

## SERVICE MANUAL



### Topaz SR10 powerful FM/AM stereo receiver

**Power Output:** 85 watts (into 8 Ohms)

**Frequency Response:** (-1dB) 5Hz - 50kHz

**Max. Power Consumption:** 500W

**Radio function** Aerial inputs FM 75 ohms, Coaxial.  
AM 300 ohms wire loop/single wire.

**Europe:** AM (522-1629kHz)  
FM (87.5-108MHz)

**US** AM (530-1710kHz)  
FM (87.5-108MHz)

**Dimensions (H x W x D):** 110 x 430 x 340mm


**Weight** 8.1kg (17.8lbs)

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## Important safety instructions

For your own safety please read the following important safety instructions carefully before attempting to connect this unit to the mains power supply. They will also enable you to get the best performance from and prolong the life of the unit:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use with only the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as the power-supply cord or plug having been damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

### WARNING

- To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.
- Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

The unit must be installed in a manner that makes disconnection of the mains plug from the mains socket outlet (or appliance connector from the rear of the unit) possible. Where the mains plug is used as the disconnect device, the disconnect device shall remain readily operable. Only use the mains cord supplied with this unit.

Please ensure there is ample ventilation (at least 10cm clearance all round). Do not put any objects on top of this unit. Do not situate it on a rug or other soft surface and do not obstruct any air inlets or outlet grilles. Do not cover the ventilation grilles with items such as newspapers, tablecloths, curtains, etc.

This unit must not be used near water or exposed to dripping or splashing water or other liquids. No objects filled with liquid, such as vases, shall be placed on the unit.



The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the service literature relevant to this appliance.



The symbol on this product indicates that it is of CLASS II (double insulated) construction.



### WEEE symbol

The crossed-out wheeled bin is the European Union symbol for indicating separate collection for electrical and electronic equipment. This product contains electrical and electronic equipment which should be reused, recycled or recovered and should not be disposed of with unsorted regular waste. Please return the unit or contact the authorised dealer from whom you purchased this product for more information.



### CE mark

This product complies with European Low Voltage (2006/95/EC), Electromagnetic Compatibility (2004/108/EC) and Environmentally-friendly design of Energy-using Products (2005/32/EC) Directives when used and installed according to this instruction manual. For continued compliance only Cambridge Audio accessories should be used with this product and servicing must be referred to qualified service personnel.



### C-Tick mark

This product meets the Australian Communications Authority's Radio communications and EMC requirements.



### Ross Test Stamp

This product meets Russian electronic safety approvals.

### FCC regulations

**NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER AUTHORITY TO OPERATE THE EQUIPMENT.**

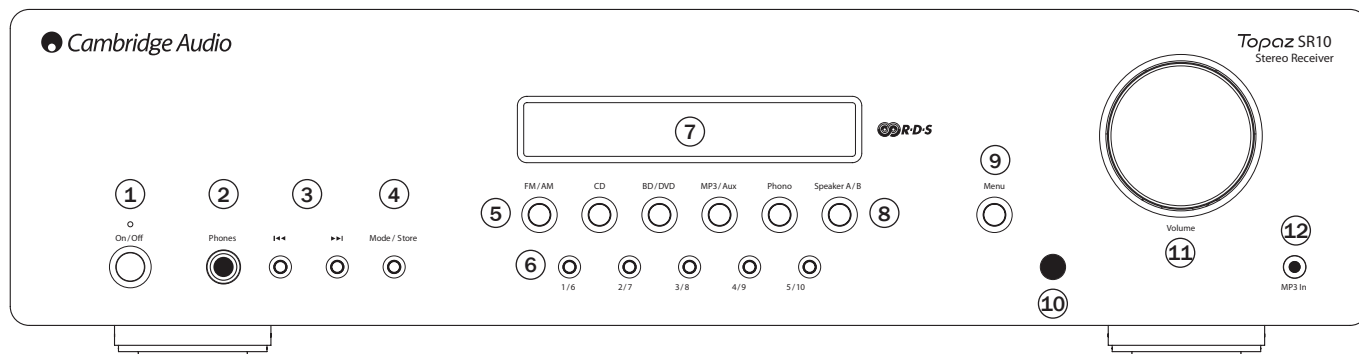


This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Front panel controls



### ① Power On/Off

Switches the unit on or off.

### ② Headphones socket

Allows for the connection of stereo headphones with a ¼ inch jack plug. Headphones with an impedance of between 32 and 600 ohms are recommended.

**Note:** Plugging in headphones will automatically mute the loudspeaker outputs.

### ③ ⏪ ⏩ Skip/Scan buttons

The skip scan buttons are used when the FM/AM tuner is selected. These buttons have different uses depending on the mode selected:

**In Preset mode** - Steps up or down through the user-stored presets.

**In Auto mode** - Searches for the previous or next available station. The unit stops at the next strong signal it finds.

**In Manual mode** - Allows manual stepping up or down of the frequency.

**Note:** When Preset mode is activated, the unit will automatically tune to the first available preset.

### ④ Mode/Store button

Used for AM/FM mode. Press to cycle the tuning mode between Preset, Auto, and Manual modes. Pressing and holding the button will allow the current selected station frequency to be stored in the preset bank. First press and hold the button then use the ⏪ ⏩ or Preset buttons to select the preset location for the station to be stored to. Press the Mode/Store button again to confirm and store the preset.

**Note:** In 'Store' mode, if no button is pressed for a while, the unit will come out of 'Store' mode and the preset will not be saved.

### ⑤ Input source buttons (CD, BD/DVD, MP3/Aux, FM/AM, Phono)

Press the relevant source button to select the desired input source.

**Note:** The FM/AM source is built into the SR10. This button toggles between the FM mode and AM mode when pressed more than once.

### ⑥ Preset buttons (1/6, 2/7, 3/8, 4/9, 5/10)

Used for AM/FM modes. The preset buttons are used to select user-stored station presets. Pressing a preset button once will select one of the first 5 preset, then pressing the same preset button again will toggle to the next preset (1 and then 6 for instance). These presets are stored separately for each waveband i.e. there are 10 for FM and 10 for AM press the FM/AM button to switch between bands and sets of 10 presets.

**Note:** As well as these 10 per band available directly from the front panel buttons a further 5 presets (11-15) per band can also be accessed by using the up/down buttons to cycle through all 15 presets.

### ⑦ Display

Used to display information such as the selected input source, volume and tone/balance levels. When the FM or AM tuner input is selected, the radio frequency or RDS station name will be displayed.

**Note:** When first purchased, the display will have a protective film over the top. Peel this off for a clear display.

### ⑧ Speaker A/B button

The Speaker A/B button toggles between the two sets of loudspeaker terminals. The options are speaker A only, speaker B only, speaker A and B together, and both sets of speakers off.

**Note:** 'Speaker off' is different to the mute function, as the Rec Out and Headphones outputs are still enabled.

### ⑨ Menu button

Pressing this once will select the Bass option. Pressing a second time will select the Treble option and pressing a third time will select the Balance option. When one of these options is selected, the volume control will adjust the level. If nothing is pressed for a while, the source will be displayed and the volume control will go back to controlling the volume level.

### ⑩ Infrared sensor

Receives IR commands from the supplied remote control. An unobstructed line of sight between the remote control and the sensor is required.

### ⑪ Volume control

Use to increase or decrease the level of the sound from the outputs of the unit. This controls the volume level of the loudspeakers and headphones. It does not affect the level of the 'Rec Out' output. The volume control will also change the level of bass, treble and balance in the menu options.

### ⑫ MP3 input socket

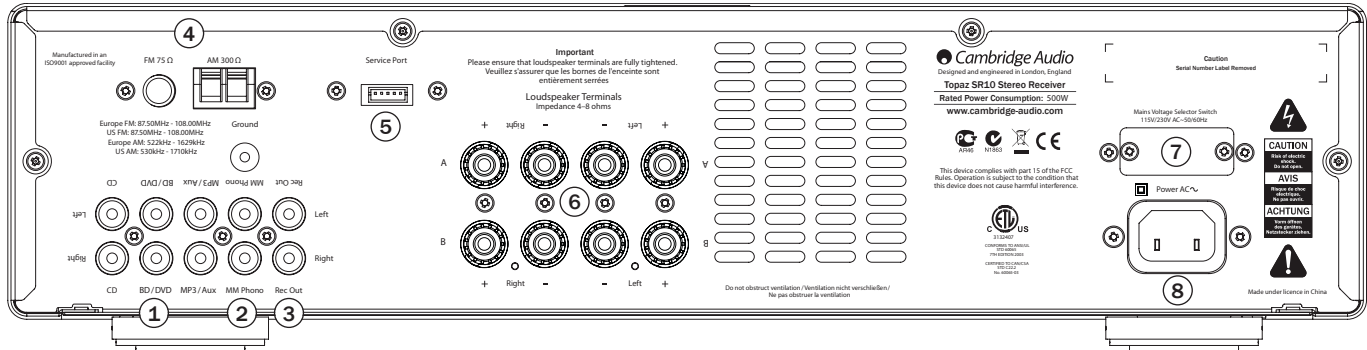
This source input allows you to connect a portable audio device such as an MP3 player directly into the front of the unit using a 3.5mm stereo-jack. Once plugged in, this input is automatically selected, although other inputs can still be selected once a stereo-jack is plugged in. The MP3/AUX button on the front of the unit will select this input whilst a stereo-jack is plugged in.

**Note:**

- Plugging a source into the front panel MP3 input overrides the Aux input. Simply remove the jack from the front panel to automatically re-enable the Aux input.

- Also note that as the output level of MP3 players tends to be quite low, the SR10 adds 10dB to the current volume setting when (and only when) the MP3 input is selected.

## Rear panel connections



### ① Audio inputs

These inputs are suitable for any 'line level' source equipment such as the audio outputs of CD players, BD/DVD players, etc.

### ② Phono input

This input has a built in phono stage. Record players fitted with Phono Cartridges of the Moving Magnet (MM) or **high output** Moving Coil (MC) type (between 2-6mV output and 30-50k load impedance) can be used. Low output Moving Coil types (<1mV and usually 10-1000 ohm load impedance) cannot be directly connected and will require a matching transformer or head amp. Please consult your dealer for details. The 'ground' terminals on both the record player and the SR10 should be connected (where possible) with a ground wire for lowest noise/hum pickup.

### ③ Rec Out

Connect to the recording input of a tape deck, CD recorder input, etc.

### ④ AM/FM antenna

Tuner aerial connections for picking up radio signals. Refer to the 'Connections' section of this manual. For permanent use, outdoor AM/FM aerials are highly recommended.

### ⑤ Service port

For servicing use only. Do not connect anything here as it may result in damage.

### ⑥ Loudspeaker terminals

Two sets of loudspeaker terminals are available, **A** (main loudspeaker terminals, top row) and **B** (secondary switchable loudspeaker terminals, bottom row). Connect the wires from your left channel loudspeaker to the Left positive and negative terminals, and the wires from the right channel loudspeaker to the Right positive and negative terminals. In each case, the red terminal is the positive output and the black terminal is the negative output.

Care should be taken to ensure no stray strands of wire are shorting speaker outputs together. Please ensure that the loudspeaker terminals have been tightened adequately to provide a good electrical connection. It is possible for the sound quality to be affected if the screw terminals are loose.

The use of A and B speakers affords you an easy and inexpensive way to create a simple multi-room system.

**Note:** When using two pairs of speakers, use speakers with a nominal impedance of 8 ohms.

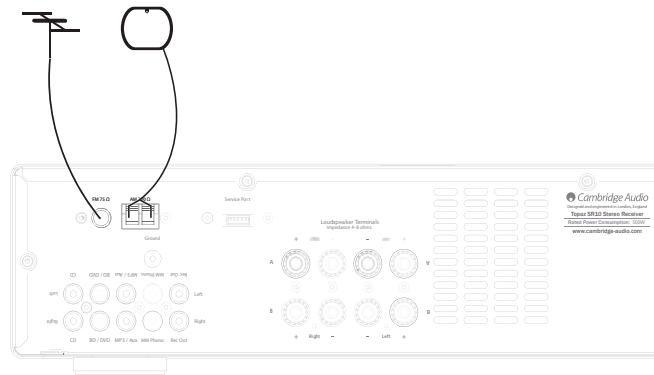
### ⑦ Voltage select switch

For servicing use only.

### ⑧ AC power socket

Once all connections are complete, plug the AC power cable into an appropriate mains socket and turn the unit on.

## Aerials



**Note:** The SR10 is supplied with a temporary aerial for initial use. For permanent use, outdoor aerials are highly recommended.

### AM loop aerial

Connect each end of the single length antenna to the antenna terminals. Place the antenna as far from the main system as possible to prevent unwanted noise and to obtain optimum reception. If the AM loop aerial provided does not provide sufficient reception, it may be necessary to use an outdoor AM aerial.

### FM aerial

Connect the supplied aerial to the FM 75 ohm socket. Extend and move the aerial lead around until you get the best reception. For continued use, we strongly recommend using a 75 ohm outdoor FM aerial.

## Remote control

The Topaz SR10 is supplied with a remote control that operates this unit and its built-in tuner. In addition, the buttons with Blue coloured icons can operate a matching Topaz CD5 or CD10 player.

Always use Alkaline batteries.

### CD5/CD10 (Blue coloured icons)

To operate the Topaz CD5 or CD10 players only. For more information refer to the Topaz CD5 and CD10 user's manual.

#### Mute

Mutes audio on the unit. Press again to cancel mute.

### Speaker A/B

Toggles between the selected loudspeaker terminals: speaker A only, speaker B only, speaker A and B together, or all speakers off.

### Stereo/Mono

Used only when FM is selected. Toggles between FM stereo output and FM mono output. For low quality stereo FM signals, selecting mono can usually reduce the noise. Note: Some FM stations are mono only, and selecting Stereo will have no affect on these.

### Mode

Used for AM/FM mode. Press to cycle the tuning mode between Preset, Auto, and Manual modes.

#### Volume

Increases or decreases the volume of the unit. Also used to change the bass, treble and balance settings when these are selected.

#### Skip

Used when FM or AM is selected.

**In Preset mode** - Steps up or down through the user-stored presets.

**In Auto mode** - Search for the previous or next available station with a strong signal.

**In Manual mode** - Adjusts the frequency in steps, for fine tuning.

### Menu

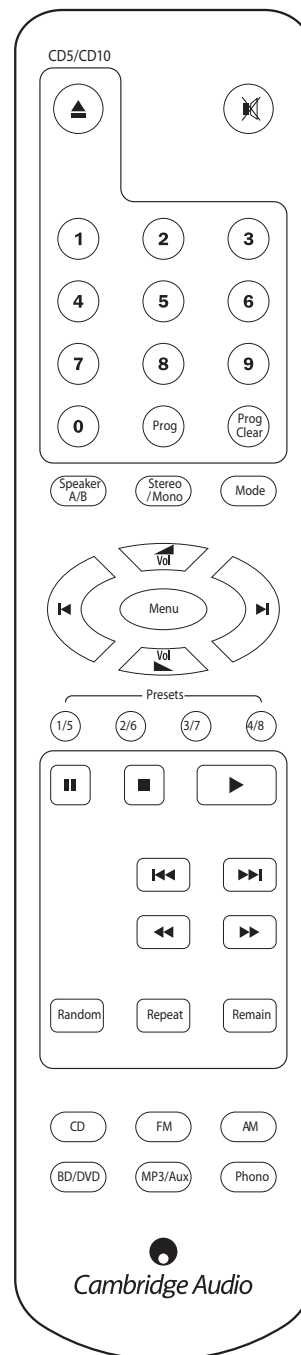
Toggles between Bass, Treble and Balance options. Use the volume buttons to change the level of the selected option.

### Preset buttons (1/5, 2/6, 3/7, 4/8)

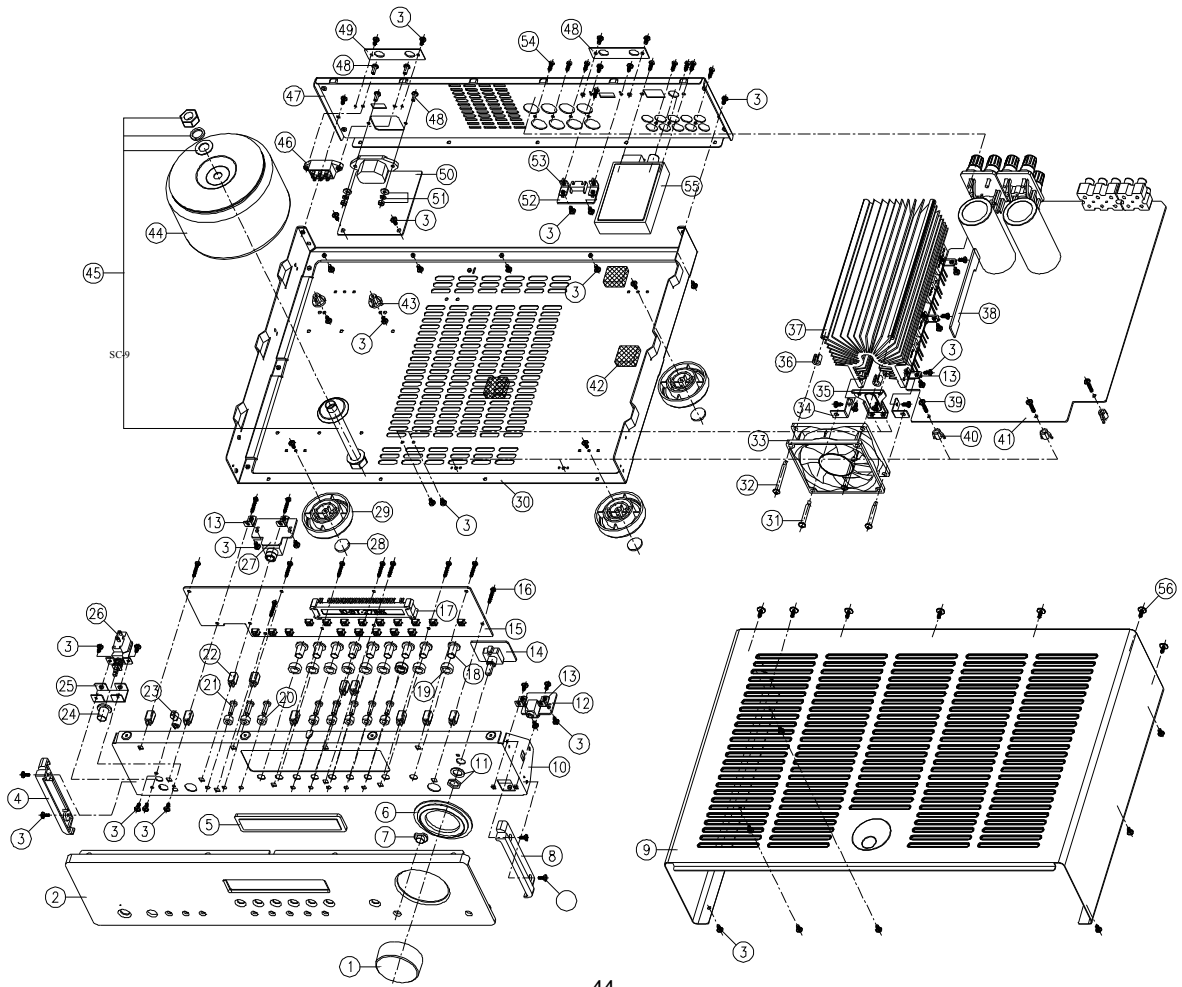
Used when FM or AM is selected. These select user-stored station presets. Pressing a preset button once will select one of the first 4 presets, then pressing the same preset button again will toggle to the next preset. 8 presets are available directly from the remote, further presets can be selected in Preset mode, by using the Skip/Scan buttons.

### Source buttons (CD, FM, AM, BD/DVD, MP3/Aux, Phono)

Press the relevant button to select the desired music source.



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### SR-10 available service parts

Exploded view item	Description	Designator and factory item	AP part
2	Al Front panel metalwork Black	6031 113C 0000	PF319
9	Top cover Black	6131 111A 0000	PF320
15	Display PCB	0059 1010 1000	PF321
41	AMP1 PCB (Main PCB)	0059 1290 0000	PF322
44	Mains transformer	4010 1013 0001	PF323
Not shown	Remote control		PF325
1	Volume knob	7331 1100 0000	PF318

#### AMP 1 Board

Description	Designator and factory item	AP part
24C02(DIP8)ATMEL	IC6 1002 4010 6620	PF081
BD3814FV(SSOP-B40)ROHM	IC4 1003 8140 5122	
BD3841FS(SSOP-A32)ROHM	IC3 1003 8410 5122	PF174
KA7805(TO-220)FAIRCHILD	IC9 1019 7805 0800	PF272
A7815(TO-220)FAIRCHILD IC8 1019 7815 0800	IC8 1019 7815 0800	PF273
KA7915(TO-220)FAIRCHILD	IC7 1019 7915 0800	PF274
LM393(DIP8)TI	IC11 1000 3930 4301	PF249
NE5532P(DIP8)TI	IC1 1049 5532 0000	PZ278
NJM2068D(DIP8)JRC	IC2,IC7,IC12 1031 2068 0100	PF037
SM5964C40J(PLCC44)SyncMOS	IC5 1005 9640 8132	PF324
KSA940(TO-220)FAIRCHILD	Q25,Q33 1110 9400 7000	
2SA950(TO-92)TOSHIBA	Q2 1110 9500 0162	PF278
2SA970(TO-92)TOSHIBA	Q6,Q7,Q13,Q18,Q21 1110 9700 0162	PF147
2SA1015(TO-92)TOSHIBA	Q37 1111 0150 0172	PF251
2SA1943(2-21F1A)TOSHIBA	Q27,Q34 1111 9430 0150	PF105
2SC1627A-Y(TO-92)TOSHIBA	Q39 1131 6271 0162	
2SC2120(TO-92)TOSHIBA	Q1,Q3 1132 1200 0162	PF253
2SC2235(TO-92MOD)TOSHIBA	Q12,Q15 1132 2350 0162	PF254
2SC2240(TO-92)TOSHIBA	Q10,Q19,Q20,Q29 1132 2400 0182	PF146
2SC2458(TO-92)TOSHIBA	Q4,Q5,Q11,Q14,Q30,Q31,Q36,Q38 1132 4580 0172	PF255
2SC2705(TO-92MOD)TOSHIBA	Q22,Q32 1132 7050 0162	PF041
2SC2878(TO-92)TOSHIBA	Q16,Q17,Q35 1132 8780 0112	PF287
KSC2073(TO-220)FAIRCHILD	Q8,Q26 1132 0730 7000	
2SC5200(2-21F1A)TOSHIBA	Q9,Q28 1135 2000 0150	PD149
2SD1953(TO-126)SANYO	Q23,Q24 1141 9530 0400	PF256
Tuner Box	340T/540R V2 AM/FM MODULE EU/UK DE-EMPH RDS	PY812

#### Display Board

UPD16311	IC1 1044 1631 0000	PF057
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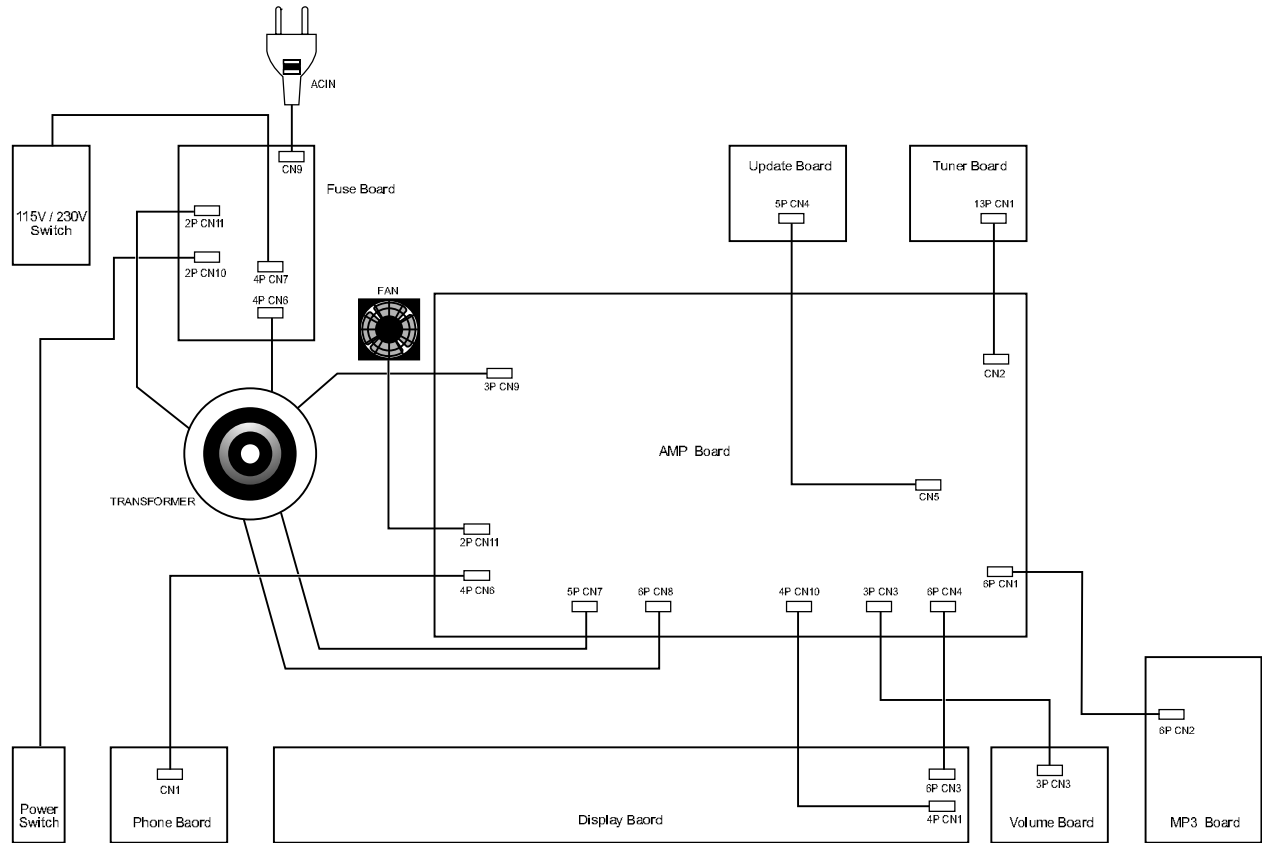
#### Volume Board

Encoder VR1	EC16B2401047AA	PF108
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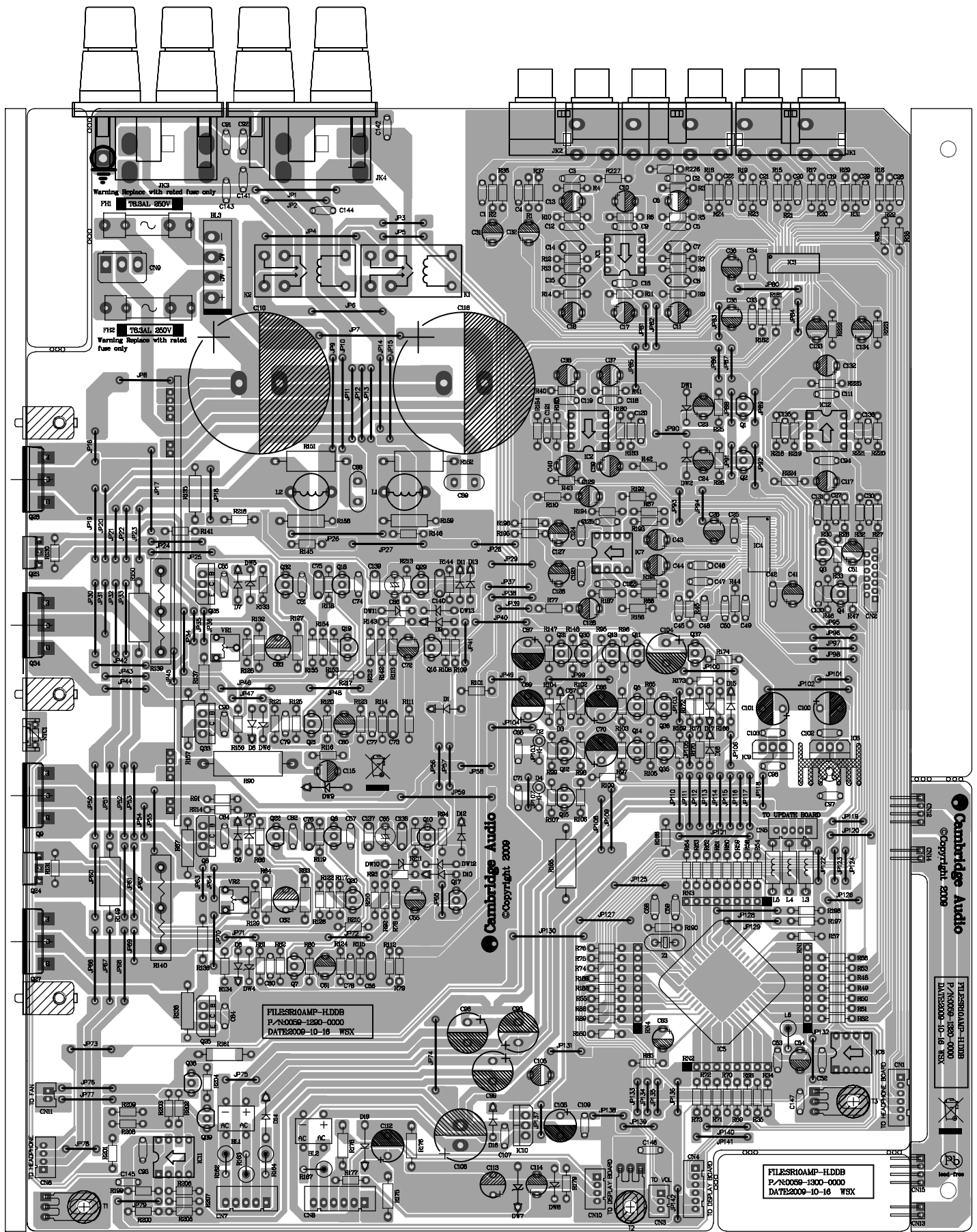
## Topaz SR10 Service Manual

SR10 PART LIST					
NO	PART NO.	PART NAME	MATERIAL	QTY.	REMARK
1	7331 1110 0000	VOLUMN KNOB	ABS	1	
2	6031 113C 0000	AL PANEL	AL	1	
3	5011 3006 0010	SCREW BTB3.0X6	STEEL	55	
4	7531 110A 0000	PANEL LEFT BRACKET	ABS	1	
5	7431 111A 0000	DISPLAY LENS	PMMA	1	
6	7931 118B 0000	WOLUME KNOB SKIRT	ABS	1	
7	7431 1020 0000	IR LENS	ARRYLIC	1	
8	7531 111A 0000	PANEL RIGHT BRACKET	ABS	1	
9	6131 111A 0000	TOP COVER	0.7 STEEL	1	
10	5331 114B 0000	SUBPANEL	0.8 STEEL	1	
11	5020 9012 0201	SCREW M9	STEEL	1	
	5030 9010 0601	WASHER Ø9×Ø14×0.6	STEEL	1	
12	0059 1060 1001	MP3 IN PCB	PCB	1	
13	5300 0060 0000	L BRACKET(H)	0.8 STEEL	7	
14	0059 1190 1001	VOLUMN PCB	PCB	1	
15	0059 1010 1000	DISPLAY PCB	PCB	1	
16	5013 2616 0011	SCREW PB2.6X16	STEEL	11	
17	7501 6220 0000	DISPLAY BRACKET	ABS	2	
18	7331 1020 0000	7MM TAC SWITCH BUTTON	ABS	7	
19	7631 1020 0000	7MM TAC SWITCH BUTTON CUSHION	SPONGE	7	
20	7631 1030 0000	4MM TAC SWITCH BUTTON CUSHION	SPONGE	8	
21	7331 1030 0011	4MM TAC SWITCH BUTTON	ABS	8	
22	7931 1022 0000	PCB COLUMN (L=10.7)	ABS	10	
23	7431 1030 0000	AMP LIGHT GUIDE	ACRYLIC	1	
24	7331 1100 0000	POWER KNOB	ABS	1	
25	5331 1150 0000	POWER BRACKET	0.8 STEEL	1	
26	4326 2000 1800	SELF LOCKING SWITCH	PCB	1	
27	0059 1210 1001	PHONES PCB	PCB	1	
28	7931 1060 0001	FOOT PAD	RUBBER	4	
29	7931 1050 0000	FOOT	ABS	4	
30	6231 110B 0000	BOTTOM COVER	1.0 STEEL	1	
31	5015 3032 0040	BOLT L=32	35# STEEL	2	
32	5015 3024 0040	BOLT L=24	35# STEEL	2	
33	9102 2533 4211	FAN 80MM		1	
34	5300 8030 0000	FAN HEATSINK BRACKET	1.0 STEEL	2	
35	5333 1041 0000	HEATSINK BRACKET	1.0 STEEL	2	
36	5931 1020 0000	HEATSINK COLUMN	AL	2	
37	5131 111B 0071	HEATSINK	AL	1	
38	0059 1320 0000	AMP-2 PCB	PCB	1	
39	5011 3012 0010	SCREW BTB3.0x12	STEEL	3	
40	7941 1030 0000	PCB COLUMN (H=8mm)	ABS	3	
41	0059 1290 0000	AMP 1 PCB	PCB	1	
42	7610 2020 0801	RUBBER (20×20×8)	RUBBER	3	
43	7900 0050 0000	PCB COLUMN(H=10mm)	ABS	2	
44	4010 1013 0001	TRANSFORMER		1	
45	5012 8090 0071	BOLT M8×90	STEEL	1	
46	4300 0308 0000	SWITCH		1	
47	6331 116B 0000	BACK COVER	0.8 STEEL	1	
48	5012 3008 0010	SCREW BM3.0x8	STEEL	4	
49	7731 506A 0000	PVC (TRANSPARENT)	PVC	2	
50	0059 1100 1001	FUSE PCB	PCB	1	
51	5020 3006 0260	SCREW M3	STEEL	2	
52	0059 1430 1001	PROGRAMMING PORT PCB	PCB	1	
53	5300 0040 0000	L BRACKET (F)	0.8 STEEL	2	
54	5013 3010 0010	SCREW PA 3.0X10	STEEL	9	
55	9800 0003 0001	TUNER BOX		1	
56	5011 3008 0042	SCREW BTB3.0X8	STEEL	7	

# Topaz SR10 Service Manual



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Warning: Replace with rated fuse only  
F11 7B3AL 250V

Warning: Replace with rated fuse only  
F12 7B3AL 250V

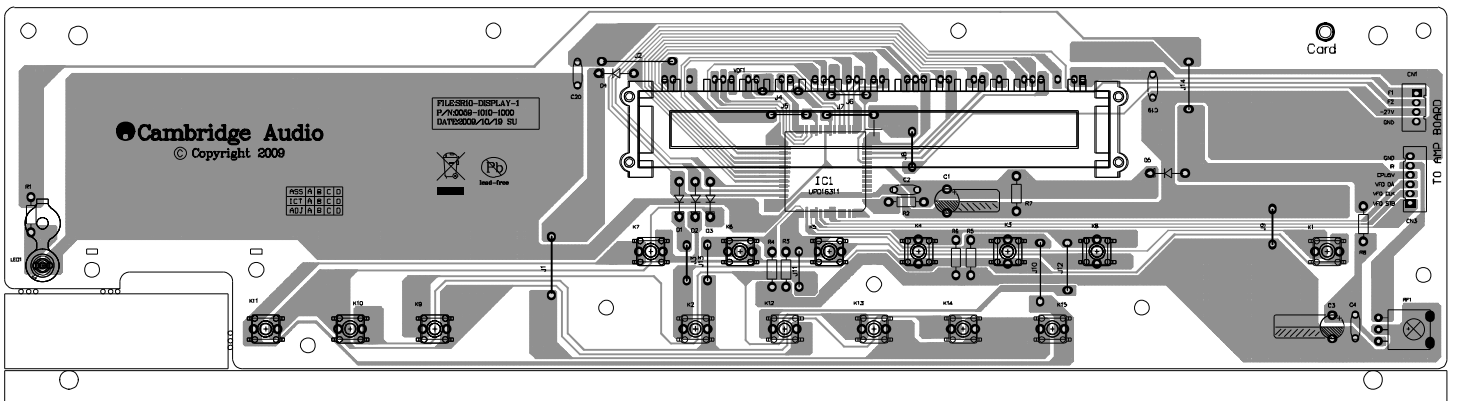
Cambridge Audio  
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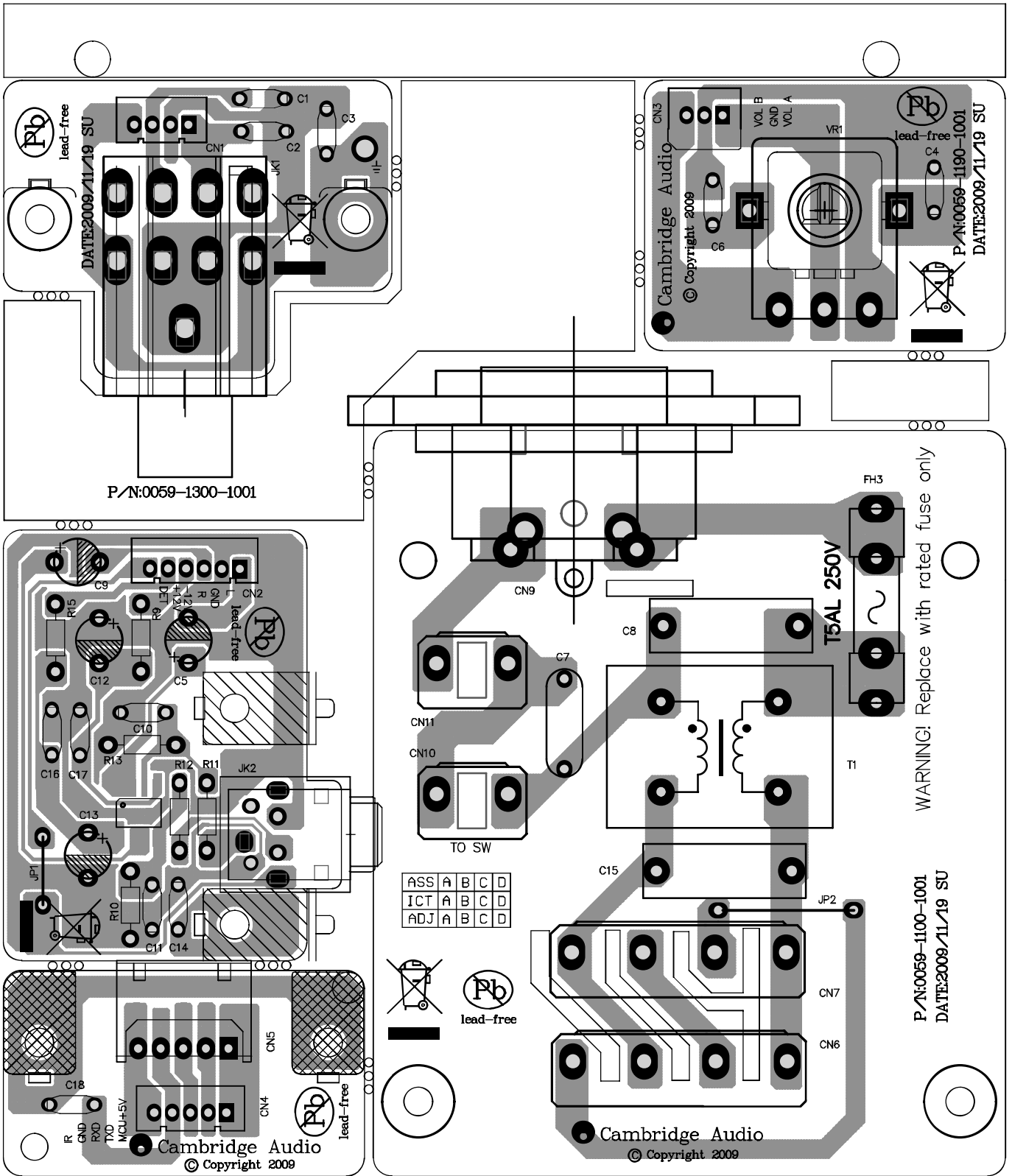
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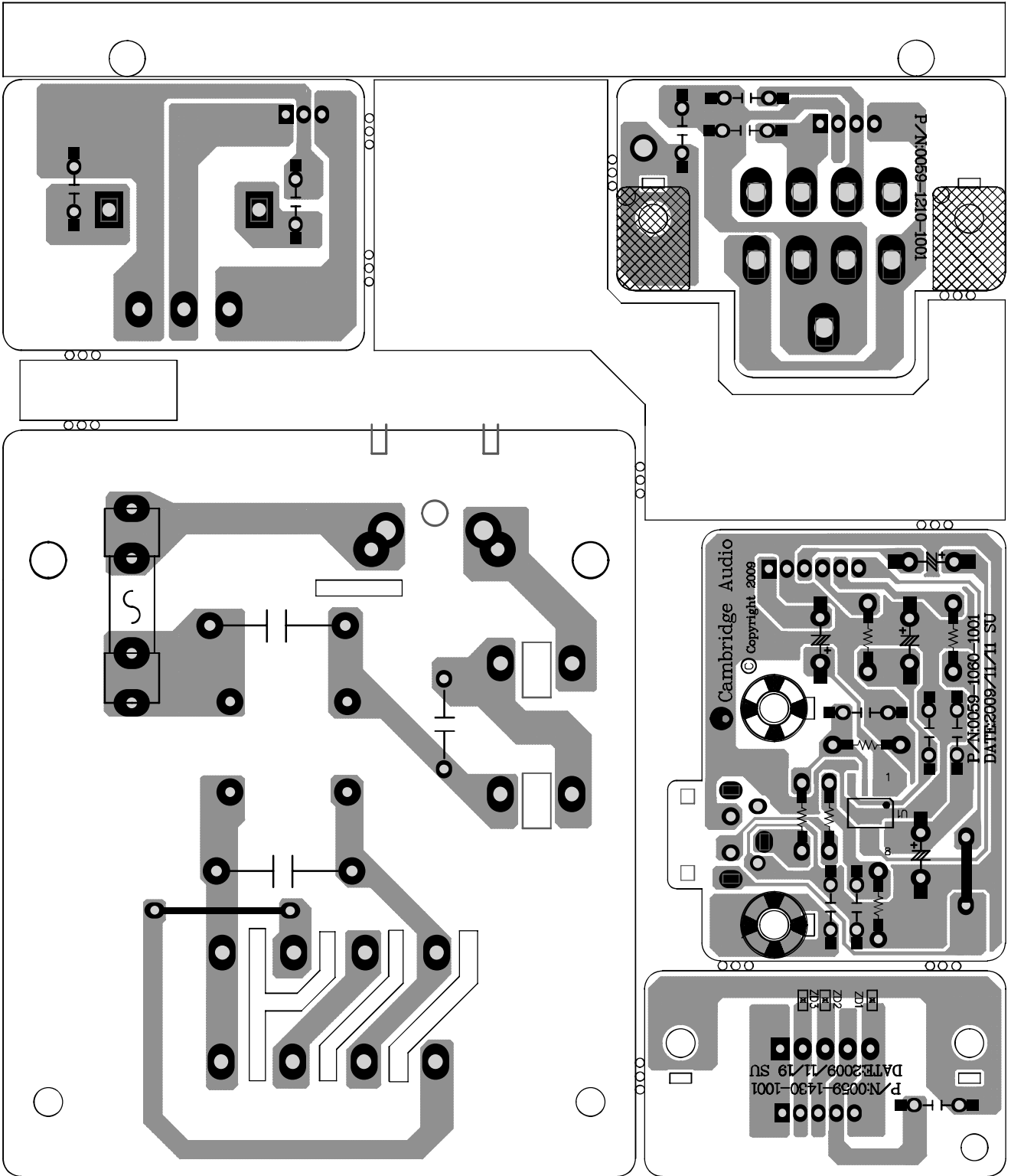
Cambridge Audio  
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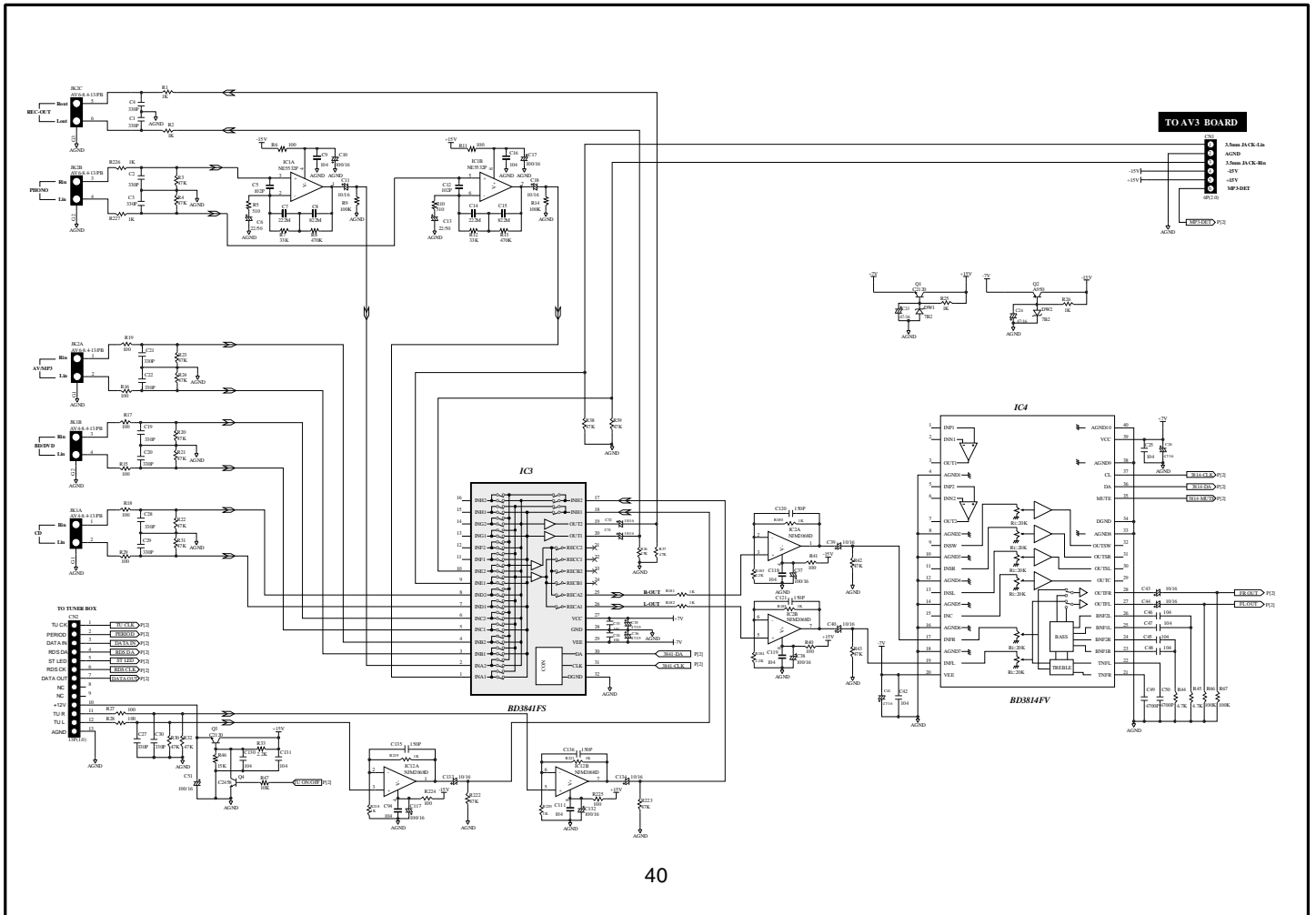
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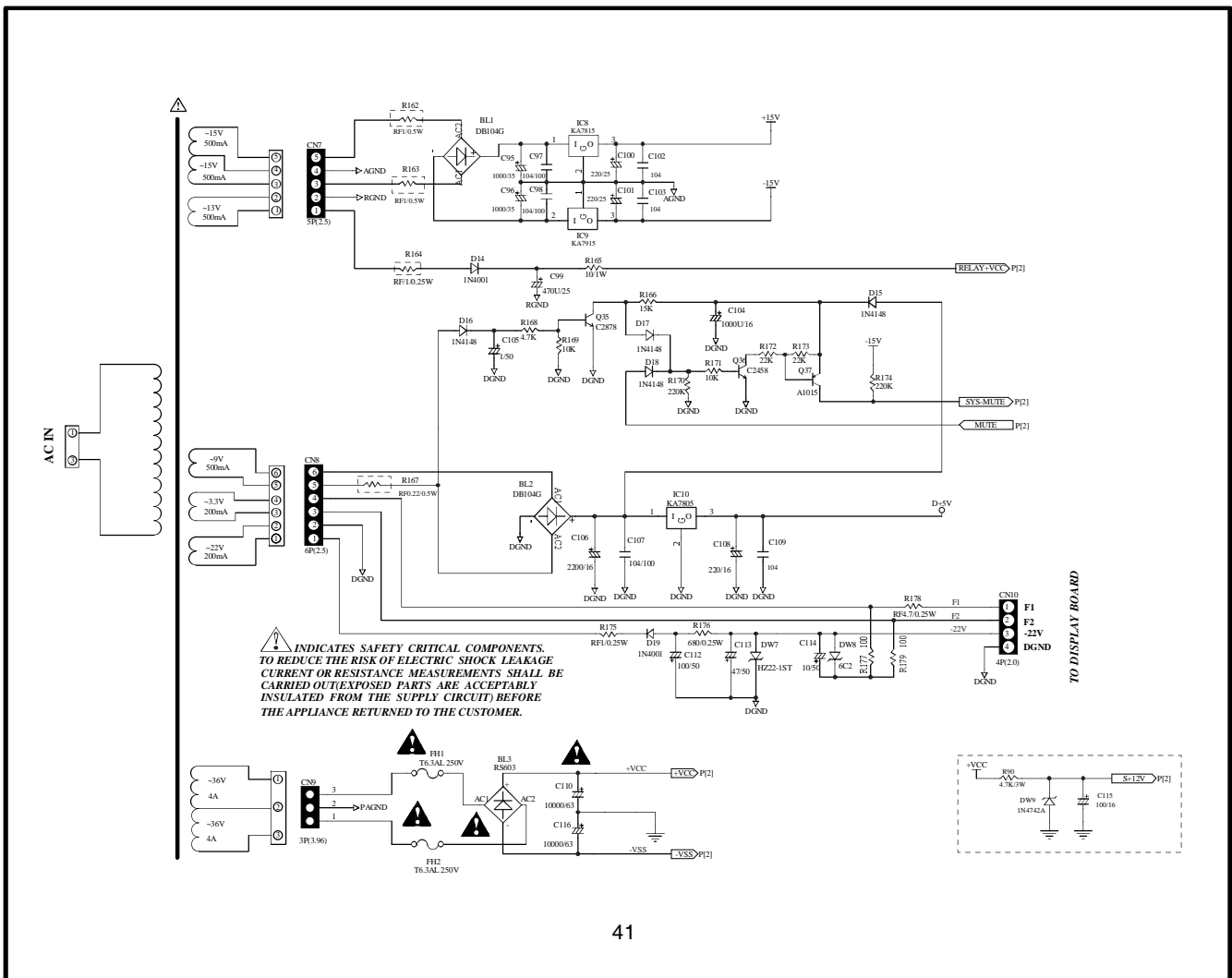




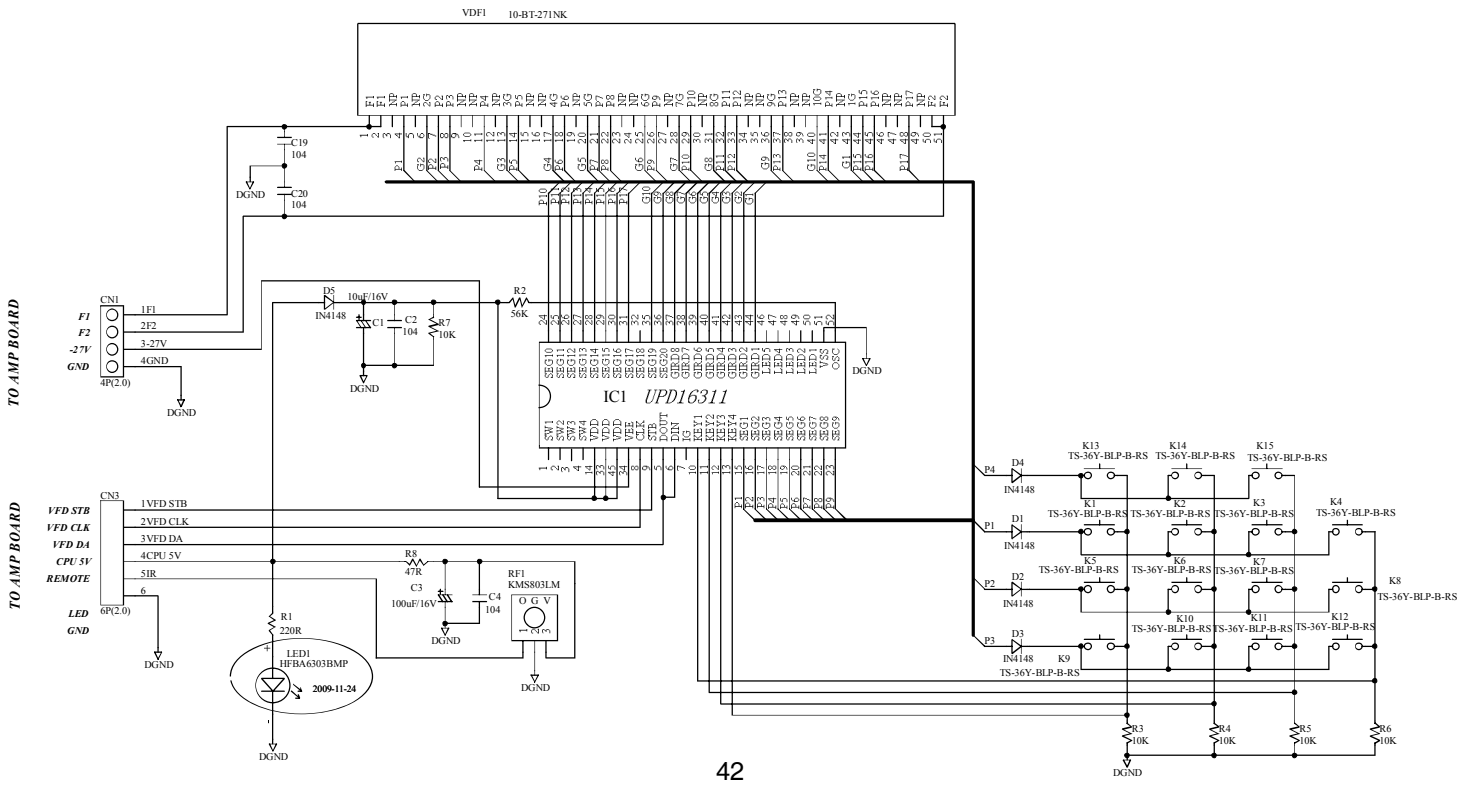


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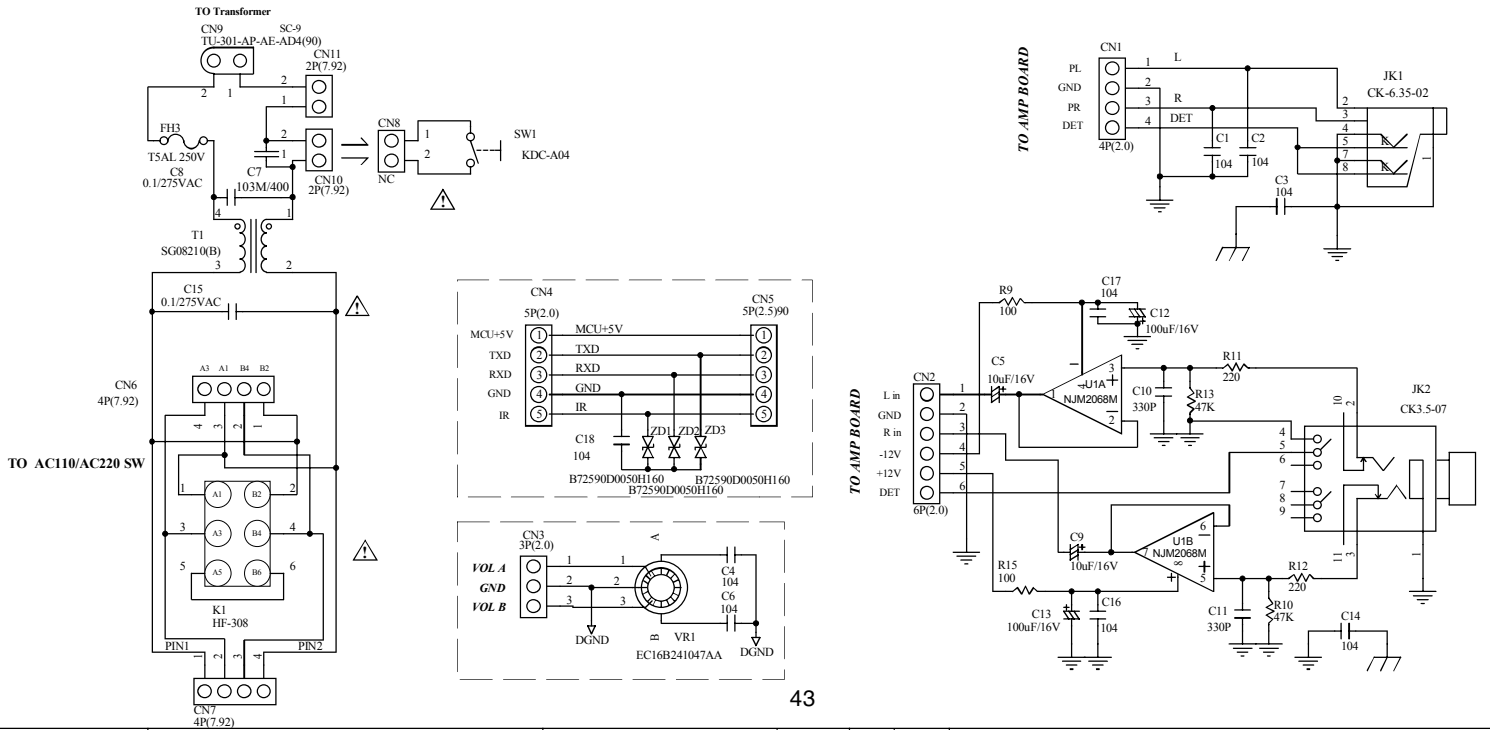




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# Topaz SR10 Service Manual



## Topaz SR10 Service Manual

SR10-AMP-BOM			
P/N: 0059-1290-0000			
Used	Part Type	Designator	Part Number
=====	=====	=====	=====
1	24C02(DIP8)ATMEL	IC6	1002 4010 6620
1	BD3814FV(SSOP-B40)ROHM	IC4	1003 8140 5122
1	BD3841FS(SSOP-A32)ROHM	IC3	1003 8410 5122
1	KA7805(TO-220)FAIRCHILD	IC9	1019 7805 0800
1	KA7815(TO-220)FAIRCHILD	IC8	1019 7815 0800
1	KA7915(TO-220)FAIRCHILD	IC7	1019 7915 0800
1	LM393(DIP8)TI	IC11	1000 3930 4301
1	NE5532P(DIP8)TI	IC1	1049 5532 0000
3	NJM2068D(DIP8)JRC	IC2,IC7,IC12	1031 2068 0100
1	SM5964C40J(PLCC44)SyncMOS	IC5	1005 9640 8132
2	KSA940(TO-220)FAIRCHILD	Q25,Q33	1110 9400 7000
1	2SA950(TO-92)TOSHIBA	Q2	1110 9500 0162
5	2SA970(TO-92)TOSHIBA	Q6,Q7,Q13,Q18,Q21	1110 9700 0162
1	2SA1015(TO-92)TOSHIBA	Q37	1111 0150 0172
2	2SA1943(2-21F1A)TOSHIBA	Q27,Q34	1111 9430 0150
1	2SC1627A-Y(TO-92)TOSHIBA	Q39	1131 6271 0162
2	2SC2120(TO-92)TOSHIBA	Q1,Q3	1132 1200 0162
2	2SC2235(TO-92MOD)TOSHIBA	Q12,Q15	1132 2350 0162
4	2SC2240(TO-92)TOSHIBA	Q10,Q19,Q20,Q29	1132 2400 0182
8	2SC2458(TO-92)TOSHIBA	Q4,Q5,Q11,Q14,Q30,Q31,Q36,Q38	1132 4580 0172
2	2SC2705(TO-92MOD)TOSHIBA	Q22,Q32	1132 7050 0162
3	2SC2878(TO-92)TOSHIBA	Q16,Q17,Q35	1132 8780 0112
2	KSC2073(TO-220)FAIRCHILD	Q8,Q26	1132 0730 7000
2	2SC5200(2-21F1A)TOSHIBA	Q9,Q28	1135 2000 0150
2	2SD1953(TO-126)SANYO	Q23,Q24	1141 9530 0400
2	1N4001	D2,D4	1360 1400 1000
15	1N4148	D1 D3 D5 D6 D7 D8 D9 D10 D11 D12 D13 D15 D16 D17 D18	1310 1414 8000
1	1N4742A	DW9	1360 5474 2002
4	HZ20-1ST 20V	DW10,DW11,DW12,DW13	1300 0205 0102
1	HZ22-1ST 22V	DW7	1302 2002 0200
4	6A3	DW3,DW4,DW5,DW6	1300 5552 0000
1	6C2	DW8	1302 0632 1200
2	7B2	DW1,DW2	1300 7000 0100
1	RS603	BL3	1360 7060 3000
2	DB104G	BL1,BL2	1361 3010 4000
4	FAIR-RITE3.5X8X1	L3,L4,L5,L6	1867 1138 0001
2	1.3uH	L1,L2	1840 1330 0601
1	2P(2.0)	CN11	3100 4020 0200
1	3P(2.0)	CN3	3100 4030 0200
2	4P(2.0)	CN6,CN10	3100 4040 0200
1	5P(2.0)	CN5	3100 4050 0200
2	6P(2.0)	CN1,CN4	3100 4060 0200
1	5P(2.5)	CN7	3100 5050 0200
1	6P(2.5)	CN8	3100 5060 0200
1	3P(3.96)	CN9	3100 0702 0050
2	JZC-42F	K1,K2	4712 0000 4203
1	D100-SSA-13	CN2	3104 0113 0050
1	AV4-8.4-13/PB	JK1	2910 4011 2090

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1	AV6-8.4-13/PB	JK2	2910 6011 0600
2	WP4-10A	JK3,JK4	2920 4060 0010
3	YQ-12	T1,T2,T3	5410 1010 0063
1	11.0592MHZ	Z1	2705 1105 9226
2	T5AL 250V	FH1,FH2	1601 0515 0120
4	FUSE HOLDER		1601 0001 0000
1	TRANSFORMER		4010 1013 0001
2	RM065-V1-501(5000)	VR1,VR2	4400 0006 5501
4	9A103G(10K)	RN1,RN2,RN3,RN4	2411 0221 0306
1	02DSB282J	NTC1	1609 0002 8225
2	RF1O/0.5W	R162,R163	2410 0421 0915
1	RF1O/0.25W		2410 0321 0911
1	RF4.7O/0.25W	R178	2410 0424 7915
1	RF1O/0.25W	R164	2410 0321 0911
2	220O1/8W±%	R201,R204	2401 0212 2111
3	1.8KO1/8W±%	R128,R129,R208	2401 0211 8211
1	2KO1/8W±%	R200	2401 0212 0211
2	2.3KO1/8W±%	R130,R131	2402 0212 3200
1	8.2KO1/8W±%	R205	2401 0218 2211
1	12KO1/8W±%	R209	2401 0211 2311
2	18KO1/8W±%	R206,R207	2401 0211 8311
4	820KO1/8W±%	R214,R215,R216,R217	2401 0228 2411
29	33O1/8W±5%	R34,R35,R48,R49,R50,R51,R52 R53,R54,R55,R56,R58,R59,R60 R61,R62,R63,R64,R68,R69,R70 R71,R72,R73,R74,R75,R76,R188 R189	2401 0223 3211
20	100O1/8W±5%	R6,R11,R15,R16,R17,R18,R19, R27,R28 R29,R40,R41,R126,R155, R177,R179,R195 R196,R224,R225	2401 0221 0111
2	150O1/8W±5%	R6,R11	2401 0221 5111
4	220O1/8W±5%	R86,R133,R134,R156	2401 0222 2111
1	470O1/8W±5%	R65	2401 0224 7111
2	510O1/8W±5%	R5,R10	2401 0225 1111
2	560O1/8W±5%	R186,R192	2401 0225 6111
2	820O1/8W±5%	R78,R113	2401 0228 2111
27	1KO1/8W±5%	R1,R2,R25,R26,R88,R89,R97,R98, R100,R106,R118,R119,R160,R180, R181,R182,R185,R187,R191,R193, R194,R218,R219,R220,R221,R226, R227	2401 0221 0211
2	1.2KO1/8W±5%	R117,R153	2401 0221 2211
4	1.5KO1/8W±5%	R77,R110,R123,R124	2401 0221 5211
8	1.8KO1/8W±5%	R79,R91,R92,R116,R122,R141, R142,R154	2401 0221 8211
3	2.2KO1/8W±5%	R33,R183,R184	2401 0222 2211
2	3.3KO1/8W±5%	R197,R198	2401 0223 3211
4	4.7KO1/8W±5%	R44,R45,R168,R190	2401 0224 7211
1	6.2KO1/8W±5%	R95	2401 0226 2211
2	6.8KO1/8W±5%	R108,R109	2401 0226 8211
3	8.2KO1/8W±5%	R80,R104,R120	2401 0228 2211
11	10KO1/8W±5%	R47,R57,R65,R85,R99,R102 R107,R147,R169,R171,R199	2401 0221 0311

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2	15KO1/8W±5%	R46,R166	2401 0221 5311
4	22KO1/8W±5%	R145,R146,R172,R173	2401 0222 2311
4	27KO1/8W±5%	R93,R94,R143,R144	2401 0222 7311
6	33KO1/8W±5%	R7,R12,R210,R211,R212,R213	2401 0223 3311
1	39KO1/8W±5%	R203	2401 0223 9311
1	43KO1/8W±5%	R202	2401 0224 3311
26	47KO1/8W±5%	R3,R4,R20,R21,R22,R23,R24,R30, R31,R32,R36,R37,R38,R39,R42, R43,R82,R96,R101,R114,R115, R125,R148,R222,R223	2401 0224 7311
7	100KO1/8W±5%	R9,R14,R66,R67,R105,R111,R112	2401 0221 0411
2	220KO1/8W±5%	R170,R174	2401 0222 2411
4	470KO1/8W±5%	R8,R13,R81,R121	2401 0224 7411
4	4.7O1/2W±5%	R87,R135,R138,R157	2401 0424 7911
4	10O1/2W±5%	R160	2401 0421 0911
1	33O1/2W±5%	R161	2401 0423 3011
2	220O1/4W±5%	R136,R137	2401 0322 2111
1	680O1/4W±5%	R176	2401 0326 8111
4	5.6KO1/4W±5%	R83,R84,R127,R132	2401 0325 6211
1	10O1/1W±5%	R165	2401 0521 0011
2	1.2KO/1W±5%	R149 R150	2401 0521 2211
2	10O 2W±5%	R158,R159	2401 0621 0011
1	4.7O/3W±5%	R90	2401 0724 7911
2	10O 3W±5%	R151,R152	2414 0721 0308
2	0.27O/5WX2	R139 R140	2405 1022 7800
2	12PF/50V±0%	C60,C79	2115 6120 0123
2	16PF/50V±0%	C58,C59	2115 6160 0123
2	33PF/50V±0%	C81,C82	2115 6330 0123
2	47PF/50V±0%	C57,C74	2115 6470 0123
4	100PF/50V±0%	C64,C84,C85,C90	2115 6101 0123
6	150PF/50V±0%	C120,C121,C122,C125,C135,C136	2115 6151 0123
12	330PF/50V±0%	C1,C2,C3,C4,C19,C20,C21 C22,C27,C28,C29,C30	2115 6331 0123
2	1000PF/50V±0%	C5,C12	2115 6102 0123
2	4700PF/50V±0%	C49,C50	2115 6472 0123
1	0.047uF/50V±0%	C67	2115 6473 0123
31	0.1uF/50V±0%	C9,C16,C25,C33,C34,C42,C45, C46,C47,C48,C52,C53,C68,C71, C91,C102,C103,C109,C111,C118, C119,C123,C124,C130,C131,C145, C146,C147	2115 8104 0123
3	0.1uF/100V±0%	C97,C98,C107	2215 3104 0243
2	1200PF/100V±0%	C75,C76	2217 3122 0243
2	2200PF/100V±0%	C7,C14	2217 3222 0243
2	8200PF/100V±0%	C8,C15	2217 3822 0243
2	0.1UF/100V±0%	C88,C89	2217 3104 0243
1	470uF/10V±20% E.CAP	C70	2341 0210 3025
15	10uF/16V±20% E.CAP	C11,C18,C31,C32,C39,C40,C43 C44,C55,C63,C72,C128,C129, C133,C134	2310 0310 1015
4	47uF/16V±20% E.CAP	C23,C24,C26,C41	2340 0310 1015
11	100uF/16V±20% E.CAP	C10,C17,C37,C38,C51,C54,C115, C117,C126,C127,C132	2311 0310 1015

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4	220uF/16V±20% E.CAP	C61,C69,C80,C108	2321 0310 1015
1	1000uF/16V±20% E.CAP	C104	2312 0310 4030
1	2200uF/16V±20% E.CAP	C106	2322 0310 5040
2	47uF/25V±20% E.CAP	C35,C36	2340 0410 1015
2	220uF/25V±20% E.CAP	C100,C101	2321 4104 3000
1	470uF/25V±20% E.CAP	C99	2341 4104 3000
2	1000uF/35V±20% E.CAP	C95,C96	2312 0510 5040
1	1uF/50V±20% E.CAP	C105	2319 0610 1015
2	4.7uF/50V±20% E.CAP NP	C65,C86	2329 0610 1016
1	10uF/50V±20% E.CAP	C114	2310 0610 1015
2	22uF/50V±20% E.CAP	C6,C13	2320 0610 1015
3	47uF/50V±20% E.CAP	C62,C83,C113	2340 0610 2015
1	100uF/50V±20% E.CAP	C112	2311 0610 1015
2	10000uF/63V±20% E.CAP	C110,C116	2313 7110 8400

### DISPLAY BOARD

P/N:059-1010-1000

Used	Part Type	Designator	Description	Part Number
====	=====	=====	=====	=====
1	UPD16311	IC1		1044 1631 0000
5	IN4148	D1 D2 D3 D4 D5		1310 1414 8000
1	4P(2.0)--JACK	CN1		3100 4040 0200
1	6P(2.0)--JACK	CN3		3100 4060 0200
1	10-BT-280NK	VDF1		10-BT-280NK
1	HFBA6303BMP(LED)	LED1		1401 6300 2100
1	KMS803LM	RF1		1304 0008 0300
15	TS-36Y-BLP-B-RS	K1 K2 K3 K4 K5 K6 K7 K8 K9 K10 K11 K12 K13 K14 K15		4502 1003 6100
1	47R±5% 1/8W	R8		2401 0224 7211
1	220R±5% 1/8W	R1		2401 0222 2111
5	10K±5% 1/8W	R3 R4 R5 R6 R7		2401 0221 0311
1	56K±5% 1/8W	R2		2401 0225 6311
1	10uF/16V ±20% E.CAP	C1		2310 0310 1015
1	100uF/16V ±20% E.CAP	C3		2311 0310 1015
4	0.1uF/50V±10% CAP	C2 C4 C19 C20		2115 8104 0123

### MIC(3.5) BOARD

P/N:059-1060-1000

Used	Part Type	Designator	Description	Part Number
====	=====	=====	=====	=====
1	NJM2068M--DMP8(JRC)	U1		1031 2068 1300
1	6P(2.0)--JACK	CN2		3100 4060 0200
1	CK3.5-07--JACK	JK2		2802 1335 0703
2	100R±5% 1/8W	R9 R15		2401 0221 0111
2	220R±5% 1/8W	R11 R12		2401 0222 2111
2	47K±5% 1/8W	R10 R13		2401 0224 7311
2	10uF/16V±20% E.CAP	C5 C9		2310 0310 1015
2	100uF/16V±20% E.CAP	C12 C13		2311 0310 1015
2	330pF/50V±10% CAP	C10 C11		2115 6331 0123
3	0.1uF/50V±10% CAP	C14 C16 C17		2115 8104 0123

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### Phone BOARD P/N:059-1210-1000

Used	Part Type	Designator	Description	Part Number
1	CK-6.35-02--JACK	JK1		3104 0113 0050
1	4P(2.0)--JACK	CN1		3100 4040 0200
3	0.1uF/50V±10% CAP	C1 C2 C3		2115 8104 0123

### VOL BOARD P/N:059-1190-1000

Used	Part Type	Designator	Description	Part Number
1	EC16B241047AA	VR1		4401 2420 4700
1	3P(2.0)	CN3		3100 4030 0200
2	0.1uF/50V±10% CAP	C4 C6		2115 8104 0123

### RS232 BOARD P/N:059-1430-1000

Used	Part Type	Designator	Description	Part Number
3	B72590D0050H160	ZD1 ZD2 ZD3		1355 6000 0500
1	5P(2.0)--JACK	CN4		3100 4050 0200
1	5P(2.5)90 --JACK	CN5		3100 5051 0200
1	0.1uF/50V±10% CAP	C18		2115 8104 0123

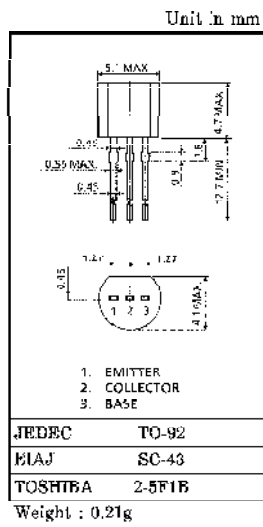
### Fuse BOARD P/N:059-1100-1000

Used	Part Type	Designator	Description	Part Number
1	HF-308	K1		4300 0308 0000
1	KDC-A04	SW1		4326 2000 1800
1	SG08210(B)	T1		1891 0700 0001
1	T5AL 250V	FH3		1601 0515 0120
2	2P(7.92)--JACK	CN10 CN11		3101 6030 0200
2	4P(7.92)--JACK	CN6 CN7		3100 0704 0050
1	TU-301-AP-AE-AD4(90)--JACK	CN9		2810 0330 1002
2	0.1/275VAC	C8 C15		2210 3104 6000
1	103M/400	C7		2210 3103 0600

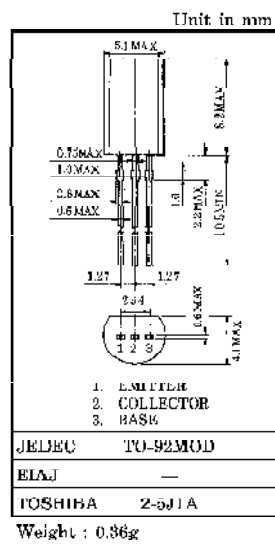
### CONNECT PCB P/N:0059-1320-0000

Used	Part Type	Designator	Description	Part Number
1	1X2P(2.0)	CN12,CN15		3107 0402 4672
1	1X4P(2.0)	CN13,CN14		3107 0404 4672

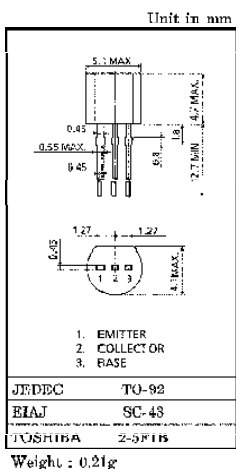
**2SA970**



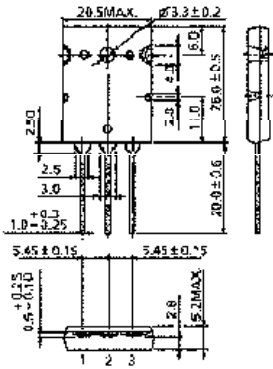
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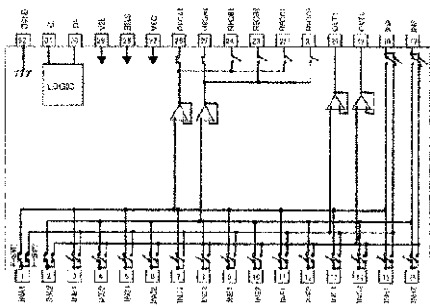
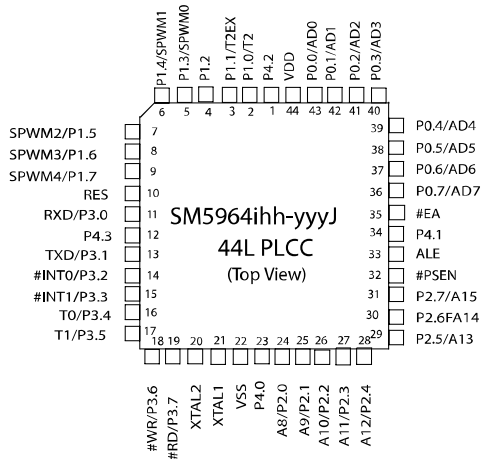
**2SC2878**







- 1. BASE
- 2. COLLECTOR (HEAT SINK)
- 3. EMITTER



\* F-SW1: INPUT FUNCTION1  
F-SW2: INPUT FUNCTION2