Integra
RESEARCH

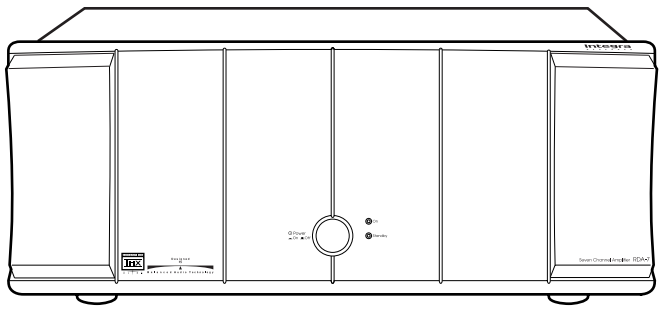
SERVICE MANUAL

Ref NO. 3651

May 2000

Seven Channel Amplifier

RDA-7



Silver model

UPP 230 V AC
UDT 120 V AC
UPT 230 V AC

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE

SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBER APPEAR AS SHOWN IN THIS MANUAL.
MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO

TABLE OF CONTENTS

Specifications

AMPLIFIER SECTION

Number of channels: 7

Power:

150 watts per channel min. RMS at 8 ohms, 2 channels driven from 20 Hz to 20 kHz with no more than 0.1 % total harmonic distortion.

300 watts per channel min. RMS at 4 ohms, 2 channels driven at 1 kHz with no more than 0.1 % total harmonic distortion.

Frequency response @ -3 dB: 3.5 Hz - 250 kHz

Input Impedance: 47 kohm each phase

Input signal for max output power: 1.2 V

Input Sensitivity (Unbalanced): 100 mVrms

Input Sensitivity (Balanced): 200 mV

THD: 0.03 %(20 Hz to 20 kHz)

Damping Factor: 40 at 8 ohm

Power consumption

USA, Canada and some Asian model: 15 A

Other models: 10 A

Rated Speaker Impedance: 4 ohms

GENERAL

Power Supply: AC 120 V, 60 Hz
AC 230 V, 50 Hz
AC 220 V, 50/60 Hz

Dimensions (W × H × D): 450 × 195 × 596 mm
17-11/16" × 7-11/16" × 23-7/16"

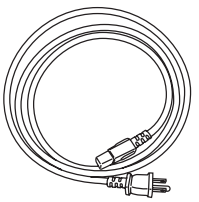
Weight: 51.0 kg, 112.4 lbs.

Specifications and features are subject to change without notice.

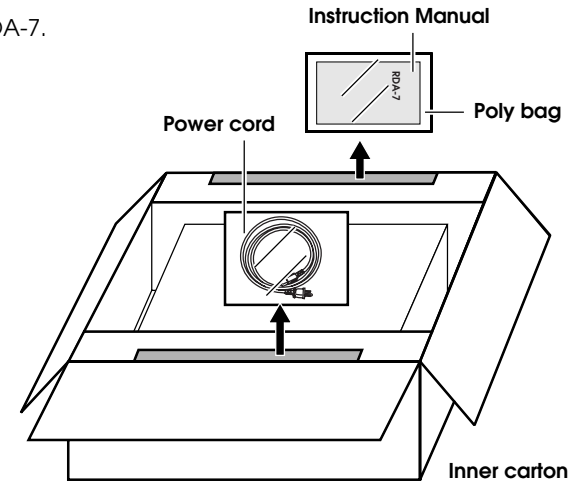
Power supply and voltage vary depending on the area in which the unit is purchased.

Supplied accessories

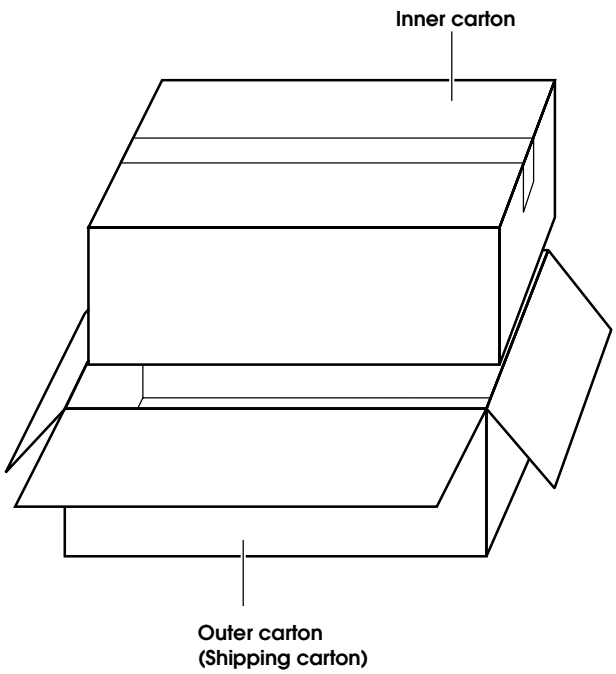
Check that the following accessories are supplied with the RDA-7.



Power cord × 1
The power cord may differ depending on the region.



Unpacking and storing the packing materials



Unpacking

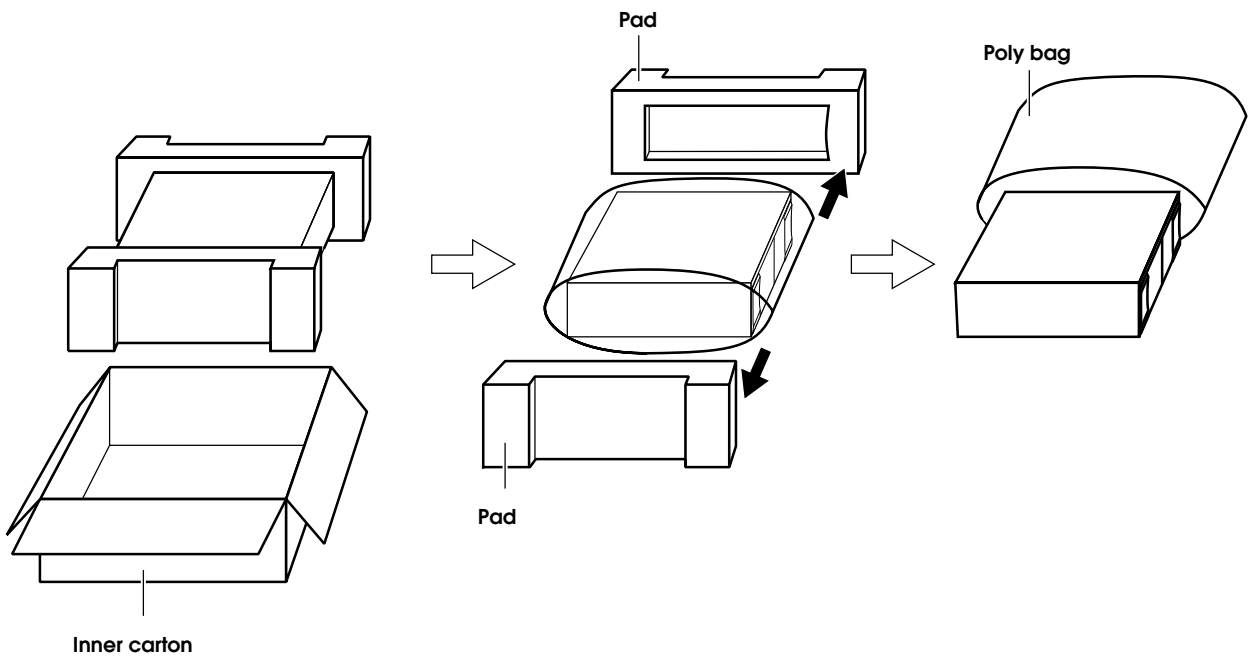
When unpacking the RDA-7, be sure to remove all accessories from the cardboard box and then check that all are included and none are missing.

Removing the RDA-7

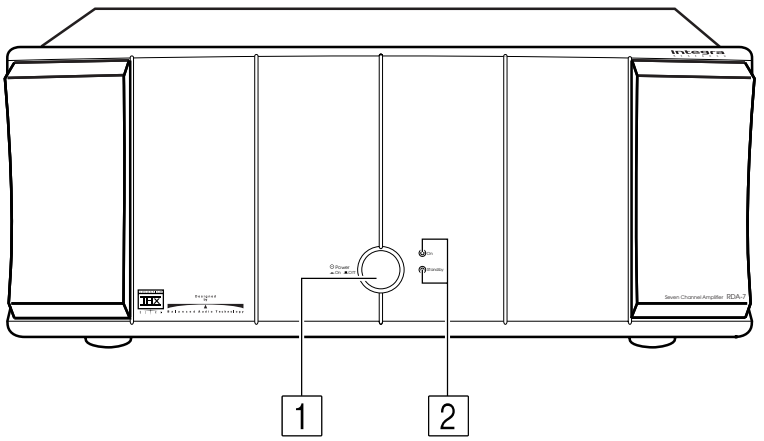
After removing the RDA-7, carefully inspect it to make sure that it has not been damaged during the shipping processes. If damaged, contact an Onkyo service station or representative immediately. Also, take down the name of the carrier in case it is necessary to obtain compensation from the carrier service.

Storing the packing materials

After unpacking, store the cardboard box and packing materials in a safe place; do not throw them away. If you are to transport the RDA-7 at a later date, you will need this cardboard box and the packing materials. The RDA-7 is very heavy and may become damaged if it is transported in a different box.



Front panel facilities



1 Power ▂ On / ▆ Off

Pressing this switch connects the RDA-7 to the main Power outlet and the On indicator lights blue. Sound will be heard after approximately 9 seconds. If you want to operate the RDA-7 using a 12-volt trigger, connect to the 12V TRIGGER terminal of a control amplifier or pre-amplifier and leave the Power switch of the RDA-7 set to On.

For example, to control the RDA-7 while it is connected to the RDC-7 AC controller, connect the 12V TRIGGER A jack of the RDC-7 to the 12V TRIGGER IN jack of the RDA-7 with a 3.5-mm (1/8-inch) mini-jack cable.

If a plug is connected to the 12V TRIGGER IN jack:

The signal reaches the 12V TRIGGER, the On indicator lights blue. When there is no signal at the 12V TRIGGER, the Standby indicator lights red.

2 On/Standby

The RDA-7 is equipped with two indicators to display its status. If both indicators are off, then the main Power switch on the front panel is turned off. If the Power switch is turned on, then one of these indicators will be lit.

On: Lights blue when Power is supplied from the AC mains Power supply.

Standby: Lights red when no signal is input from the 12V TRIGGER IN terminal and the RDA-7 is in the Standby state.

Note:

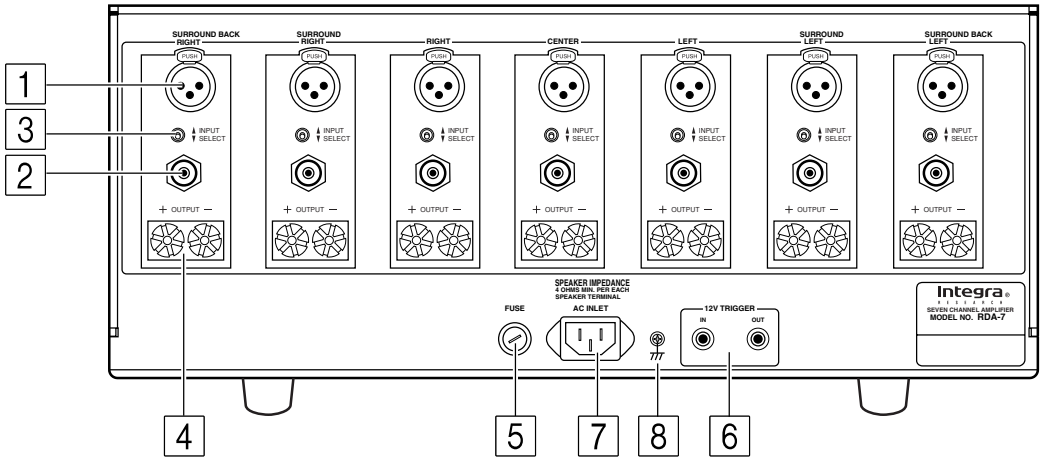
If the Power switch is pressed and neither indicator lights, check that the Power cord is properly connected and that a fuse has not blown. If the indictors still do not light, turn off the RDA-7, disconnect the Power cord, and contact an Onkyo service station or representative.

If the On indicator lights blue and the Standby indicator **flashes** red, the protection circuitry of the RDA-7 has activated. The protection circuitry activates if a problem such as a speaker cord shorting or the temperature of the RDA-7 rising excessively occurs. Turn off the RDA-7, remove the cause of the problem, and then turn the RDA-7 back on. If the problem is still not solved, turn off the RDA-7, disconnect the power cord, and contact an Onkyo service station or representative.

Rear panel facilities and connections

Caution

- **Do not connect the Power cord until you have finished all other connections.**
- **Read the instructions that came with the other components you are connecting.**
- **Do not make connections to input or output jacks while the RDA-7 is turned on (Power ▬ on).**
- **Always turn the volume of the pre-amplifier down before turning on the RDA-7.**

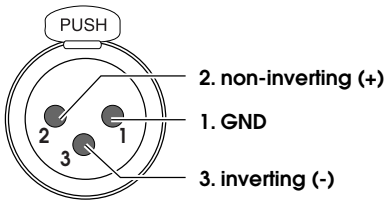


Precaution for connection

This unit comprises 7 independent power amplifiers, each being capable of reproducing the same quality sound through its channel. Note that you should connect an input source and a speaker to each channel in use. For channels that are not in use, we recommend that you do not connect any input source or speaker.

1 Balanced Input (XLR terminal)

Connect controllers or pre-amplifiers with balanced outputs for high-quality sound.



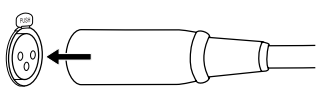
Connector ground terminal: Chassis grounded

The pin assignments for this terminal are given above. This pin assignment conforms to the standard adopted by the Audio Engineering Society. Refer to the instruction manual supplied with the pre-amplifier and verify that its output terminal is compatible with the pin assignments for this terminal. If it does not, wire it so that the output pins connect with the proper input pins.

Input terminal

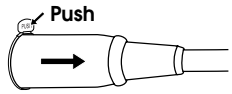
1. Connecting the input terminal

Match the pins and insert the terminal until you hear a "click." Ensure that it is secure by gently pulling it.



2. Disconnecting the input terminal

Pull out the connection cord while holding down the lever.



Note:

- When using this balanced connection for a specific channel between the pre-amplifier and RDA-7, set the INPUT SELECT switch to the XLR input side to select balanced input. Next, use high-quality cables and connect the balanced output from the pre-amplifier to the corresponding balanced input on the RDA-7.
- Do not connect anything to the RCA-type audio input jack.

2 Unbalanced Input (single end RCA input)

Connect controllers or pre-amplifiers with single-ended outputs for high-quality sound.

Note:

- When using this single-ended connection for a specific channel between the pre-amplifier and RDA-7, set the INPUT SELECT switch to the RCA input side to select single-ended input. Next, use high-quality cables and connect the single-ended output from the pre-amplifier to the corresponding single-ended input on the RDA-7.
- Do not connect anything to the balanced input jack.

3 INPUT SELECT ▲ / ▼

This switch is located between the balanced input and single-ended RCA input for each channel. Use this switch to select the input type for its channel.

Note:

- Do not change the INPUT SELECT switch setting when the RDA-7 is turned on.

Rear panel facilities and connections

- Make sure that connections have been made only to the inputs selected with the INPUT SELECT switches and nothing is connected to the other ones.

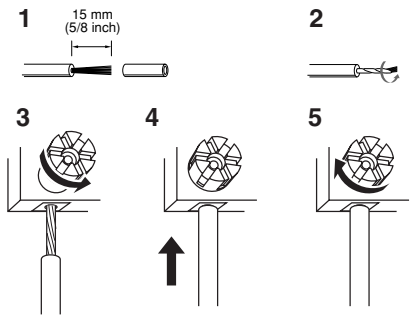
4 + OUTPUT – (Speaker output and binding post)

The RDA-7 is equipped with high-current binding posts for use at output terminals to the speaker system. To obtain the best in sound quality from the RDA-7, we recommend the use of high-quality speaker cables.

For each channel, connect the negative (or black) output post to the negative (or black) input terminal of the speaker and the positive (or red) output post to the positive (or red) input terminal of the speaker.

Make the connections following the procedure given below.

1. **Strip away 15 mm (5/8 inch) of wire insulation.**
2. **Twist wire ends very tight.**
3. **Unscrew**
4. **Insert wire**
5. **Screw**



Be sure to read "Phasing your speaker system" and "Speaker ratings" on the following page.

Caution

- Do not connect any devices other than speakers to these terminals. Also, never short-circuit the output from these terminals.
- Be sure not to mistake the positive and negative outputs or the left and right speakers. Doing so will result in an unnatural sound space.
- Only connect speakers with an impedance of 4 ohms or greater. If a speaker with an impedance of less than 4 ohms is connected, it may damage the RDA-7.
- Do not connect more than one speaker cable to one output terminal. Doing may damage the RDA-7.

5 Fuse

The RDA-7 uses a 250V AC slow-blow (time lag) main fuse. To replace the fuse, insert a coin or similar object into the groove, turn it to the left, and remove the fuse. Replace only with the same type and same rating. The correct fuse rating will differ depending on the voltage of your set as given here.

120V:T15A/250V

220V/230V/240V:T10A/250V

Warning

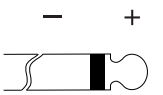
Before replacing the fuse or making any electrical connections, always turn off the Power and disconnect the Power cord.

6 12V TRIGGER IN/OUT

Connect the 12V TRIGGER IN jack to control amplifiers that have a 12V TRIGGER output jack, such as the RDC-7. This jacks works on between 5 to 12 volts DC. With the Power switch of the RDA-7 set to On, you can switch the RDA-7 between the on and Standby states with operations at the control amplifier.

If you want another component to be activated by turning on and off the control amplifier connected to the 12V TRIGGER IN jack of the RDA-7, then connect the 12V TRIGGER input jack of that component to the 12V TRIGGER OUT jack of the RDA-7. In this state, even if the RDA-7 is turned off, the signal from the control amplifier passes through the RDA-7 and goes out the 12V TRIGGER OUT jack. Daisy chaining is also possible using these jacks.

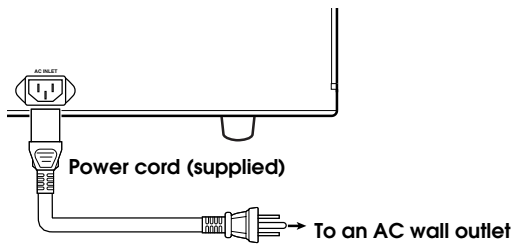
Use ϕ3.5-mm (1/8-inch) monaural-type mini-jack connectors. The tip polarity of the connectors are as shown below.



5-12 volts, positive tip polarity

7 AC INLET

Plug the supplied Power cord into this AC INLET and then into the Power outlet on the wall,

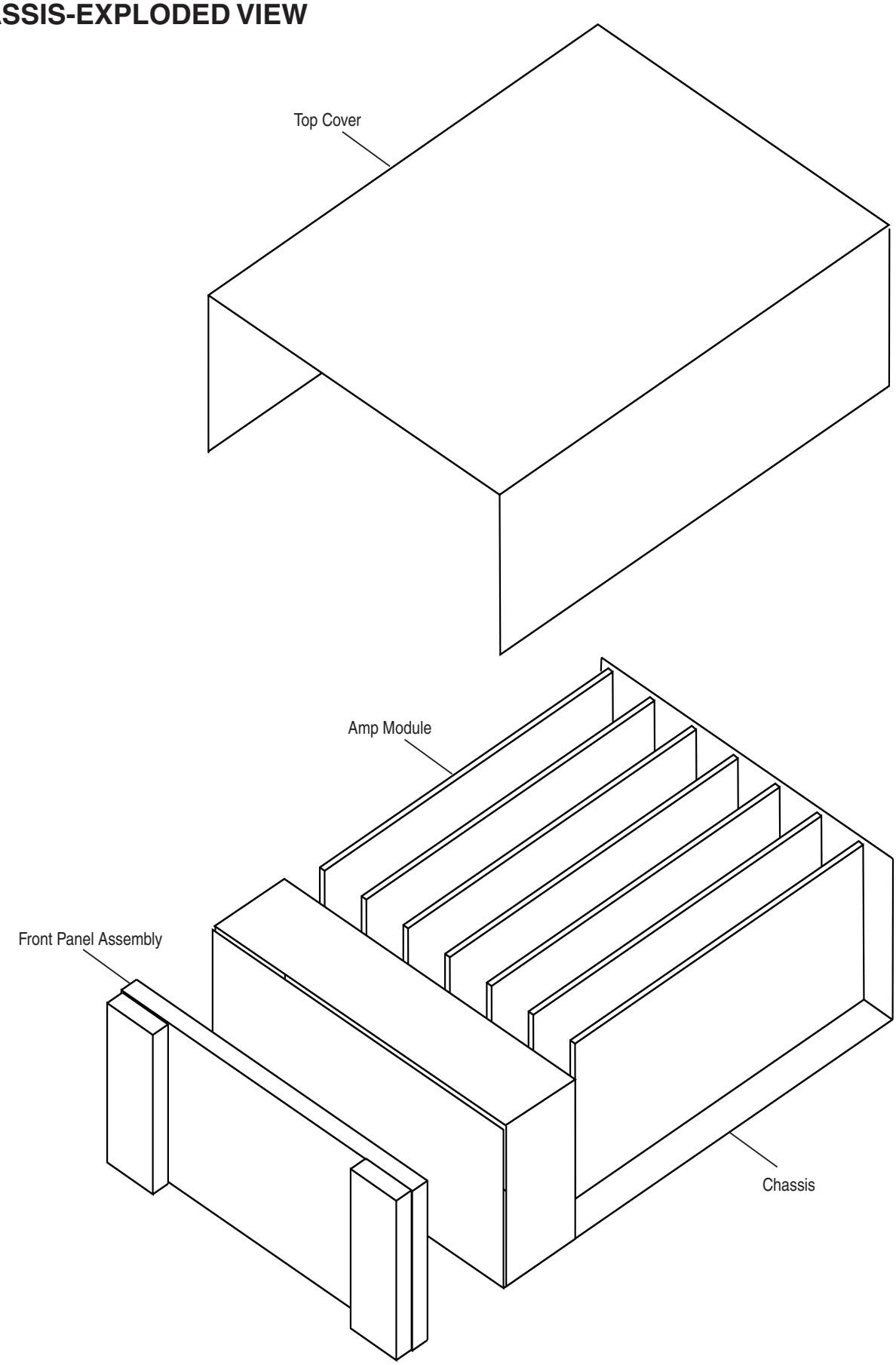


- Do not use a Power cord other than the one supplied with the RDA-7. The Power cord supplied is designed for use with the RDA-7 and should not be used with any other device.
- Never have the Power cord disconnected from the RDA-7 while the other end is plugged into the wall outlet. Doing so may cause an electric shock. Always connect by plugging into the wall outlet last and disconnect by unplugging from the wall outlet first.

8 Ground

If connecting the unit to another equipment causes noise such as a hum, you may improve the reproduced sound quality by connecting this terminal to the grounding terminal of the connected equipment with a lead wire.

CHASSIS-EXPLODED VIEW



Parts List

RDA-7 Amp Module

REF. NO.	PART NO.	DESCRIPTION
	Heatsink	
11	-	M3X6, Pan Hd Phil, BLACK oxide, Screw(PCBH)
11-1	-	Standoff 4.5M3X8, BR517109.0-00
	PCB Bracket	
5	-	6-32x3/8, Pan Hd Phil SEMS, Blk, Screw(PCBB)
	SP terminal	
	-	Nut, Washer included (21-0062)
	-	Cover 21-0062, CL159706YA
	-	Wire (Red), 14AWG
	-	Wire (Black), 14AWG
	PCB(RDA-7-010-C)	
	-	TERM: Lug solder #6, Mfg #21 ERICK (JMP 14-2014)
	Resistors	
R1, R85, R77, R84	-	30.1K
R2	-	replace to VR8
R3, R17, R49	-	2.00K
R4	-	110K
R5, R81, R83	-	10.0K
R67, R75, R76, R78,R80,R82,R6	-	100K
R7, R8	-	13.0K
R9, R10	-	6.49k
R11, R12	-	16k/2W
R13, R15	-	47k
R14,R16,R41,R42,R26,R27,R47	-	100 Ohm
R18, R31, R38, R64	-	5.62k
R19, R20, R21, R22	-	43.2k
R23	-	147k
R24	-	Trimpot Single Turn 50k
		50k Bourns 3386C
R25, R28	-	215 Ohm
R29, R33	-	2.15k
R30, R32, R37, R39, R51, R52	-	47 Ohm
R34, R35	-	619 Ohm
R36, R40	-	68.1 Ohm
R43, R44	-	10k, 1/2W
R45	-	562 Ohm
R46	-	Trimpot 25 Turn 500 Ohm
		Bourns 3296X
R48	-	158k
R50	-	1k
R53, R54	-	12k
R55	-	215 Ohm
R57 - R62 (47-0089)	-	0.22 Ohm, 3W, Wirewound (8-21-00)
		Pecker, Non-Inductive
R63	-	10 Ohm, 3W, Wirewound
		Non-Inductive

REF. NO.	PART NO.	DESCRIPTION
R65	-	4.02k
R66	-	1k
R68	-	562 Ohm
R69, R72, R73	-	215k
R70	-	261k
R71	-	562k
R74	-	348k
R86	-	7.5k
R87, R88	-	10 Ohm
R90, R91	-	1k
R92	-	Do Not Load
R93	-	Zero Ohm Jumper
		Tube
R95, R96	-	Do Not Load
	Capacitors	
C1, C2	-	0.01uF ATI 15-0054, AC Ceramic
C3 - C6 (15-0051)	-	10,000uF/ 80V LP5 -80V103MS57, Elna
C7, C9, C40	-	100uF/100V, Alum. axl
		BC 2222 021 90532
C8, C10	-	0.47uF/100V E1474, Polyester
C11, C12	-	1uF/50V Tant., P2073-ND or Equiv.
C13, C14	-	3.3uF/100V EF1335-ND 15-0034, Polyester
C15	-	220uF/50V Radial 10x16mm, EL
		P6269-ND
C17, C20	-	10uF/100V EF1106-ND, Polyester
C18, C19	-	1000pF/50V P3102-ND or Equiv., Film
C21	-	3.3uF/100V EF1335-ND 15-0034, Polyester
C22, C23	-	6.8pF/50V Axial, Cer.
C24, C25	-	22p/ 100V Axial, Cer.
C26	-	0.1uF/50V P4593-ND, Film
C27	-	0.01uF/50V RA, 103, Cer.
C28	-	1000pF/50V Axial, Cer.
C29	-	4.7uF/25V, Tant
C30, C31, C35, C39, C45	-	.01uF/50V, Axial, Cer.
C32, C33, C34	-	.1uF/50V Axial, Cer.
C36	-	47uF/25V, 5mm, radial, P6238-ND, EL
C37	-	10pF 50V Axial , Cer.
C41	-	0 33uF 10V Radial P6212-ND, Alum.
C42	-	2.2uF 100V Radial P6290-ND, Alum.
C38	-	100pF/50V, Poly,
	Inductors	
L1	-	Load 16 Gage Bare Wire Jumper
		Nylon Tube
	Fuses	
F3, F4	-	Littelfuse Pico II R251 015, F837-ND
	Semiconductors	
CR1, CR2	-	Rectifier Bridge 10A
12	-	5-40x1/2, Socket Hd Cap, Blk (25-0052), Screw(TRM)
12-1	-	Washer, Square Cone #6x.312, 25-0048

REF. NO.	PART NO.	DESCRIPTION
CR3, CR4	-	LED T-1 3/4 Green
CR6, CR7, CR8, CR10,	-	Diode Switching 1N4150 or
CR11, CR12	-	1N4148
CR9	-	LED T-1 Red (24-5007)
CR13	-	DIP Bridge 1A 400V
VR1	-	Zener 30V 400mW Axial, 1N5256B
VR2 - VR5, VR8	-	Zener 24V 400mW Axial, 1N5252B
VR6, VR7	-	Zener 12V 400mW Axial, 1N5242B
Q1	-	IRF620, MOSFET or
	-	IRF621
13	-	5-40x3/8(Q1), Socket Hd Cap, Blk (25-0033), Screw(TRS)
13-1	-	Nut(Q1), Hex KEP, 5-40 Zinc
13-2	87643008	W3x8F(BC), Washer(Q1)
13-3	871130	SW-3, Spring Washer(Q1)
Q2	-	IRF540
13	-	5-40x3/8(Q2), Socket Hd Cap, Blk (25-0033), Screw(TRS)
13-2	87643008	W3x8F(BC), Washer(Q2)
13-3	871130	SW-3, Spring Washer(Q2)
13-4	28170075	TOSHIBA AC331, Bush(Q2)
	-	Sheet(Q2)
Q3	-	2N5401
Q4	-	2N5551
Q5	-	IRF5210 or
	-	IRF9540N
13	-	5-40x3/8(Q5), Socket Hd Cap, Blk (25-0033), Screw(TRS)
13-2	87643008	W3x8F(BC), Washer(Q5)
13-3	871130	SW-3, Spring Washer(Q5)
13-4	28170075	TOSHIBA AC331, Bush(Q5)
	-	Sheet(Q5)
Q6, Q7	-	2SC3381
Q8	-	2SA1349
Q9	-	2N5550
Q10	-	2N5400
Q11	-	2SA1837
13	-	5-40x3/8(Q11), Socket Hd Cap, Blk (25-0033), Screw(TRS)
13-1	-	Nut(Q11), Hex KEP, 5-40 Zinc (25-0050)
13-2	87643008	W3x8F(BC), Washer(Q11)
13-3	871130	SW-3, Spring Washer(Q11)
	-	Heatsink(Q11), Thermalloy 7020B
Q12	-	2SC4793
13	-	5-40x3/8(Q12), Socket Hd Cap, Blk (25-0033), Screw(TRS)
13-1	-	Nut(Q12), Hex KEP, 5-40 Zinc
13-2	87643008	W3x8F(BC), Washer(Q12)
13-3	871130	SW-3, Spring Washer(Q12)
	-	Heatsink(Q12), Thermalloy 7020B
Q13, Q14	-	MJF15030
13	-	5-40x3/8(Q13,Q14), Socket Hd Cap, Blk (25-0033), Screw(TRS)
13-2	87643008	W3x8F(BC), Washer(Q13,Q14)
13-3	871130	SW-3, Spring Washer(Q13,Q14)

REF. NO.	PART NO.	DESCRIPTION
Q15	-	MJF15031
13	-	5-40x3/8(Q15), Socket Hd Cap, Blk (25-0033), Screw(TRS)
13-2	87643008	W3x8F(BC), Washer(Q15)
13-3	871130	SW-3, Spring Washer(Q15)
Q16, Q18, Q20	-	2SC3281
12	-	5-40x1/2, Socket Hd Cap, Blk (25-0052), Screw(TRM)
12-1	-	Washer(Q16,Q18,Q20), Square Cone #6x.312, 25-0048
	-	Sheet(Q16,Q18,Q20)
Q17, Q19, Q21	-	2SA1302
12	-	5-40x1/2(Q17,Q19,Q21), Socket Hd Cap, Blk (25-0052), Screw(TRM)
12-1	-	Washer(Q17,Q19,Q21), Square Cone #6x.312, 25-0048
	-	Sheet(Q17, Q19, Q21)
Q23, Q24	-	MPS2222A (PN2222A)
U1	-	Voltage Regulator LP2951CN
U2, U3	-	Voltage Regulator LM317L TO-92
U4	-	Voltage Reference LM385Z
U5, U10	-	Optocoupler Single PS2502-1
U6	-	Dual Comparator TLC372CP
U7	-	Dual D Flip-Flop CD4013BCN
U8	-	Triple 3-Input NOR CD4025BCN
U9	-	TLC555 8pin DIP
	Connectors	
J1	-	AMP 643416-1 Loaded From Ckt Side(Cut necessary)
J2	-	A-Ser. XLR NC3FAHL-2 Circuit Side (Groud Cut is necessary)
7	-	#4x.500(J2), Pan HD Phil TypeA, Blk (25-0049), Screw(DIN)
J3	-	RCA PC Board Mount Rt Angle Ckt Side(Use one nut)
	-	Washer(J3), 5610-166-62
P1	-	AMP 103669-1
TP1,2	-	
	Switches	
S1	-	NKK:NKKM2022S2A2G30
TS1	-	Thermal Switch UP71 95 Deg.C
	-	Cushion

RDA-7 AC PCB Module (RDA-7-020-B)

Ref. No.	Parts Number	Description
10	-	M3x0.5, 12mm, Pan Hd Phil Nickel Pltd, Screw(LEDP)
	Resistors	
R1, R4, R13	-	10.0K
R2	-	1k
R3	-	5.62k
R5, R7	-	22k
R6, R12	-	2.15k
R8, R11	-	100K
R9	-	215k
R10	-	16.2K
	Capacitors	
C1	-	1000uF/16V, 10x20mm, radial, P6231ND, EL
C2, C4	-	1uF/50V Tant. P2073-ND or Equiv.
C3	-	47uF/25V, 5mm, radial, P6238-ND, EL.
C5	-	0.1uF 50V Axial, Cer.
C6	-	2.2uF/25V, Tant.
C7	-	0.01uF 50V Axial, Cer.
	Semiconductors	
CR1	-	1A, 400V, DIP (48-0011), Rect., Bridge
CR2, CR3	-	1N4150, Diode Switching or
	-	1N4148
CR4	-	LED T-1 3/4 Blue
	-	Tube
CR5	-	LED T-1 3/4 Red
	-	Tube
Q1, Q2	-	MPS2222A
U1	-	TLC555 8pin DIP
	Fuses	
F2	-	Littelfuse Pico II R251 001 F826-ND
	Transformer	
T1	-	Microtran MT3101
	Relays	
K1, K2 (51-0009)	-	Song Chuan 821-W-1A-C
	Connectors	
P1-P10 (25-0032)	-	AMP Fast-On, male, 63824-1
P11	-	AMP 4-Pos. Pin Header 103908-3
TB1	-	Terminal Block, 16 Position,
	-	SSB6FP160201NNNN
FASTON USHAPE	-	USHAPE
	-	SCREW6-32x3/8

Inrush Current Limiter PCB Module (RDA-7-030-A)

Ref. No.	Parts Number	Description
R1 ~ R4	-	2.5 Ohm KC003L-ND Or Equiv.
P2, P3 (25-0032)	-	AMP Fast-On, male, 63824-1
14	-	6-32x3/8, Pan Hd Phil SEMS, Nickel Pltd, Screw(GROU)
36905	-	Standoffs, 1/4Hex 6-32x1-1/4, Brass, Nickel Pltd

Transformer Assy

Ref. No.	Parts Number	Description
	-	Transformer, 4Ch
	-	Bushing, Xfmer, 94HB Inserted by ATI
	-	Transformer, 3Ch
	-	Bushing, Xfmer, 94HB Inserted by ATI
	-	Connector, transformer sec., AMP: 350779-1 (UL94-V0)
	-	TUBE
	-	Bolt, Xfmer 3/8-16x3.5
	-	Nut, 3/8-16, ATI 25-0012
	-	Washer, Xfmer, ATI 25-0013
	-	Washer, Rubber, Xfmer, ATI

Shroud

Ref. No.	Parts Number	Description
	-	Shround
9	-	M4x0.7 8mm, Flat Hd, Blk, Screw(COV)

L Bracket

Ref. No.	Parts Number	Description
	-	L Bracket
9	-	M4x0.7 8mm, Flat Hd, Blk, Screw(COV)

12V trigger Assembly

Ref. No.	Parts Number	Description
	-	Connector to AC 4 pin, AMP103958-3 Molex 50-57-9404 (21-0049)
	-	Wire BLK
	-	Wire WHT
	-	Wire RED
	-	Wire GRN
	-	Mini Jack
	-	Nut(Mini jack)
	-	Wire WHT
	-	Wire BLK
	-	Wire RED
	-	Wire BLK
	-	Wire RED
	-	Tube, 26AWG 25"
	-	Connector to Amp 2 pin, AMP103958-1(ATI 21-0033)Molex 50-57-9402

Conduit

Ref. No.	Parts Number	Description
	-	Conduit
9	-	M4x0.7 8mm, Flat Hd, Blk, Screw(COV)

AC Inlet Assembly

Ref. No.	Parts Number	Description
	-	AC Inlet, UL approved (Mouser161-0707-1-250)
	-	Wire(Green/Yellow), AWG14
	-	Nut(GROND), JMP 16-1014
6	-	4-40x1/2, Flat Hd , Blk (25-0025), Screw(INLE)

REF. NO.	PART NO.	DESCRIPTION
6-1	-	Nut, HEX KEP 4-40 Zinc, (25-0030)
	-	Wire(Blk 5")
	-	Fuse Holder, UL/CSA approved(Schurter 0031 1699)
	-	Wire(White)
	-	Wire(Blk)
	-	Tube

Chassis

REF. NO.	PART NO.	DESCRIPTION
	-	Chassis (UDD,UPP,UJJ,UGT)
	-	Serial Number Label
	-	Rubber Feet, ATI 25-0164
8	-	10-32x3/4, ATI, Screw(FOOT)
9	-	M4x0.7 8mm, Flat Hd, Blk, Screw(COV)
	-	Top Cover
9	-	M4x0.7 8mm, Flat Hd, Blk, Screw(COV)
	29360778	Label(Flash)
	-	Label for Ground
14	-	6-32 x 3/8, Pan Hd Phil SEMS, Nickel Pltd, Screw(GROU)

Front Panel Module

REF. NO.	PART NO.	DESCRIPTION
	27212183	Front Panel Assembly
	-	Front Bracket with pemnut
3	-	10-32x1/4, Button Hd Cap, Blk, Screw(FBRA)
	-	Switch plate
	-	Power Switch, TV-5, UL marking, VDE, SEMKO, 5A
	-	Alpha: PS-1108-512-L
1	-	4-40x1/4(POW SW), Pan Hd, Phil, Zinc, Screw(PSW)
	28325734	Knob AS (POW)
	-	Wire(Blk)
2	-	4-40x1/4, (POW ASS'Y), Phil Pan Hd, SEMS, Zinc, Screw(SWPL)
4	-	10-32x3/8, Pan Hd, Phil, Ni, Screw(FCHA)
	28198908	Facet(1)
	27268013	Guide(Power)
	82143006	3P+6FN(BC), Screw (Guide (Power))

Shipping Carton Assembly

REF. NO.	PART NO.	DESCRIPTION
	-	Inner Carton
	-	Outer Carton
	-	Destination label
	-	PAD(L)
	-	PAD(R)
	-	Poly Bag
	-	Warning Label
	29361573	PE-LD label
	29100097-1A	Poly Bag(Manual)

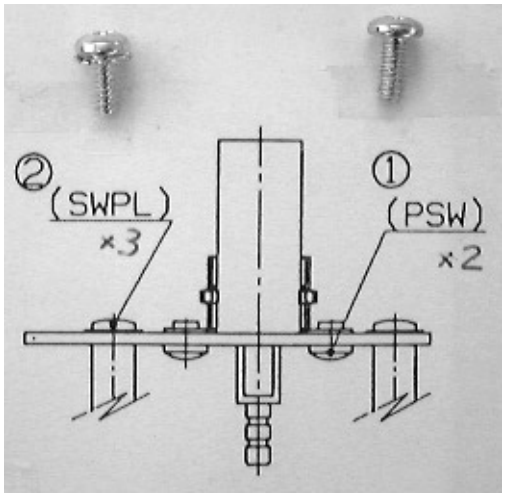
RDA-7 AC PCB Module Jumpers

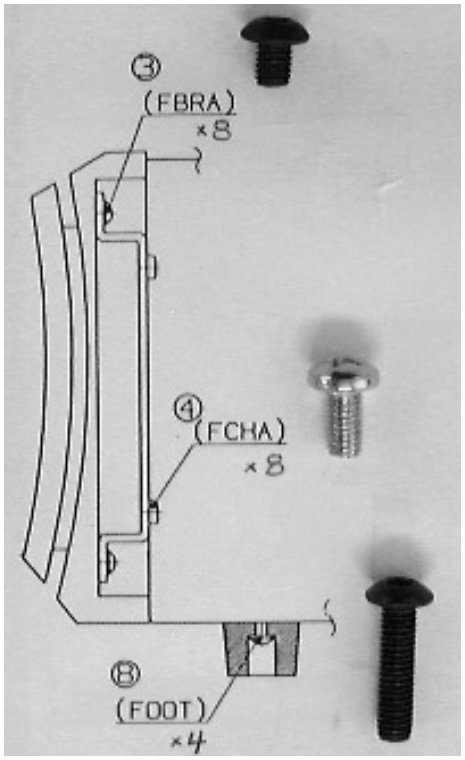
REF. NO.	PART NO.	DESCRIPTION
	-	L, L <UDD, UDT, UJJ>
	-	H <UPP, UPT, UGT>

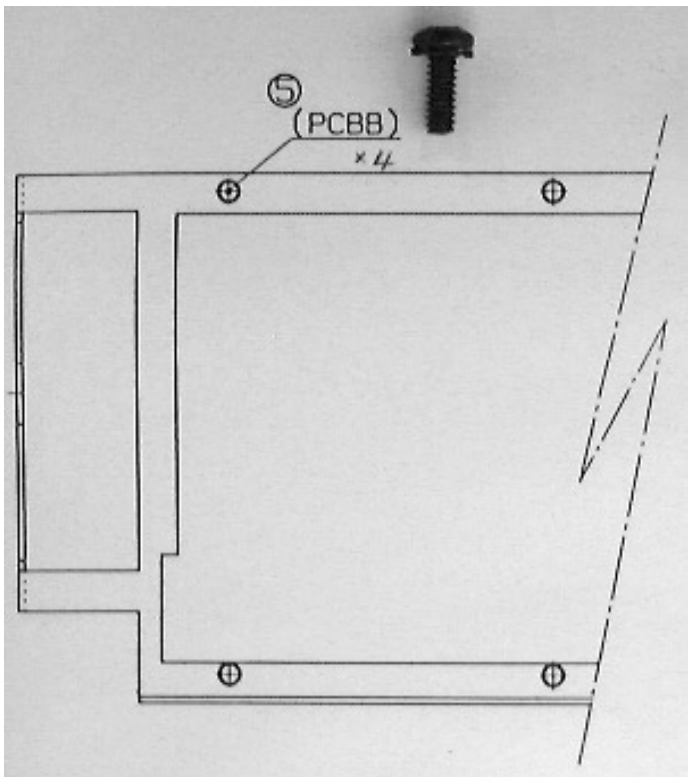
Others

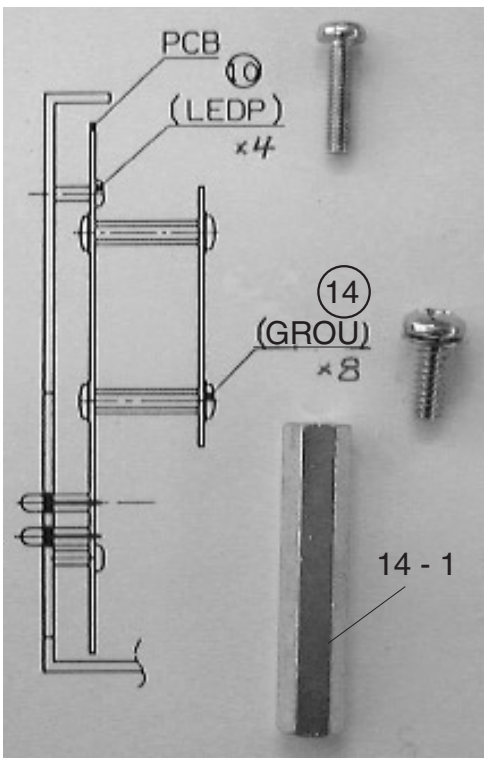
REF. NO.	PART NO.	DESCRIPTION
	-	Chassis(UDD) <UDD,UDT>
	-	Chassis(UPP) <UPP, UPT>
	-	Chassis(UGT) <UGT>
	-	Chassis(UJJ) <UJJ>
	-	Plug for binding post, Cliff RED CL159777 <UPP, UPT, UGT>
	-	Plug for binding post, Cliff Blk CL159778 <UPP, UPT, UGT>
	-	Fuse (43-0015), 120: LF314 015 15A 250V, UL/CSA <UDD, UDT, UJJ>
	-	Fuse (43-0004), 230: LF314 010, 10A250V UL/CSA <UPP, UPT, UGT>
	29342947	Instruction Manual, E <UDD,UDT, UPP, UPT, UGT>
	29342949	Instruction Manual, T <UDT, UPT, UGT>
	29342948	Instruction Manual, G,D,SW,F,S,I <UPP>
	29342950	Instruction Manual, J <UJJ>
	-	AC Cord, 120: Tumbler: 3271JW46 <UDD, UDT>
	-	AC Cord, 230: Unicable:8150-25M-BB <UPP, UPT, UGT>
	253303HIT	AC Cord <UJJ>
	29365086	Warranty Card <UDD>
	29365082A	Warranty Card <UJJ>
	29362620	UPC Label <UDD>
	29362621	EAN Label <UDT, UPP, UPT, UGT>
	29362622	POS Label <UJJ>
	29095865	Sheet(Integra) <UDD>

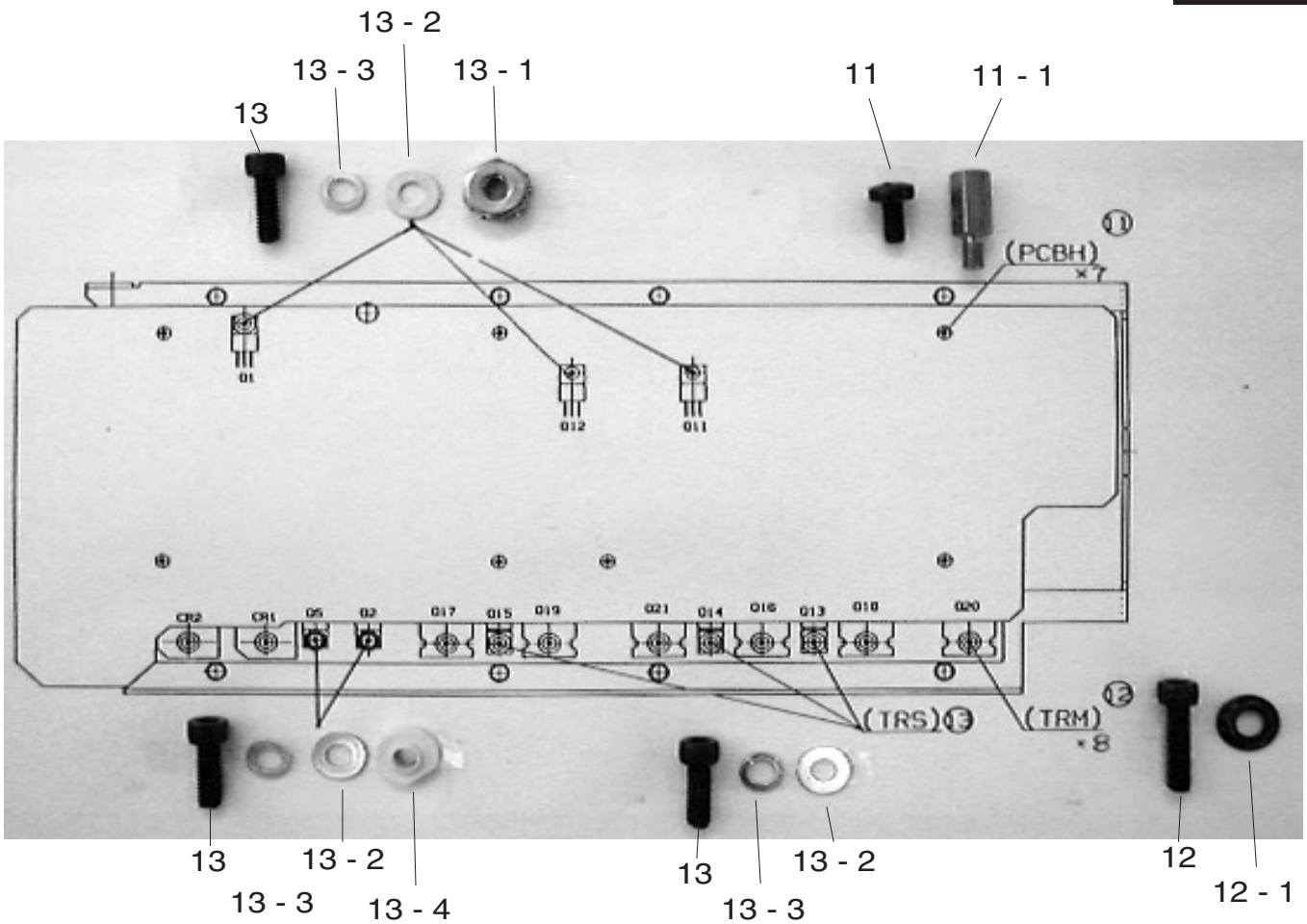
SCREWS

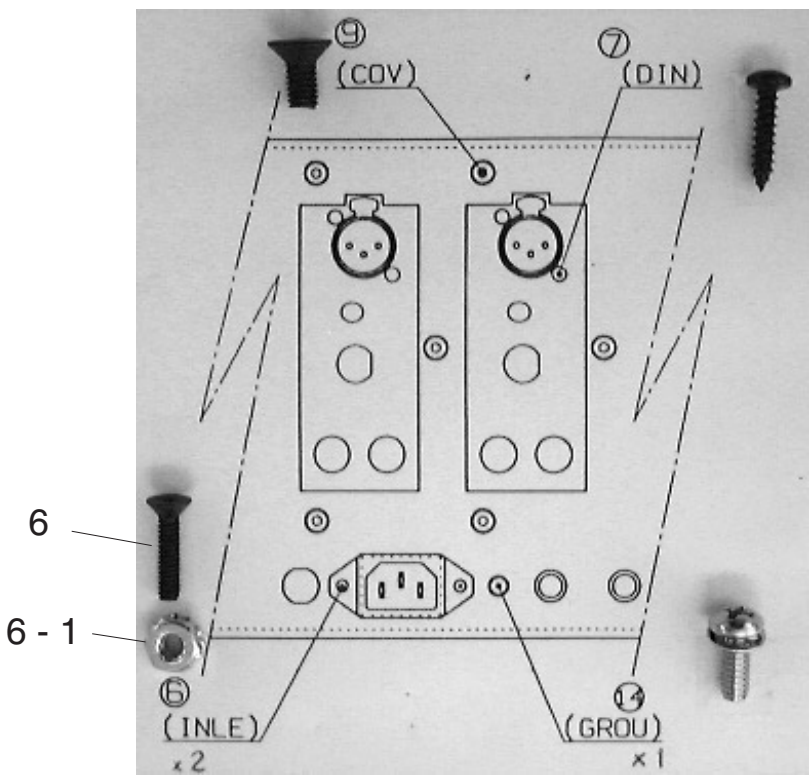

②
(SWPL)
×3
①
(PSW)
×2


③
(FBRA)
×8
④
(FCHA)
×8
⑧
(FOOT)
×4


⑤
(PCB8)
×4


PCB
⑩
(LEDP)
×4
⑭
(GROU)
×8
14 - 1


13 - 2
13 - 3
13 - 1
13
11
11 - 1
(PCBH)
×7
(TRS)
(TRM)
×8
13
13 - 2
13 - 3
13 - 4
13
13 - 3
13 - 2
12
12 - 1


(COV)
(DIN)
6
6 - 1
(INLE)
×2
(GROU)
×1

ADJUSTMENT PROCEDURES

Channel Test

1. Connect the assembled channel to the power transformer and turn it ON.
2. After about 9 seconds the two green LED's should turn ON
3. Measure the following voltages and make sure they are within the specifications: For all these measurements connect the DC voltmeter negative lead to the bottom lead of the VR8 zener diode.

   C7 (+) 70V +/- 3V
   C9 (-) -70V +/- 3V
   L1 0V +/- .1V
4. Connect a DC voltmeter to the test points TP1 and TP2 and adjust the voltage to 4mV using the R46 BIAS adjustment trimpot.
5. Allow the channel to warm up for 30 minutes, adjusting the bias every ten minutes.
6. Measure the output DC voltage and adjust it as close to zero as possible using the R24 trimpot.

Main Chassis Test

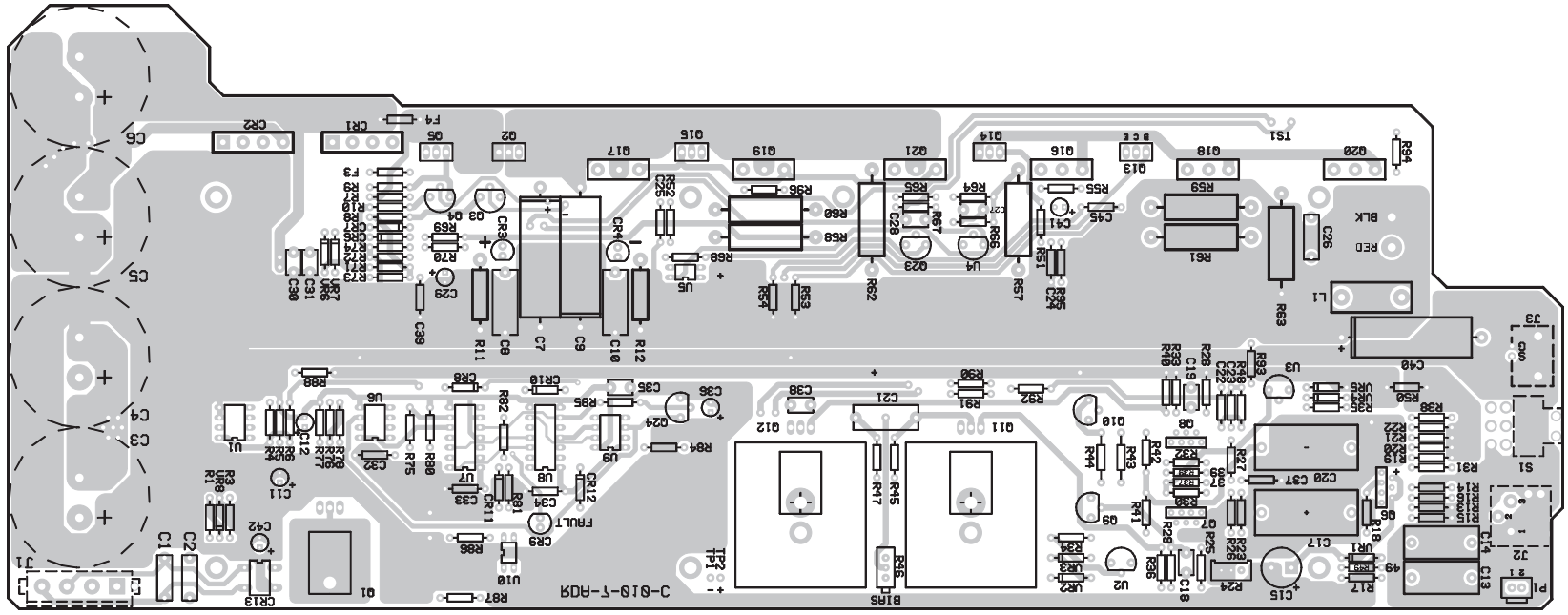
1. Assemble the chassis/power supply and configure it for right line voltage.
2. Plug it into the power line.
3. Turn the unit ON. The blue ON LED should come ON.
4. Red Fault/Standby LED should be flashing.
5. Turn the unit OFF and plug a remote control plug into the Remote IN jack.
6. Turn the unit ON. The Red Standby LED should be ON.
7. Apply 12V to the remote control plug. The unit should turn ON, the blue LED should be ON and the red LED flashing.
8. Measure the secondary voltages on all power cables going to the channels. Each secondary should read 50VAC +/- 2VAC.

Final Assembly Test

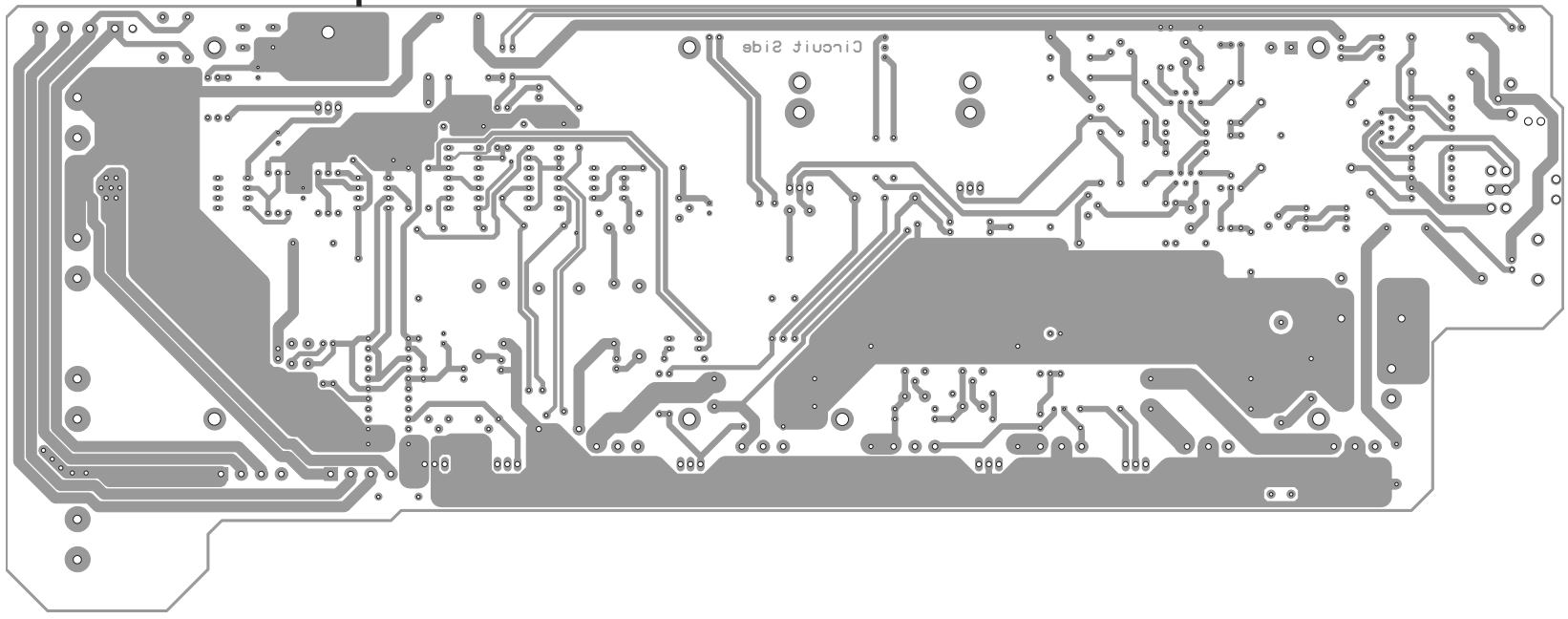
1. Install all channels in the chassis and turn the unit ON. All green LED's should come ON after about 9 seconds.
2. Check bias currents on all channels and adjust if necessary.
3. Allow the unit to warm up for 30 minutes, adjusting the bias currents every ten minutes.
4. Adjust the DC output voltage as close to zero as possible on each channel.

Pcboard

Component side view from circuit side



Circuit side view from component side



RDA-7 Primary Connections For Different Voltages

AC Board Jumpers

For voltages in the 100V - 120V range, install the two jumpers marked L
For voltages in the 200V - 240V range install the single jumper marked H

Main Transformer Jumpers

The following connections should be made for different line voltages:

100V:
K1-3 to BL1-4,
P7 to BL1-3
P2 to BL1-2
K2-3 to BL1-12,
P8 to BL1-11
P3 to BL1-10

110V:
K1-3 to BL1-6,
P7 to BL1-5
P2 to BL1-2
K2-3 to BL1-14,
P8 to BL1-13
P3 to BL1-10

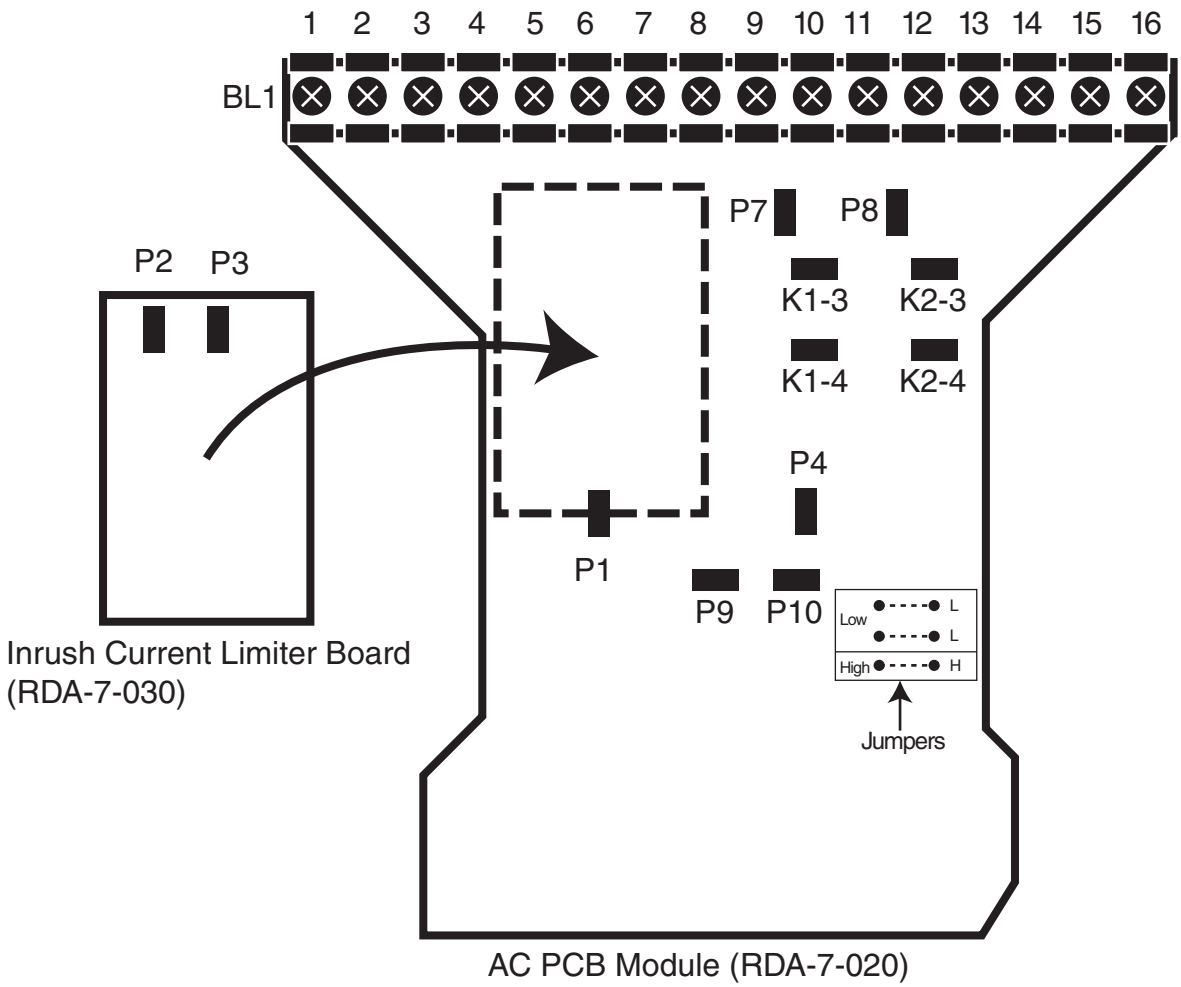
120V:
K1-3 to BL1-8,
P7 to BL1-7
P2 to BL1-2
K2-3 to BL1-16,
P8 to BL1-15
P3 to BL1-10

200V:
K1-3 to BL1-4
BL1-2 to BL1-3
K2-3 to BL1-12
BL1-10 to BL1-11

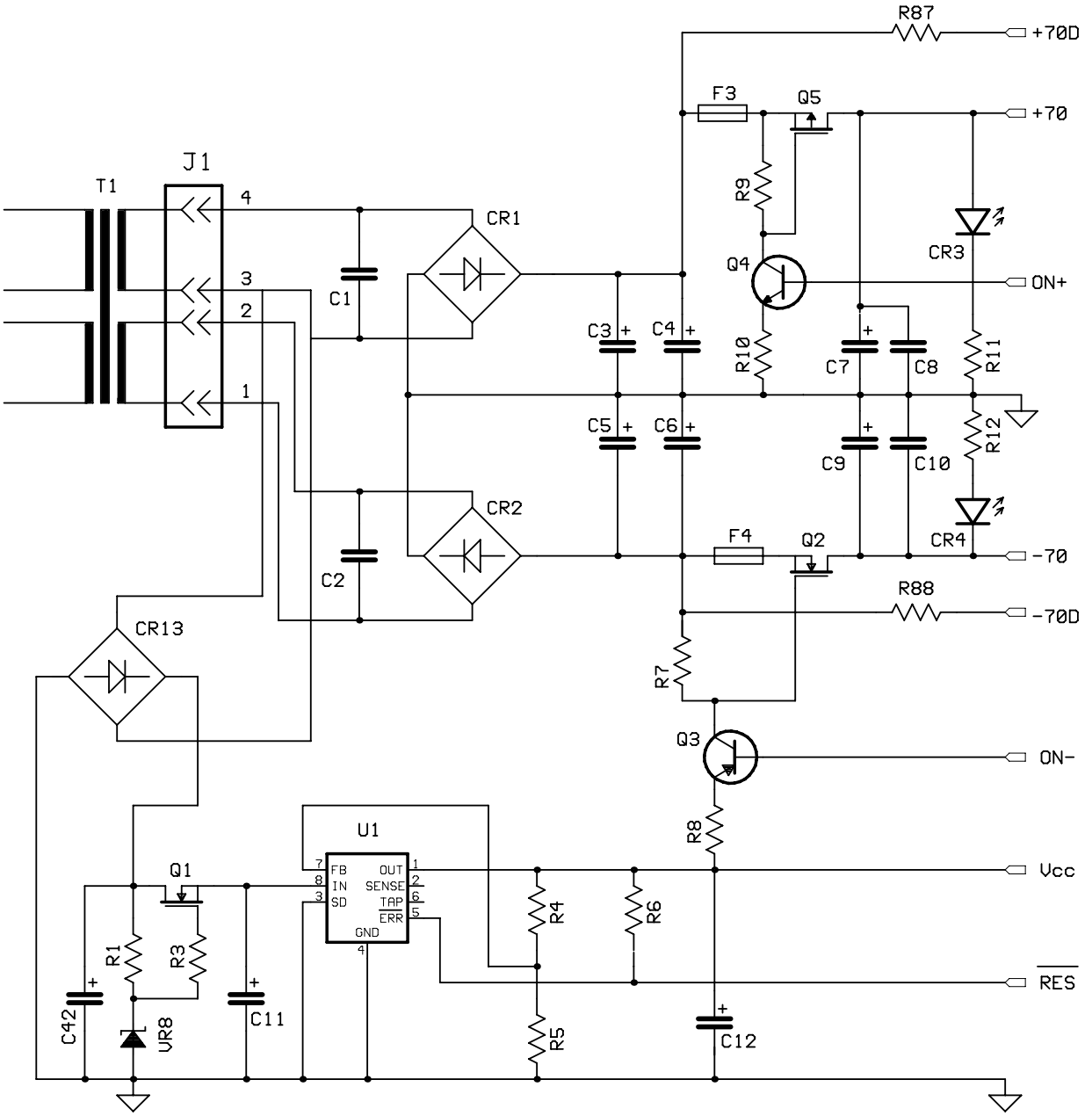
220V:
K1-3 to BL1-6
BL1-2 to BL1-5
K2-3 to BL1-14
BL1-10 to BL1-13

230V:
K1-3 to BL1-6
BL1-2 to BL1-7
K2-3 to BL1-14
BL1-10 to BL1-15

240V:
K1-3 to BL1-8
BL1-2 to BL1-7
K2-3 to BL1-16
BL1-10 to BL1-15

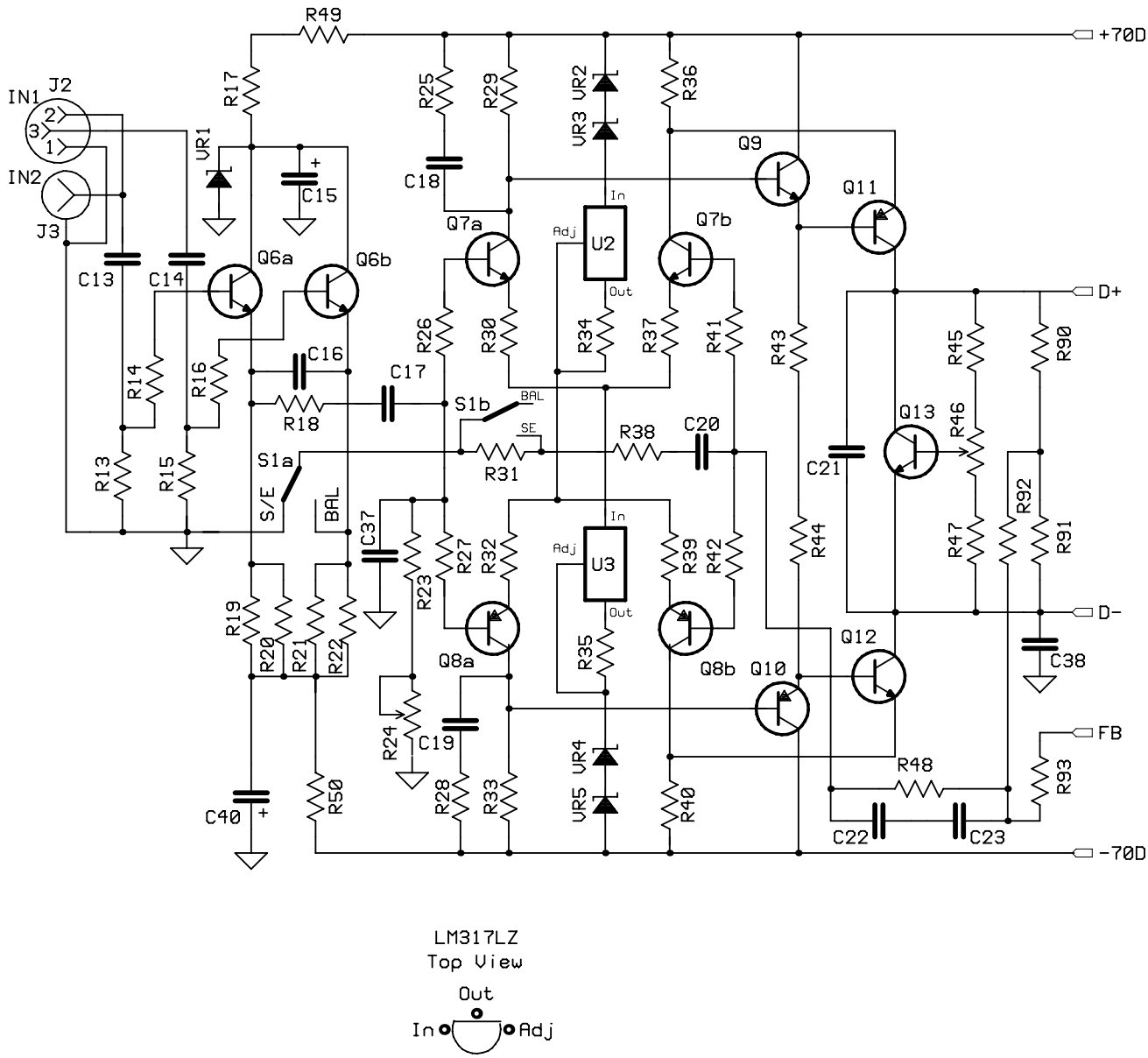

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
BL1
P7
P8
P2
P3
K1-3
K2-3
K1-4
K2-4
P4
P1
P9
P10
Low
L
L
High
H
Jumpers
Inrush Current Limiter Board
(RDA-7-030)
AC PCB Module (RDA-7-020)

POWER SUPPLY



ONK-1b.sch

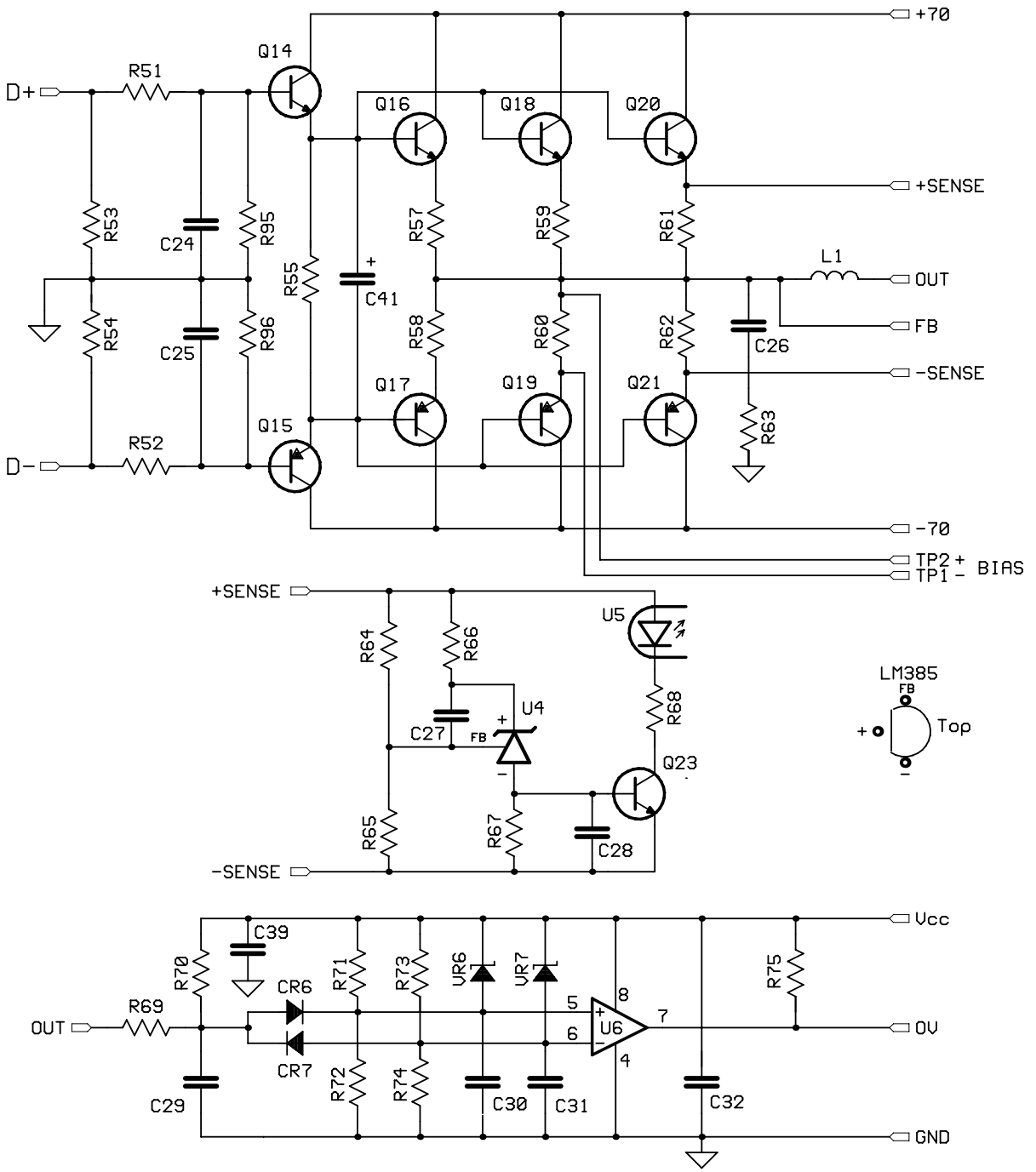
DRIVER CIRCUIT



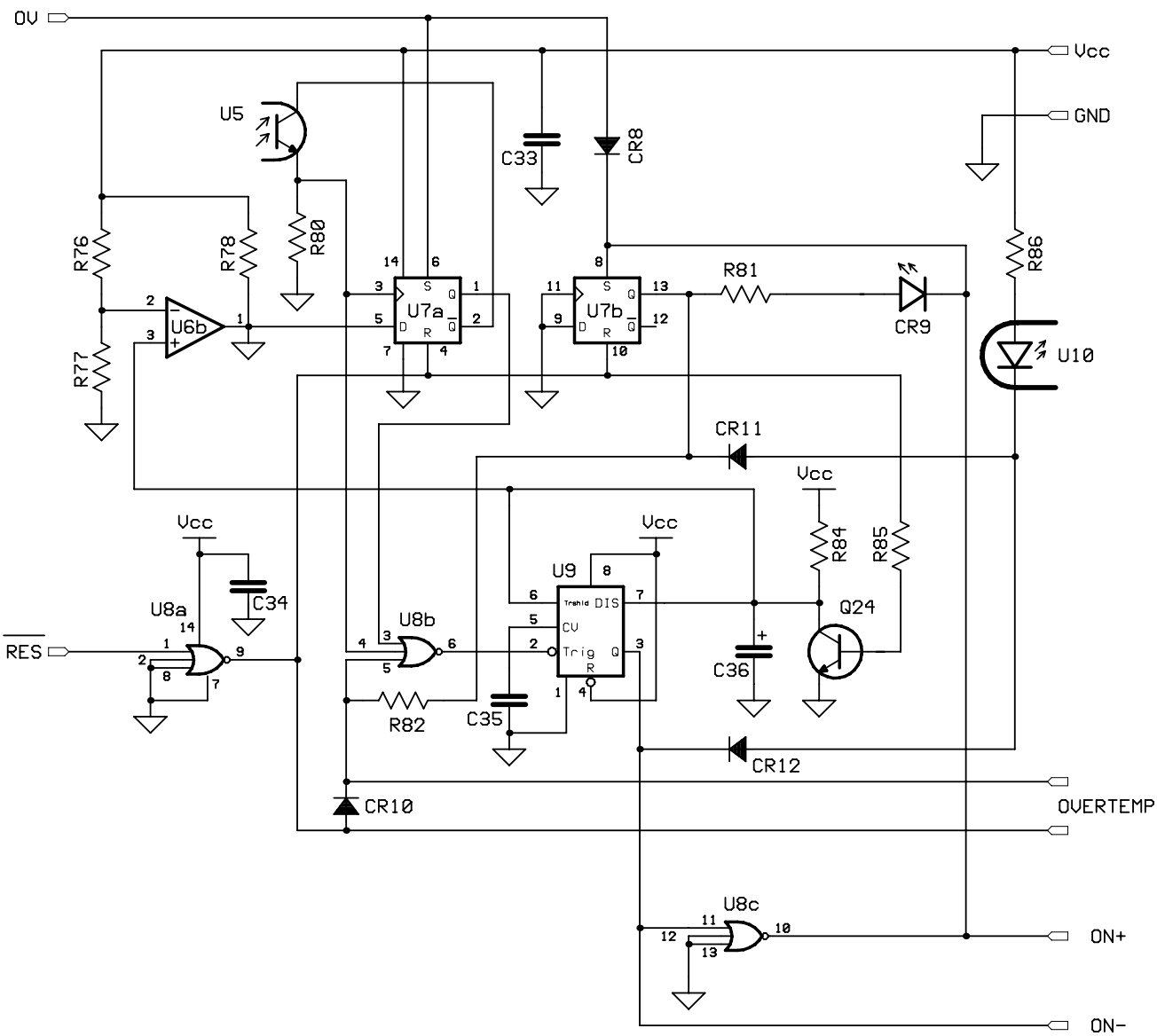
LM317LZ
Top View

ONK-2b.sch

OUTPUT STAGE AND PROTECTION

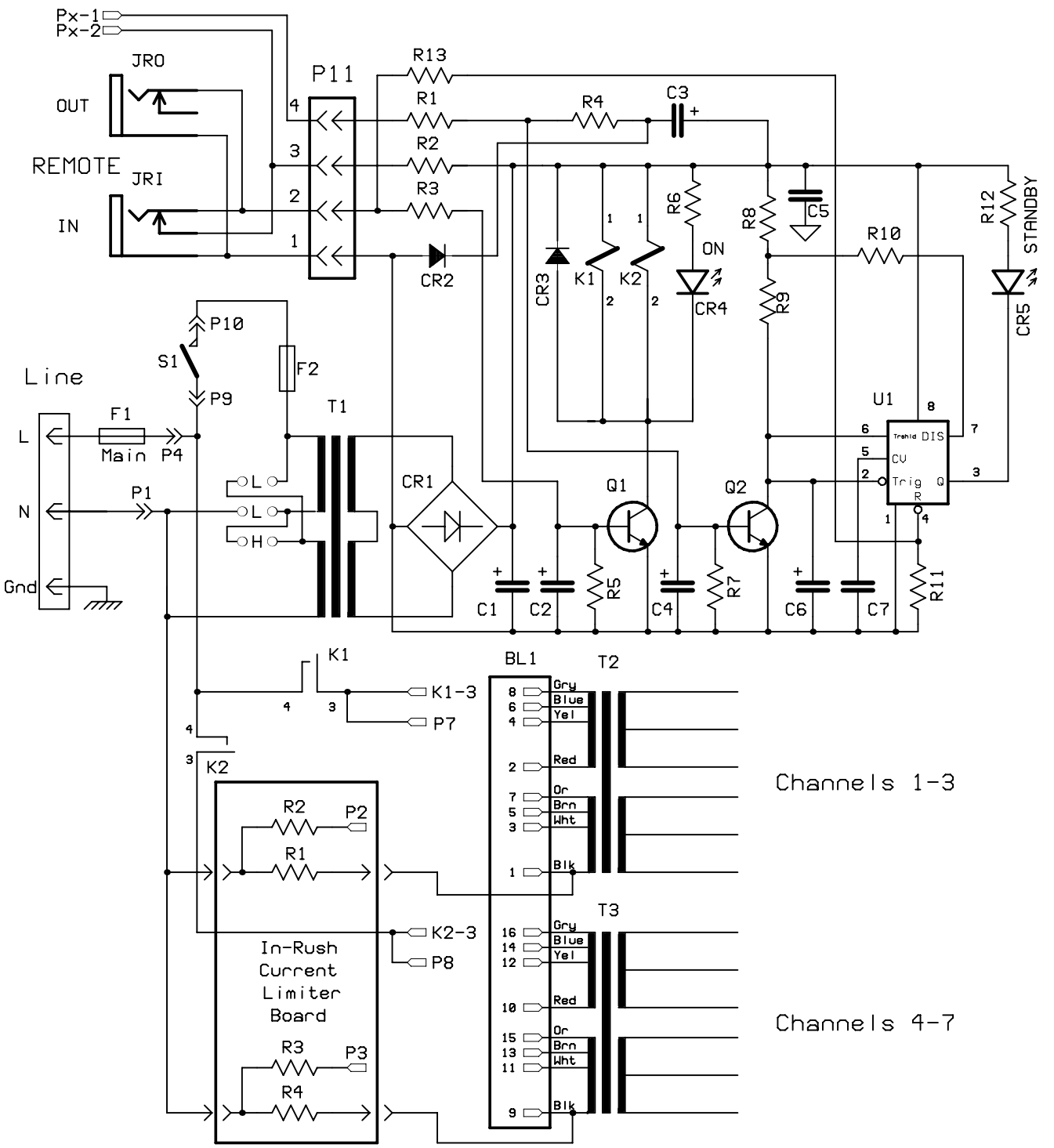


PROTECTION



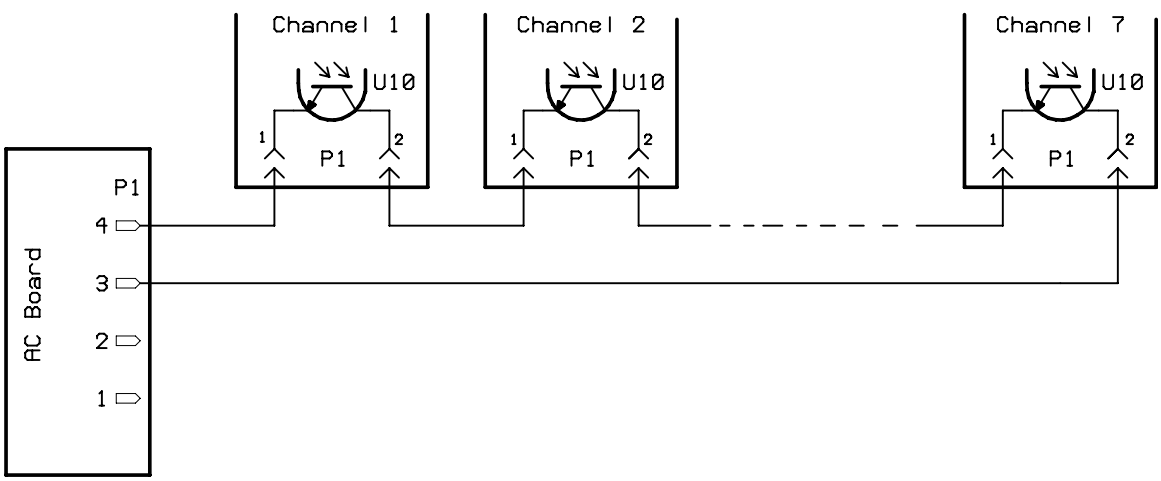
ONK-4b.sch

AC BOARD



ONK-ACb.sch

PROTECTION WIRING



ONK-6A.sch

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