



Technical Manual

SIX CHANNEL POWER AMPLIFIER RB-976MKII

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Specification

Continuous Power Output Stereo Mode (20-20 kHz, <0.03%THD)	60 watts/ch into 8 ohms
Continuous Power Output Bridged Mono Mode (20-20 kHz, < 0.1% THD)	150 watts/ch into 8 ohms
Total Harmonic Distortion (20Hz-20kHz, 8 ohms)	<0.03%
Intermodulation Distortion (60 Hz : 7 kHz, 4:1)	<0.03%
Frequency Response (± 1 dB)	15 Hz-100 kHz
Damping Factor (20-20,000 Hz, 8 ohms)	150
Speaker Impedance (combined load)	Stereo mode : 4 ohms minimum Bridged Mono mode : 8 ohms minimum
Signal to Noise Ratio (IHF A network)	116 dB
Input Impedance	22 k Ohms
Input Sensitivity	1.5 volt
Auto Turn On Threshold Level (if activated)	10 mV input signal
Auto Turn Off Delay Time (if activated)	5 minutes with no signal
Power Requirements	USA : 115 Volts, 60 Hz Europe : 230 Volts, 50Hz
Power Consumption	700 Watts
Dimensions (W x H x D)	440 x 121 x 410 mm 17 ³ / ₈ x 4 ³ / ₄ x 16 ¹ / ₈ in
Weight	12.7kg, 28 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	SYMBOL	PARTS NO.	DESCRIPTION
X-1280 PCB ASSEMBLY					
C501.502	041 UTES1H100-FB	CAPACITOR ELEC.50V10UF	C424	041 UTES1E101-FB	CAPACITOR ELEC.25V100UF
C503.504	044 S50V330PJ	CAPACITOR STYROL 50V330PF	D421-423	034 T1N4148-86	DIODE
C505.506	044 S50V220PJ	CAPACITOR STYROL 50V220PF	K401-404	066 4TR-2709#3	2P PINJACK
C507.508	041 UTES1E101-FB	CAPACITOR ELEC.25V100UF	R401-406	054 TMF1001	RESISTOR METAL 1K
C511.512	041 UTES1H010-FB	CAPACITOR ELEC.50V1UF	R407-412	054 TMF1003	RESISTOR METAL 100K
C513.514	044 S50V390PJ	CAPACITOR STYROL 50V390PF	R415	054 TMF1502	RESISTOR METAL 15K
C515-518	044 S50V150PJ	CAPACITOR STYROL 50V150PF	R416.417	054 TMF1002	RESISTOR METAL 10K
C519.520	041 UTES1H100-FB	CAPACITOR ELEC.50V10UF	R418.419	054 TMF1502	RESISTOR METAL 15K
C551	041 UTES1H100-FB	CAPACITOR ELEC.50V10UF	R420	054 TMF1002	RESISTOR METAL 10K
D501-504	034 T1N4148-86	DIODE	R421	054 TMF1001	RESISTOR METAL 1K
D551.552	034 T1N4148-86	DIODE	R422	054 TMF2202	RESISTOR METAL 22K
R501.502	054 TMF1001	RESISTOR METAL 1K	R423	054 TMF2203	RESISTOR METAL 220K
R503.504	054 TMF2702	RESISTOR METAL 27K	R424	054 TMF1203	RESISTOR METAL 120K
R505.506	054 TMF3300	RESISTOR METAL 330R	R425	054 TMF2202	RESISTOR METAL 22K
R507.508	054 TMF1501	RESISTOR METAL 1.5K	R426	054 TMF1002	RESISTOR METAL 10K
R509.510	054 TMF4700	RESISTOR METAL 470R	R427	054 TMF1003	RESISTOR METAL 100K
R511.512	054 TMF6801	RESISTOR METAL 6.8K	R428	054 TMF1800	RESISTOR METAL 180R
R513.514	054 TMF8201	RESISTOR METAL 8.2K	R429	054 TMF4702	RESISTOR METAL 47K
R515.516	054 TMF4300	RESISTOR METAL 430R	R430	054 TMF4703	RESISTOR METAL 470K
R517.518	054 TMF47R0	RESISTOR METAL 47R	S401	064 4TR-2294	SLIDE SWITCH (INPUT A)
R519.520	054 TMF3302	RESISTOR METAL 33K	S402.403	064 C-4606A00	SLIDE SWITCH (INPUT B.C)
R521.522	054 TMF1002	RESISTOR METAL 10K	S404	064 C-4660A00	SLIDE SWITCH (SIGNAL SENSE)
R523.524	054 TMF1000	RESISTOR METAL 100R	T421.422	032 TC536-FG	TRANSISTOR (2SC536K-FG)
R525.526	054 TMF2201	RESISTOR METAL 2.2K	T423	032 TA608-FG	TRANSISTOR (2SA608K-FG)
R527.528	054 TMF6801	RESISTOR METAL 6.8K	U421	031 PC817B	PHOTO COUPLER
R529-532	054 TMF2200	RESISTOR METAL 220R	X-1281-02 PCB ASSEMBLY		
R533-536	054 NIR2-0.22JF	RESISTOR METAL 2W 0.22R	C951-954	043 TC500V103	CAPACITOR CERA.500V0.01UF
R537.538	051 SFR001-222	SEMI-FIXED RESISTOR 2.2K	C955	041 UTES1H471	CAPACITOR ELEC.50V470UF
R539	054 TMF8201	RESISTOR METAL 8.2K	C956	041 UTES1E101-FB	CAPACITOR ELEC.25V100UF
R551.552	054 TMF2202	RESISTOR METAL 22K	C957	041 UTES1E221-FB	CAPACITOR ELEC.25V220UF
R553.554	054 TMF1501	RESISTOR METAL 1.5K	C958	042 TP50V103J	CAPACITOR MYLAR 50V0.01UF
R555.556	054 TMF1201	RESISTOR METAL 1.2K	C991.992	044 DE1307E472M	SPARK KILLER
R557.558	054 TMF1502	RESISTOR METAL 15K	D951-954	034 T1N4003-TB	DIODE
R559	054 TMF4702	RESISTOR METAL 47K	D955	034 TRD15JST1	ZENER DIODE
R560	054 TMF1003	RESISTOR METAL 100K	D956	034 T1N4148-86	DIODE
R561	054 TMF4701	RESISTOR METAL 4.7K	F991	036 5ST250	MINI FUSE 250VT250MA
R562	034 TTC-503	THERMISTOR	L951	022 T-1070N01	SUB TRANSFORMER
R563	054 TMF8200	RESISTOR METAL 820R	R951	054 TMF3901	RESISTOR METAL 3.9K
R564	054 TMF3002	RESISTOR METAL 30K	R952	054 1WS1KJF	RESISTOR METAL 1W 1K
R565	054 TMF1501	RESISTOR METAL 1.5K	R953	054 TMF8203	RESISTOR METAL 820K
T501-506	032 TA1016-FG	TRANSISTOR(2SA1016K-FG)	R954	054 TMF4702	RESISTOR METAL 47K
T507.508	032 TC1941-KL	TRANSISTOR(2SC1941-KL)	R955	054 TMF1004	RESISTOR METAL 1M
T509.510	032 TA1016-FG	TRANSISTOR(2SA1016K-FG)	R956.957	054 TMF1003	RESISTOR METAL 100K
T511-514	033 B631-EF	TRANSISTOR(2SB631K-EF)	R958	054 TMF4702	RESISTOR METAL 47K
T515.516	033 D600-EF	TRANSISTOR(2SD600K-EF)	R959	054 2WS470JF	RESISTOR METAL 2W 470R
T551.552	032 TC536-FG	TRANSISTOR(2SC536K-FG)	R960	054 TMF2202	RESISTOR METAL 22K
T553.554	032 TA608-FG	TRANSISTOR(2SA608K-FG)	S991	061 C-4176A08	POWER SWITCH
601-.701-	AS SAME AS 501-.		S992	063 DH1U-24	RELAY
X-1281-01 PCB ASSEMBLY			T951-953	032 TC536-FG	TRANSISTOR(2SC536K-FG)
C401	041 UTES1H101-FB	CAPACITOR ELEC.50V100UF	U951	031 NJM555D	IC(TIMER)
C407-412	044 50MSAN104J	CAPACITOR FILM 50V0.1UF	019 C-3417A		FUSE CLIP
C421	042 TP50V183J	CAPACITOR MYLAR 50V0.018UF	X-1281-03 PCB ASSEMBLY		
C422	041 UTES1H100-FB	CAPACITOR ELEC.50V10UF	R451-453	051 4TR-2972	VARIABLE RESISTOR 50KBX2
C423	044 50MSAN104J	CAPACITOR FILM 50V0.1UF			

Parts List-2

SYMBOL	PARTS NO.	DESCRIPTION	SYMBOL	PARTS NO.	DESCRIPTION
X-1281-04 PCB ASSEMBLY					
D481-483	034 LTL4262N	LED	D902.903	034 T1N4003-TB	DIODE
D484.485	034 LTL4296N	LED	D931.932	034 T1N4003-TB	DIODE
D486	034 LTL4262N	LED	F901.902	036 5ST6.3	MINI FUSE 250VT6.3A
D487.488	034 LTL4296N	LED	R901	054 TMF3R30	RESISTOR METAL 3.3R
D489	034 LTL4262N	LED	R902	054 TMF1802	RESISTOR METAL 18K
D490.491	034 LTL4296N	LED	R931	054 TMF47R0	RESISTOR METAL 47R
D492	034 LTL4262N	LED	911-.921-.	069 C-3417A	FUSE CLIP
	019 4TR-3213	LED HOLDER		AS SAME AS 901-.	
X-1281-05 PCB ASSEMBLY			HEAT SINKER ASSEMBLY		
K431	067 C-4635A02	2P TERMINAL BLOCK	017 SQ4-16A00		HEAT SINKER
X-1282-01 PCB ASSEMBLY			019 TO-220		INSULATION SHEET (S)
C801.802	044 50MSAN104J	CAPACITOR FILM 50V0.1UF	019 TO-3PL		INSULATION SHEET (L)
C811	041 UTES1E101-FB	CAPACITOR ELEC.25V100UF	032 D600-EF		TRANSISTOR(2SD600K-EF)
C812	041 UTES1E470-FB	CAPACITOR ELEC.25V47UF	033 A1943-RO		POWER TRANSISTOR(2SA1943-RO)
			033 C5200-RO		POWER TRANSISTOR(2SC5200-RO)
C813	041 UTES1H4R7-FB	CAPACITOR ELEC.50V4.7UF	OTHERS		
D811	034 T1N4148-86	DIODE	011 FP-512		FRONT PANEL ASSY
D812	034 TRD5.6JST1	ZENER DIODE	012 4TSA-7		KNOB 11F
K811	067 C-4493A01	SPEAKER TERMINAL	012 SD4-16A00		PUSH BUTTON 12F
L801.802	021 TRL-331	SPEAKER COIL	014 4TR-2797#3		ORNAMENT SIDE BOARD
R801.802	054 2WS10JF	RESISTOR METAL 2W 10R	014 SQ3-15A00		UPPER COVER
R811	054 TMF1003	RESISTOR METAL 100K	015 RP-367		REAR CHASSIS
R813	054 TMF5602	RESISTOR METAL 56K	019 4TR-2823#2		PLASTIC FOOT 24F
R815	054 TMF1502	RESISTOR METAL 15K	019 4TSH-19#2		PLASTIC FOOT 50F
R816.817	054 TMF1203	RESISTOR METAL 120K	022 T-1076N01		POWER TRANSFORMER
R818	054 2WS1.2KJF	RESISTOR METAL 2W 1.2K	034 SEL1124R		LED
R819	053 CR14-104J-A	RESISTOR CARBON 100K	069 C-4629A01		AC INLET
R820	053 CR14-474J-A	RESISTOR CARBON 470K	072 C-4621A01		AC CORD SET for STD
R821	054 TMF1502	RESISTOR METAL 15K	072 C-4622A01		AC CORD SET for AUSTRALIA
S811	063 DH2TU-24	RELAY	072 C-4623A01		AC CORD SET for UK
T811	032 TC536-FG	TRANSISTOR(2SC536K-FG)	072 C-4624A01		AC CORD SET for CEE
U811	031 MPC1237HA	IC(PROTECTION)	081 SQ4-31A00		INSIDE CARTON
831-.861-.	AS SAME AS 801-.		081 Z-203		STYROL MOULDING
X-1282-02 PCB ASSEMBLY					
C901-904	043 TC500V103	CAPACITOR CERA.500V0.01UF			
C905.906	041 50USP682	CAPACITOR ELEC.50V6800UF			
C931.932	043 TC500V103	CAPACITOR CERA.500V0.01UF			
C933	041 UTSS1H101-FB	CAPACITOR ELEC.50V100UF			
D901	034 RS403L	BRIDGED DIODE			

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 inceased risk of fire or electrical shock hazard.

Adjustment


Instruments : DC milli-meter

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

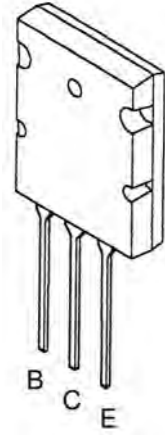
Step	Coupling	Location	Adjust	Adjust for
1	K31	X-1280-01 PCB	R537	DC milli-voltmeter Reads 4mV
2	K32	X-1280-01 PCB	R538	
3	K33	X-1280-02 PCB	R637	
4	K34	X-1280-02 PCB	R638	
5	K35	X-1280-03 PCB	R737	
6	K36	X-1280-03 PCB	R738	

Service Note

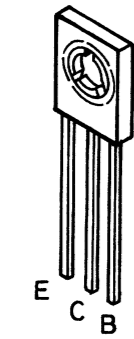
Cautions during Inspection and Repair

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.

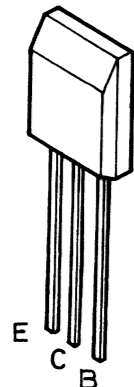
Case Outline



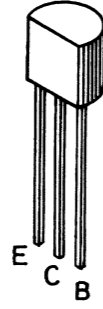
2SA1943
2SC5200



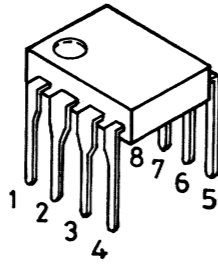
2SB631K
2SD600K



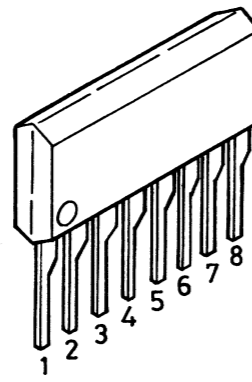
2SC1941



2SC536K
2SA608K
2SA1016K

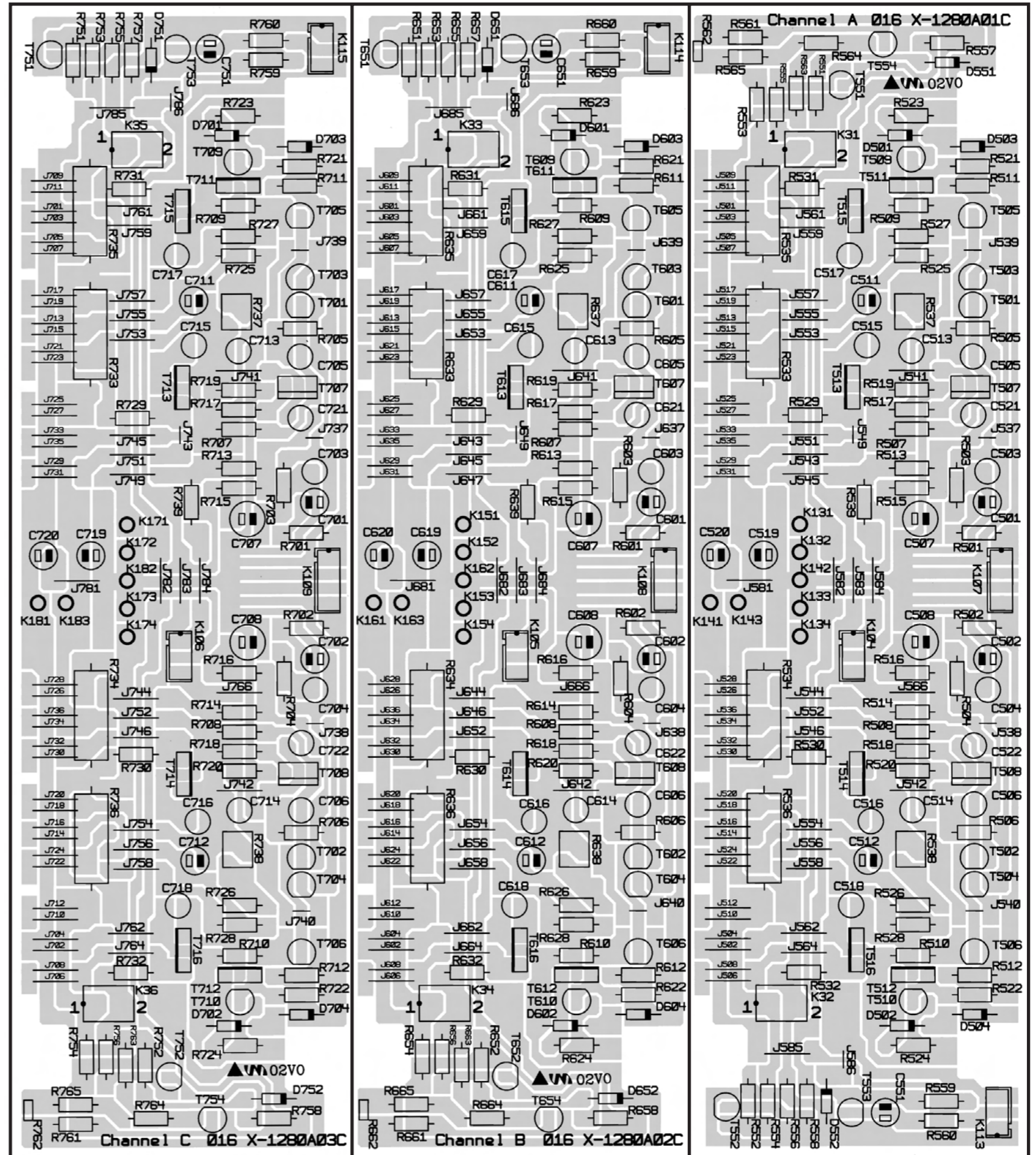


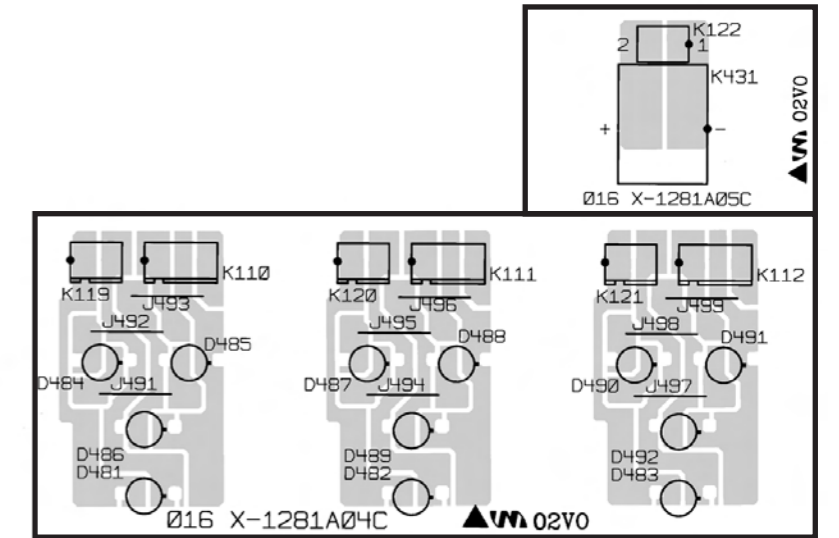
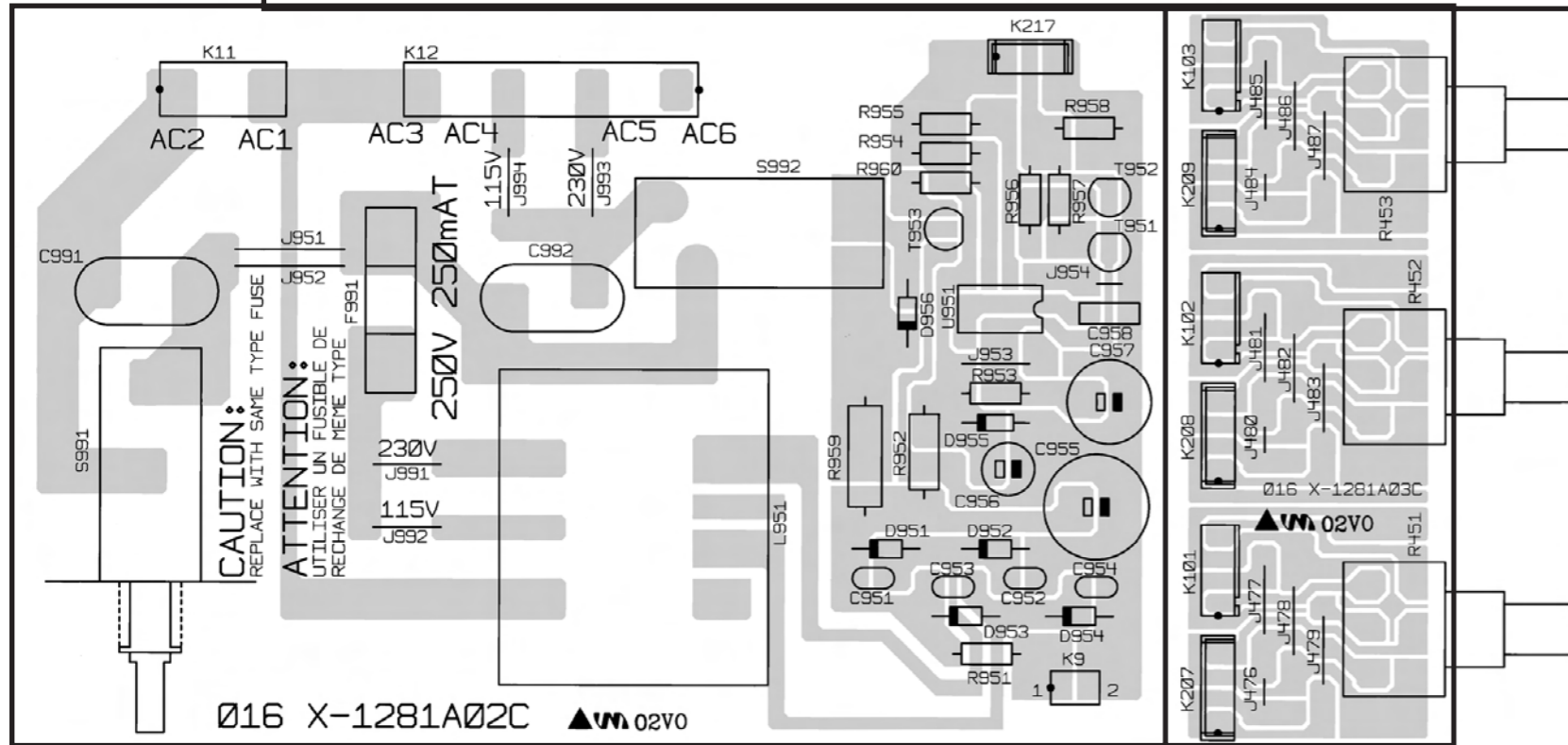
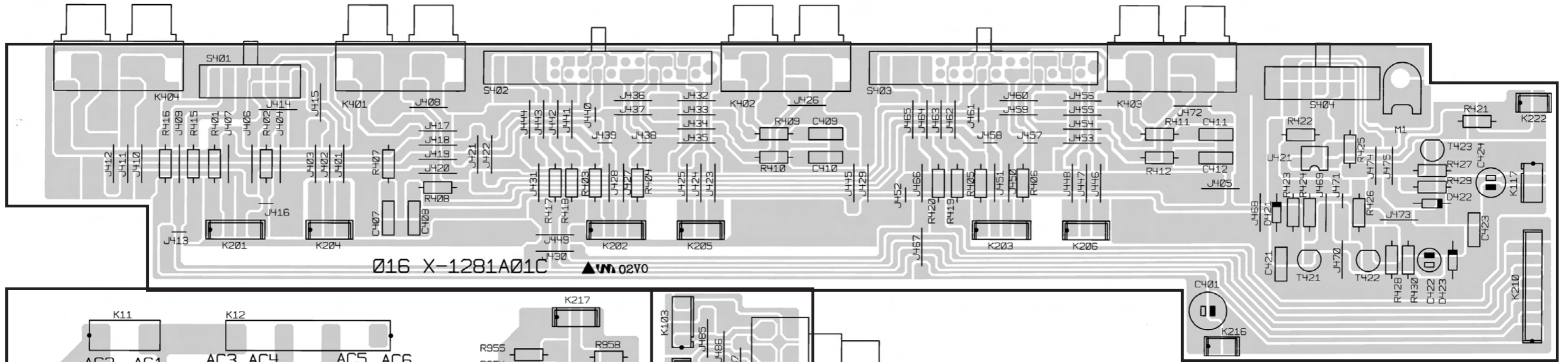
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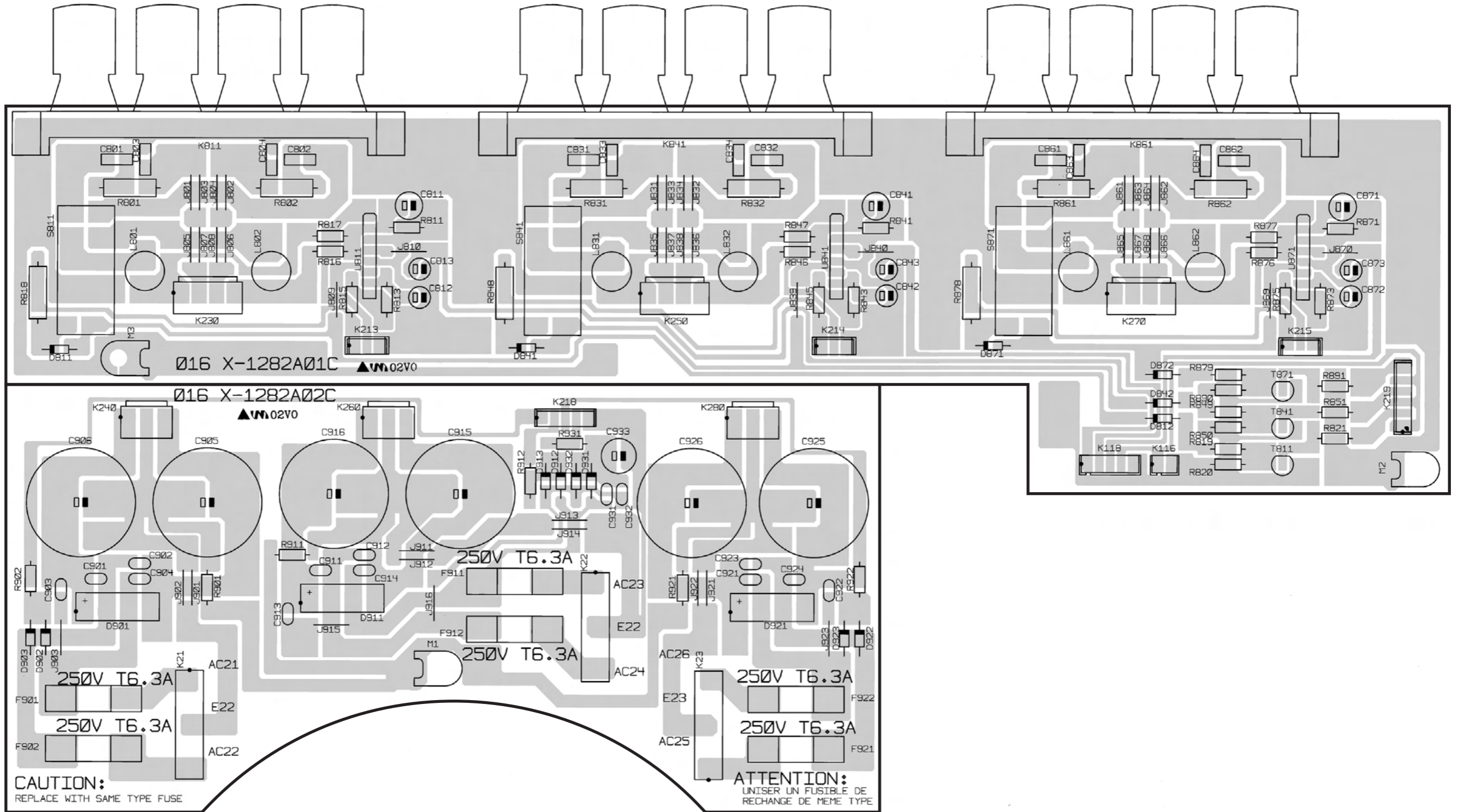


MPC1237HA

PCB Assembly-1







Schematic Diagram

