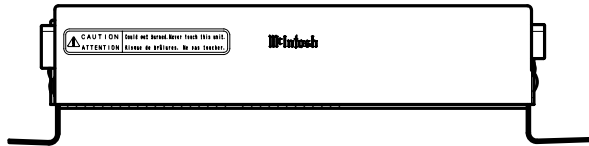


# Service Manual



**McIntosh**

SUBARU Automobile Genuine  
Power Amplifier

Model **EF-1080I-C**  
(Genuine No.86221AE02A)

## SPECIFICATIONS

### Main section

Gain:	FRONT 23dB ± 2dB(1.5kHz) REAR 24dB ± 2dB(500Hz)
Power output:	35W × 4ch(maximum) More than 20W × 4ch (100Hz ~ 15kHz, THD0.05%, 8 )
Distortion(THD):	Less than 0.05% (0.5W output, 1kHz)
S/N ratio:	More than 80dB(1kHz)
Load impedance:	8

### Sub woofer section

Gain:	29dB ± 2dB(30Hz)
Power output:	60W(maximum) More than 40W (50Hz, THD0.05%, 4 )
Distortion(THD):	Less than 0.08% (0.5W output, 50Hz)
S/N ratio:	More than 80dB(50Hz)
Load impedance:	4

### General

Channel separation:	More than 60dB(1kHz)
Power supply voltage:	DC14.4V(10.8V to 15.6V)
Current consumption:	Less than 25A
Dimensions(mm):	240(W) × 50(H) × 165(D)
Weight:	2.3kg

Specifications and design are subject to change without notice for further improvement.

## NOTE

We cannot supply PWB with component parts in principle. When a circuit on PWB has failure, please repair it by component parts base. Parts which are not mentioned in service manual are not supplied.

## COMPONENT

EF-1080I-C

Main unit - - - - - 1

To engineers in charge of repair or inspection of our products.

Before repair or inspection, make sure to follow the instructions so that customers and Engineers in charge of repair or inspection can avoid suffering any risk or injury.

### 1. Use specified parts.

The system uses parts with special safety features against fire and voltage. Use only parts with equivalent characteristics when replacing them.

The use of unspecified parts shall be regarded as remodeling for which we shall not be liable. The onus of product liability (PL) shall not be our responsibility in cases where an accident or failure is as a result of unspecified parts being used.

### 2. Place the parts and wiring back in their original positions after replacement or re-wiring.

For proper circuit construction, use of insulation tubes, bonding, gaps to PWB, etc, is involved. The wiring connection and routing to the PWB are specially planned using clamps to keep away from heated and high voltage parts. Ensure that they are placed back in their original positions after repair or inspection.

If extended damage is caused due to negligence during repair, the legal responsibility shall be with the repairing company.

3. Check for safety after repair.

Check that the screws, parts and wires are put back securely in their original position after repair. Ensure for safety reasons there is no possibility of secondary problems around the repaired spots.

If extended damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.

4. Caution in removal and making wiring connection to the parts for the automobile.

Disconnect the battery terminal after turning the ignition key off. If wrong wiring connections are made with the battery connected, a short circuit and/or fire may occur. If extensive damage is caused due to negligence of repair, the legal responsibility shall be with the repairing

company.

5. Cautions regarding chips.

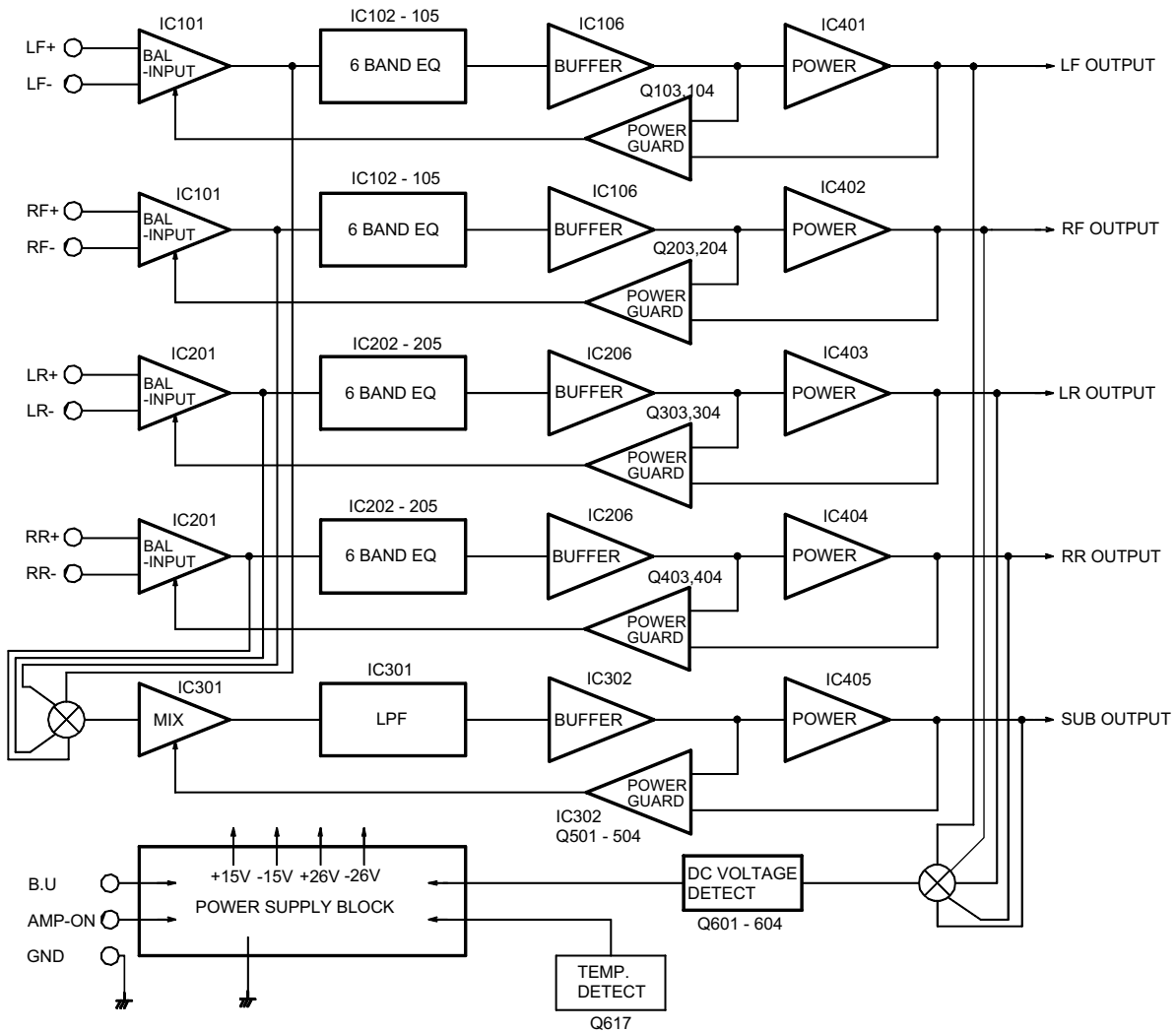
Do not reuse removed chips even when no abnormality is observed in their appearance. Always replace them with new ones. (The chip parts include resistors, capacitors, diodes, transistors, etc). The negative pole of tantalum capacitors is highly susceptible to heat, so use special care when replacing them and check the operation afterwards.

6. Cautions in handling flexible PWB

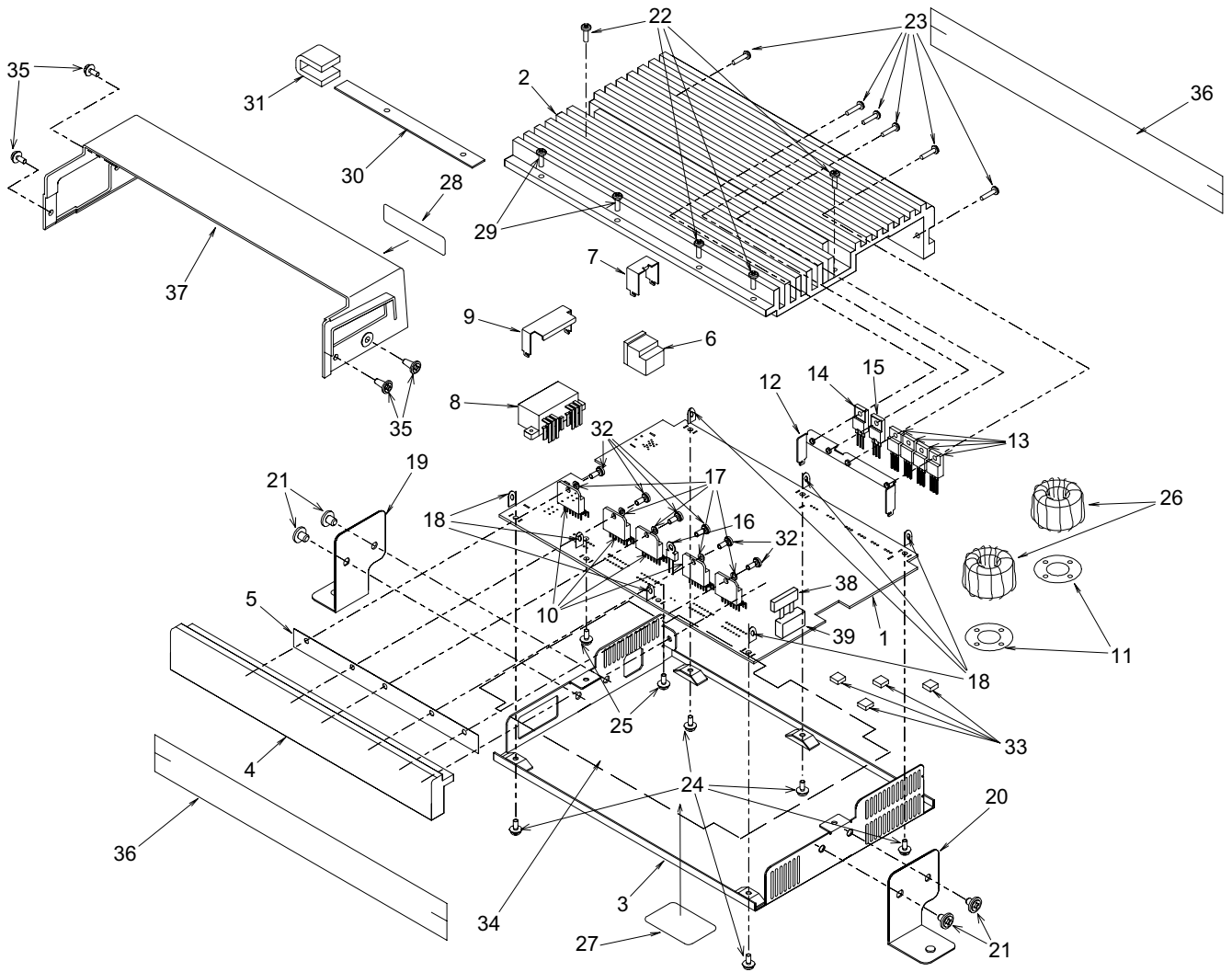
Before working with a soldering iron, make sure that the iron tip temperature is around 270 . Take care not to apply the iron tip repeatedly (more than three times) to the same patterns. Also take care not to apply the tip with force.

7. Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

## BLOCK DIAGRAM



# EXPLODED VIEW • PARTS LIST



NO.	PART NO.	DESCRIPTION	Q'TY	NO.	PART NO.	DESCRIPTION	Q'TY
1	039-1480-01	MAIN PWB (WITHOUT COMPONENT)	1	21	714-5006-77	MACHINE SCREW(M5 × 6)	4
2	313-1721-02	HEAT SINK(MAIN)	1	22	714-3010-87	MACHINE SCREW(M3 × 10)	4
3	304-0457-03	LOWER COVER	1	23	714-3014-87	MACHINE SCREW(M3 × 14)	6
4	313-1720-00	HEAT SINK(SUB)	1	24	732-3008-17	SEMS SCREW(M3 × 8)	5
5	347-5659-00	INSULATOR	1	25	735-3008-18	D-SEMS SCREW(M3 × 8)	2
6	074-1137-00	OUTLET SOCKET(13PIN)	1	26	010-8018-00	COIL	2
7	331-2343-00	DIN-HOLDER	1	27	286-9064-09	SETPLATE	1
8	074-0973-00	OUTLET SOCKET	1	28	285-1823-00	GUIDE LABEL	1
9	331-2344-00	CONNECTOR HOLDER	1	29	714-3012-80	MACHINE SCREW(M3 × 12)	2
10	051-2024-00	IC(TDA7295)	5	30	300-7751-00	BRACKET	1
11	347-5660-00	INSULATOR	2	31	345-8193-00	CUSHION	1
12	331-2342-00	IC-HOLDER	1	32	716-0881-01	D-SEMS SCREW(M3 × 8)	6
13	125-8004-00	TRANSISTOR(MTAJ30N06)	4	33	345-7555-00	SPACER	4
14	001-0650-0B	DIODE(FMG22S)	1	34	347-5861-00	SHELTER	1
15	001-0650-0A	DIODE(FMG22R)	1	35	735-3008-19	D-SEMS SCREW(M3 × 8)	4
16	002-0223-00	THERMISTOR	1	36	353-0513-01	SHADE	2
17	078-0045-00	WASHER(AC316A)	5	37	335-6542-00	HEAT SINK COVER	1
18	073-0743-90	TERMINAL(GND)	7	38	060-0057-59	AUTO FUSE(25A)	1
19	300-7708-01	MTG-BRKT(CON)	1	39	335-3086-00	FUSE SUPPORT	1
20	300-7707-00	MTG-BRKT	1				

# ELECTRICAL PARTS LIST

Note) Several different parts of the same reference number are alternative parts.

## Main PWB(B1) section

One of those parts is used in the set.

REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION
C101	176-2201-00	22pF CH	C407	172-1541-11	0.15 µ F	C644	042-9020-00	16V2200 µ F
C102	176-4711-00	470pF CH	C408	172-2731-11	0.027 µ F	C645	042-9023-00	35V330 µ F
C103	182-1043-63	50V0.1 µ F	C409	172-1851-11	50V1.8 µ F	C646	042-9023-00	35V330 µ F
C104	172-1851-11	50V1.8 µ F	C410	172-4731-11	0.047 µ F	D601	001-0592-00	RM4Z
C105	172-1541-11	0.15 µ F	C411	172-1041-11	0.1 µ F	D602	001-0330-00	1SS119
C106	172-1831-11	0.018 µ F	C412	173-1821-11	1800pF J	D603	001-0330-00	1SS119
C107	173-1221-11	1200pF J	C413	172-1031-11	0.01 µ F	D604	001-0425-20	HZS6.2
C108	172-3931-11	0.039 µ F	C416	042-0555-66	16V10 µ F	D605	001-0650-0A	FMG22R
C109	172-4731-11	0.047 µ F	C417	176-8097-00	8pF CH	D606	001-0650-0B	FMG22S
C110	173-8221-11	8200pF J	C418	182-2253-63	50V2.2 µ F	D607	001-0425-20	HZS6.2
C111	173-6821-11	6800pF J	C419	184-4763-51	35V47 µ F	D608	001-0466-00	S5688B
C112	172-1841-15	0.18 µ F	C420	172-1041-11	0.1 µ F	D609	001-0466-00	S5688B
C113	172-5631-11	0.056 µ F	C421	042-0555-66	16V10 µ F	IC101	051-3001-00	NJM4580D
C114	172-3931-11	0.039 µ F	C422	042-0555-66	16V10 µ F	IC102	051-3001-00	NJM4580D
C115	172-1231-11	0.012 µ F	C501	172-2231-11	0.022 µ F	IC103	051-3021-00	NJM4741D
C116	042-0555-66	16V10 µ F	C502	176-4701-00	47pF CH	IC104	051-3021-00	NJM4741D
C117	176-8097-00	8pF CH	C503	172-2241-11	0.22 µ F	IC105	051-3021-00	NJM4741D
C118	183-6853-59	35V6.8 µ F	C504	172-2241-11	0.22 µ F	IC106	051-0422-51	NJM4558D
C119	184-4763-51	35V47 µ F	C505	042-0555-66	16V10 µ F	IC201	051-3001-00	NJM4580D
C120	172-1041-11	0.1 µ F	C506	042-0555-66	16V10 µ F	IC202	051-3001-00	NJM4580D
C121	042-0555-66	16V10 µ F	C507	176-1007-00	10pF CH	IC203	051-3021-00	NJM4741D
C122	042-0555-66	16V10 µ F	C508	176-4711-00	470pF CH	IC204	051-3021-00	NJM4741D
C201	176-2201-00	22pF CH	C509	182-2253-63	50V2.2 µ F	IC205	051-3021-00	NJM4741D
C202	176-4711-00	470pF CH	C510	182-1063-52	35V10 µ F	IC206	051-0422-51	NJM4558D
C203	182-1043-63	50V0.1 µ F	C511	184-4763-51	35V47 µ F	IC301	051-3001-00	NJM4580D
C204	172-1541-11	0.15 µ F	C512	172-1041-11	0.1 µ F	IC302	051-3001-00	NJM4580D
C205	172-1851-11	50V1.8 µ F	C513	176-1011-00	100pF CH	IC401	051-2024-00	TDA7295
C206	173-1221-11	1200pF J	C514	176-1011-00	100pF CH	IC402	051-2024-00	TDA7295
C207	172-1831-11	0.018 µ F	C534	042-9024-00	16V470 µ F	IC404	051-2024-00	TDA7295
C208	172-4731-11	0.047 µ F	C537	042-9024-00	16V470 µ F	IC405	051-2024-00	TDA7295
C209	172-3931-11	0.039 µ F	C538	042-9024-00	16V470 µ F	IC601	051-5817-00	TL594CN
C210	173-6821-11	6800pF J	C590	042-9023-00	35V330 µ F	IC602	051-1160-00	NJM7815FA
C211	173-8221-11	8200pF J	C591	042-0505-00	25V1 µ F	IC603	051-1306-00	NJM7915FA
C212	172-5631-11	0.056 µ F	C601	172-6841-11	0.68 µ F	J101	074-1137-00	13P DIN
C213	172-1841-15	0.18 µ F	C602	178-1042-78	0.1 µ F	J102	074-0973-00	14P
C214	172-1231-11	0.012 µ F	C603	184-4773-11	6.3V470 µ F	L601	010-8018-00	COIL
C215	172-3931-11	0.039 µ F	C604	042-9020-00	16V2200 µ F	L602	010-8018-00	COIL
C216	042-0555-66	16V10 µ F	C605	178-8232-78	0.082 µ F	Q101	102-2712-00	2SC2712
C217	176-8097-00	8pF CH	C606	172-1041-11	0.1 µ F	Q102	125-8008-00	PN4392
C218	183-6853-59	35V6.8 µ F	C607	182-4763-33	16V47 µ F	Q103	100-1298-00	2SA1298
C219	184-4763-51	35V47 µ F	C608	182-1053-63	50V1 µ F	Q104	100-1298-00	2SA1298
C220	172-1041-11	0.1 µ F	C609	178-1032-78	0.01 µ F	Q201	102-2712-00	2SC2712
C221	042-0555-66	16V10 µ F	C610	182-2263-33	16V22 µ F	Q202	125-8008-00	PN4392
C222	042-0555-66	16V10 µ F	C611	182-1053-63	50V1 µ F	Q203	100-1298-00	2SA1298
C301	176-2201-00	22pF CH	C612	178-1042-78	0.1 µ F	Q204	100-1298-00	2SA1298
C302	176-4711-00	470pF CH	C613	173-1521-11	1500pF J	Q301	102-2712-00	2SC2712
C303	182-1043-63	50V0.1 µ F	C614	042-0555-66	16V10 µ F	Q302	125-8008-00	PN4392
C304	172-4731-11	0.047 µ F	C615	178-1042-78	0.1 µ F	Q303	100-1298-00	2SA1298
C305	173-8221-11	8200pF J	C616	178-1042-78	0.1 µ F	Q304	100-1298-00	2SA1298
C306	172-1541-11	0.15 µ F	C617	178-1032-78	0.01 µ F	Q401	102-2712-00	2SC2712
C307	173-2221-11	2200pF J	C620	173-2221-11	2200pF J	Q402	125-8008-00	PN4392
C308	172-1851-11	50V1.8 µ F	C621	042-9014-00	35V2200 µ F	Q403	100-1298-00	2SA1298
C309	172-2731-11	0.027 µ F	C622	042-9014-00	35V2200 µ F	Q404	100-1298-00	2SA1298
C310	172-1041-11	0.1 µ F	C623	172-1041-11	0.1 µ F	Q501	100-1298-00	2SA1298
C311	172-4731-11	0.047 µ F	C624	172-1041-11	0.1 µ F	Q502	100-1298-00	2SA1298
C312	172-1031-11	0.01 µ F	C625	184-4763-51	35V47 µ F	Q503	125-8008-00	PN4392
C313	173-1821-11	1800pF J	C626	184-4763-51	35V47 µ F	Q504	102-2712-00	2SC2712
C316	042-0555-66	16V10 µ F	C627	172-1041-11	0.1 µ F	Q601	100-1298-00	2SA1298
C317	176-8097-00	8pF CH	C628	172-1041-11	0.1 µ F	Q602	102-2712-00	2SC2712
C318	182-2253-63	50V2.2 µ F	C629	172-1041-11	0.1 µ F	Q603	102-2712-00	2SC2712
C319	184-4763-51	35V47 µ F	C630	172-1041-11	0.1 µ F	Q604	102-2712-00	2SC2712
C320	172-1041-11	0.1 µ F	C631	184-2273-32	16V220 µ F	Q605	100-1431-00	2SA1431
C321	042-0555-66	16V10 µ F	C632	184-2273-32	16V220 µ F	Q606	102-2712-00	2SC2712
C322	042-0555-66	16V10 µ F	C633	042-9024-00	16V470 µ F	Q607	100-1298-00	2SA1298
C401	176-2201-00	22pF CH	C635	172-1041-11	0.1 µ F	Q608	100-1298-00	2SA1298
C402	176-4711-00	470pF CH	C636	172-1041-11	0.1 µ F	Q609	102-2712-00	2SC2712
C403	051-2024-00	TDA7295	C639	172-1041-11	0.1 µ F	Q610	102-2712-00	2SC2712
C403	182-1043-63	50V0.1 µ F	C640	172-1041-11	0.1 µ F	Q611	100-1298-00	2SA1298
C404	173-8221-11	8200pF J	C641	172-1041-11	0.1 µ F	Q612	125-8004-00	MTAJ30N06HD
C405	172-4731-11	0.047 µ F	C642	172-1041-11	0.1 µ F	Q613	125-8004-00	MTAJ30N06HD
C406	173-2221-11	2200pF J	C643	172-1041-11	0.1 µ F	Q614	125-8004-00	MTAJ30N06HD



REF No.	PART No.	DESCRIPTION
R631	111-2201-91	1/4WS 22
R632	117-1041-10	1/10W 100k
R633	117-4721-10	1/10W 4.7k
R634	117-4721-10	1/10W 4.7k
R635	117-4721-10	1/10W 4.7k
R636	117-2211-10	1/10W 220
R637	117-2211-10	1/10W 220
R638	117-2211-10	1/10W 220
R639	117-2211-10	1/10W 220

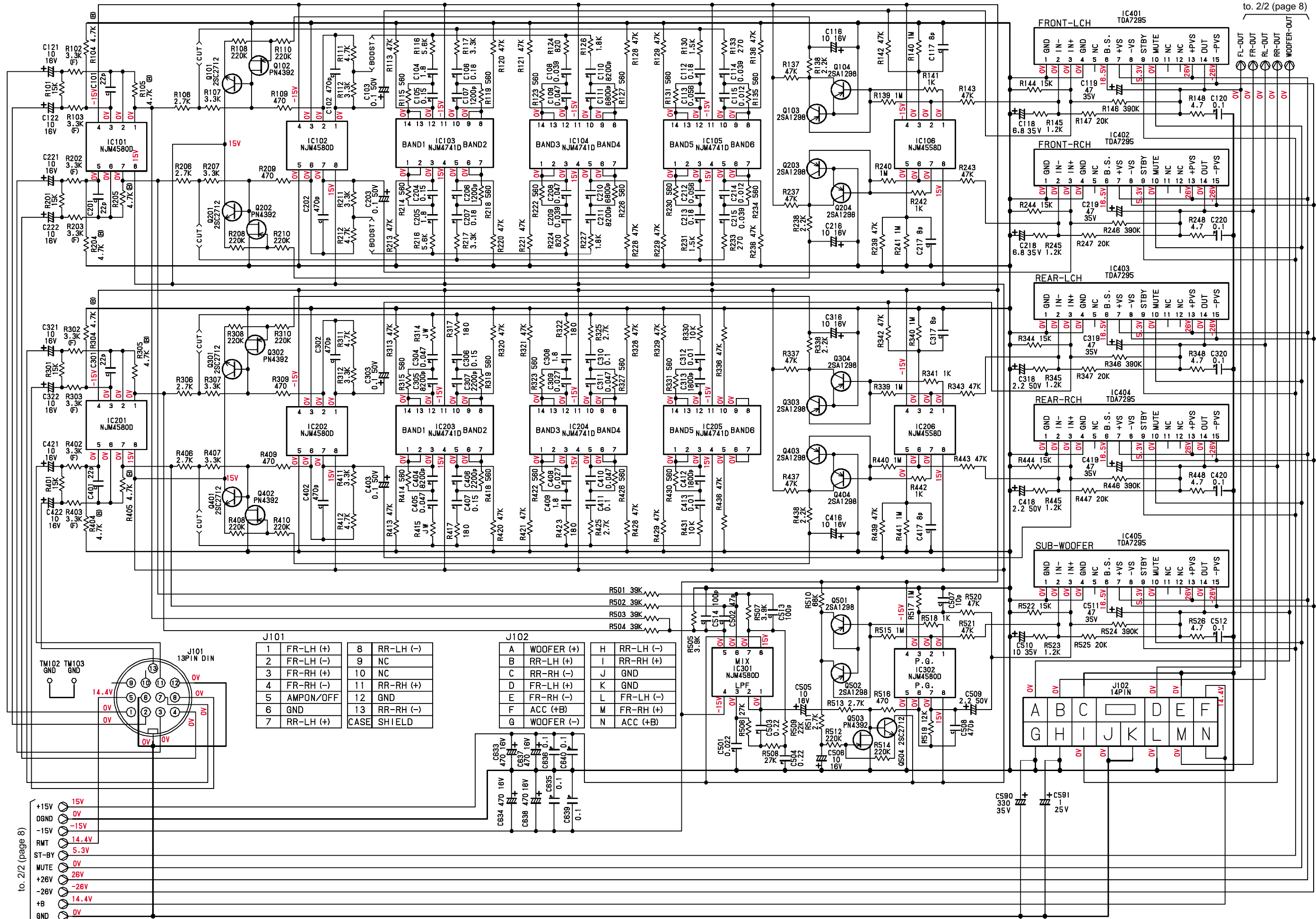
REF No.	PART No.	DESCRIPTION
R640	111-2291-81	1/2WS 2.2
R643	032-0089-14	2W 82
R644	117-1231-10	1/10W 12k
R645	032-0141-00	1/2WS 22
R646	032-0141-00	1/2WS 22
R647	032-0087-61	1/4WS 10k ± 1%
R648	032-0087-61	1/4WS 10k ± 1%
R649	032-0087-63	1/4WS 56k ± 1%
R650	111-3301-91	1/4WS 33

REF No.	PART No.	DESCRIPTION
T601	007-1145-00	TRANS
TH601	002-0223-00	PTH9M04BE471T
TM101	073-0743-90	GND PLATE
TM102	073-0743-90	GND PLATE
TM103	073-0743-90	GND PLATE
TM104	073-0743-90	GND PLATE
TM105	073-0743-90	GND PLATE
TM106	073-0743-90	GND PLATE
TM107	073-0743-90	GND PLATE

# CIRCUIT DIAGRAM

## Main PWB(B1) section 1/2

to 2/2 (page 8)



J101

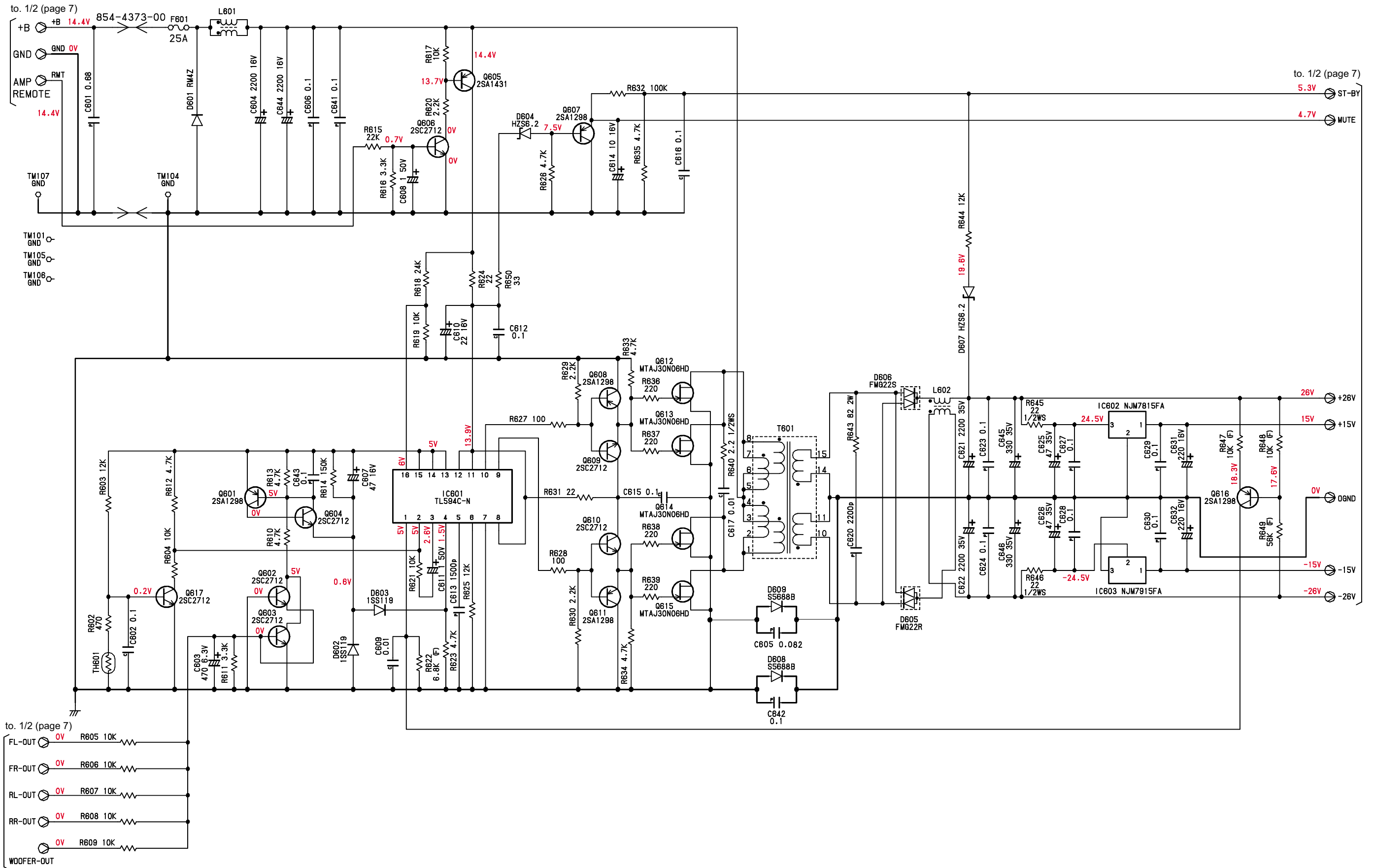
1	FR-LH (+)	8	RR-LH (-)
2	FR-LH (-)	9	NC
3	FR-RH (+)	10	NC
4	FR-RH (-)	11	RR-RH (+)
5	AMPON/OFF	12	GND
6	GND	13	RR-RH (-)
7	RR-LH (+)	CASE	SHIELD

J102

A	WOOFER (+)	H	RR-LH (-)
B	RR-LH (+)	I	RR-RH (+)
C	RR-RH (-)	J	GND
D	FR-LH (+)	K	GND
E	FR-RH (-)	L	FR-LH (-)
F	ACC (+B)	M	FR-RH (+)
G	WOOFER (-)	N	ACC (+B)

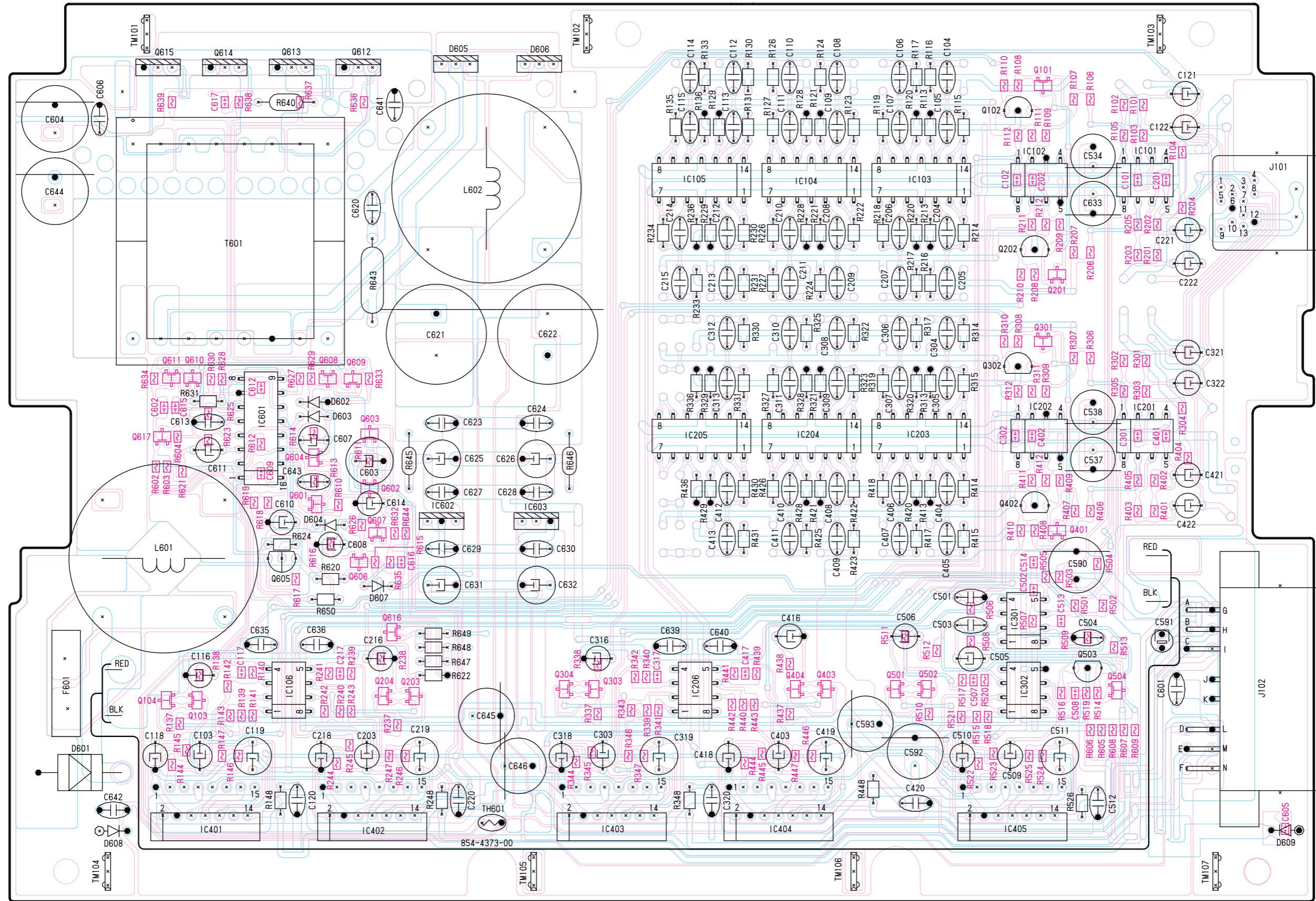
- +15V 15V
- 0GND 0V
- 15V -15V
- RMT 14.4V
- ST-BY 5.3V
- MUTE 0V
- +26V 26V
- 26V -26V
- +B 14.4V
- GND 0V

Main PWB(B1) section 2/2





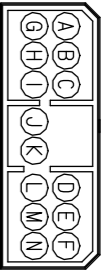
■ PRINTED WIRING BOARD  
Main PWB(B1) section



- 1 FRONT LEFT SP +
- 2 FRONT LEFT SP -
- 3 FRONT RIGHT SP +
- 4 FRONT RIGHT SP -
- 5 AMP ON/OFF
- 6 GND
- 7 REAR LEFT SP +
- 8 REAR LEFT SP -
- 9 NC
- 10 NC
- 11 REAR RIGHT SP +
- 12 GND
- 13 REAR RIGHT SP -



- A WOOFER SP +
- B REAR LEFT SP -
- C REAR RIGHT SP -
- D FRONT LEFT SP +
- E FRONT RIGHT SP -
- F ACC
- G WOOFER SP -
- H REAR LEFT SP -
- I REAR RIGHT SP +
- J GND
- K GND
- L FRONT LEFT SP -
- M FRONT RIGHT SP +
- N ACC



IC	401	601	106	402	602	603	403	105 206	404	104	103	405 301	102	101	MAIN PWB (B1)	
Q	615	610 614	613 605	608 604 601	612 603 606 204	603	304 303	205	404 403	204	501 502 203	102 202 302 402	101 201 301 401	503 504	201	

● MEANS GND PATTERN