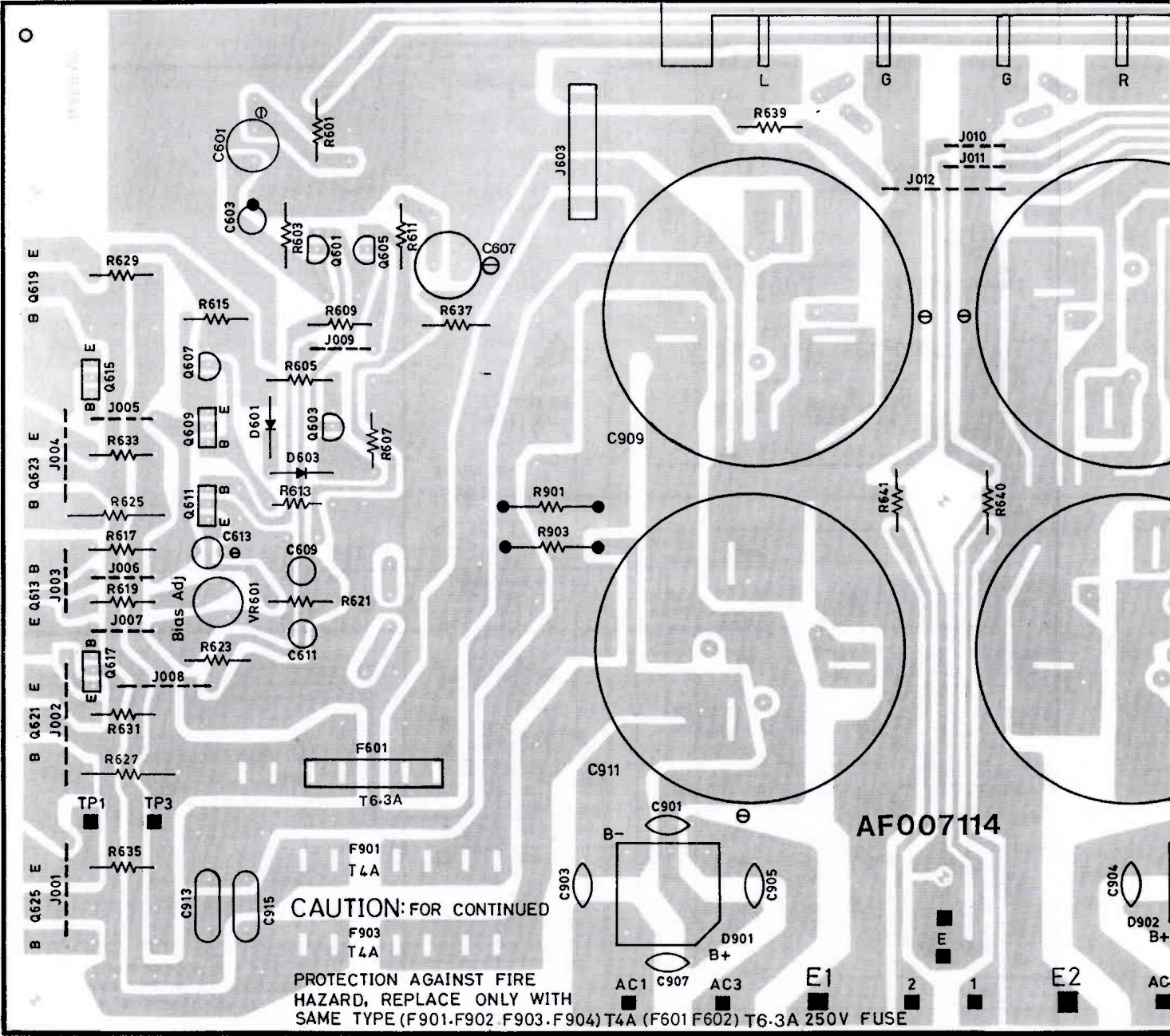
Power Consumption.....300 watts

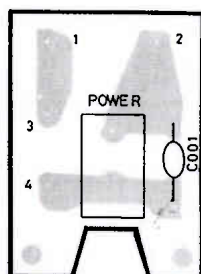
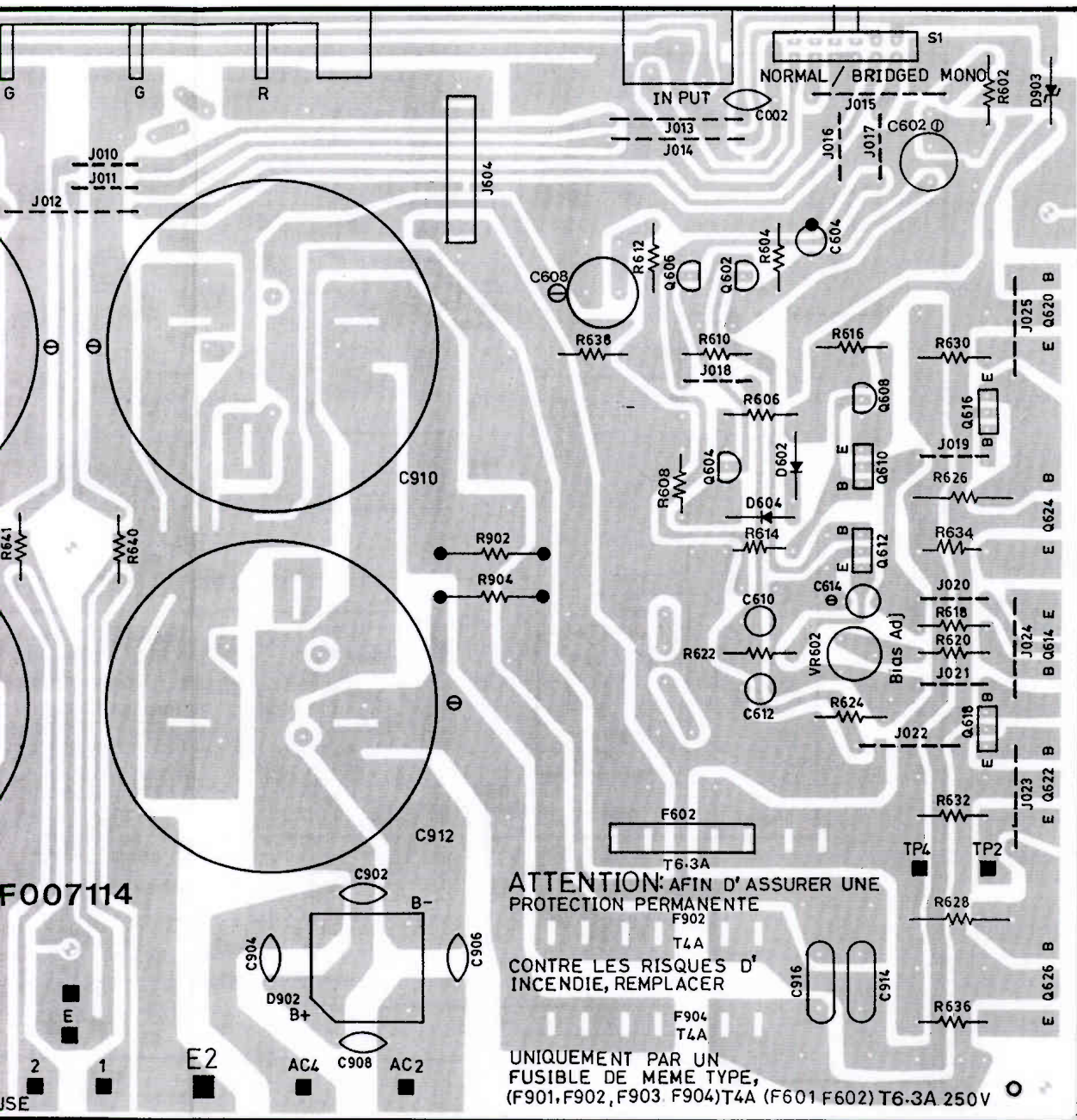
Dimensions (overall).....440 (W) x 92 (H) x 334 (D) mm,  
17-3/8" x 3-5/8" x 13-3/16"

Weight (net).....9.2 kg / 20.2 lbs.

- Specifications and design subject to possible modifica-  
tion without notice.
- \*Measured pursuant to the Federal Trade Commis-  
sion's Trade Regulation Rule or, Power Claims for  
Amplifiers (applicable to the U.S.A. only).

Printed Circuit Boards

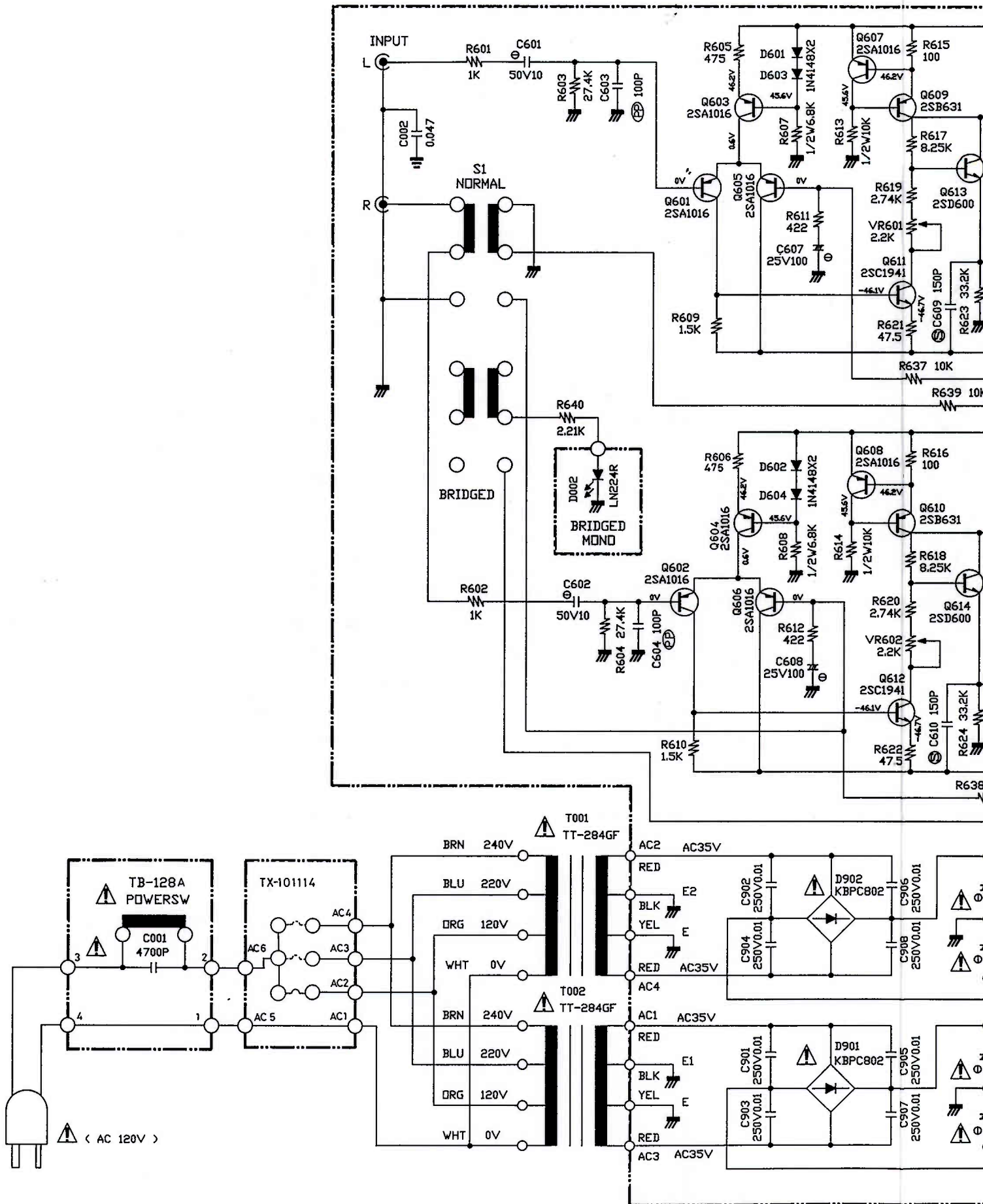




# Schematic Diagram

## SCHEMATIC DIAGRAM MOD

NOTE : PARTS AND CIRCUIT SUBJECT TO CHANGES FOR IMPROVEMENT



IMPROVEMENTS WITHOUT PRIOR NOTICE



## SPEAKERS

⚠ F 602  
T 6A  
\*(EUROPE)  
USE T 6.3A

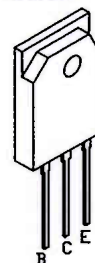
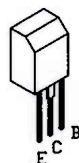
1. USE ONLY REPLACEMENT PARTS THAT HAVE THE CRITICAL CHARACTERISTICS RECOMMENDED BY MANUFACTURER.
2. MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE AC SUPPLY CIRCUIT BEFORE RETURNING THE UNIT TO THE CUSTOMER.

- 2SA1016

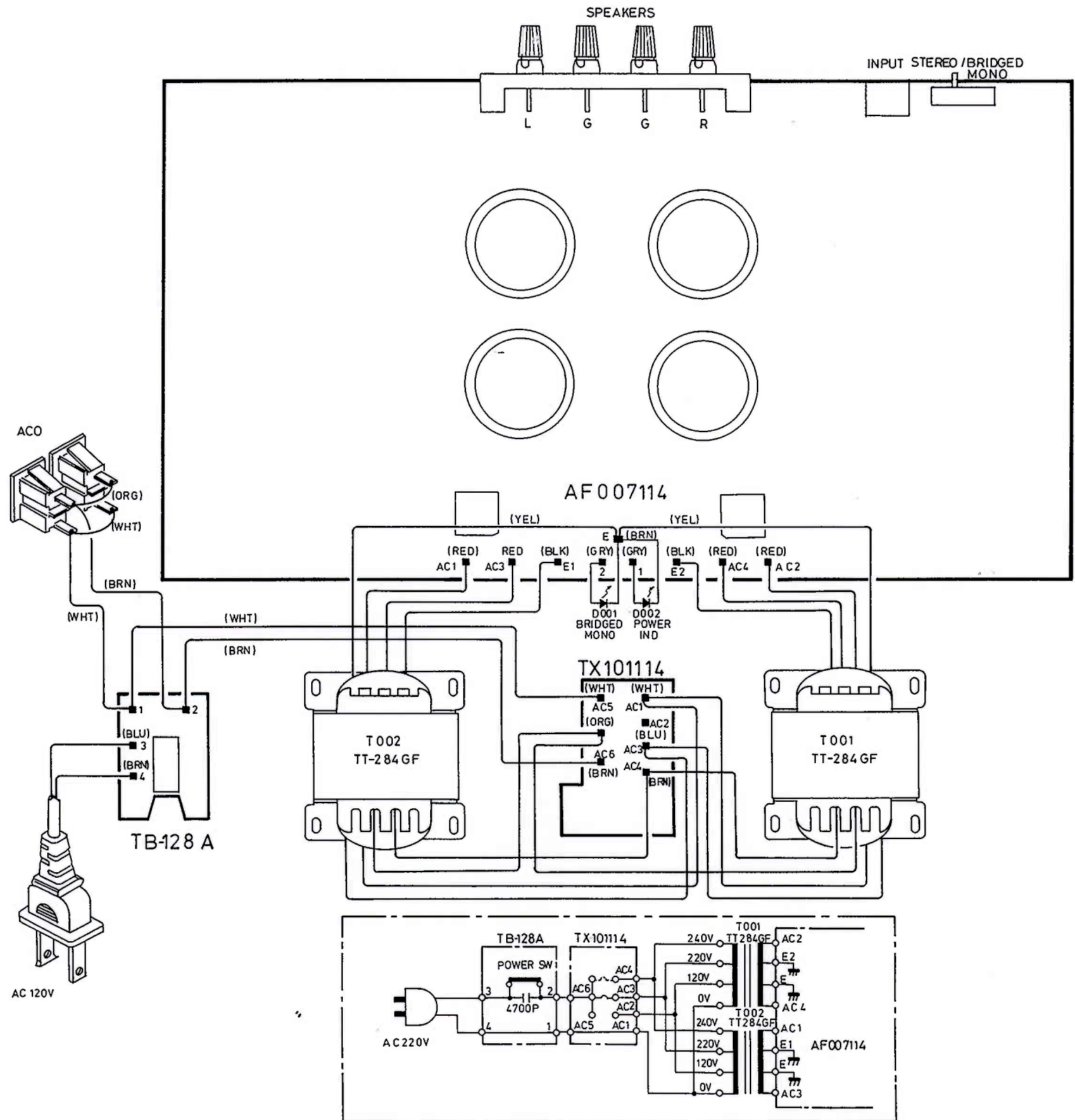
- 2SC1941

- 2SD600
- 2SB631

- 2SD1047
- 2SB817



# Wiring Diagram



# Parts List

NOTE: THE COMPONENTS IDENTIFIED BY  $\Delta$  MARK ARE FOR SAFETY. REPLACE ONLY WITH ORIGINAL PARTS. DO NOT SUBSTITUTE.

SYMBOL	PARTS NO.	DESCRIPTION	SYMBOL	PARTS NO.	DESCRIPTION
AF007114 PCB ASSEMBLY			OTHERS		
R601,602	RM81001612	R, STANDARD METAL MK2001KFECZ.	AB00000584	PAINTED BOTTOM BOARD 4TTF-10#2	
R603,604	RM82742619	R, STANDARD METAL MK227K4FECZ.	AF20000179	FRONT CHASSIS 2TTF-2B	
R605,606	RM84750619	R, STANDARD METAL MK2475RFECZ.	AM00001938	PAINTED CHASSIS BODY 2TTF-4B#2	
R607,608	RM96801925	R, METAL 6.8K 1/2W J	AR20000590	PRINTED REAR CHASSIS TRP-582	
R609,610	RM81501610	R, STANDARD METAL MK201K5FECZ.	DD40000095	LED LN224R	
R611,612	RM84220618	R, STANDARD METAL MK2422RFECZ.	PT28407107	POWER TRANSFORMER TT-284GF $\Delta$	
R613,614	RM91002923	R, METAL 10K 1/2W J	BC00000222	CYLINDER BUSH 4TVL-7#3 12MM	
R615,616	RM81000619	R, STANDARD METAL MK2100RFECZ.	FT00000229	PLASTIC FOOT 4TSH-19#2 50F $\times$ 14H	
R617,618	RM88251610	R, STANDARD METAL MK28K25FECZ.	FT00000230	PU FOOT 4TR-2823 24F $\times$ 14H	
R619,620	RM82741615	R, STANDARD METAL MK22K74FECZ.	SP10006351	PT SUPPORT 3TQH-2	
R621,622	RM84759611	R, STANDARD METAL MK247R5FECZ.	NP00001949	NAME STICKER AC120V	
R623,624	RM83322614	R, STANDARD METAL MK233K2FECZ.	4TR-2828#1 TNP-382		
R625,626	RM92200121	R, METAL 220 1W J	NP00001974	NAME STICKER AC120V-C	
R627,628	RM92200121	R, METAL 220 1W J	4TR-2828#4 TNP-385		
R629,630	RS20228230	R, SQUARE TYPE MPC70-0.22F	NP00001962	NAME STICKER AC240V	
R631,632	RS20228230	R, SQUARE TYPE MPC70-0.22F	4TR-2828#3 TNP-384		
R633,634	RS20228230	R, SQUARE TYPE MPC70-0.22F	NP00001950	NAME STICKER AC220V	
R635,636	RS20228230	R, SQUARE TYPE MPC70-0.22F	4TR-2828#2 TNP-383		
R637,638	RM81002616	R, STANDARD METAL MK2010KFECZ.	NP00001998	NAME STICKER AC230V	
R639	RM81002616	R, STANDARD METAL MK2010KFECZ.	4TR-2828#5 TNP-389		
R640,641	RM82211614	R, STANDARD METAL MK22K21FECZ.	NP00002012	NAME STICKER AC100V	
C601,602	CE51006477	CAP, ELAC. 50BGF10M	4TR-2828#6 TNP-391		
C603,604	CP71011353	CAP, P.P 100V101H	CD00000218	AC CORD SPT-2 AWG#18	
C605,606	CE51005679	CAP, ELEC. 25BGF100M	4TR-670#4 (C,U,A) $\Delta$		
C609,610	CS41511420	CAP, STYROL 150P F 50V J	CD00000292	AC POWER CORD UP-401F	
C611,612	CS43311421	CAP, STYROL 330P F 50V J	4TR-2631#1 (D) $\Delta$		
C613,614	CE01007504	CAP, ELEC. 50V 1uF	CD00000048	AC POWER CORD	
D601,602	DD80000021	DIODE IN4148-86	4TR-1037 (H,E,K2) $\Delta$		
D603,604	DD80000021	DIODE IN4148-86	CD00000085	AC POWER CORD C-2504A (K1) $\Delta$	
Q601,602	TR10000023	TRANSISTOR 2SA1016 (F)	CD00000115	AC POWER CORD C-3763-T (G) $\Delta$	
Q603,604	TR10000023	TRANSISTOR 2SA1016 (F)	SC00000131	AC CORD STOPPER SR-5N-4 (K1) $\Delta$	
Q605,606	TR10000023	TRANSISTOR 2SA1016 (F)	SC00000039	AC CORD STOPPER SR-6W-1 (D) $\Delta$	
Q607,608	TR10000023	TRANSISTOR 2SA1016 (F)	SC00000027	AC CORD STOPPER SR-4N-4 $\Delta$	
Q609,610	TR10000047	TRANSISTOR 2SB631K (E,F)	AH20000448	HEAT SINKER BOARD 4TTF-7	
Q611,612	TR30000169	TRANSISTOR 2SC1941 (K,L)	AA20000634	FRONT PANEL 2TQH-1 TFP-621	
Q613,614	TR40000069	TRANSISTOR 2SD600K (E)	BU00001145	POWER RING W/LED 4TQF-13 14 $\times$ 14	
Q615,616	TR40000069	TRANSISTOR 2SD600K (E)	KB20002681	POWER BUTTON 4TQF-15 14 $\times$ 14	
Q617,618	TR10000047	TRANSISTOR 2SB631K (E,F)	OM10001272	ORNAMENTAL SIDE BOARD	
Q619,620	TR40000045	POWER TRANSISTOR 2SD1047	4TR-2797#2 H=80MM		
Q621,622	TR20000040	POWER TRANSISTOR 2SB817	OM70000065	PUSH BUTTON CONNECTOR 4TTL-15	
Q623,624	TR40000045	POWER TRANSISTOR 2SD1047	SN00000179	BUTTON SPRING 4TR-1988#2 10F	
Q625,626	TR20000040	POWER TRANSISTOR 2SB817	SRO0000870	ORNAMENTAL PLATE SPACER	
VR601,602	RV40000022	R, SEMI-FIXED VM6CKPV-13-B	4TR-2411		
F601,602	FU25000041	FUSE 125V 6A C,U,H,J $\Delta$	AU00001201	TOP COVER POLY 3TTF-5#7 H=80MM	
	FU23000219	FUSE 250V 6.3A $\Delta$	SRO0000882	UPPER COVER SPACER 4TR-2418	
R901-904	RM95601126	R, METAL 5.6K 1W	MN10002781	OWNER'S MANUAL RB-960BX	
C901-908	CC01009256	CAP, CERAMIC 250V 0.01uF $\Delta$	PL00001051	STYROL SIDE MOULDING	
C909-912	CE51003440	CAP, ELEC. DC050HP3103	2TR-2800 TZ-183		
C913-916	CP61008321	CAP, M.P. 100V 104K	AZ00001597	REAR CHASSIS 2TTF-3	
D901,902	DD10000147	DIODE KBPC802 $\Delta$	AZ00002851	CHASSIS BODY 2TT-4B#1	
D903	DD20000028	DIODE RD-20E	AZ00002863	BOTTOM BOARD 4TTF-10#1	
TX101114 PCB ASSEMBLY					
F901,902	FU25000028	125V 4A UL/CSA $\Delta$			
	FU23000190	250V T4A S $\Delta$			
TB-128A PCB ASSEMBLY					
S001	SH40000155	POWER SW C-4176A01 $\Delta$			
C001	CK00000035	SPARK KILLER DE7150F472M $\Delta$			