

Service
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Service Manual

TABLE OF CONTENTS

	Page
Location of PC Boards/Specifications	1-2
Measurement Setup	1-3
ESD & Safety Instruction	1-4
Disassembly Instructions & Service Positions	2
Set Block & Wiring Diagram	3
Amplifier/Input/LED Board	4
Power Board	5
Mechanical Exploded View	6

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Published by BB-ET0242 Service Audio Printed in The Netherlands Subject to modification



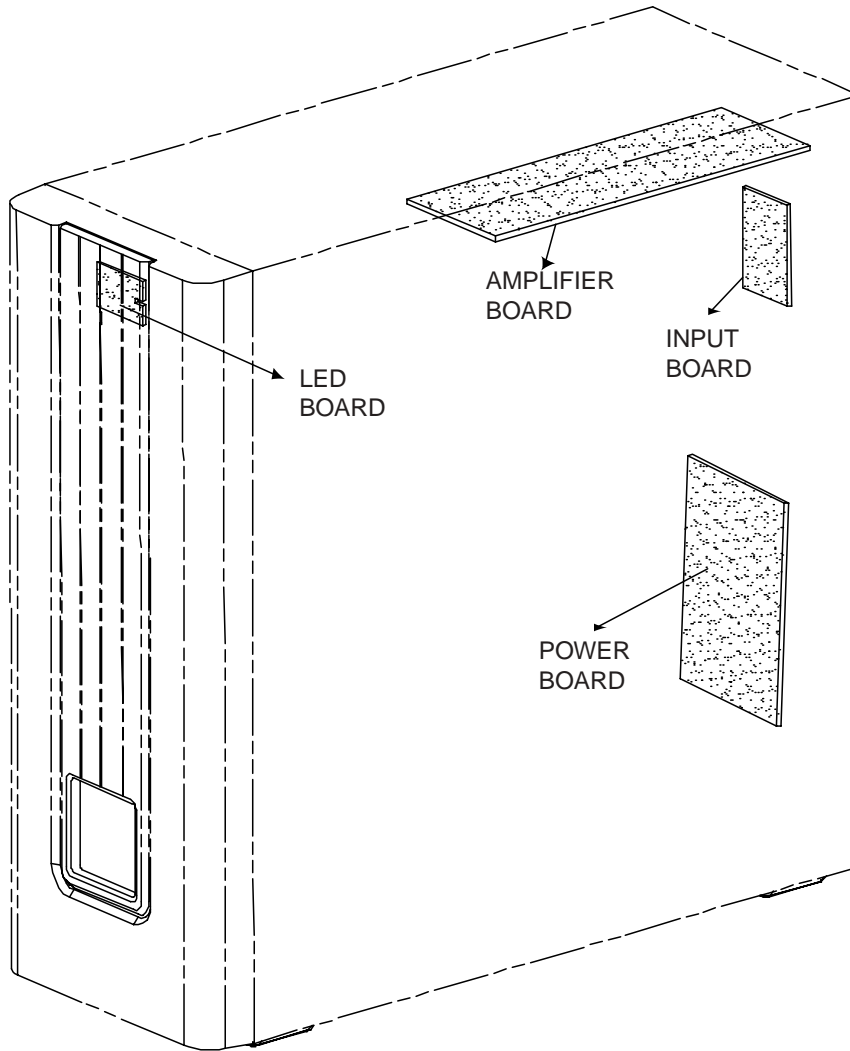
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Version 1.0



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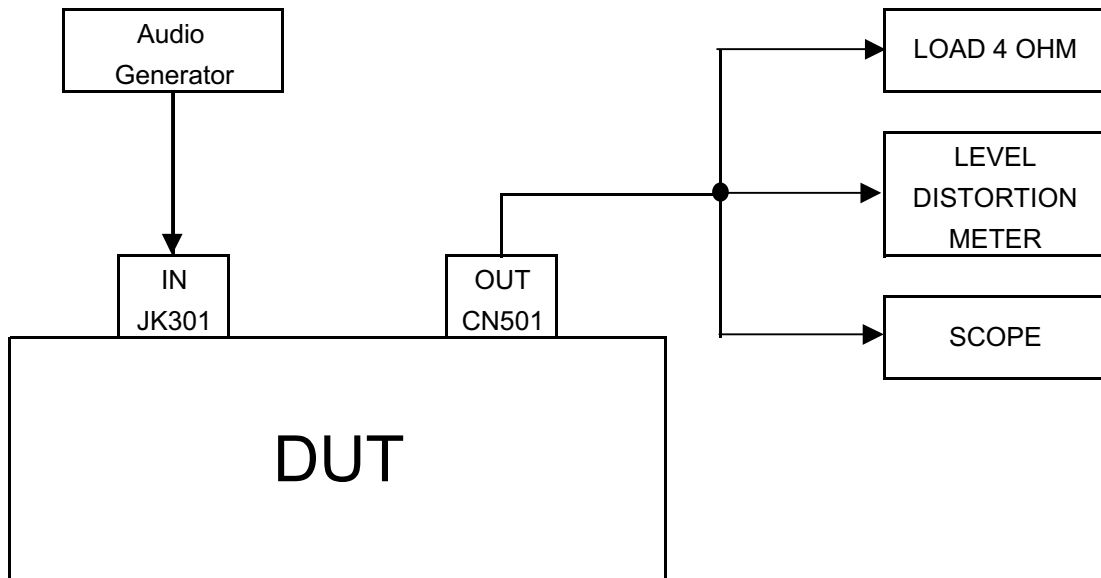
LOCATION OF PC BOARDS



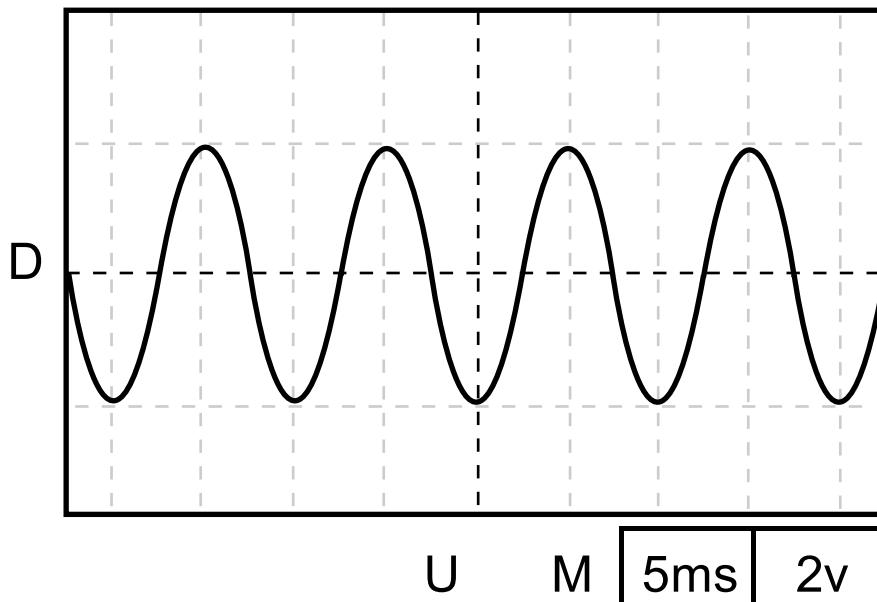
SPECIFICATIONS

SUBWOOFER

Subwoofer (not magnetically shielded design).....	6.5"
Output Power.....	50W (4Ω,DIN)
THD (Total Harmonic Distortion)	10% at 80 Hz (output power)
Reproduction Frequency Response.....	30 Hz- 160 Hz
Phase Switch.....	0°,180°
Input Sensitivity (Subwoofer In).....	.80 mVrms
AC Power230V/50 Hz(/00S)
AC Power	115V/230V,50Hz/60Hz(/01S)
power Consumption.....	.53 W (at 1/8 Rated Power)
Dimensions (w x h x d).....	130 mm x 337 mm x 375 mm
Weight.....	.7 Kg

MEASUREMENT SETUP**Audio Test Signal**

100Hz



ESD & SAFETY INSTRUCTION

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

ESD



D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes. Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD). Onzorgvuldige behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un bracciale a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisés les pièces de rechange identiques à celles spécifiées.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

DISASSEMBLY INSTRUCTIONS

Dismantling the Grille Assembly & Speaker Driver

1. Place the Subwoofer Box as shown in the Picture 1 and use a screw driver to force open the Grille Assembly.

Caution: Take care the surface when take out the Grille Assembly of Subwoofer



Picture 1

2. Place the Subwoofer Box as shown in the Picture 2 and loosen 4 screws A to remove the Speaker Driver.



Picture 2

Dismantling the Front Assembly

1. Place the Subwoofer Box as shown in the Picture 3 (Bottom view) and use a screw driver to force open the front assembly.

Caution: Do not break the bundle of wires to the front. Take care the surface when take out the front panel of subwoofer



Picture 3

Dismantling the Rear assembly

1. Loosen 9 screws B as shown in the Picture 4 (Rear View) to pull out the Printed Circuit Board assembly.

Caution: Do not break the bundle of wires to the front.



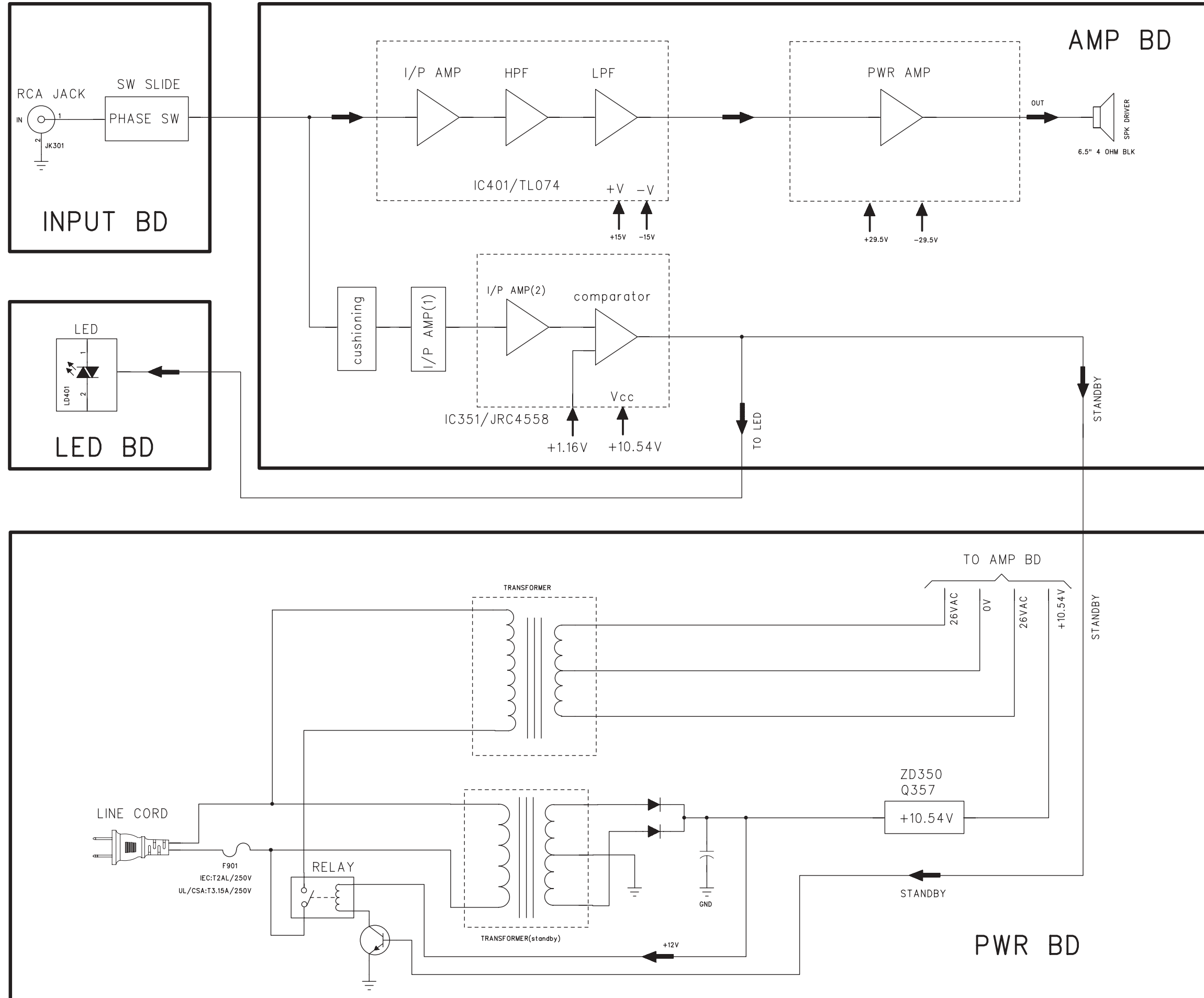
Picture 4

WARNING: THERE IS ONLY A LED BETWEEN FRONT PANEL AND WOOD BOX. IF NOT NECESSARY, PLEASE DO NOT TRY TO OPEN THE FRONT PANEL!!!

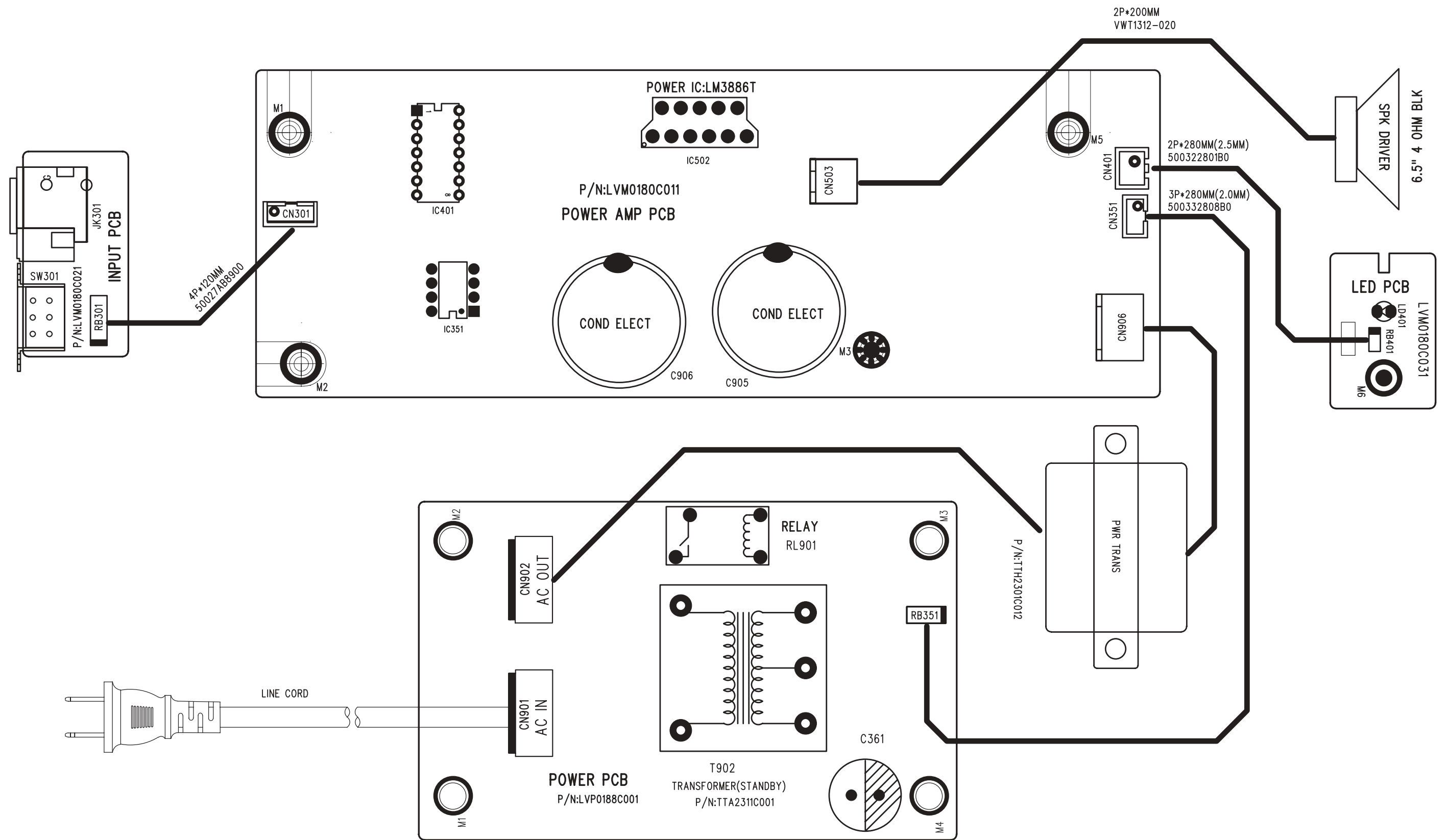
SERVICE POSITION



BLOCK DIAGRAM



WIRING DIAGRAM

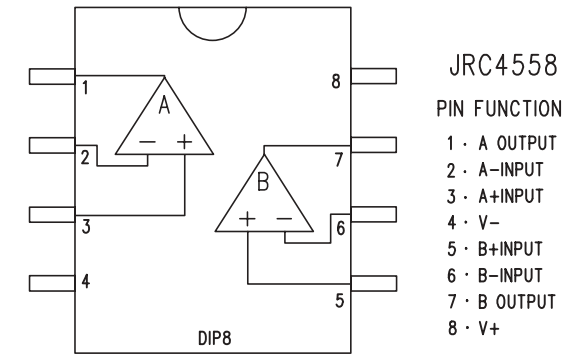


AMPLIFIER / I/P / LED BOARD

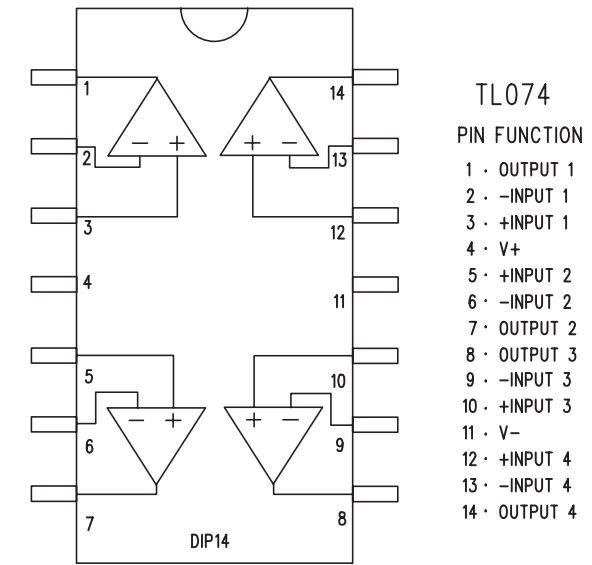
TABLE OF CONTENTS

Internal IC Diagram 4-1
 Circuit Diagram 4-2
 PCB Layout View 4-3
 Electrical Part list 4-4

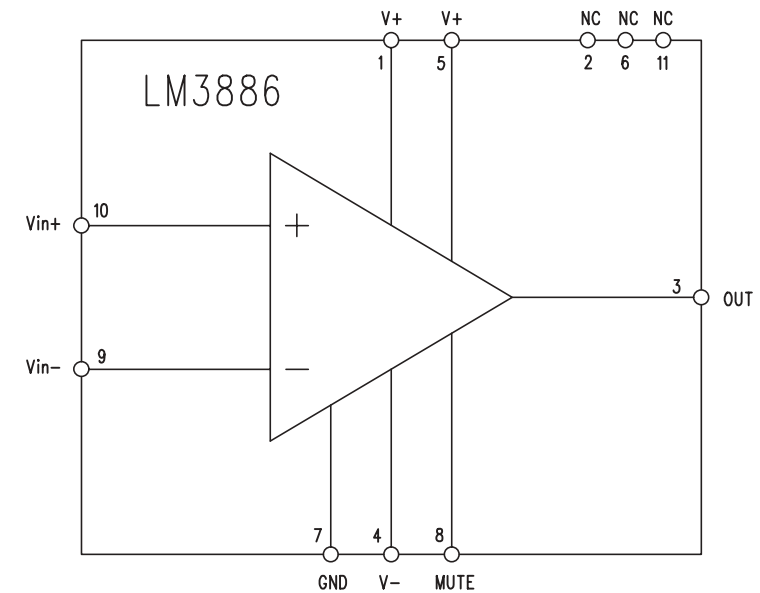
JRC4558 INTERNAL BLOCK



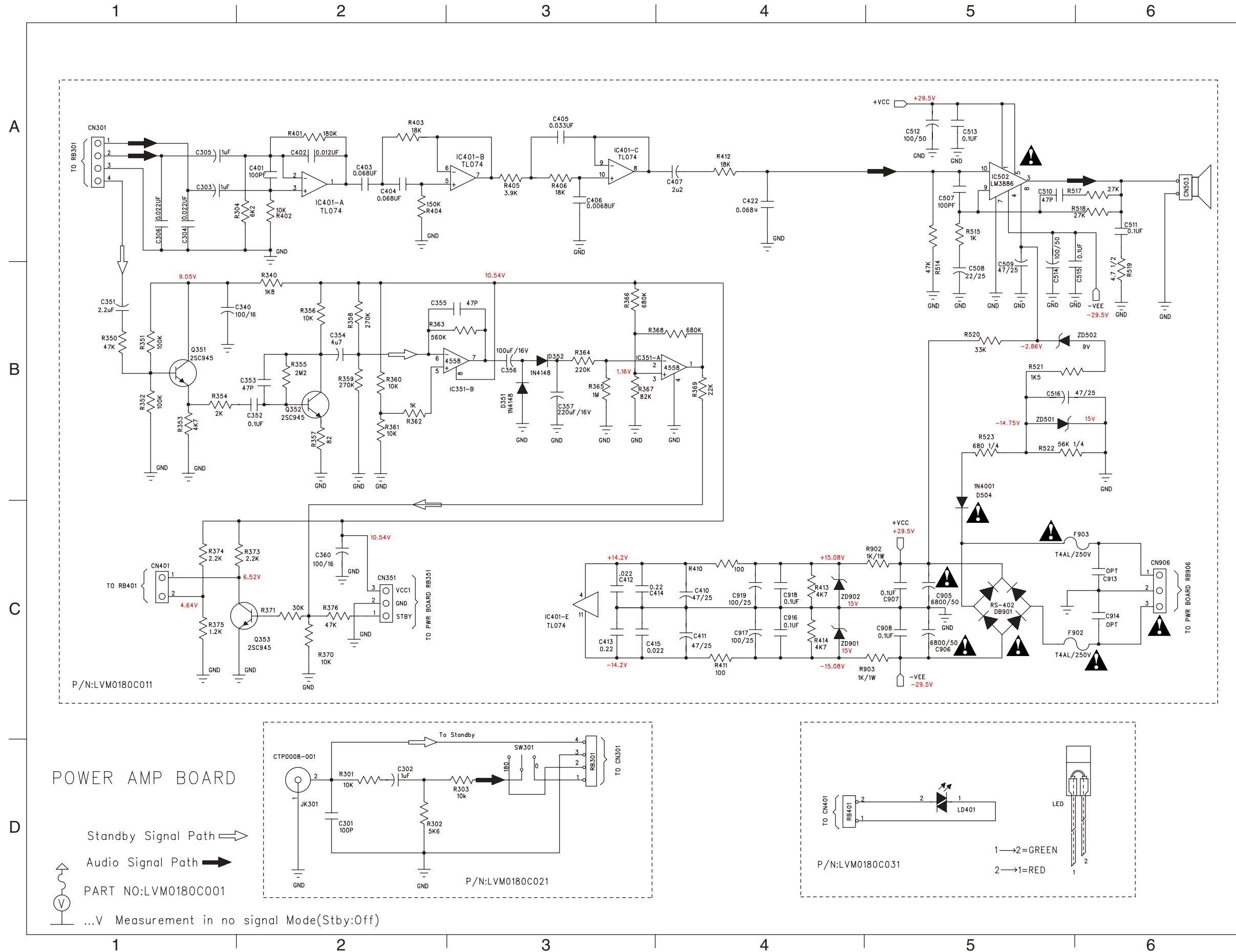
TL074 INTERNAL BLOCK



LM3886 INTERNAL BLOCK



CIRCUIT DIAGRAM



C301	D2	JK301	D2
C302	D2	LD401	D5
C303	A1	Q351	B1
C304	A1	Q352	B2
C305	A1	Q353	C2
C306	A1	R301	D2
C340	B2	R302	D2
C351	B1	R303	D3
C352	B2	R304	A2
C353	B2	R340	B2
C354	B2	R350	B1
C355	B2	R351	B1
C356	B3	R352	B1
C357	B3	R353	B1
C360	C2	R354	B1
C401	A2	R355	B2
C402	A2	R356	B2
C403	A2	R357	B2
C404	A2	R358	B2
C405	A3	R359	B2
C406	A3	R360	B2
C407	A4	R361	B2
C410	C4	R362	B2
C411	C4	R363	B2
C412	C3	R364	B3
C413	C3	R365	B3
C414	C3	R366	B3
C415	C3	R367	B3
C422	A4	R368	B4
C507	A5	R369	B4
C508	B5	R370	C2
C509	B5	R371	C2
C510	A5	R373	C2
C511	A6	R374	C1
C512	A5	R375	C1
C513	A5	R376	C2
C514	B5	R401	A2
C515	B6	R402	A2
C516	B5	R403	A2
C905	C5	R404	A2
C906	C5	R405	A3
C907	C5	R406	A3
C913	C6	R411	C4
C914	C6	R412	A4
C916	C4	R413	C4
C917	C4	R414	C4
C918	C4	R513	A4
C919	C4	R514	A5
CN301	A1	R515	A5
CN351	C2	R517	A6
CN401	C1	R518	A6
CN503	A6	R519	B6
CN906	C6	R520	B5
D351	B3	R521	B5
D352	B3	R522	B5
D504	B5	R523	B5
DB901	C5	R902	C5
F902	C6	R903	C5
F903	C6	RB301	D3
IC351A	B3	RB401	D4
IC351B	B3	SW301	D3
IC401A	A2	ZD501	B5
IC401B	A3	ZD502	B6
IC401C	A3	ZD901	C4
IC401E	C3	ZD902	C4
IC502	A5		

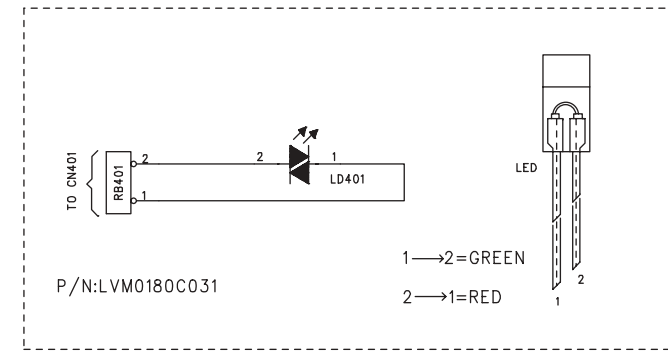
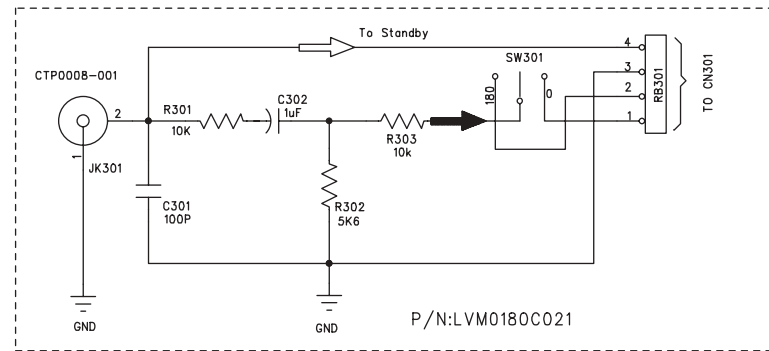
POWER AMP BOARD

Standby Signal Path →

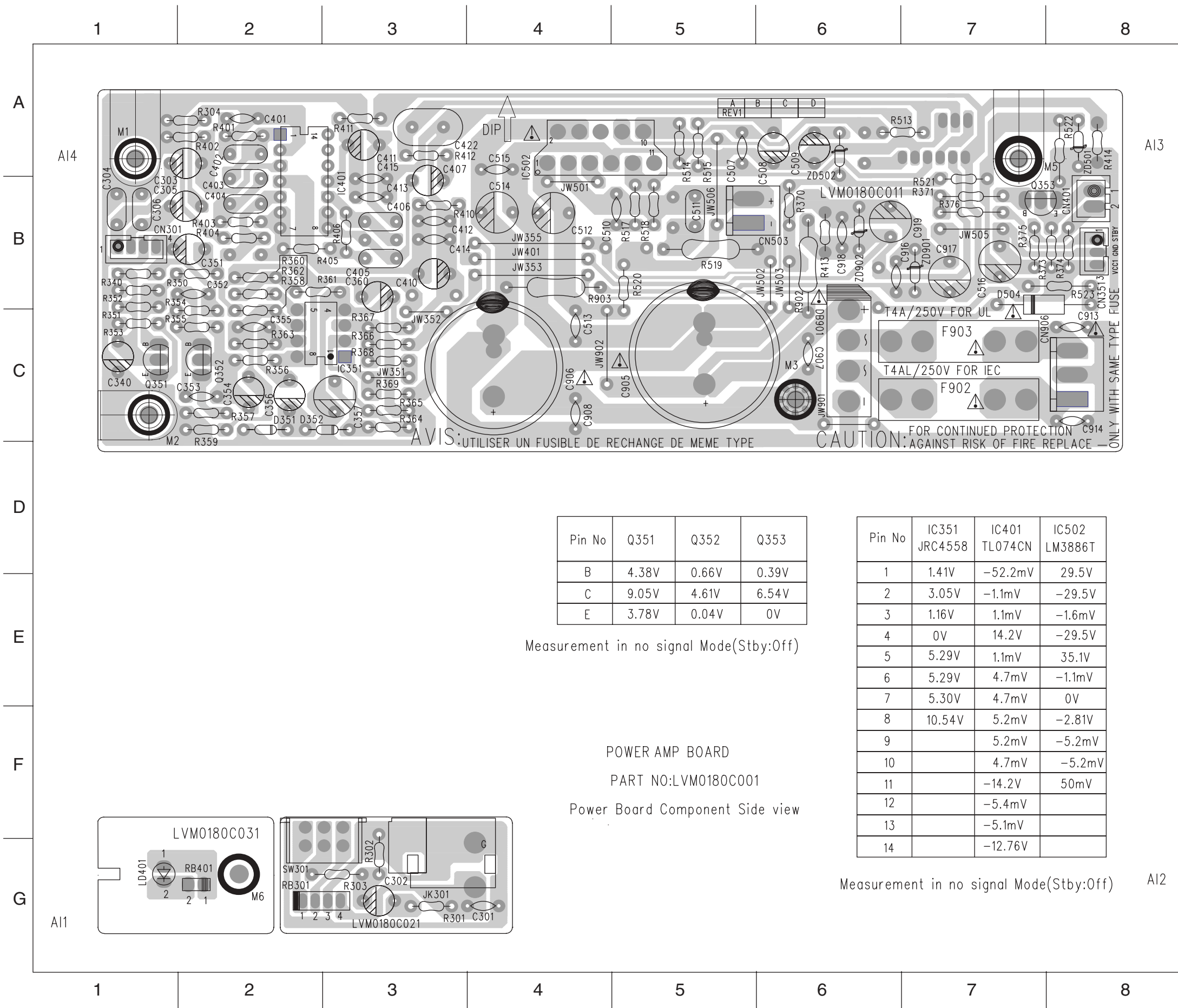
Audio Signal Path →

PART NO:LVM0180C001

...V Measurement in no signal Mode(Stby:Off)



PCB LAYOUT VIEW



Pin No	Q351	Q352	Q353
B	4.38V	0.66V	0.39V
C	9.05V	4.61V	6.54V
E	3.78V	0.04V	0V

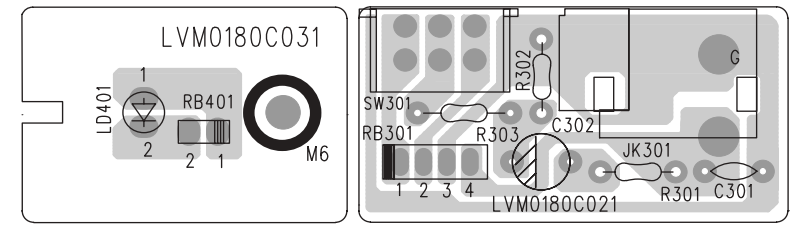
Measurement in no signal Mode(Stby:Off)

Pin No	IC351 JRC4558	IC401 TL074CN	IC502 LM3886T
1	1.41V	-5.2mV	29.5V
2	3.05V	-1.1mV	-29.5V
3	1.16V	1.1mV	-1.6mV
4	0V	14.2V	-29.5V
5	5.29V	1.1mV	35.1V
6	5.29V	4.7mV	-1.1mV
7	5.30V	4.7mV	0V
8	10.54V	5.2mV	-2.81V
9		5.2mV	-5.2mV
10		4.7mV	-5.2mV
11		-14.2V	50mV
12		-5.4mV	
13		-5.1mV	
14		-12.76V	

Measurement in no signal Mode(Stby:Off)

POWER AMP BOARD
PART NO:LVM0180C001

Power Board Component Side view



- C301 G4 JW503 B6
- C302 G3 JW505 B7
- C303 B1 JW506 B5
- C304 B1 JW901 C6
- C305 B1 JW902 C4
- C306 B1 LD401 G1
- C340 C1 Q351 C1
- C351 B2 Q352 C2
- C352 B2 Q353 B7
- C353 C2 R301 G3
- C354 C2 R302 G3
- C355 C2 R303 G3
- C356 C2 R304 A2
- C357 C3 R340 B1
- C360 B3 R350 B2
- C401 A2 R351 C1
- C402 A2 R352 B1
- C403 B2 R353 C1
- C404 B2 R354 B2
- C405 B3 R355 C2
- C406 B3 R356 C2
- C407 A2 R357 C2
- C410 B3 R358 B2
- C411 A3 R359 C2
- C412 B3 R360 B2
- C413 B3 R361 B2
- C414 B3 R362 B2
- C415 A3 R363 C2
- C422 A3 R375 B7
- C507 A5 R376 B7
- C508 A6 R401 A2
- C509 A6 R402 A2
- C510 B5 R403 B2
- C511 B5 R404 B2
- C512 B4 R405 B2
- C513 C4 R406 B3
- C514 B4 R410 B3
- C515 A4 R411 A3
- C516 B7 R412 A3
- C905 C5 R413 B6
- C906 C4 R414 A8
- C907 C6 R513 A7
- C908 C4 R514 A5
- C913 C8 R515 A5
- C914 C8 R517 B5
- C916 B7 R518 B5
- C917 B7 R519 B5
- C918 B6 R520 B5
- C919 B7 R521 B7
- CN301 B1 R522 A8
- CN351 B8 R523 B8
- CN401 B8 R902 B6
- CN503 B5 R903 B4
- CN906 C8 RB301 G2
- D351 C2 RB401 G2
- D352 C2 SW301 G2
- D504 B7 ZD501 A8
- DB901 C6 ZD502 A6
- F902 C7 ZD901 B7
- F903 C7 ZD902 B6
- IC351 C3 R364 C3
- IC401 B3 R365 C3
- IC502 A4 R366 C3
- JK301 G3 R367 C3
- JW351 C3 R368 C3
- JW352 C3 R369 C3
- JW353 B4 R370 B6
- JW355 B4 R371 B7
- JW401 B4 R373 B7
- JW501 B4 R374 B8
- JW502 B6

ELECTRICAL PARTS LIST - AMPLIFIER / INPUT / LED BOARD**MISCELLANEOUS**

CN301	9965 000 15859	Connector 4 PIN P=2.0mm
CN351	9965 000 15900	Connector 3 PIN P=2.0mm
CN401	9965 000 15862	Connector B2B-XH-A 2 PIN
CN906	9965 000 12617	Connector 3 PIN P=3.96mm
F902	9965 000 16184	△ FUSE T4A 250V SLOW
F903	9965 000 16184	△ FUSE T4A 250V SLOW
JK301	4822 267 41238	RCA JACK 1P
LD401	9965 000 16315	LED Red/Green 2 PIN
SW301	4822 277 11821	Slide Switch

CAPACITORS

C301	4822 122 33293	100pF 5% 50V
C302	9965 000 16316	1uF 50V 20%
C303	9965 000 16316	1uF 50V 20%
C304	9965 000 08286	0,022uF 100V 5%
C305	9965 000 16316	1uF 50V 20%
C306	9965 000 08286	0,022uF 100V 5%
C340	9965 000 16317	100uF 16V 20%
C351	9965 000 16318	2,2uF 50V 20%
C352	2038 554 00065	100nF +80/-20% 50V
C353	9965 000 12614	47pF 50V 5%
C354	9965 000 16319	4,7uF 50V 20%
C355	9965 000 12614	47pF 50V 5%
C356	9965 000 16317	100uF 16V 20%
C357	9965 000 16320	220uF 16V 20%
C360	9965 000 16317	100uF 16V 20%
C401	4822 122 33293	100pF 5% 50V
C402	9965 000 16321	0,0022uF 100V 5%
C403	9965 000 16322	0,047uF 100V 5%
C404	5322 121 42662	68nF 5% 250V
C405	5322 121 42489	33nF 5% 250V
C406	5322 121 42489	33nF 5% 250V
C407	9965 000 16318	2,2uF 50V 20%
C410	9965 000 16323	47uF 25V 20%
C411	9965 000 16323	47uF 25V 20%
C412	4822 122 30103	22nF +80/-20% 63V
C413	9965 000 12613	0,22uF 50V +80/-20%
C414	9965 000 12613	0,22uF 50V +80/-20%
C415	4822 122 30103	22nF +80/-20% 63V
C422	5322 121 42662	68nF 5% 250V
C507	4822 122 33293	100pF 5% 50V
C508	9965 000 16324	22uF 25V 20%
C509	9965 000 16323	47uF 25V 20%
C510	9965 000 12614	47pF 50V 5%
C511	5322 121 42578	100nF 5% 250V
C512	9965 000 16325	100uF 50V 20%
C513	2038 554 00065	100nF +80/-20% 50V
C514	9965 000 16325	100uF 50V 20%
C515	2038 554 00065	100nF +80/-20% 50V
C516	9965 000 16323	47uF 25V 20%
C905	9965 000 16326	6800uF 35V 20%
C906	9965 000 16326	6800uF 35V 20%

RESISTORS

R301	9965 000 12515	2,2k 1/6W 5%
R302	4822 050 25602	5k6 1% 0,6W
R303	4822 050 21003	10k 1% 0,6W
R304	4822 050 26202	6k2 1% 0,6W
R340	9965 000 12620	1,8k 1/6W 5%
R350	4822 050 24703	47k 1% 0,6W
R351	4822 050 21004	100k 1% 0,6W
R352	4822 050 21004	100k 1% 0,6W
R353	9965 000 09725	4,7k 1/6W 5%
R354	9965 000 12621	2k 1/6W 5%
R355	9965 000 12622	2,2M 1/6W 5%
R356	4822 050 21003	10k 1% 0,6W
R357	9965 000 12623	82R 1/6W 5%
R358	9965 000 12624	270k 1/6W 5%
R359	9965 000 12624	270k 1/6W 5%
R360	4822 050 21003	10k 1% 0,6W
R361	4822 050 21003	10k 1% 0,6W
R362	9965 000 12519	1k 1/6W 5%
R363	9965 000 12625	560k 1/6W 5%
R364	9965 000 08284	220k 1/6W 5%
R365	9965 000 12626	1M 1/6W 5%
R366	9965 000 12627	680k 1/6W 5%
R367	9965 000 12628	82k 1/6W 5%
R368	9965 000 12627	680k 1/6W 5%
R369	4822 050 22203	22k 1% 0,6W
R370	4822 050 21003	10k 1% 0,6W
R371	9965 000 12629	30k 1/6W 5%
R373	9965 000 12515	2,2k 1/6W 5%
R374	9965 000 12515	2,2k 1/6W 5%
R375	9965 000 16328	1,2k 1/6W 5%
R376	4822 050 24703	47k 1% 0,6W
R401	9965 000 12631	180k 1/6W 5%
R402	4822 050 21003	10k 1% 0,6W
R403	4822 050 23303	33k 1% 0,6W
R404	4822 050 21504	150k 1% 0,6W
R405	9965 000 09724	3,9k 1/6W 5%
R406	9965 000 08285	18k 1/6W 5%
R410	4822 050 21001	100R 1% 0,6W
R411	4822 050 21001	100R 1% 0,6W
R412	9965 000 08285	18k 1/6W 5%
R413	9965 000 09725	4,7k 1/6W 5%
R414	9965 000 09725	4,7k 1/6W 5%

ELECTRICAL PARTS LIST - AMPLIFIER / INPUT / LED BOARD

R514	4822 050 24703	47k 1% 0,6W
R515	9965 000 12519	1k 1/6W 5%
R517	9965 000 16329	27k 1/6W 5%
R518	9965 000 16329	27k 1/6W 5%
R519	4822 116 81753	4R7 5% 0,5W
R520	4822 050 23303	33k 1% 0,6W
R521	4822 050 21502	1k5 1% 0,6W
R522	4822 116 52291	56k 5% 0,5W
R523	4822 116 52228	680R 5% 0,5W
R902	9965 000 12632	1k 1W 5%
R903	9965 000 12632	1k 1W 5%

DIODES

D351	4822 130 30621	1N4148
D352	4822 130 30621	1N4148
D504	4822 130 31438	△ 1N4001G
DB901	4822 130 70035	△ RS402L
ZD501	4822 130 34281	BZX79-B15
ZD502	9965 000 12635	ZENER 9,1-9,5V 0,5W
ZD901	4822 130 34281	BZX79-B15
ZD902	4822 130 34281	BZX79-B15

INTEGRATED CIRCUITS

IC351	4822 209 83631	JRC4558D
IC401	4822 209 32742	TL074CN
IC502	9965 000 12633	LM3886T

TRANSISTORS

Q351	4822 130 41198	2SC945P
Q352	4822 130 41198	2SC945P
Q353	4822 130 41198	2SC945P

Note : Only the parts mentioned in this list are normal service spare parts.

Voltages

F901
IEC:T2AL/250V
UL/CSA:T3.15A/250V

Pin No	Q354	Q355	Q357
B	0.13V	0.73V	11.24V
C	6.11V	0.54V	13.9V
E	0V	0V	10.54V

Measurement in Stby Off

Pin No	Q354	Q355	Q357
B	0.6V	0.03V	11.26V
C	0.05V	20.2V	16.3V
E	0V	0V	10.59V

Measurement in Stby On

POWER BOARD

TABLE OF CONTENTS

Voltages 5-1

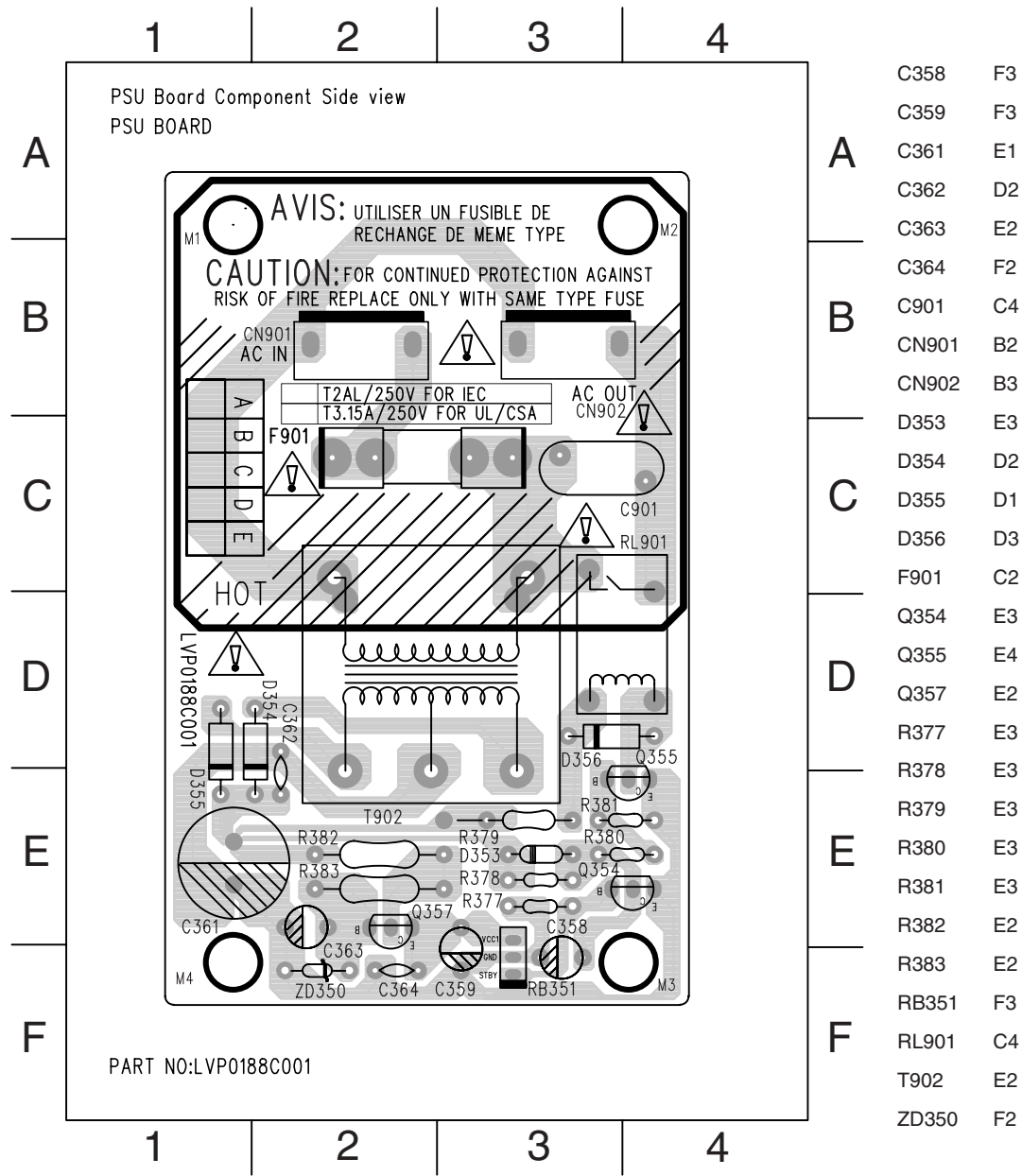
Power PCB Layout View (/00S,/01S) 5-2

Power PCB schematic View (/00S) 5-3

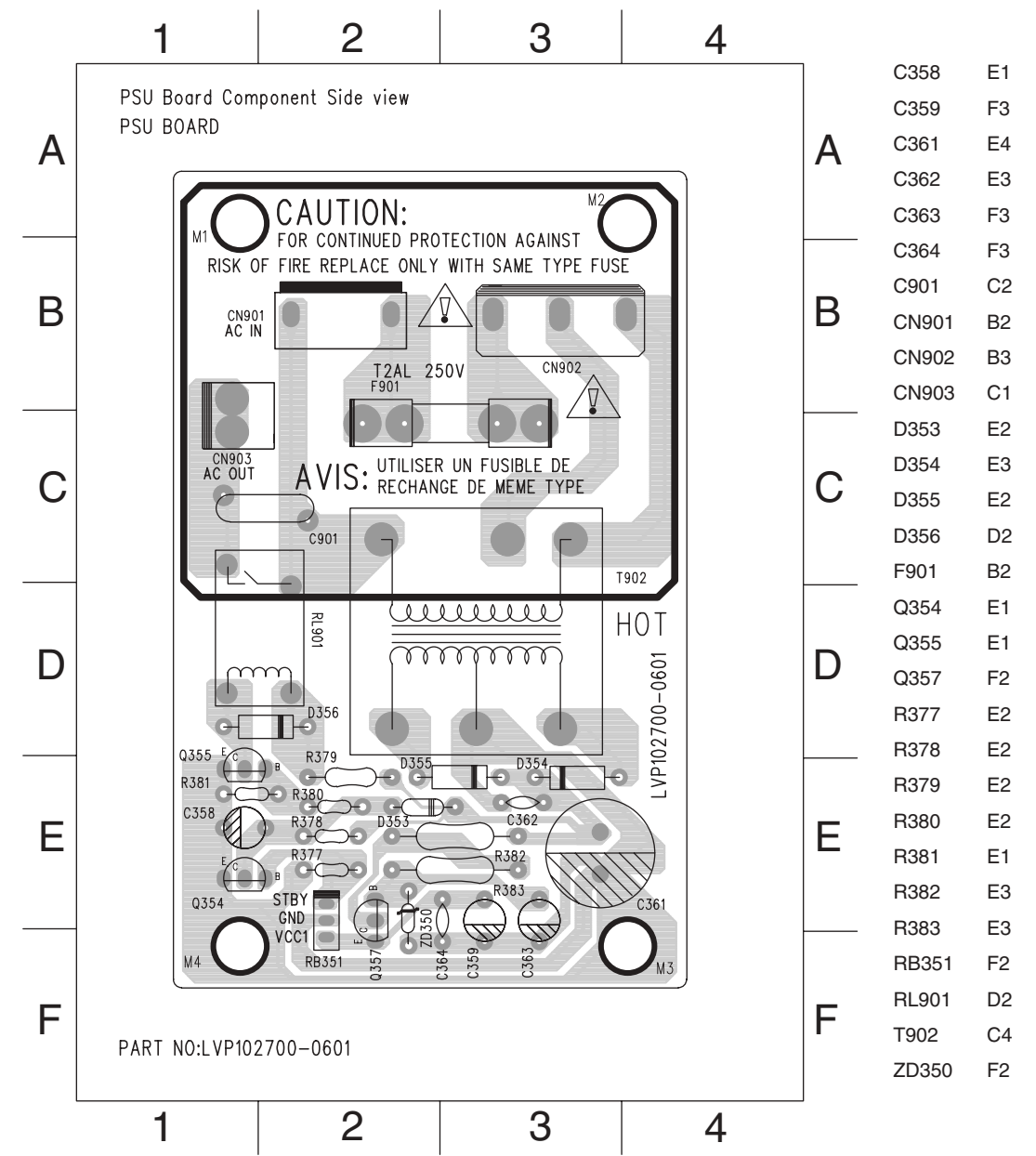
Power PCB schematic View (/01S) 5-4

Electrical Parts List (/00S,/01S) 5-5

POWER PCB LAYOUT VIEW (For/00S only)



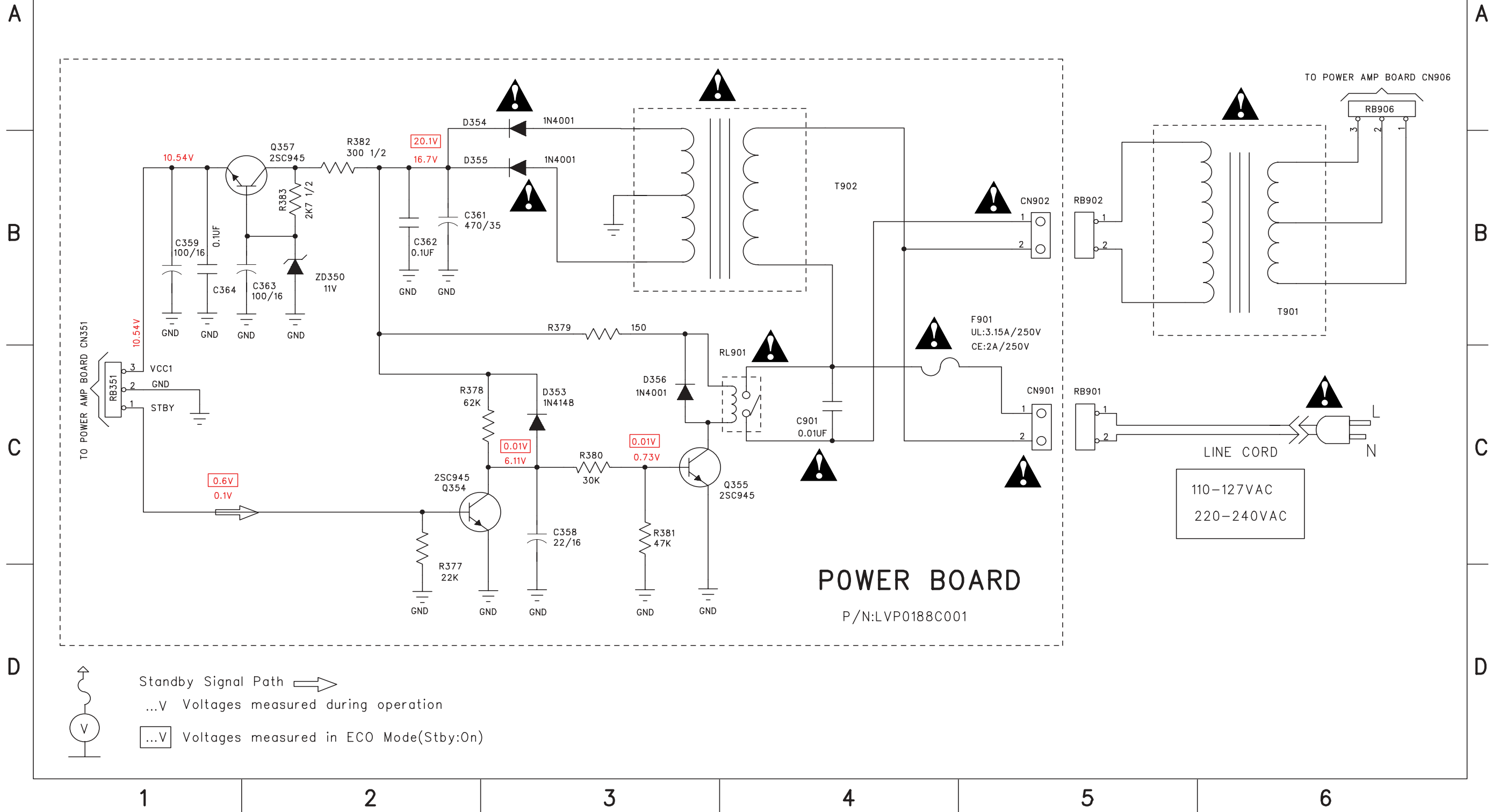
POWER PCB LAYOUT VIEW (For/01S only)



POWER SCHEMATIC DIAGRAM (For/00S only)

C358	C3	C362	B2	C901	C4	D353	C3	D356	C3	Q355	C3	R378	C3	R381	C3	RB351	C1	RB906	A6	T902	B4
C359	B1	C363	B2	CN901	C5	D354	A3	F901	B5	Q357	B2	R379	B3	R382	B2	RB901	C5	RL901	C4	ZD350	B2
C361	B2	C364	B2	CN902	B5	D355	B3	Q354	C2	R377	C2	R380	C3	R383	B2	RB902	B5	T901	B6		

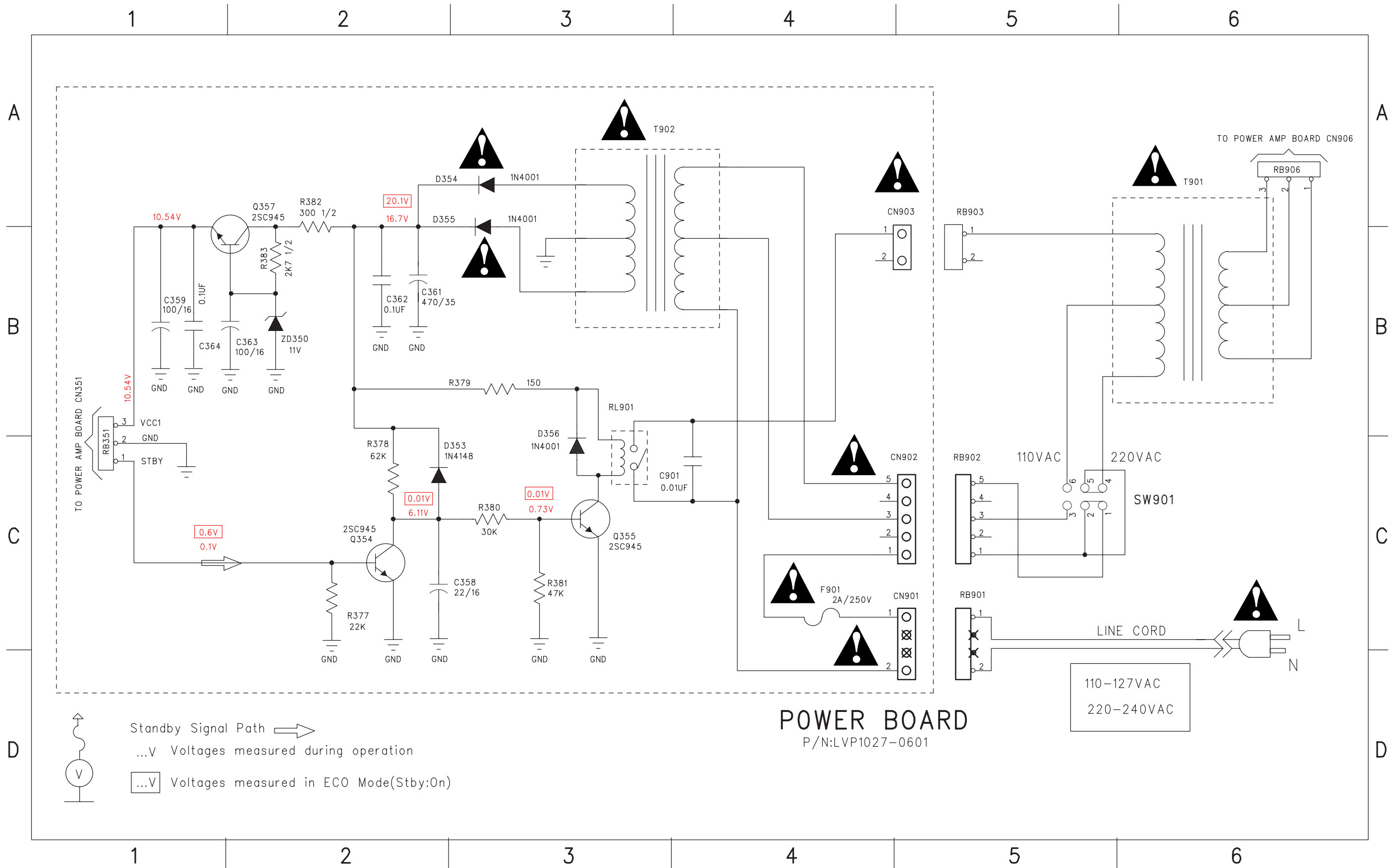
CIRCUIT DIAGRAM



Standby Signal Path \Rightarrow
 ...V Voltages measured during operation
...V Voltages measured in ECO Mode(Stby:0n)

POWER SCHEMATIC DIAGRAM (For/01S only)

C358	C3	C362	B2	C901	C3	CN903	A5	D355	A3	Q354	C2	R377	C2	R380	C3	R383	B2	T902	A3
C359	B1	C363	B2	CN901	C5	D353	C3	D356	C3	Q355	C3	R378	C2	R381	C3	RB351	C1	ZD350	B2
C361	B2	C364	B1	CN902	C5	D354	A3	F901	C4	Q357	A2	R379	B3	R382	A2	RL901	B3		



ELECTRICAL PARTS LIST - POWER BOARD

MISCELLANEOUS

CN901 9965 000 15936 Δ Connector 4 PIN P=3.96mm
 CN902 9965 000 15936 Δ Connector 4 PIN P=3.96mm /00S
 CN902 9965 000 16340 Δ Connector 5 PIN P=3.96mm /01S
 CN903 9965 000 16341 Δ Connector 2 PIN /01S
 F901 9965 000 16330 Δ FUSE 2A 250V SLOW
 RL901 9965 000 16331 Δ Relay GJ-SH-112DM
 T902 9965 000 15975 Δ TRANS 230V 50Hz EI28 AXIAL /00S
 T902 9965 000 16342 Δ TRANS 115V/230V EI28 AXIAL /01S

CAPACITORS

C358 9965 000 16332 22uF 16V 20%
 C359 9965 000 16317 100uF 16V 20%
 C361 9965 000 16333 470uF 35V 20%
 C362 2038 554 00065 100nF +80/-20% 50V
 C363 9965 000 16317 100uF 16V 20%
 C364 2038 554 00065 100nF +80/-20% 50V
 C901 9965 000 15941 Δ 0,01uF 250V 20%

RESISTORS

R377 4822 050 22203 22k 1% 0,6W
 R378 9965 000 16334 62k 1/6W 5%
 R379 4822 116 83868 150R 5% 0,5W
 R380 9965 000 12629 30k 1/6W 5%
 R381 4822 050 24703 47k 1% 0,6W
 R382 9965 000 16335 300R 1/2W 5%
 R383 9965 000 16336 2,7k 1/2W 5%

DIODES

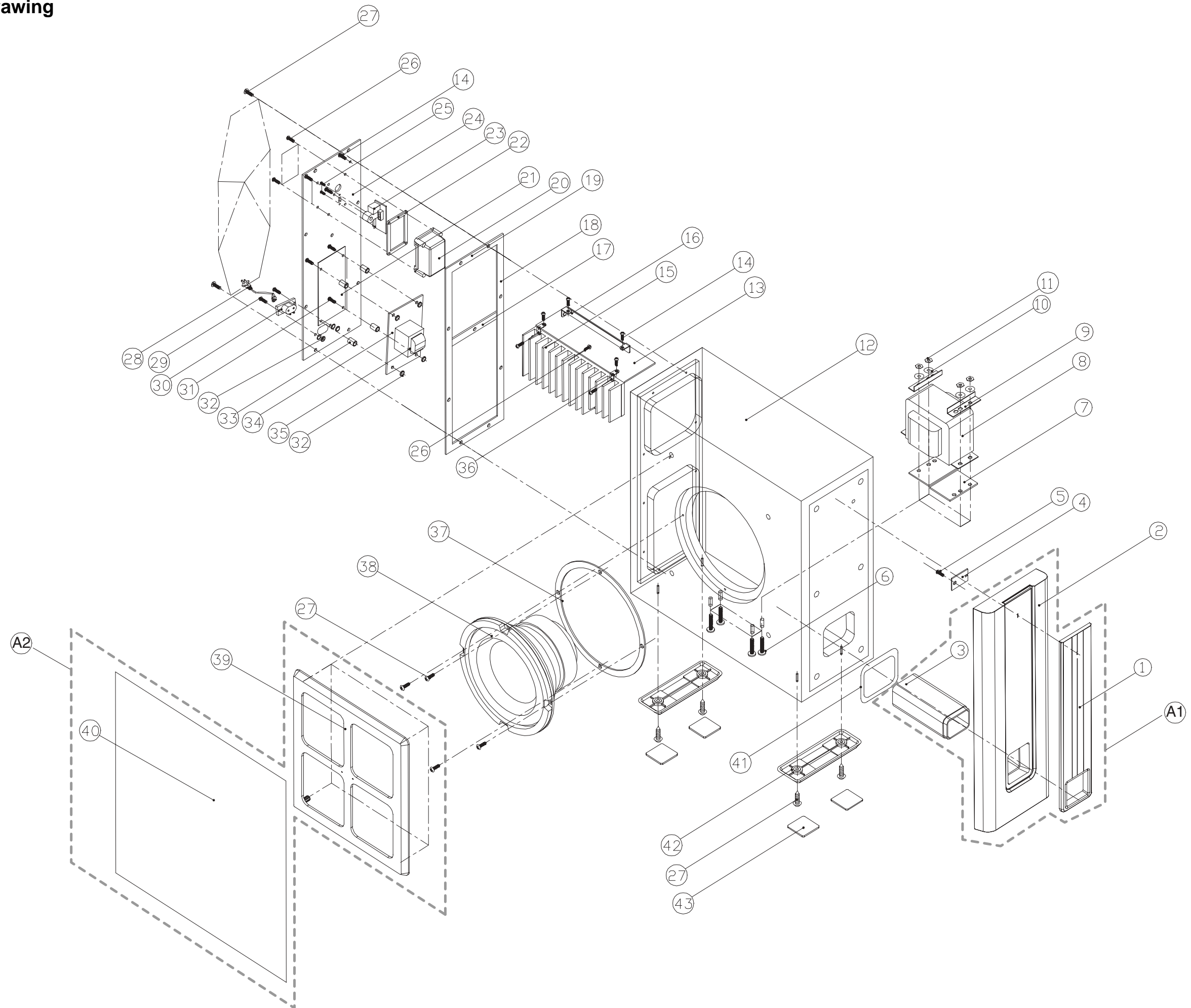
D353 4822 130 30621 1N4148
 D354 4822 130 31438 Δ 1N4001G
 D355 4822 130 31438 Δ 1N4001G
 D356 4822 130 31438 Δ 1N4001G
 ZD350 9965 000 16337 DIODE ZENER 11,1 - 11,6V 0,5W

TRANSISTORS

Q354 4822 130 41198 2SC945P
 Q355 4822 130 41198 2SC945P
 Q357 4822 130 41198 2SC945P

Note : Only the parts mentioned in this list are normal service spare parts.

Exploded Drawing



MECHANICAL & ACCESSORIES PARTS LIST

A1	9965 000 16311	Front Cabinet Assembly	
A2	9965 000 16312	Grille Assembly	
8	9965 000 16313	△ PWR TRANS EI-66 230V	/00S
8	9965 000 16338	△ PWR TRANS EI-66 120V/230V 60/50Hz	/01S
28	9965 000 15983	△ Mains Cord	
30	9965 000 12443	△ AC Socket	
37	4822 532 13065	Speaker Sponge	
38	9965 000 08278	Speaker Driver 100W 6,5" 4 OHM	
43	9965 000 15981	Rubber Foot	
	9965 000 16339	△ SW SLIDE 6 PIN SL14-22AH	/01S
	9965 000 16314	RCA Cable 3000mm	

Note : Only the parts mentioned in this list are normal service spare parts.

SCREW LISTS

5	D3 x 6
6	M4 x 25
14	M3 x 8
25	M2 x 6
26	D3 x 10
27	D3.5 x 14
29	M3 x 12
31	M3 x 22