



Technical Manual

STEREO/MONO POWER AMPLIFIER RB-1050

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Specification

Continuous Power Output (20 - 20 kHz, <0.03%, 8 ohms)	70 watts/ch
Total Harmonic Distortion (20 - 20 kHz, 8 ohms)	<0.03 %
Intermodulation Distortion (60 Hz : 7 kHz 4 : 1)	<0.03 %
Frequency Response (±1 db)	10 Hz - 100 kHz
Damping Factor (20-20,000 Hz, 8 ohms)	500
Speaker Impedance (Normal mode)	4 ohms minimum
Signal to Noise Ratio (IHF A network)	116 dB
Input Impedance / Sensitivity	33 k ohms / 1.0 volt
Power Requirements	115 volts, 60 Hz (U.S. version) 230 volts, 50 Hz (European version)
Power Consumption	250 Watts
Dimensions (W x H x D)	430 x 92 x 350 mm 1615/16 x 35/8 x 1313/16 ins.
Weight (net)	8.1 kg / 17.86 lb.

THE ROTEL CO., LTD

SHINSEN-BLD. 4F 10-10 SHINSEN-CHO, SHIBUYA-KU,
TOKYO 150-0045, JAPAN

Serial. NO. Beginning

Parts List-1

SYMBOL	PARTS NO.	DESCRIPTION
	X-1296-01 PCB ASSEMBLY	
C601.602	041 50BGF4R7M	CAPACITOR ELEC.50V4.7UF
C603.604	044 TFKP2-2A681H	CAPACITOR FILM 100V680PF
C605.606	044 FSC160V221H	CAPACITOR STYROL 160V220PF
C607.608	041 25BGF100M	CAPACITOR ELEC.25V100UF
C609.610	044 FSC160V331H	CAPACITOR STYROL 160V330PF
C611.612	041 50BGF10M	CAPACITOR ELEC.50V10UF
C613-616	044 FSC160V561H	CAPACITOR STYROL 160V560PF
C617.618	044 FSC160V471H	CAPACITOR STYROL 160V470PF
C623.624	044 KT18-2A104K	CAPACITOR FILM 100V0.1UF
C651.652	041 UTES1E100-FB	CAPACITOR ELEC.25V10UF
C653	041 UTES1E101-FB	CAPACITOR ELEC.25V100UF
C654	041 UTES1E470-FB	CAPACITOR ELEC.25V47UF
C701.702	044 50MSAN104J	CAPACITOR FILM 50V0.1UF
C703	042 TP50V183J	CAPACITOR MYLAR 50V0.018UF
C704	041 UTES1E100-FB	CAPACITOR ELEC.25V10UF
C705	044 50MSAN104J	CAPACITOR FILM 50V0.1UF
C706	042 TP50V103J	CAPACITOR MYLAR 50V0.01UF
C707	041 TUTES1C471-TF	CAPACITOR ELEC.16V470UF
C708	041 UTES1E101-FB	CAPACITOR ELEC.25V100UF
C901-908	043 TC500V103	CAPACITOR CERA.500V0.01UF
C909-912	041 ALC20S1022DF	CAPACITOR ELEC.50V8200UF
C913	041 UTES1J221	CAPACITOR ELEC.63V220UF
D601-608	034 T1N4148-86	DIODE
D609-612	034 T1N4003-TB	DIODE
D651.652	034 T1N4148-86	DIODE
D653	034 TRD5.6JST1	ZENER DIODE
D654	034 T1N4148-86	DIODE
D701.702	034 T1N4148-86	DIODE
D901.902	034 BR84	BRIDGED DIODE
D903	034 T1N4148-86	DIODE
D904.905	034 T1N4003-TB	DIODE
F601-604	036 5T3.15	MINI FUSE 250VT3.15A
IC651	031 MPC1237HA	IC(PROTECTION)
IC701	031 NJM555D	IC(TIMER)
PJ1.2	066 4TR-2709#3	2P PINJACK
Q601-606	033 TC2362-FG	TRANSISTOR(2SC2362K-FG)
Q607-612	033 TA1016-FG	TRANSISTOR(2SA1016K-FG)
Q613.614	033 B631-EF	TRANSISTOR(2SB631K-EF)
Q615.616	033 D600-EF	TRANSISTOR(2SD600K-EF)
Q619.620	033 TC3478A-LKU	TRANSISTOR(2SC3478A-LKU)
Q621.622	033 TA1376A-LKU	TRANSISTOR(2SA1376A-LKU)
Q651.652	032 TC536-FG	TRANSISTOR(2SC536K-FG)
Q653-656	032 TA608-FG	TRANSISTOR(2SA608K-FG)
Q657-659	032 TC536-FG	TRANSISTOR(2SC536K-FG)
Q701-704	032 TC536-FG	TRANSISTOR(2SC536K-FG)
Q902	032 TC536-FG	TRANSISTOR(2SC536K-FG)
R601.602	054 EE10-102	RESISTOR METAL 1K
R603.604	054 EE10-333	RESISTOR METAL 33K
R605.606	054 TMFR4470R	RESISTOR METAL 1% 470R
R607.608	054 TMFR401K5	RESISTOR METAL 1% 1.5K
R609.910	054 TMFR4270R	RESISTOR METAL 1% 270R
R611.612	054 TMFR4220R	RESISTOR METAL 1% 220R
R613.614	054 TMF1/4-5600F	RESISTOR MRS25 560R
R615.616	054 TMFR401K5	RESISTOR METAL 1% 1.5K
R617.618	054 TMFR4270R	RESISTOR METAL 1% 270R

SYMBOL	PARTS NO.	DESCRIPTION
R619.620	054 TMFR4220R	RESISTOR METAL 1% 220R
R621.622	054 TMFR4047K	RESISTOR METAL 1% 47K
R623.624	054 TMFR4100R	RESISTOR METAL 1% 100R
R625.626	054 TMF1/4-6801F	RESISTOR MRS25 6.8K
R627.628	054 TMF1/4-3901F	RESISTOR MRS25 3.9K
R629.630	054 TMFR4100R	RESISTOR METAL 1% 100R
R631.632	054 TMFR4001K	RESISTOR METAL 1% 1K
R633.634	054 TMFR4047R	RESISTOR METAL 1% 47R
R635.636	054 NIR2-0.22JF	RESISTOR METAL 2W 0.22R
R639-642	054 NIR2-0.22JF	RESISTOR METAL 2W 0.22R
R645.646	054 NIR2-0.22JF	RESISTOR METAL 2W 0.22R
R647.648	054 1WS10JF	RESISTOR METAL 1W 10R
R651.652	054 TMFR4012K	RESISTOR METAL 1% 12K
R653.654	054 TMF3300	RESISTOR METAL 330R
R655-658	054 TMFR4220R	RESISTOR METAL 1% 220R
R661.662	054 TMF8200	RESISTOR METAL 820R
R663.664	054 TMF2202	RESISTOR METAL 22K
R665.666	054 TMF1502	RESISTOR METAL 15K
R667.668	053 CR14-681J-A	RESISTOR CARBON 680R
R669.670	053 CR14-273J-A	RESISTOR CARBON 27K
R671.672	053 CR14-122J-A	RESISTOR CARBON 1.2K
R673.674	053 CR14-472J-A	RESISTOR CARBON 4.7K
R675.676	053 CR14-473J-A	RESISTOR CARBON 47K
R677.678	053 CR14-104J-A	RESISTOR CARBON 100K
R679	053 CR14-153J-A	RESISTOR CARBON 15K
R680	053 CR14-563J-A	RESISTOR CARBON 56K
R681	053 CR14-153J-A	RESISTOR CARBON 15K
R682	053 CR14-104J-A	RESISTOR CARBON 100K
R683	053 CR14-474J-A	RESISTOR CARBON 470K
R684	053 CR14-682J-A	RESISTOR CARBON 6.8K
R685.686	053 CR14-182J-A	RESISTOR CARBON 1.8K
R687.688	053 CR14-124J-A	RESISTOR CARBON 120K
R701.702	053 CR14-104J-A	RESISTOR CARBON 100K
R703	053 CR14-224J-A	RESISTOR CARBON 220K
R704	053 CR14-124J-A	RESISTOR CARBON 120K
R705	053 CR14-103J-A	RESISTOR CARBON 10K
R706	053 CR14-101J-A	RESISTOR CARBON 100R
R707	053 CR14-473J-A	RESISTOR CARBON 47K
R708.709	053 CR14-104J-A	RESISTOR CARBON 100K
R710	053 CR14-105J-A	RESISTOR CARBON 1M
R711	053 CR14-473J-A	RESISTOR CARBON 47K
R712	053 CR14-564J-A	RESISTOR CARBON 560K
R713	054 1WS3.3KJF	RESISTOR METAL 1W 3.3K
R720	054 1WS3.3KJF	RESISTOR METAL 1W 3.3K
R901	053 CR14-223J-A	RESISTOR CARBON 22K
R902	054 1WS1.5KJF	RESISTOR METAL 1W 1.5K
R903	053 CR14-822J-A	RESISTOR CARBON 8.2K
R904	054 ERQ12AJ2R2P	FUSIBLE RESISTOR 2.2R
R905	054 1WS1.5KJF	RESISTOR METAL 1W 1.5K
R921	053 CR14-222J-A	RESISTOR CARBON 2.2K
RY601	063 DH2TU-24	RELAY (SPEAKER)
RY901	063 DH2U-24	RELAY (POWER)
SP1	067 C-4493A00	SPEAKER TERMINAL
TH651.652	034 TTC-503	THERMISTOR
VR601.602	051 SFR002-222	SEMI-FIXED RESISTOR 2.2K

Parts List-2

SYMBOL	PARTS NO.	DESCRIPTION	SYMBOL	PARTS NO.	DESCRIPTION
	069 C-3417A	FUSE CLIP	Q633.634	033 B817-DE	POWER TRANSISTOR(2SB817-DE)
	X-1296-02 PCB ASSEMBLY		Q637.638	033 B817-DE	POWER TRANSISTOR(2SB817-DE)
C710	041 UTE51H2R2-FB	CAPACITOR ELEC.50V2.2UF		017 RM4-18B00	HEAT SINKER BOARD
D703.704	034 T1N4148-86	DIODE		019 TO-126	INSULATION SHEET(S)
				019 TO-3P	INSULATION SHEET(L)
HJ1.2	065 YKB21-5103A	MINI JACK		OTHERS	
IC702	031 PC817B	PHOTO COUPLER		011 FP-508	SUB PANEL ASSY
Q705.706	032 TA608-FG	TRANSISTOR(2SA608K-FG)		011 TJ3-01A00	H/S PANEL ASSY
Q707	032 TC536-FG	TRANSISTOR(2SC536K-FG)		012 RV4-09A00	PUSH KNOB 14F
R714	053 CR14-102J-A	RESISTOR CARBON 1K		014 C-4713A01	UPPER COVER
R715	053 CR14-471J-A	RESISTOR CARBON 470K		014 RM4-07B00	BOTTOM BOARD
R716	053 CR14-103J-A	RESISTOR CARBON 10K		015 RP-369	REAR CHASSIS
R717	053 CR14-473J-A	RESISTOR CARBON 47K		019 4TR-2823#2	PLASTIC FOOT 24F
R718	053 CR14-104J-A	RESISTOR CARBON 100K		019 4TSH-19#2	PLASTIC FOOT 50F
R719	053 CR14-102J-A	RESISTOR CARBON 1K		022 T-1055U01	POWER TRANSFORMER
R757	053 CR14-224J-A	RESISTOR CARBON 22K		034 LTL1214A	LED 2F
S701	064 C-4660A00	SLIDE SWITCH		034 SEL1124R	LED 1X5
				063 A-0710W-10A	BREAKER
	X-1296-03.04 PCB ASSY			069 C-4629A01	AC INLET
VR001.002	051 C-4170A31	VARIABLE RESISTOR 50KB		072 C-4621A01	AC CORD SET for STD
	X-1296-05 PCB ASSEMBLY			072 C-4622A01	AC CORD SET for AUSTRALIA
C001	044 DE1307E472M	SPARK KILLER		072 C-4623A01	AC CORD SET for UK
S901	061 C-4176A08	POWER SWITCH		072 C-4624A01	AC CORD SET for CEE
				081 TJ3-10A00	INSIDE CARTON
				081 Z-204	STYROL MOULDING
	HEAT SINKER ASSEMBLY				
Q617.618	032 D1953	TRANSISTOR(2SD1953)			
Q623.624	032 C4793	DRIVER TRANSISTOR(2SC4793)			
Q625.626	032 A1837	DRIVER TRANSISTOR(2SA1837)			
Q627.628	033 D1047-DE	POWER TRANSISTOR(2SD1047-DE)			
Q631.632	033 D1047-DE	POWER TRANSISTOR(2SD1047-DE)			

NOTE ON SAFTY : Symbol Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol . Any other component substitution (other than original type), may incease risk of fire or electrical shock hazard.

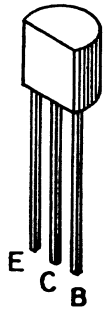
Adjustment

Instruments : DC milli-voltmeter

Notes : Prior to Bias Adjustment, run about 5minutes with rated output(8ohms) and warm up Power Transistor and Heat Sink. Set input off.

Step	Coupling	Location	Adjust	Adjust for
1	TP1	X-1296-01 PCB	VR601	DC milli-voltmeter reads 4mV
2	TP2	X-1296-01 PCB	VR602	

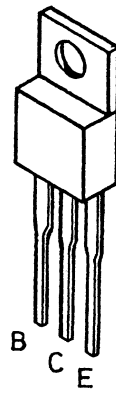
Case Outlines



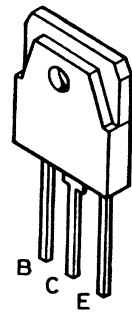
2SA608K
2SA1016K
2SA1376A
2SC536K
2SC2362K
2SC3478A



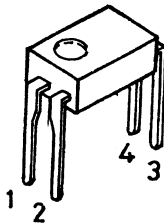
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2SD600K



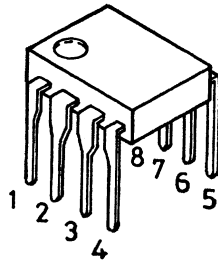
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2SC4793



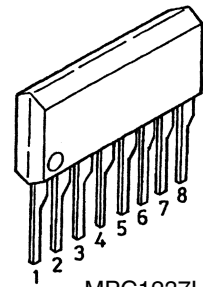
2SB817
2SD1047



PC817B





NJM555D



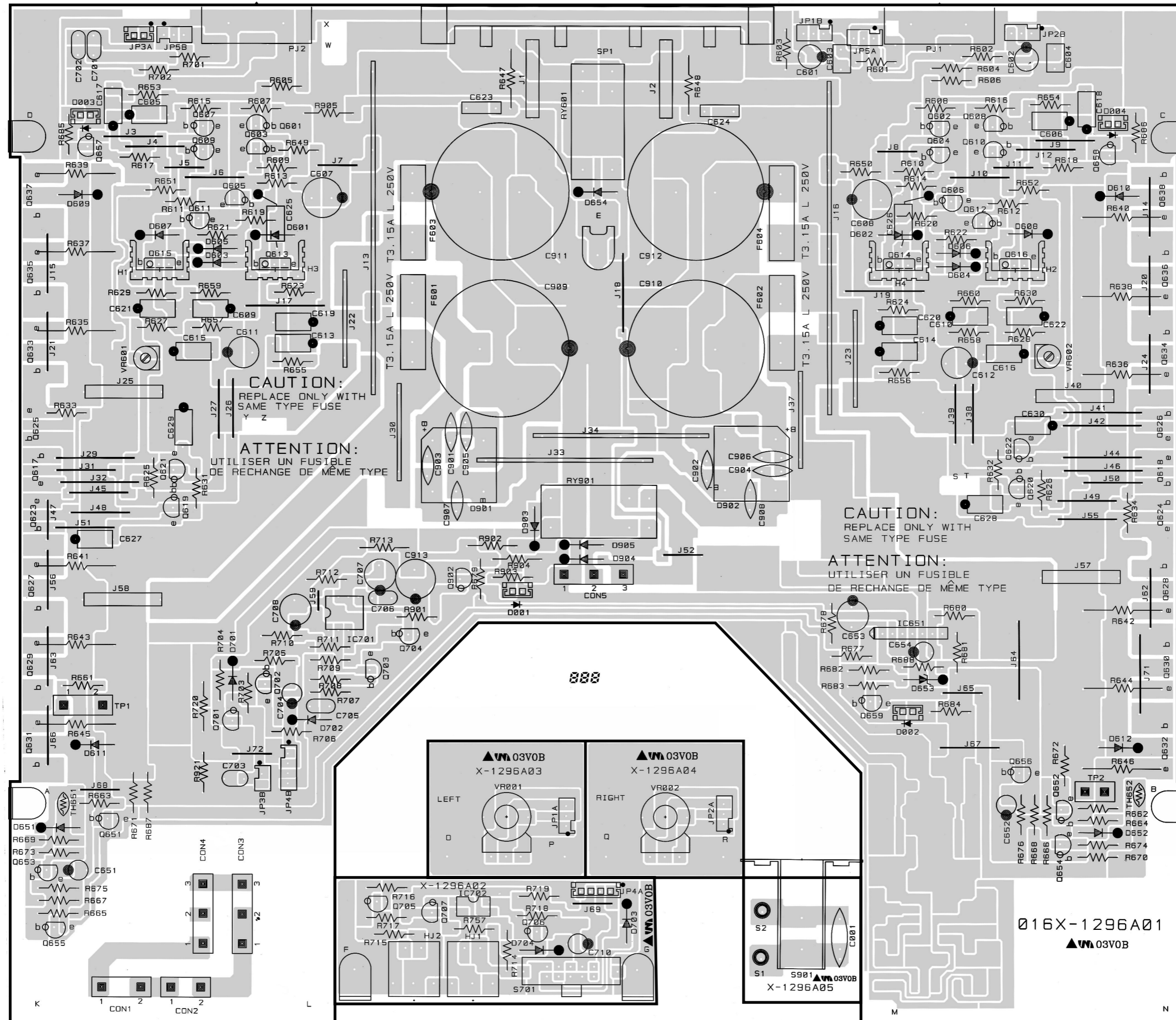
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Service Note

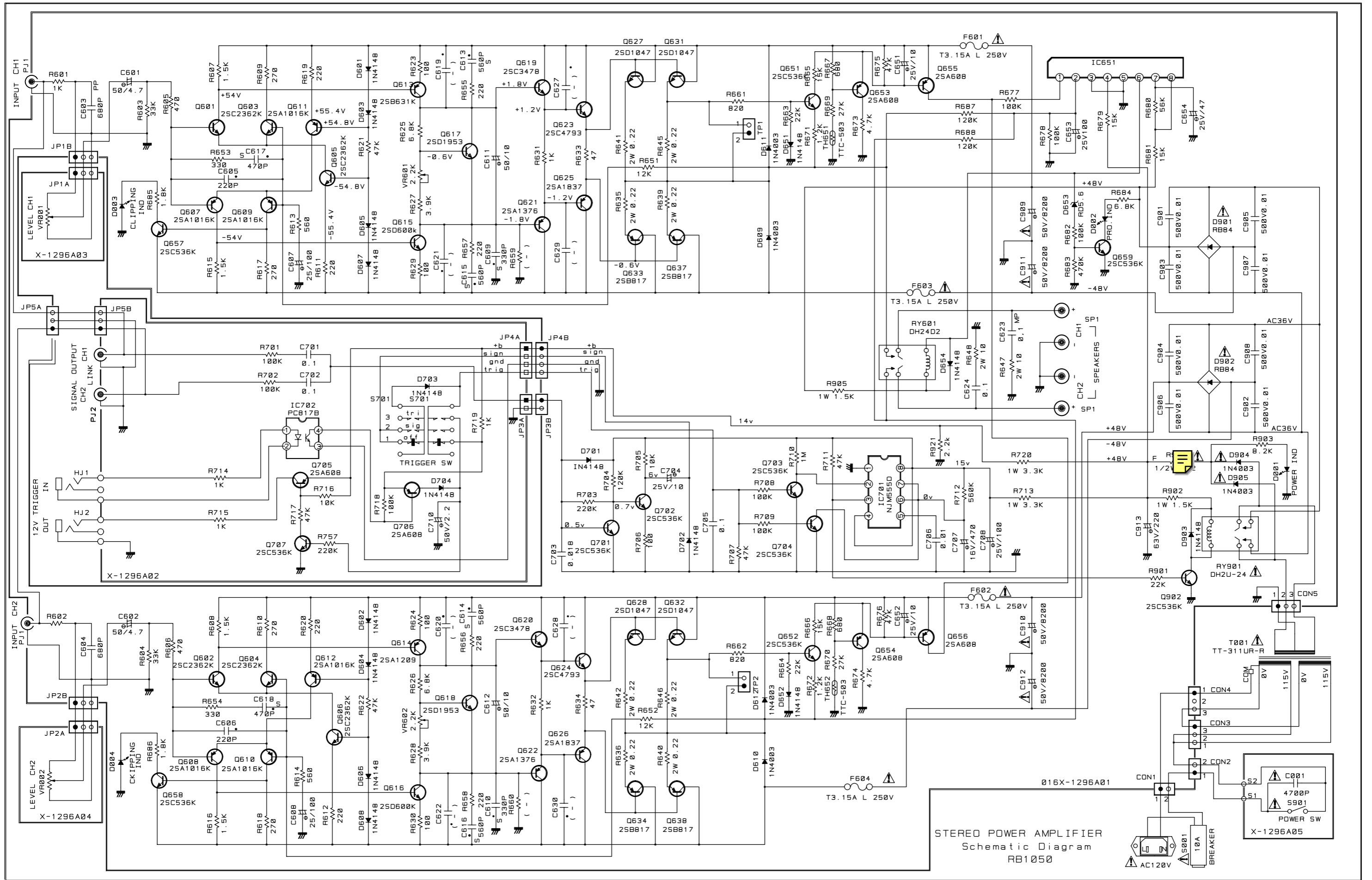
Cautions during Inspection and Repair

1. Keep in mind the safety warnings
The safety instructions are shown as the labels or printings on the exterior, the inside chassis or the parts, etc. Refer to the instructions when proceeding with inspection or repair.
2. Use only the specified parts for replacement
The selected parts are used at critical area to reduce fire hazard or electrical shock. So when replacing these parts where designaged with  **marks or**  **marks on the schematic diagram or the parts list**, ensure to use only the same parts.
3. Ensure to dress back the AC (Mains) cord to the original position
If for some reason, the AC cord is moved or partially disassembled, ensure to re-route or assemble back to the original position. The AC cord area is protected and secured by tubing and insulation materials for the sake of safety, so that no loose wire will touch and cause fire hazard and electrical shock.
4. Check for safety aspects after inspection or repair
Ensure all parts, such as screws or wires, removed during inspection or repair are secured back to the original positions, and check visually for any anomaly. Also check for any electrical leakage or resistance to maintain the safety.

PCB Assembly



Schematic Diagram



STEREO POWER AMPLIFIER
Schematic Diagram
RB1050