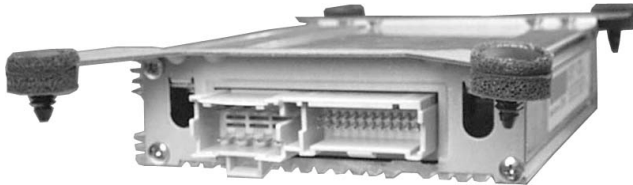


Service Manual

AUTOMOTIVE ELECTRONICS

GM CY-BG2911ZC

4-channels Power Amplifier



GM PART No. :10309548

VEHICLE : Impala

DESTINATION : US /Canada

PRODUCED AFTER: Nov., 2000

Specifications*

General

Power Supply	DC 12V (11V - 16V)	Dimensions** (WxHxD)	167.4 × 140 × 39.1 (mm)
	Test Voltage 13.2V		(not including connector protrusion or brackets)
	Negative ground	Weight**	1.1kg (including brackets)
Current Consumption	Less than 3A		
Maximum Output Power	20W × 4ch (at 4Ω)		
Output Impedance	4Ω		
Source Impedance	600Ω or less		
Input Level	0dBV (1Vrms)		
THD	0.5% max.		
Output Noise	-67dBV max. (each channel)		
Channel Separation	55dB min. (at 500Hz)		

* Specifications and the design are subject to possible modification without notice due to improvements.


** Dimensions and Weight shown are approximate.

- Above specifications comply with EIA standards.

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

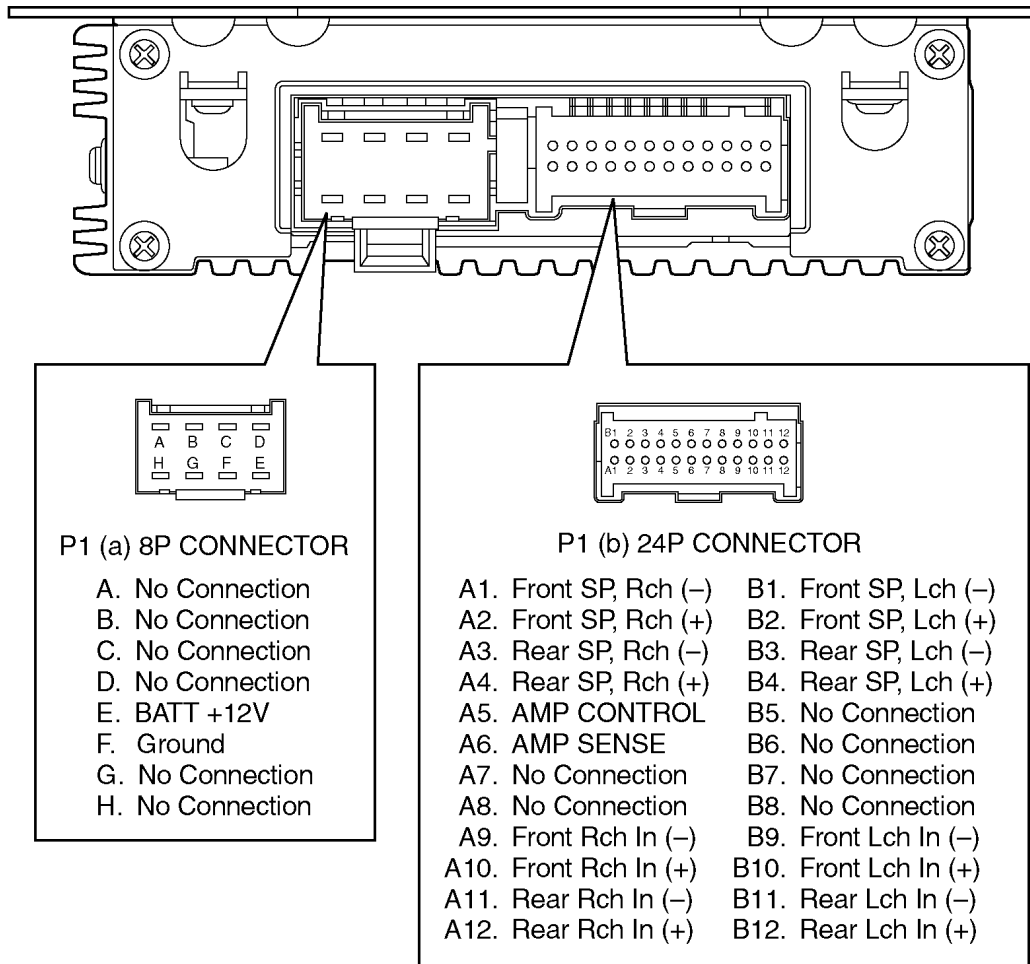
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1 FEATURES

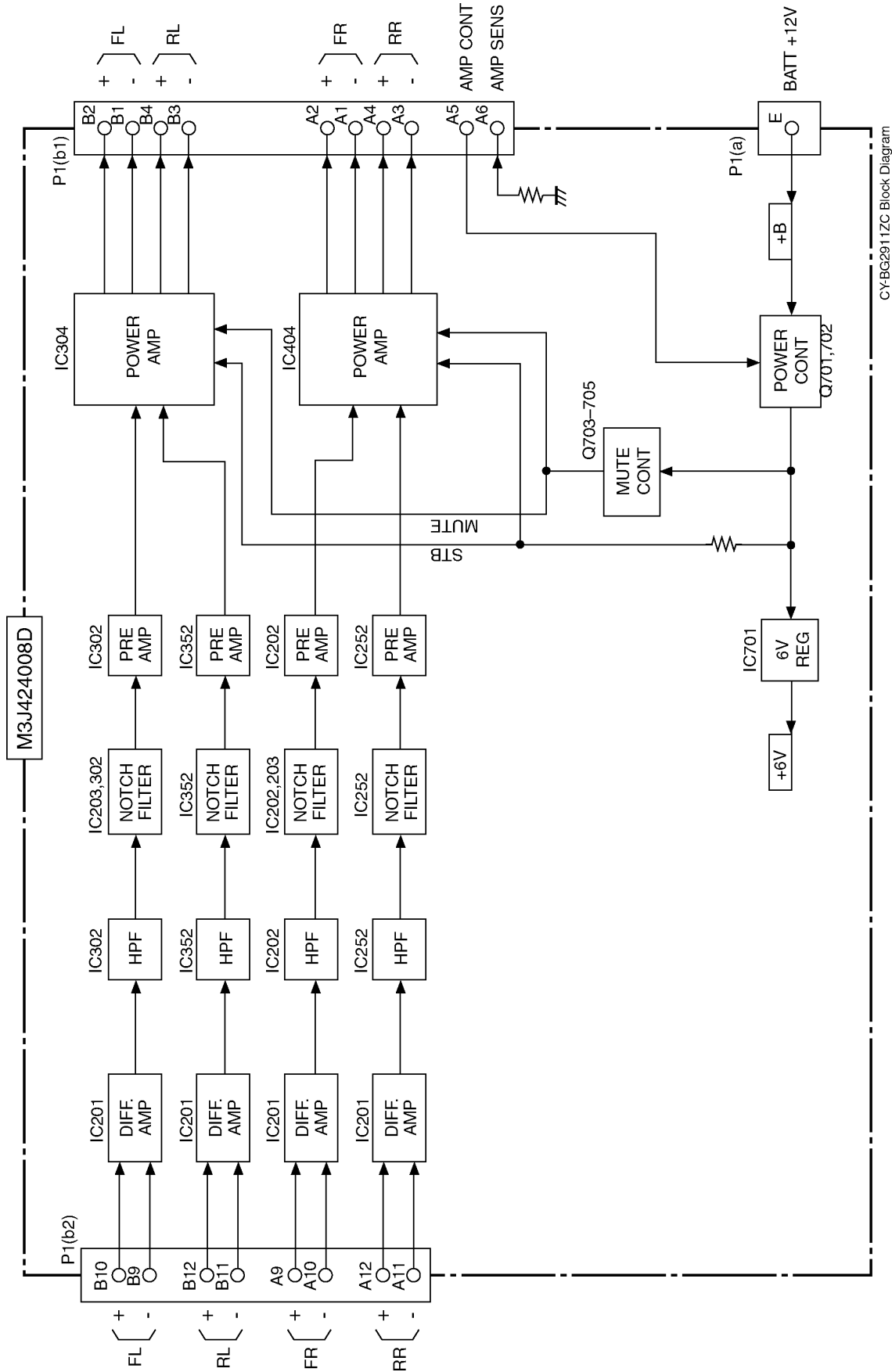
- 4 channels of amplification: LF, RF, LR and RR.
- 3 bands of fixed equalization for each front channel.
2 bands of fixed equalization for each rear channel.
- The amplifier shall utilize AMP CONTROL to invoke amplifier function as follows:
For AMP CONTROL signal from 0 Vdc to 1.0 Vdc, amplifier shall be off.
For AMP CONTROL signal from 2.5 Vdc to voltage BATT12V terminal, amplifier shall be on.

2 REAR VIEW AND CONNECTORS



3 BLOCK DIAGRAM

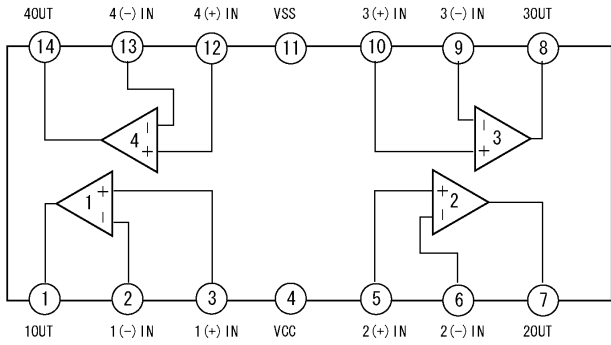
3.1. Main Block



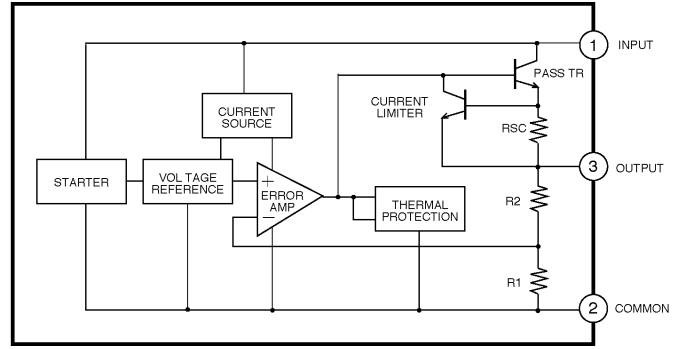
CY-BG2911ZC Block Diagram

4 PACKAGE AND IC BLOCK DIAGRAM

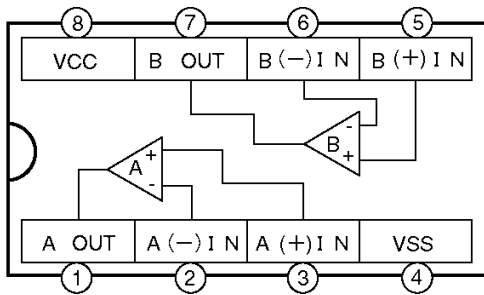
4.1. MAIN BLOCK



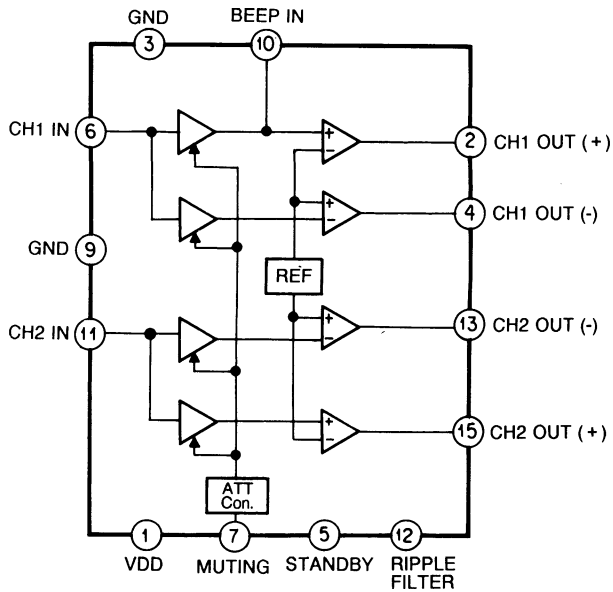
IC201, 202, 252 : YEAMPC4574E1
 IC302, 352 : YEAMPC4574E1



IC701 : MC7806BT



IC203, 205 : YEAMPC4570E1



IC204, 304 : AN7190NK

5 REPLACEMENT PARTS LIST

Notes :

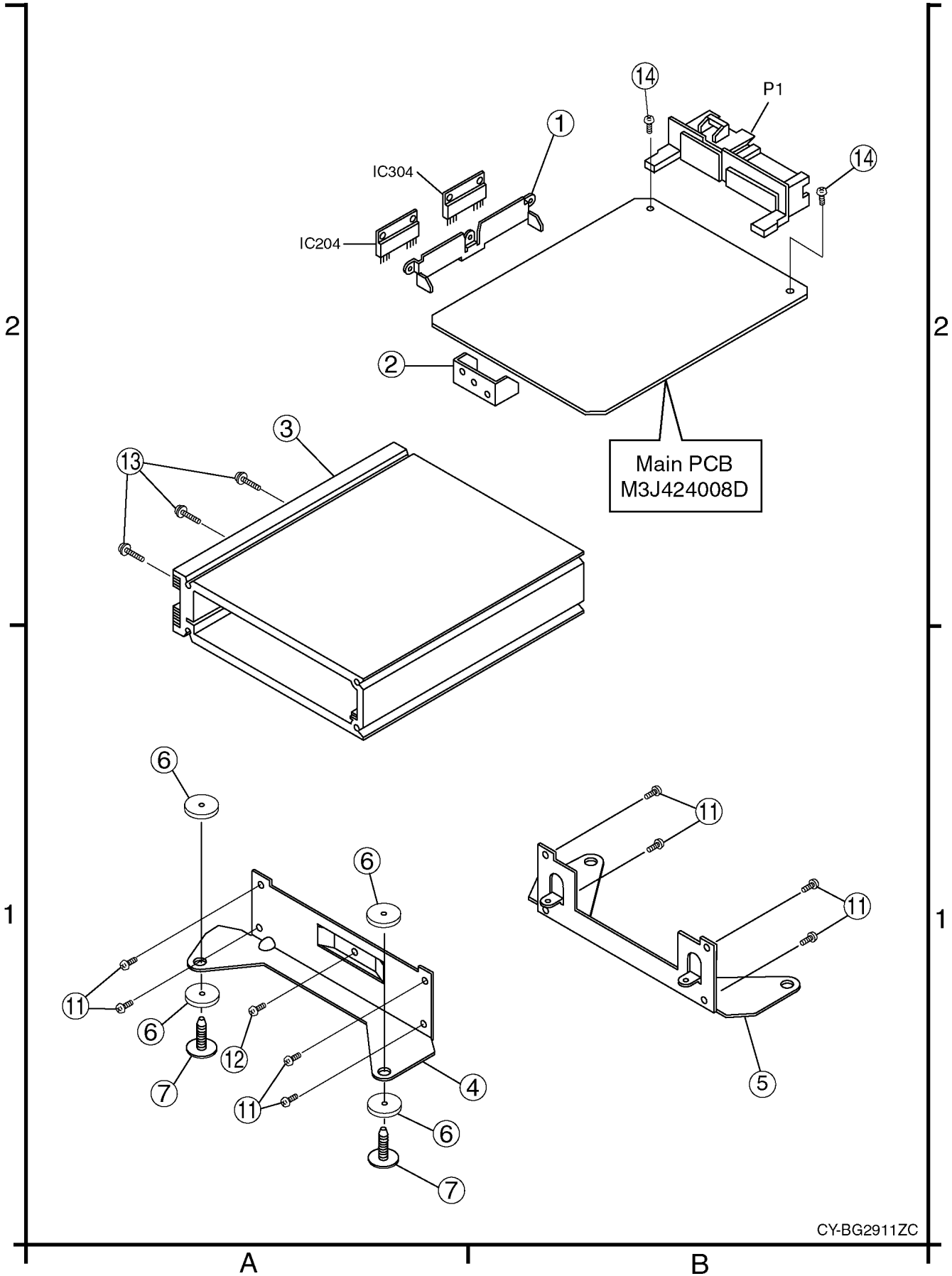
1. Be sure to make your orders of replacement parts according to this list.
2. Important safety notice: Components, identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Location keys in the remarks column indicates the general location of the parts shown in the exploded drawing, as in a road map.
4. The marking (RTL) indicates that Retention Time is limited for this item. After the discontinuation of assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
5. "MCC" marks in remarks column are indicated supply parts of Matsushita Communication Industrial Corp. of America (MCC).

Ref. No.	Part No.	Part Name & Description	Remarks
[M3J424008D] Main Block			
IC's and TRANSISTORS			
IC201	YEAMPC4574E1	IC	
IC202	YEAMPC4574E1	IC	
IC203	YEAMPC4570E1	IC	
IC204	AN7190NK	IC	
IC205	YEAMPC4570E1	IC	
IC252	YEAMPC4574E1	IC	
IC302	YEAMPC4574E1	IC	
IC304	AN7190NK	IC	
IC352	YEAMPC4574E1	IC	
IC701	MC7806BT	IC	MCC
Q701	ZZ24008MP6	Transistor	MCC
Q702	YEANC3661TA	Transistor	
Q703	BlABCF000042	Transistor	
Q704	YEANC3661TA	Transistor	
Q705	YEANC3661TA	Transistor	
DIODES			
D201	MA3X15300L	Diode	MCC
D202	MA3X15300L	Diode	MCC
D251	MA3X15300L	Diode	MCC
D252	MA3X15300L	Diode	MCC
D301	MA3X15300L	Diode	MCC
D302	MA3X15300L	Diode	MCC
D351	MA3X15300L	Diode	MCC
D352	MA3X15300L	Diode	MCC
D701	YEAD30D2FC6	Diode	
D702	MA3X15300L	Diode	MCC
D703	YEAD30D2FC6	Diode	
D704	MA3X15300L	Diode	MCC
D705	MA3X15300L	Diode	MCC
CAPACITORS			
C200	YECUS1H221JM	Ceramic, 220PF 50WV	
C201	ECEALCSN100I	Electrolytic, 10 μ F 16WV	
C202	ECEALCSN100I	Electrolytic, 10 μ F 16WV	
C203	YECUS1H221JM	Ceramic, 220PF 50WV	
C204	YECUS1H221JM	Ceramic, 220PF 50WV	
C205	YECUS1H104KX	Ceramic, 0.1 μ F 50WV	
C206	YECUS1H104KX	Ceramic, 0.1 μ F 50WV	

Ref. No.	Part No.	Part Name & Description	Remarks
C207	YECUS1H273KX	Ceramic, 0.027 μ F 50WV	
C208	YECUS1H122KX	Ceramic, 1200PF 50WV	
C209	YECUS1C124KX	Ceramic, 0.12 μ F 16WV	
C210	YECUS1H103KX	Ceramic, 0.01 μ F 50WV	
C211	YECUS1C823KX	Ceramic, 0.082 μ F 16WV	
C212	YECUS1H103KX	Ceramic, 0.01 μ F 50WV	
C215	YECUS1H153KX	Ceramic, 0.015 μ F 50WV	
C221	ECEALCKA100I	Electrolytic, 10 μ F 16WV	
C222	YECUS1H152KX	Ceramic, 1500PF 50WV	
C223	YECUS1C224KX	Ceramic, 0.22 μ F 16WV	
C224	YECUS1C224KX	Ceramic, 0.22 μ F 16WV	
C225	YECUS1H472KX	Ceramic, 4700PF 50WV	
C226	YECUS1H472KX	Ceramic, 4700PF 50WV	
C227	YECUS1H471JM	Ceramic, 470PF 50WV	
C228	YECUS1H471JM	Ceramic, 470PF 50WV	
C231	YECUS1H103KX	Ceramic, 0.01 μ F 50WV	
C232	ECEALCKA100I	Electrolytic, 10 μ F 16WV	
C233	ECA1CM222B	Electrolytic, 220 μ F 16WV	
C241	YECUS1H104KX	Ceramic, 0.1 μ F 50WV	
C242	YECUS1H104KX	Ceramic, 0.1 μ F 50WV	
C243	YECUS1H104KX	Ceramic, 0.1 μ F 50WV	
C244	YECUS1H104KX	Ceramic, 0.1 μ F 50WV	
C245	YECUS1H104KX	Ceramic, 0.1 μ F 50WV	
C246	YECUS1C224KX	Ceramic, 0.22 μ F 16WV	
C247	YECUS1H102KX	Ceramic, 1000PF 50WV	
C248	YECUS1C224KX	Ceramic, 0.22 μ F 16WV	
C249	YECUS1H102KX	Ceramic, 1000PF 50WV	
C250	YECUS1H221JM	Ceramic, 220PF 50WV	
C251	ECEALCSN100I	Electrolytic, 10 μ F 16WV	
C252	ECEALCSN100I	Electrolytic, 10 μ F 16WV	
C253	YECUS1H221JM	Ceramic, 220PF 50WV	
C254	YECUS1H221JM	Ceramic, 220PF 50WV	
C255	YECUS1C823KX	Ceramic, 0.082 μ F 16WV	
C256	YECUS1C823KX	Ceramic, 0.082 μ F 16WV	
C257	YECUS1H183KX	Ceramic, 0.018 μ F 50WV	
C258	YECUS1H392KX	Ceramic, 3900PF 50WV	
C259	YECUS1C334KX	Ceramic, 0.33 μ F 16WV	
C260	YECUS1H123KX	Ceramic, 0.012 μ F 50WV	
C265	YECUS1H273KX	Ceramic, 0.027 μ F 50WV	
C271	ECEALCKA100I	Electrolytic, 10 μ F 16WV	
C272	YECUS1H152KX	Ceramic, 1500PF 50WV	
C273	YECUS1C224KX	Ceramic, 0.22 μ F 16WV	
C274	YECUS1C224KX	Ceramic, 0.22 μ F 16WV	
C275	YECUS1H472KX	Ceramic, 4700PF 50WV	
C276	YECUS1H472KX	Ceramic, 4700PF 50WV	
C277	YECUS1H471JM	Ceramic, 470PF 50WV	
C278	YECUS1H471JM	Ceramic, 470PF 50WV	
C300	YECUS1H221JM	Ceramic, 220PF 50WV	
C301	ECEALCSN100I	Electrolytic, 10 μ F 16WV	
C302	ECEALCSN100I	Electrolytic, 10 μ F 16WV	
C303	YECUS1H221JM	Ceramic, 220PF 50WV	
C304	YECUS1H221JM	Ceramic, 220PF 50WV	
C305	YECUS1H104KX	Ceramic, 0.1 μ F 50WV	
C306	YECUS1H104KX	Ceramic, 0.1 μ F 50WV	
C307	YECUS1H273KX	Ceramic, 0.027 μ F 50WV	
C308	YECUS1H122KX	Ceramic, 1200PF 50WV	
C309	YECUS1C124KX	Ceramic, 0.12 μ F 16WV	
C310	YECUS1H103KX	Ceramic, 0.01 μ F 50WV	
C311	YECUS1C823KX	Ceramic, 0.082 μ F 16WV	
C312	YECUS1H103KX	Ceramic, 0.01 μ F 50WV	
C315	YECUS1H153KX	Ceramic, 0.015 μ F 50WV	
C321	ECEALCKA100I	Electrolytic, 10 μ F 16WV	
C322	YECUS1H152KX	Ceramic, 1500PF 50WV	
C323	YECUS1C224KX	Ceramic, 0.22 μ F 16WV	
C324	YECUS1C224KX	Ceramic, 0.22 μ F 16WV	
C325	YECUS1H472KX	Ceramic, 4700PF 50WV	
C326	YECUS1H472KX	Ceramic, 4700PF 50WV	
C327	YECUS1H471JM	Ceramic, 470PF 50WV	
C328	YECUS1H471JM	Ceramic, 470PF 50WV	
C331	YECUS1H103KX	Ceramic, 0.01 μ F 50WV	
C332	ECEALCKA100I	Electrolytic, 10 μ F 16WV	
C333	ECA1CM222B	Electrolytic, 220 μ F 16WV	
C341	YECUS1H104KX	Ceramic, 0.1 μ F 50WV	

Ref. No.	Part No.	Part Name & Description	Remarks
P1	M4Z424088	Connector	MCC
1	M2G424003	Fixture, IC	MCC
2	M2G424005	Fixture, PCB	MCC
3	M3F424006	Chassis	MCC
4	M3G424002	Bracket, Amplifier (L)	MCC
5	M3G424001	Bracket, Amplifier (R)	MCC
6	M2D424034	Sponge Washer	MCC
7	M2E424035	Peg	MCC
11	XTB4+12BFX	Screw, M4 x 12	
12	XTB3+6FFX	Screw, M3 x 6	
13	YEJT03038	Screw, M3 x 16	
14	YEJT03015	Screw, M3 x 6 (PCB)	

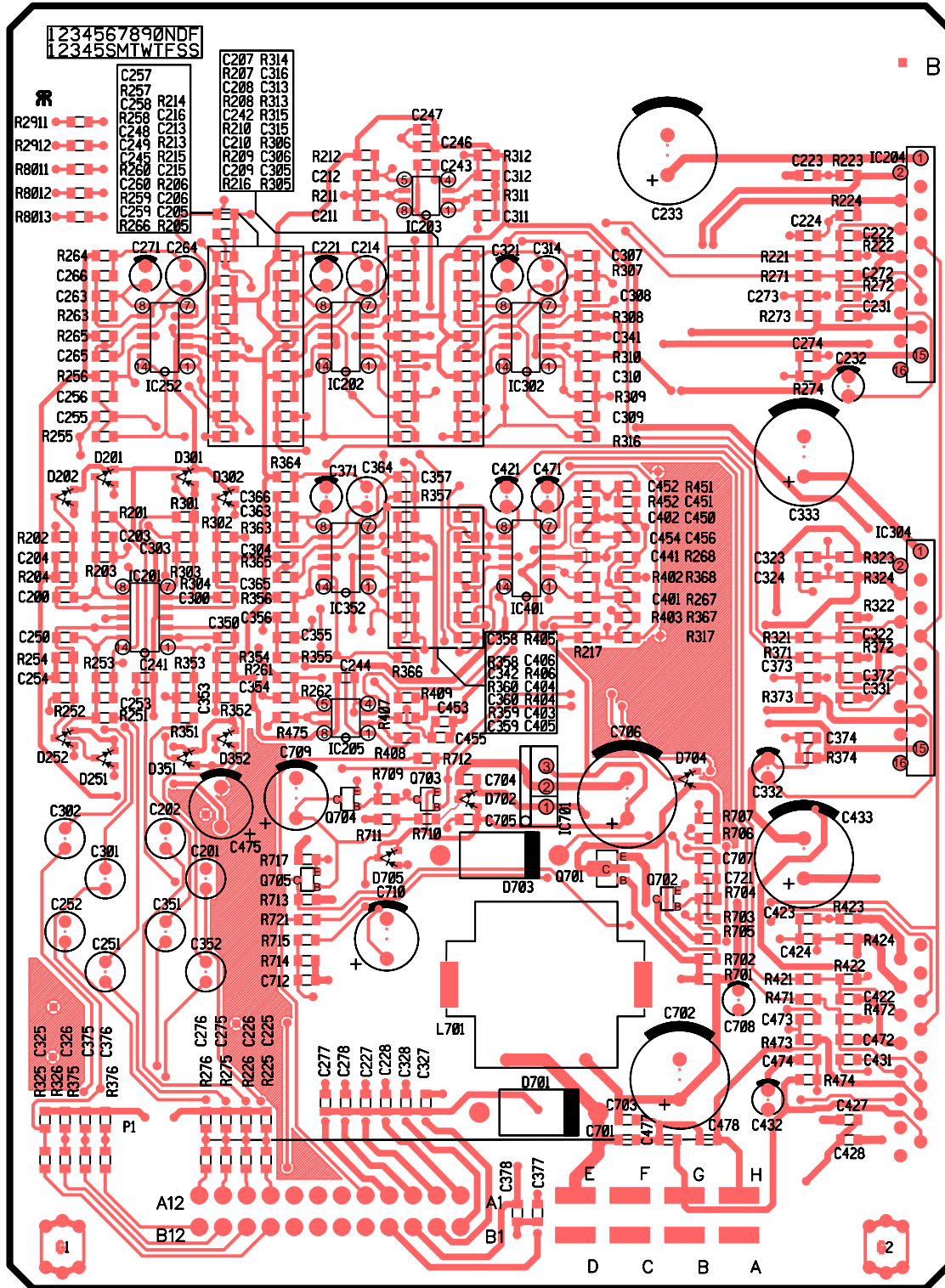
6 EXPLODED VIEW



CY-BG2911ZC

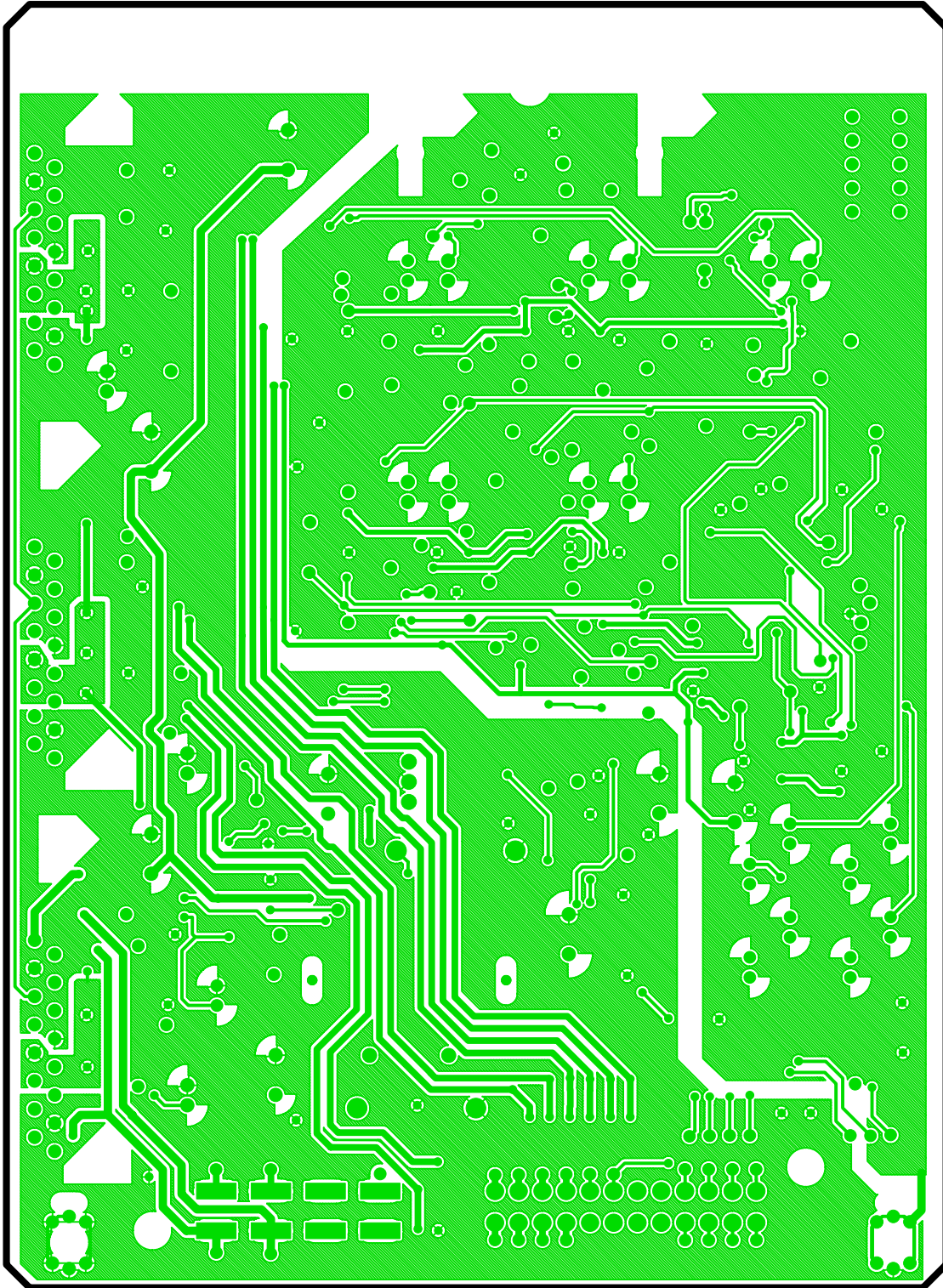
7 WIRING DIAGRAM

7.1. Main Block-1 (Top View)



[M3J424008D] [Top View]

7.2. Main Block-2 (Bottom View)



[M3J424008D] [Bottom View]

8 SCHEMATIC DIAGRAM

8.1. Main Block

