TSS-750

6 – Piece Home Theater System

SERVICE MANUAL

Infinity Systems Incorporated
250 Crossways Park Dr.
Woodbury, New York 11797

Rev3 1/2005

CONTENTS

SPECIFICATIONS

	Satellites	Center Channel
Frequency Range: Recommended	120Hz – 20,000Hz (±3dB)	120Hz – 20,000Hz (±3dB)
Amplifier Power Range:	10 – 100 watts	10 – 125 watts
Sensitivity: (2.83V @ 1 meter)	88dB	89dB
Nominal Impedance:	8 ohms	8 ohms
Crossover Frequency:	3500Hz, 24dB/Octave	3500Hz, 24dB/Octave
Midrange Driver(s):	3-1/2" MMD, magnetically shielded	Dual 3-1/2" MMD, magnetically shielded
High-Frequency Driver:	3/4" MMD, magnetically shielded	3/4" MMD, magnetically shielded
Dimensions (H x W x D):	6" x 4-1/8" x 4-3/8" (152mm x 105mm x 111mm)	4-1/8" x 9-1/4" x 4-3/8" (105mm x 235mm x 111mm)
Weight:	2.8 lb (1.3kg)	4.5 lb (2.0kg)

SUB750 Subwoofer

Frequency Range:	34Hz – 150Hz (±3dB)
Amplifier Output:	150 watts RMS, 500 watts Peak
Low-Frequency Driver:	10" (254mm) MMD™
Crossover Frequency:	50Hz – 150Hz, 24dB/Octave, continuously variable
Dimensions (H x W x D):	16-3/4" x 10-3/4" x 15-3/4" (425mm x 273mm x 400mm)
Weight:	33 lb (15.0kg)

Infinity continually strives to update and improve existing products, as well as create new ones. The specifications and construction details in this and related Infinity publications are therefore subject to change without notice.

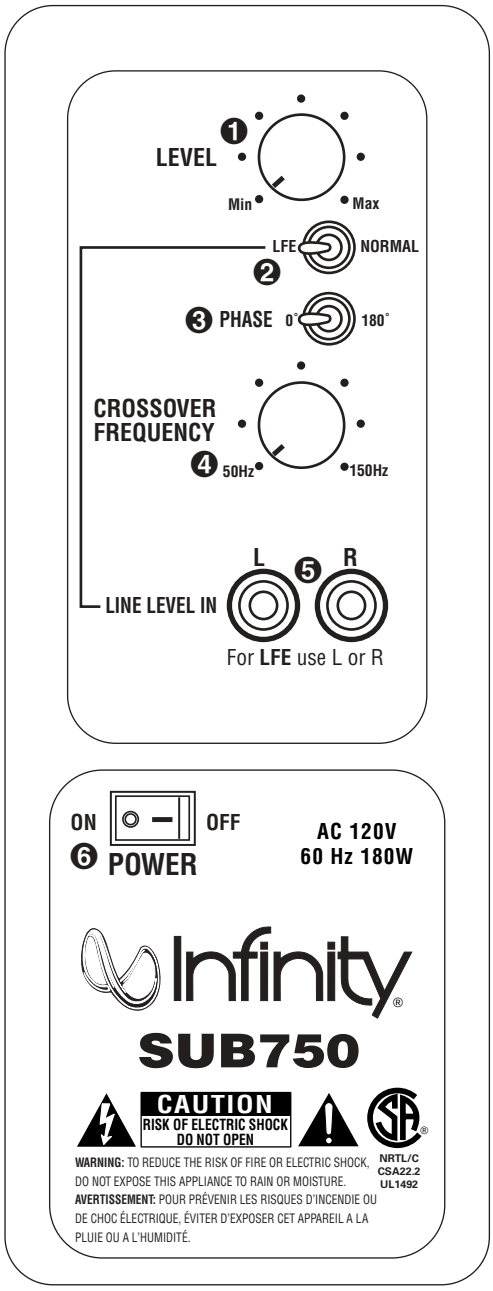
SUB750 Powered Sub/ Plate Amp

LINE VOLTAGE	Yes/No	Hi/Lo Line	Nom.	Unit	Notes
US 120vac/60Hz	Yes	108-132	120	Vrms	Normal Operation
EU 230vac/50-60Hz	Yes	207-264	230	Vrms	Normal operation, MOMS required
Parameter	**Specification**	**Unit**	**QA Test Limits**	**Conditions**	**Notes**
Type (Class AB, D, other)	D	n/a	n/a		
Load Impedance (speaker)	4	Ohms	n/a	Nominal	
Rated Output Power	75	Watts	75	1 input driven	
AVG RMS Dynamic Power	150	Watts	135		Average RMS power, 3/20 Cycles 50 Hz, Driven 6dB above its input sensitivity sensitivity, average level obtained from the first 4 half cycles.
THD @ Rated Power	0.5	%	1	22k filter	75 Watts
THD @ 1 Watt	0.2	%	0.5	22k filter	
DC Offset	10	mV-DC	30	@ Speaker Outputs	
Damping factor	35	DF	22	Measured at amplifier board	Measured at the amplifier board THD < 0.1% - 75 Watts @ 50Hz
Input Sensitivity					
Input Frequency	50	Hz	50	Nominal Freq.	
L&R	162	mVrms	±2dB	To 75 Watts, Ap Zo=600 Ohms	Single input driven LP switch to Normal
LFE	162	mVrms	±2dB	To 75 Watts, Ap Zo=600 Ohms	Single input driven LP switch to LFE
Speaker/Hi Level Input	1.5	Vrms	±2dB	To 75 Watts	Single input driven, LP switch to Normal, This applies to 230VAC model only
Signal to Noise					
SNR-A-Weighted	95	dBA	85	relative to rated power	A-Weighting filter
SNR-unweighted	80	dBr	75	relative to rated power	22k filter
SNR rel. 1W-unweighted	65	dBr	60	relative to 1W Output	22k filter
Residual Noise Floor	1.5	mVrms(max)	2.5	Volume @max, w/ A/P Swept Bandpass Measurement (Line freq.+ harmonics) (BW=20Khz)	Line level inputs must be terminated using 1KOHM
Input Impedance					
Line Input	10K	ohms	n/a	Nominal	
Speaker/Hi Level Input	>4.7K	ohms	n/a	Nominal	Applies to 230VAC model only
Filters					
LP 4th order	60-150	Hz	± 10	2nd order variable, 2nd order fix	
HP 2nd order	Fixed			33 Hz, Q=1.8	
LFE Low pass 2nd order fixed	200>LP<1K	Hz			
Friend circuit	65 Hz			65.6 Hz, Q=2.68	
Speaker out HP filter	1st order fix				
Left & Right	200	Hz	± 10	Speaker input - Spkr out 4 Ohms	(Applies to 230VAC model only)
Left & Right	100	Hz	± 10	Speaker input - Spkr out 8 Ohms	(Appies to 230VAC model only)
Limiter					
THD at Max. Output Power	YES	n/a	functional	Maximum Output Power	Limiter has no effect at maximum output power
Features	--				
Volume pot Taper (lin/log)	LOG	--			A Taper
HP Speaker input and output	YES				Refer to filter section (Applies to 230V model only)
Phase switch	0-180	deg			
LP defeat switch (LFE-Normal)	YES				LFE function selection
Signal Sensing (ATO)					
Auto-Turn-On (yes/no)	YES		functional		
ATO Input test frequency	50	Hz	functional		
ATO Level LFE Input	3	mV	functional		
ATO Level Speaker in	50	mV	functional		
ATO Turn-on time	5	ms	functional	Amp connected and AC on, then input signal applied	
Auto Mute/ Turn-OFF Time	15	minutes	18	T before muting, after signal is removed	Auto turn of time (T) must be 5 > T < 20 Minutes
Power on Delay time	3	sec.	4	AC Power Applied	
Transients/Pops					
ATO Transient	5	mV-peak	n/a	@ Speaker Outputs	
Turn-on Transient	50	mV-peak	2V-pk-pk	@ Speaker Outputs	AC Line cycled from OFF to ON
Turn-off Transient	50	mV-peak	2V-pk-pk	@ Speaker Outputs	AC Line cycled from ON to OFF
Efficiency					
Efficiency	65	%	65		Nominal Line voltage 120 VAC / 230 VAC
Stand-by Input Power	12	Watts	15	@ nom. line voltage	Auto turn of time (T) must be 5 > T < 20 Minutes
Power Cons. @ rated power	115	Watts	120	@ nom. line voltage	75 Watts @ 4 Ohms nominal line voltage

Parameter	Specification	Unit	QA Test Limits	Conditions	Notes
Protections					
Short Circuit Protection	YES		functional	Direct short at output	Amplifier should resume operation after short circuit condition removal
Thermal Protection	YES		functional	@1/8 max unclipped Power	Temperature rise in accessible metal parts should not exceed 35K rise for domestic version or 30K rise for European versions
DC Offset Protection	YES		-	DC present at Speaker Out leads	No Offset at the speaker output under any operating condition including abnormal operation
Line Fuse Rating					
US Domestic version	1.25	Amps	1.25	Type-T or Slo Blo-250 V	Internal fuse with UL/CSA/SEMKO rated holder
EU	0.8	Amps	0.8	Type-T or Slo Blo-250 V, Low Breaking capacity	Internal fuse with UL/CSA/SEMKO rated holder
ALL SPECS SHOULD BE MEASURED AT NOMINAL LINE VOLTAGE.					

Subwoofer Controls

Rear Panel



1. Subwoofer-Level Control
2. LFE/Normal Switch
3. Phase Switch
4. Crossover-Frequency Adjustment
5. Line-Level (LFE) Inputs
6. Power Switch

A Few Suggestions

We recommend that you do not operate your speakers or subwoofer with the bass, treble and loudness controls set to full boost. This will place undue strain on your electronics and speakers and could damage them.

The volume control setting on your processor/preamp or receiver is not a specific indication of the overall loudness level of the speakers. The only important consideration is the loudness level at which the system can be played, regardless of where the volume control is set.

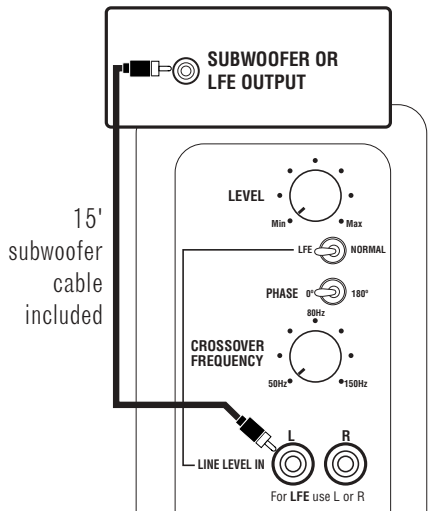
Always turn down the volume control setting on your processor/preamp or receiver when changing a cassette or CD, or switching inputs to AM or FM operation. Excessively loud transients (clicks or popping sounds) can damage the satellite speakers and possibly the subwoofer.

Important!

Whenever changing cables, pulling plugs, etc., ALWAYS TURN OFF ALL EQUIPMENT, including the subwoofer.

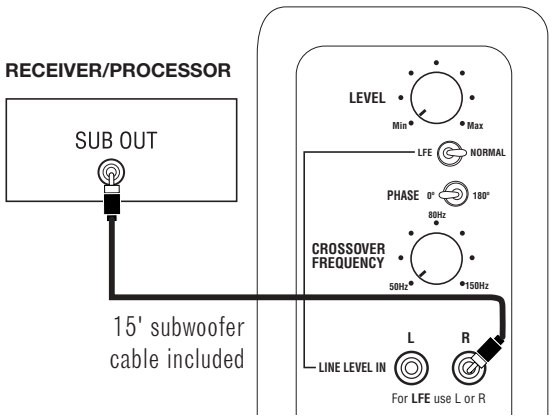
Subwoofer Connections

If you have a Dolby* Digital or DTS® receiver/ processor with a low-frequency-effects (LFE) or subwoofer output:



Set line-level/LFE switch to "LFE."

If your receiver/processor does not contain a Dolby Digital or DTS processor but has a subwoofer output:



Set line-level/LFE switch to "Normal."

NOTE: If your receiver/processor has only one sub out, you may use either the L or R input.

Operation

Surround Modes

When using the TSS-750 in a Dolby Pro Logic* home theater system, make sure the receiver's center channel mode is set to "Normal." When using the system in a Dolby Digital or DTS home theater system, make sure all speakers are set to "Small".

Some Dolby Digital-equipped receivers/processors offer different setup options for each source or surround mode, e.g., CD-stereo, videotape, Dolby, Pro Logic. In each case, follow your equipment's instructions to ensure that the subwoofer output is turned on and that the speakers are set to "Small" in each mode.

Power On

Plug your subwoofer's AC cord into a wall outlet. Do not use the outlets on the back of the receiver.

Initially set the Subwoofer Level Control ❶ to the "MIN" position.

Turn on the subwoofer by pressing the Power Switch ❻ on the rear panel.

Turn on your entire audio system and start a CD or movie soundtrack at a moderate level.

Auto On/Stand-By

With the Power Switch ❻ in the ON position, the LED on the front panel will remain lit in red or green to indicate the On/Stand-By mode of the subwoofer.

RED = STAND-BY (No signal detected, Amp Off)

GREEN = ON (Signal detected, Amp On)

The subwoofer will automatically enter the Stand-By mode after approximately 10 minutes when no signal is detected from your system. The subwoofer will then power ON instantly when a signal is detected. During periods of normal use, the Power Switch ❻ can be left on. You may turn off the Power Switch ❻ for extended periods of nonoperation, e.g., when you are away on vacation.

Adjust Level

Turn the Subwoofer Level Control ❶ up about half way. If no sound emanates from the subwoofer, check the AC-line cord and input cables. Are the connectors on the cables making proper contact? Is the AC plug connected to a "live" receptacle? Has the Power Switch ❻ been pressed to the "On" position? Once you have confirmed that the subwoofer is active, proceed by playing a CD or DVD. Use a selection that has ample bass information.

Set the overall volume control of the receiver/processor to a comfortable level. Adjust the Subwoofer Level Control ❶ until you obtain a pleasing blend of bass. Bass response should not overpower the room but rather be adjusted so there is a harmonious blend across the entire musical range. Many users have a tendency to set the subwoofer volume too loud, adhering to the belief that a subwoofer is there to produce lots of bass. This is not entirely true. A subwoofer is there to enhance bass, extending the response of the entire system so the bass can be felt as well as heard. However, overall balance must be maintained or the music will not sound natural. An experienced listener will set the volume of the subwoofer so its impact on bass response is always there but never obtrusive.

Crossover Adjustment

The Crossover Frequency Control ❹ determines the highest frequency at which the subwoofer reproduces sounds. For the TSS-750, it is recommended that this control be set at 120Hz (approximately the 3 o'clock position).

NOTE: This control will have no effect if the LFE/Normal Switch ❷ is set to LFE. If you have a Dolby Digital or DTS receiver/processor, the Low-Pass Frequency is set by the receiver/processor. Set the LFE/Normal Switch ❷ on the subwoofer to LFE. Consult your owner's manual to learn how to view or change this setting. A setting of 120Hz – 150Hz is recommended.

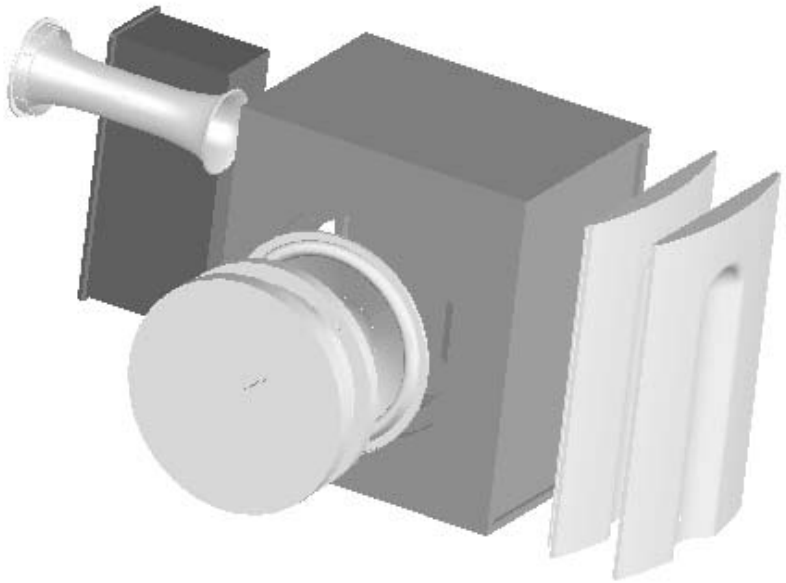
Phase Control

The Phase Switch ❸ determines whether the subwoofer speaker's piston-like action moves in and out with the main speakers, 0˚, or opposite the main speakers, 180˚. Proper phase adjustment depends on several variables such as room size, subwoofer placement and listener position. Adjust the phase switch to maximize bass output at the listening position.

Final Positioning

After correctly connecting the TSS-750 system and verifying that both the subwoofer and all satellite speakers are playing, it is time to optimize the system for your particular listening room. Earlier, you placed the subwoofer in its general location. Finding the exact location for optimum performance sometimes only involves moving the speakers up to a few inches in any direction. We urge you, therefore, to experiment with placement, if possible, until your speakers deliver their full potential.

SUB-750 EXPLODED VIEW



SERVICE NOTE

Access to woofer:

1) Carefully pry metal grille out of its recess with a sharp pointed instrument such as an awl – USE CAUTION. Work evenly around the perimeter until the grill w/ gasket can be removed.
2) Remove the (4) Phillips screws holding the trim ring to the cabinet.
3) Remove the (4) Phillips screws holding the woofer to the cabinet.

REPLACEMENT: Assure when the woofer is replaced, it is exactly centered in the counterbore. If it is offset, replacement of the trim ring and grille will be difficult.

SUB-750 Mechanical Parts List

Part number	Description	QTY
Not for Sale	TSS-750 SUB Wood cabinet, Platinum	1
Not for Sale	TSS-750 SUB Wood cabinet, Charcoal	1
750-GR-PLT	TSS-750 SUB Grill with gasket, Platinum	1
750-GR-CHR	TSS-750 SUB Grill with gasket , Charcoal	1
750-TR-PLT	TSS-750 SUB Trim ring, Platinum	1
750-TR-CHR	TSS-750 SUB Trim ring, Charcoal	1
Not for Sale	TSS-750 SUB Plastic Front baffle	1
Not for Sale	TSS-750 SUB Aluminum panel, platinum	1
Not for Sale	TSS-750 SUB Aluminum panel, charcoal	1
750-LED	TSS-750 SUB LED	1
750-PRT-PLT	TSS-750 SUB Port tube, platinum	1
750-PRT-CHR	TSS-750 SUB Port tube, charcoal	1
Not for Sale	TSS-750 SUB Amp(1), 120V	1
Not for Sale	TSS-750 SUB Amp(2), 230V	1
750-10D	10" woofer DCR = 4.6 ohms ±10%	1
750-FT-CHR	TSS-750 SUB rubber feet, charcoal	4
750-SCREW1	TSS-750 AMP screws	10
750-SCREW2	TSS-750 SUB woofer screws	4

Service Tips

May 2004

To: Infinity Service Centers

Models: *TSS-750 Satellites*

Subject: *How to Disassemble the Satellite Loudspeakers*

To disassemble the satellites, a small hook or dental pick is necessary (see *Picture 1*)
The hook can be used to take the front grille off, and then to remove the front baffle.

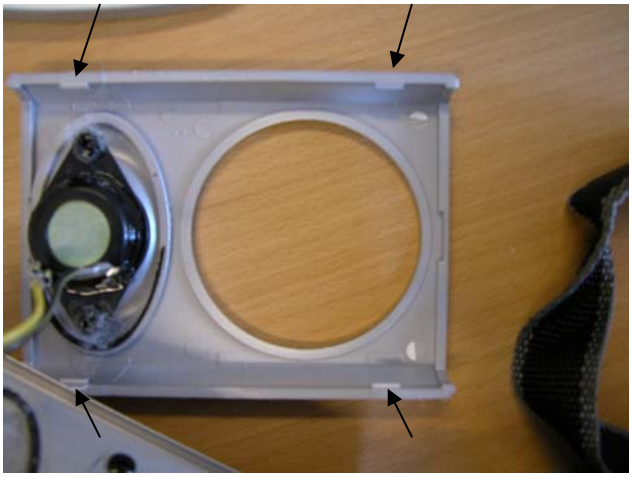
To remove the front baffle, place the hook in the small hole in the corner next to the woofer as on *Picture 2* and pull out so the small hook pulls the tabs on front baffle loose from the cabinet. See *Picture 4* to locate the tabs. It is easiest to start with the corners next to the woofer, as there may be glue around the tweeter that makes it more difficult to start on that end.

Picture 3 shows the satelite when it is disassembled

Picture 1

Picture 2

Picture 3



Picture 4

Model	Serial number	Status	Action
TSS-750 SAT	All		Repair

TSS-750 SATELLITES, CENTER, PACKING

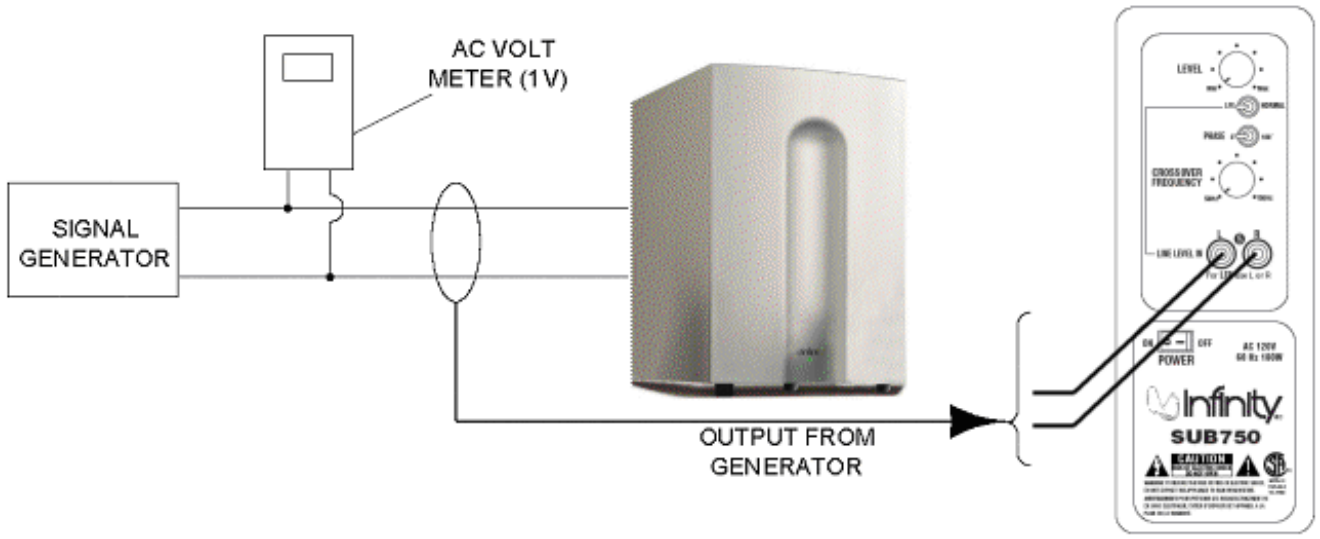
Part number	Description
750-TW	Tweeter for TSS-750 sat/center
750-GSPLT	Grill cover w / logo for satellite TSS-750 platinum
750-FRSPLT	Front panel for satellite TSS-750 platinum
750-CVSPLT	Satellite TSS-750 platinum top & bottom cap
750-XS	X-over network for satellite TSS-750
750-350DS	3-1/2” driver 4 ohm for satellite TSS-750
750-TMSPLT	Terminal for satellite TSS-750 platinum
750-TMCPLT	Terminal for center TSS-750 platinum
750-XC	X-over network for center TSS-750
750-350DC	3-1/2” driver 8 ohm for center TSS-750
750-GCPLT	Grill cover w / logo for center TSS-750 platinum
750-CRPLT	Cradle for center TSS-750 platinum
750-FRCPLT	Front panel for center TSS-750 platinum
750-CCVPLT	Center TSS-750 platinum left & right cap
PACKING	
750-FOAM	TSS-750 System Styrofoam
750CTN-PL120	Carton for TSS-750 platinum 120V
750CTN-PL230	Carton for TSS-750 platinum 230V
750OM-120	120V Owner manual for TSS-750
750OM-230	230V Owner manual for TSS-750
750WS-120	TSS-750 warranty sheet 120V
750-BRTPLT	TSS-750 Wall mount bracket platinum
120v	Speaker wire with RCA cable for TSS-750 120V
230v	Speaker wire with RCA cable for TSS-750 230V

750CTN-STD-PL	Carton for TS-Stand platinum
750STD-OM	TS-Stand Owner manual
750STD-WS	TS-Stand warranty sheet

TSS-750CHR , TSS-750CHR/230 & TS-STANDCHR spare parts

Part number	Description
750-TMSCHR	Terminal for satellite TSS-750 charcoal
750-TMCCHR	Terminal for center TSS-750 charcoal
750-GSCHR	Grill cover w / logo for satellite TSS-750 charcoal
750-GCCHR	Grill cover w / logo for center TSS-750 charcoal
750-CRCHR	Cradle for center TSS-750 charcoal
750-FRSCHR	Front panel for satellite TSS-750 charcoal
750-FRCCHR	Front panel for center TSS-750 charcoal
750-CVSCHR	Satellite TSS-750 charcoal top & bottom cap
750-CCVCHR	Center TSS-750 charcoal left & right cap
750CTN-CH120	Carton for TSS-750 charcoal 120V
750CTN-CH230	Carton for TSS-750 charcoal 230V
750CTN-STD-CH	Carton for TS-Stand charcoal

SUB750 Test Set Up and Procedure



SYSTEM AURAL SWEEP TEST

Equipment needed:

- Function/signal generator/sweep generator
- Multimeter
- RCA cables

General Unit Function (UUT = Unit Under Test)

Switches/knobs on the amplifier faceplate:

Crossover Frequency Adjust full CW (150Hz)
Phase switch – either position
Normal/LFE switch - Normal

1. From the signal generator, Connect both right and left line level inputs (RCA jacks) – to signal generator and UUT. Use Y-cable if necessary from mono source.
2. On the amplifier, turn the LEVEL control full Counterclockwise (Min).
3. Turn on generator, adjust to **90mV, 50 Hz**.
4. Plug in UUT; turn the power switch ON. Turn LEVEL control full Clockwise (Max).
5. LED should now be Green; immediate bass response should be heard and felt from rear port tube opening.

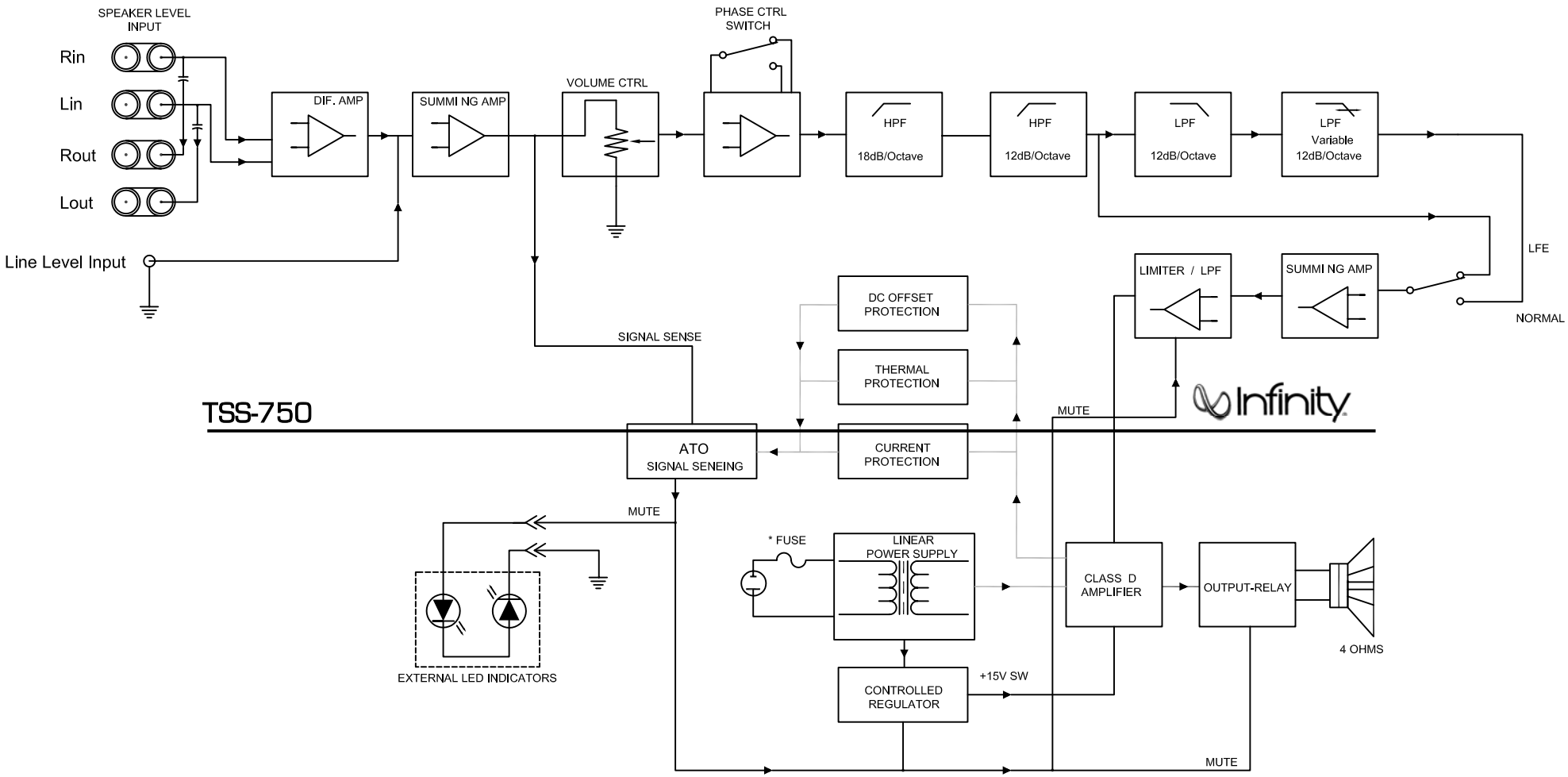
Sweep Function

1. Follow steps 1-5 above, using a sweep generator as a signal source.
2. Sweep generator from 20Hz to 1kHz. Listen to the cabinet and drivers for any rattles, clicks, buzzes or any other noises. If any unusual noises are heard, remove woofer and test.

Driver Function (Woofer)

1. Remove woofer from cabinet (follow steps on exploded view page); detach + and - wire clips.
2. Check DC resistance of woofer; it should be **4.6 ohms**±10%.
3. Connect a pair of speaker cables to driver terminals. Cables should be connected to an integrated amplifier fed by a signal generator. Turn on generator and adjust so that speaker level output is **5.0**V.
4. Sweep generator from 20Hz to 1kHz. Listen to driver for any rubbing, buzzing, or other unusual noises.

BLOCK DIAGRAM



NOTE : **FUSES**
120 VAC T1.25A-250V
230 VAC T0.8A-250V

Designed by 製圖	Checked by 檢圖	Approved by 核准	Model No. 型號	Issue No./文件號碼
			SUB750	Date 日期 2003/06/18
圖名				客戶名稱 JBL
			Dwg No. 圖號	Edition 版次 01 / Sheet 頁次 OF 7

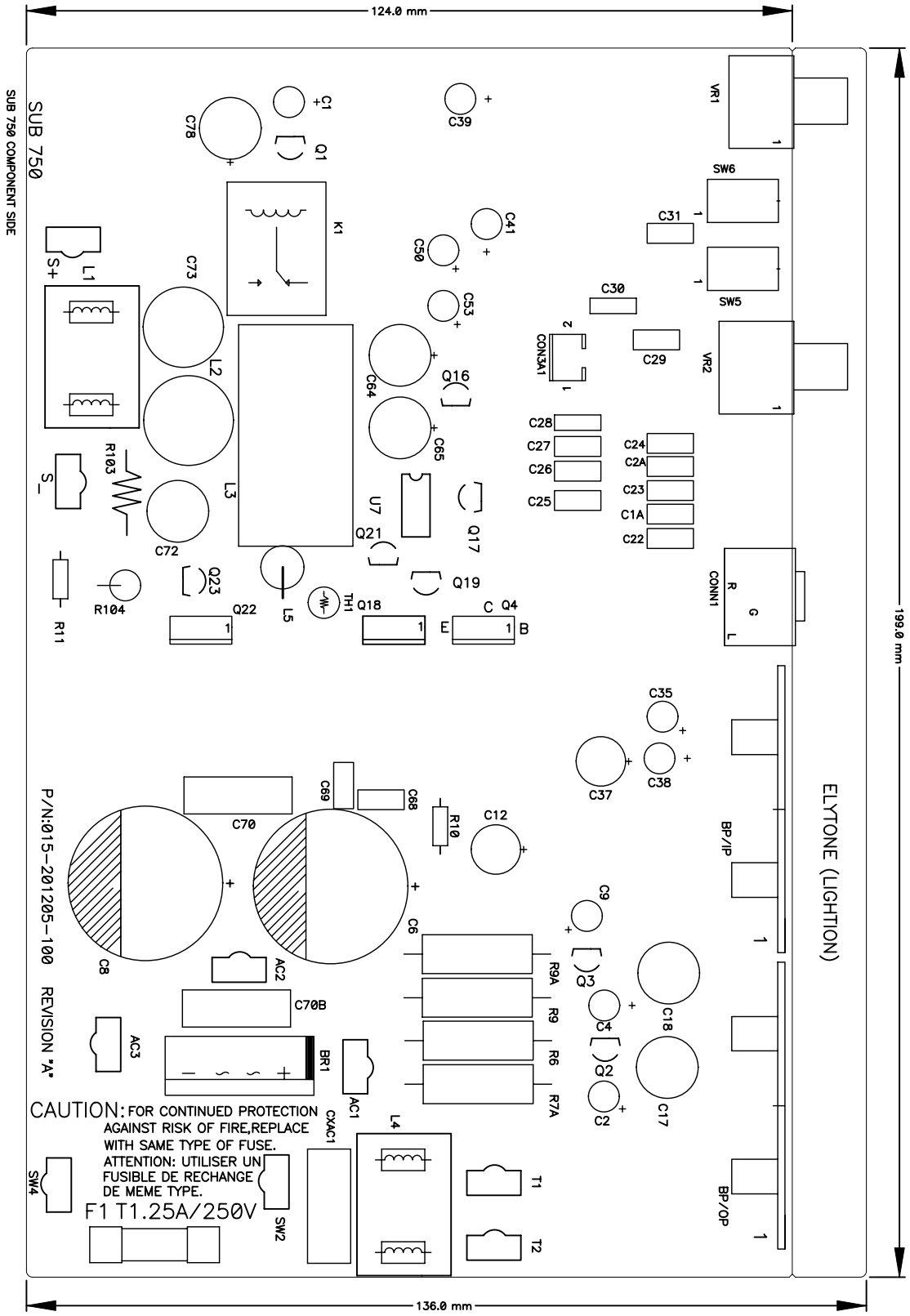
TECH TIPS

Troubleshooting tips and solutions to common service problems

For models: PS-10, PS-12, SUB750, SW-10 **TIP# INFTT2003-02 Rev2**

Subject: Replacing Output MOSFETS

In the event you need to replace MOSFET transistors Q18 or Q22 as part of a repair:
It is important to use ONLY the Infinity part# FE106401110, 051-640001-000, *or* only the brands: International Rectifier, or Fairchild.
Replace both Q18 and Q22 MOSFET's in the circuit, even if only one seems to be damaged.
Do NOT mix & match these components from different manufacturers, or batches. They should be identical.


124.0 mm
199.0 mm
136.0 mm
SUB 750
SUB 750 COMPONENT SIDE
P/N:015-201205-100 REVISION "A"
ELYTONE (LIGHTION)
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE,REPLACE WITH SAME TYPE OF FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE.
F1 T1.25A/250V
VR1
VR2
SW6
SW5
SW4
SW2
CONN1
CON3A1
BP/IP
BP/OP
K1
L1
L2
L3
L4
L5
T1
T2
BR1
TH1
U7
Q1
Q2
Q3
Q4
Q16
Q17
Q18
Q19
Q21
Q22
Q23
C1
C2
C4
C6
C8
C9
C12
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C70B
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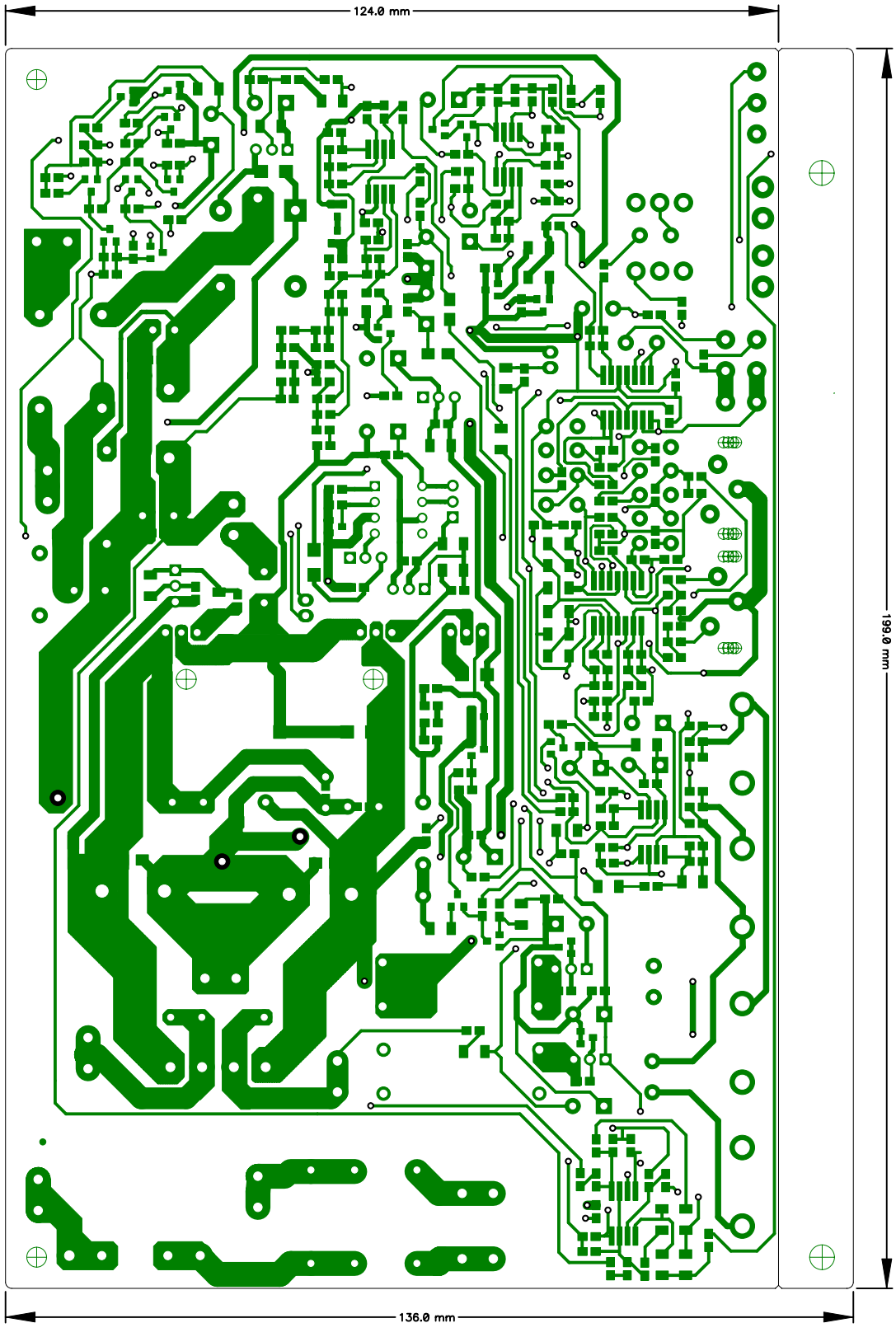
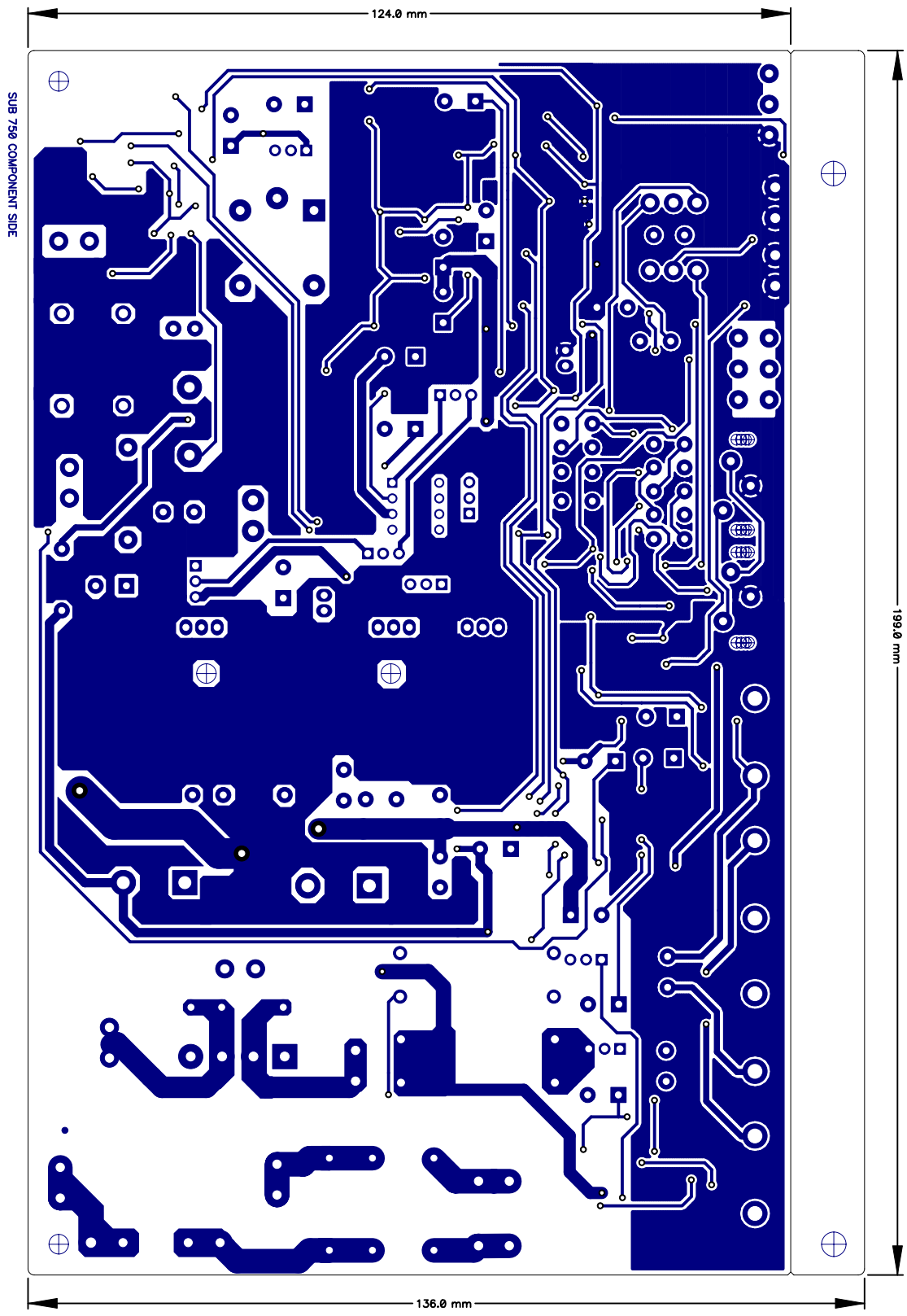
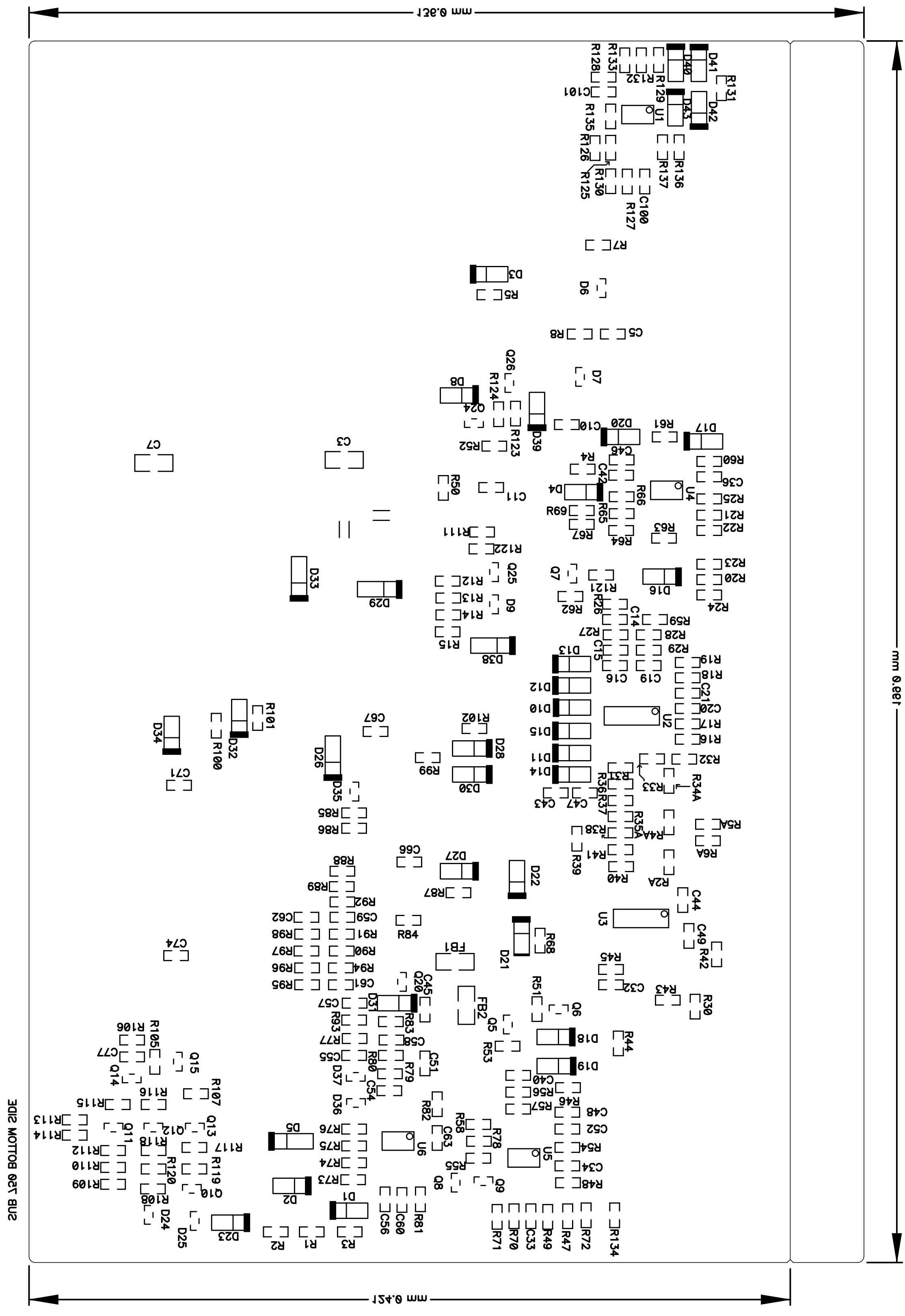
R103
R104
AC1
AC2
AC3
CXAC1


124.0 mm
193.0 mm
136.0 mm


124.0 mm
SUB 750 COMPONENT SIDE
199.0 mm
136.0 mm


136.0 mm
189.0 mm
124.0 mm
SUB 750 BOTTOM SIDE

SUB750 120V ELECTRICAL PARTS LIST				
Part Number	**Description**		**Qty**	**Reference Designator**
Resistors				
020-000098-400	Carbon Film	0R 1/8W	1	C22-C24,C31
020-220497-120	Carbon Film	2K2 1/4W J	1	R11
021-000097-100	Metal Film Resistor	0R 1/4W F	1	R10
021-100401-120	MOF Resistor	1K 1W J	1	R103
021-820305-020	MOF Resistor	820R 5WS J 8x20	1	R6,9
022-500003-020	Resistor KNP	0R05 3WS J FK TYPE	1	R104
024-100298-120	SMD Resistor	10R 1/8W J 0805	1	R81,82
024-100398-120	SMD Resistor	100R 1/8W J 0805	1	R62
024-100498-120	SMD Resistor	1K 1/8W J 0805	1	R79,83,92,95,96,105,108,65
024-100598-120	SMD Resistor	10K 1/8W J 0805	1	R2,17,19,37,54,58,63,71
024-100698-120	SMD Resistor	100K 1/8W J 0805	1	R3,112
024-110598-100	SMD Resistor	11K 1/8W F 0805	1	R98
024-120498-120	SMD Resistor	1K2 1/8W J 0805	1	R51,53
024-130498-100	SMD Resistor	1K3 1/8W F 0805	1	R110
024-133698-100	SMD Resistor	133K 1/8W F 0805	1	R45
024-137698-100	SMD Resistor	137K 1/8W F 0805	1	R32
024-147498-100	SMD Resistor	1K47 1/8W F 0805	1	R5A
024-150598-100	SMD Resistor	15K 1/8W F 0805	1	R29
024-150698-120	SMD Resistor	150K 1/8W J 0805	1	R4A
024-160598-100	SMD Resistor	16K 1/8W F 0805	1	R135
024-200598-120	SMD Resistor	20K 1/8W J 0805	1	R94
024-220398-120	SMD Resistor	220R 1/8W J 0805	1	R90
024-220498-121	SMD Resistor	2K2 1/8W J 0805	1	R1,87,61,68
024-220598-120	SMD Resistor	22K 1/8W J 0805	1	R118,50,52
024-220798-120	SMD Resistor	2M2 1/8W J 0805	1	R80,121
024-237598-120	SMD Resistor	23K7 1/8W F 0805	1	R48
024-240398-120	SMD Resistor	240R 1/8W J 0805	1	R2A
024-270498-120	SMD Resistor	2K7 1/8W J 0805	1	R73,64
024-287498-100	SMD Resistor	2K87 1/8W F 0805	1	R38
024-300398-120	SMD Resistor	300R 1/8W J 0805	1	R55
024-300598-120	SMD Resistor	30K 1/8W J 0805	1	R56
024-330498-120	SMD Resistor	3K3 1/8W J 0805	1	R7,8,12-15,59,67
024-330598-120	SMD Resistor	33K 1/8W J 0805	1	R4,5
024-332498-100	SMD Resistor	3K32 1/8W F 0805	1	R26,27
024-360498-100	SMD Resistor	3K6 1/8W F 0805	1	R28
024-360598-120	SMD Resistor	36K 1/8W J 0805	1	R39
024-390498-120	SMD Resistor	3K9 1/8W J 0805	1	R93
024-390598-120	SMD Resistor	39K 1/8W J 0805	1	R77
024-430498-120	SMD Resistor	4K3 1/8W J 0805	1	R78
024-453598-100	SMD Resistor	45K3 1/8W F 0805	1	R30
024-470298-120	SMD Resistor	47R 1/8W J 0805	1	R101,102
024-470398-120	SMD Resistor	470R 1/8W J 0805	1	R76,99,100
024-470498-120	SMD Resistor	4K7 1/8W J 0805	1	R85,86
024-470598-120	SMD Resistor	47K 1/8W J 0805	1	R44,47,49,107
024-470698-120	SMD Resistor	470K 1/8W J 0805	1	R70
024-470798-120	SMD Resistor	4M7 1/8W J 0805	1	R60
024-536498-100	SMD Resistor	5K36 1/8W F 0805	1	R36
024-560598-120	SMD Resistor	56K 1/8W J 0805	1	R122
024-620398-100	SMD Resistor	620R 1/8W F 0805	1	R16,18
024-620398-120	SMD Resistor	620R 1/8W J 0805	1	R57
024-649298-100	SMD Resistor	64R9 1/8W F 0805	1	R6A
024-680498-120	SMD Resistor	6K8 1/8W J 0805	1	R46,91,40-43
024-680598-120	SMD Resistor	68K 1/8W J 0805	1	R33,34A,31,66
024-750798-120	SMD Resistor	7M5 1/8W J 0805	1	R134
024-820598-120	SMD Resistor	82K 1/8W J 0805	1	R69

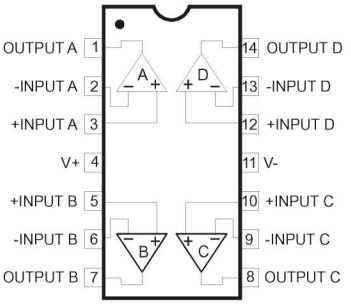
Part Number	Description		Qty	Reference Designator
024-825498-100	SMD Resistor	8K25 1/8W F 0805	1	R35A
025-010300-000	Thermister	TSE-103 K L:50mm	1	TH1
026-200595-269	VR 20KX2 FREQUENCY	PN:RD163121R03D-20KBx2(EJ)	1	VR2
026-500495-252	VR 5KA VOLUME	PN:RK163111R52B-5KA (EJ)	1	VR1
Capacitors				
031-100244-100	SMD Ceramic Capacitor	0u01/50V K 0805 X7R	1	C33,45,51,66,67,5,10
031-100343-100	SMD Capacitor	100pF/50V J 0805 NPO	1	C36,58
031-100344-100	SMD Capacitor	0u1/50V K 0805 X7R	1	C11,42-44,46-49,52,54,55,60
031-100384-100R	SMD Capacitor	0u1/250V K 1206 X7R	1	C3,7
031-220243-103	SMD Capacitor	0u022/50V J 0805 X7R	1	C40
031-220344-100	SMD Capacitor	220pF/50V J 0805 NPO	1	C20,21,19
031-330444-300	SMD Capacitor	3300pF/50V K 0805 X7R	1	C34
031-470244-102	SMD Capacitor	0u047/50V K 0805 X7R	1	C62,59
031-560243-100	SMD Capacitor	56pF/50V J 0805 NPO	1	C57,61
031-560343-102	SMD Capacitor	560pF/50V J 0805 NPO	1	C56
032-100484-200	END Mylar Capacitor	1uF/250V K P:15	1	C70,C70B
032-270343-301	Mylar Capacitor	0u27/63V J P:5	1	C29
032-820244-200	Mylar Capacitor	0u082/100V K (R)	1	C30
033-470464-270	NPE Capaciator	4u7/100V K10 (R)1015 GNE	1	C73
033-680464-270	NPE Capaciator	6u8/100V K10 (R)1020 GNE	1	C72
034-100525-300	Electrolytic Capacitor	10uF/25V M (R)0511 P:5	1	C35
034-100625-300	Electrolytic Capacitor	100uF/25V M (R)6.3x11 P:5	1	C64
034-220525-301	Electrolytic Capacitor	22uF/25V M (R)5x11 P:5	1	C4,9,41,50,53
034-220615-301	Electrolytic Capacitor	220uF/16V M (R)0611 P:5	1	C37
034-330515-000	Electrolytic Capacitor	33uF/16V M (R)0511 P:5	1	C39
034-330525-300	Electrolytic Capacitor	33uF/25V M (R)0511 P:5	1	C1
034-330615-300	Electrolytic Capacitor	330uF/16V M (R)0812 P:5	1	C12,78
034-470415-301	Electrolytic Capacitor	4u7/50V M (R)0511 P:5	1	C2
034-470615-301	Electrolytic Capacitor	470uF/16V M (R)0812 P:5	1	C65
034-470794-200	Electrolytic Capacitor	4700uF/80V M (R)25x50	1	C6,8
035-100363-300	PE Capacitor	0u1/100V J P:5m/m	1	C28,2A
035-220353-300S	PE Capacitor	0u22/63V J P:5mm	1	C27
035-470243-300	PE Capacitor	0uF047/50V J P:5mm	1	C1A
035-470353-301	ESK Capacitor	0u47/63V J P:5m/m	1	C25,26
038-100363-300	MPE Capacitor	0u1/100V J	1	C68,69
039-100390-100	UL Safety Capacitor	0u1/275V PN:XG275M104VSL7	1	CXAC1
Semiconductors				
051-000600-100	Transistor NPN	PN:MPSW06RLRA TO-92 (ON)	2	Q2,Q16
051-003100-000	Transistor NPN	PN:TIP 31C TO-220 (MOSPEC)	1	Q4
051-005600-100	Transistor PNP	PN:MPSW56RLRA TO-92 (ON)	1	Q3
051-222200-100	Transistor NPN	PN:MPS2222ARLRA TO-92	1	Q21
051-290700-100	Transistor PNP	PN:MPS2907A RLRA TO-92	2	Q19,23
051-540101-000	Transistor PNP	PN:2N5401 TO-92	1	Q1
051-555100-000	Transistor NPN	PN:2N5551 TO-92	1	Q17
051-640001-000	Mosfet N-Channel	PN:IRF640N TO-220 (IR)	2	Q18,22
052-400080-000	Diode Bridge	PN:RS804 400V,8A	1	BR1
053-211100-000	IC;DIP,Half-Bridge Driver	PN:IR2111 8PIN (IR)	1	U7
054-000100-100	SMD Diode	PN:ES1D 200V 1A	5	D5,26,29,33,38
054-001002-100	SMD Zener Diode	PN:BZX84C10 10V SOT-23	1	D35
054-001501-100	SMD Zener Diode	PN:BZX84C15 15V SOT-23	3	D6,7,9
054-007200-100	SMD IC Dual Op-amp	PN:TL072CDR SO-8 (TI)	2	U5,6
054-007400-100	SMD IC;(OP)Quad Op-amp	PN:TL074CDR (TI)	2	U2,3
054-011400-100	SMD Transistor	PN:DTC114TKA SMT3 (ROHM	1	Q7
054-033904-100	SMD Transistor	PN:MMBT3904LT1 SOT23 (ON	7	Q11,14,13,5,8,25,9
054-033906-100	SMD Transistor	PN:MMBT3906LT1 SOT23 (ON	4	Q6,10,12,15
054-045580-100	SMD IC;(OP)Dual Op-amp	PN:NJM4558M-TE3 DMP-8	1	U4

Part Number	Description		Qty	Reference Designator
054-050601-100	SMD Zener Diode	PN:BZX84C5V6 5.6V SOT-23	3	D24,36,37
054-414803-100	SMD Diode	PN:LL4148 (Wishay)	1	D1-4,8,10-23,27,28,30-32,
054-540100-100	SMD Transistor	PN:MMBT5401 LT1 SOT-23	3	Q20,24,26
Miscellaneous				
041-115001-000	Bead Coil	YT-10911	1	L5
042-010052-003	Transformer	YT-10615-4	1	
043-300101-000	Inductor	PN:YT-10033 30uH	1	L2
043-324300-000	Inductor	324uH YT-10778	1	L4
043-560200-000	Inductor	56uH YT-10779	1	L1
043-700101-000	Toroidal Inductor	70uH YT-10682	1	L3
044-100100-000	SMD Ferrite Bead	PN:321611 600R/100MHz 1206	1	FB1,FB2
008-000201-450	Fuse Label	21x5mm	1	
008-001008-133	Label	97x74.8 t=0.254mm	1	
008-002007-023	Label	200.3x71.1 t=0.254mm	1	
008-061215-000	Gasket C4305	12x15 t=5mm	1	
008-062002-002	Gasket	PN:L-32 200x20mm t=5mm	1	
008-062002-012	Gasket	200x20mm t=2mm	1	
008-063208-000	Gasket C4305	321x8 t=1mm	1	
008-069304-000	Gasket C4305	93x4 t=1mm	1	
015-201205-100	Double-sided PCB ; FR-4	199x124x1.6mm	1	
061-020000-000	Knob	φ20x15m/m UL94V-0 BLK	1	
061-314002-000	Srtain Relief	P/N SB4F-2	1	
061-400014-000	Rubber Foot	ID:6.2 OD:11.5 t=2mm BLK	1	
061-700044-000	Myca	13x18mm TO-220	1	
063-010012-000	Bracket for Transistor	P/N:TRK-1	1	
063-321102-000	Panel	322x105.7x15mm ABS-94VO BLK	1	
063-531808-000	Bucket	322x105.7x146.5mm BLK (94VO)	1	
066-120300-900	Cable Tie	CV-120S	1	
071-100608-100	Fiber Washer	OD=8mm ID=3.2 t=1 (red)	1	
071-100851-000	Washer	ID=5.1 OD=12 t=1m/m	1	
072-010007-000	RCA Jack	SCJ-1020 2P(G) wht/red	1	
072-040039-000	Terminal	PC205 (t=0.8m/m) T205MA	1	S-
072-040064-000	Terminal	PC250(t=0.8),T250MA	1	S+
072-040096-000	Terminal	(t=0.8mm) PC187(0.8)	1	AC1,AC3,T1,T2,AC2,SW2,SW4
072-040169-000	Connector	2 PIN JS-1001-2 P:2.5mm	1	
073-011001-400	Bracket	16x34mm t=0.8mm	1	
073-032088-600	Black Anodized	58x32x70mm	1	
073-050001-000	Fuse Clip	P/N:CFFH1206	1	
074-020018-000	Rocker SW	PN:RF1003-BB4-0	1	
074-030002-000	Toggle SW	PN:L101-T2B4QE	1	SW5,SW6
074-300018-000	Relay	PN:943-1C-48D	1	K1
080-060351-009	Tinned Plated copper Wire	φ0.6x63m/m	1	VR2-GNE
082-022241-001	Wire set #22 UL1007	L=410mm blk/wht	1	
083-041802-009	ULPower Cable	SPT-2 BLK #18	1	
093-105202-300	FUSE:UL GSL(2AG)	FUSE:2A,250V,5*20mm	1	F1
181-911600-161	Wire set #16AWG UL1007	L=610mm T205 blk	1	Out-
181-911655-135	Wire set #16AWG UL1007	L=610mm T250 green	1	Out+
181-921600-000	Wire set #16 UL1015 (blk)	L:140mm T187	1	
181-921699-000	Wire set #16 UL1015 (wht)	L:160mm T187	1	

Integrated Circuit Diagrams

OPAMP, QUAD 14P TL074

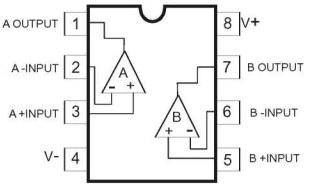
U2,3



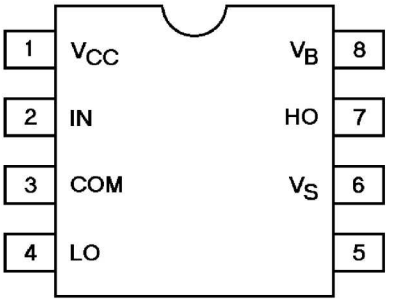
OPAMP, DUAL 8PIN

TL072, NJM4558M

U4-6

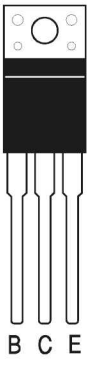


IR2111 U7



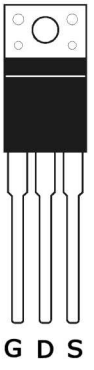
TRANS, NPN T0220

TIP31C Q4



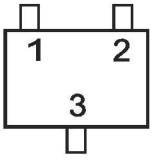
MOSFET, IRF640 T0220

Q18,22



* MMBT3904LTI SOT23,
* MMBT3906LTI SOT23,
DTC114TK SMT3
* MMBT5401 LTI,
* MMBT5551 LTI

Q5-15,20,24,26

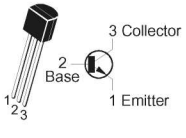


1) Emitter
2) Base
3) Collector

* PREFIX MAY BE "FMMT"

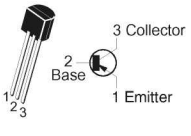
TRANS NPN MPSW06, MPS2222A, 2N5551

Q2,16,17,21

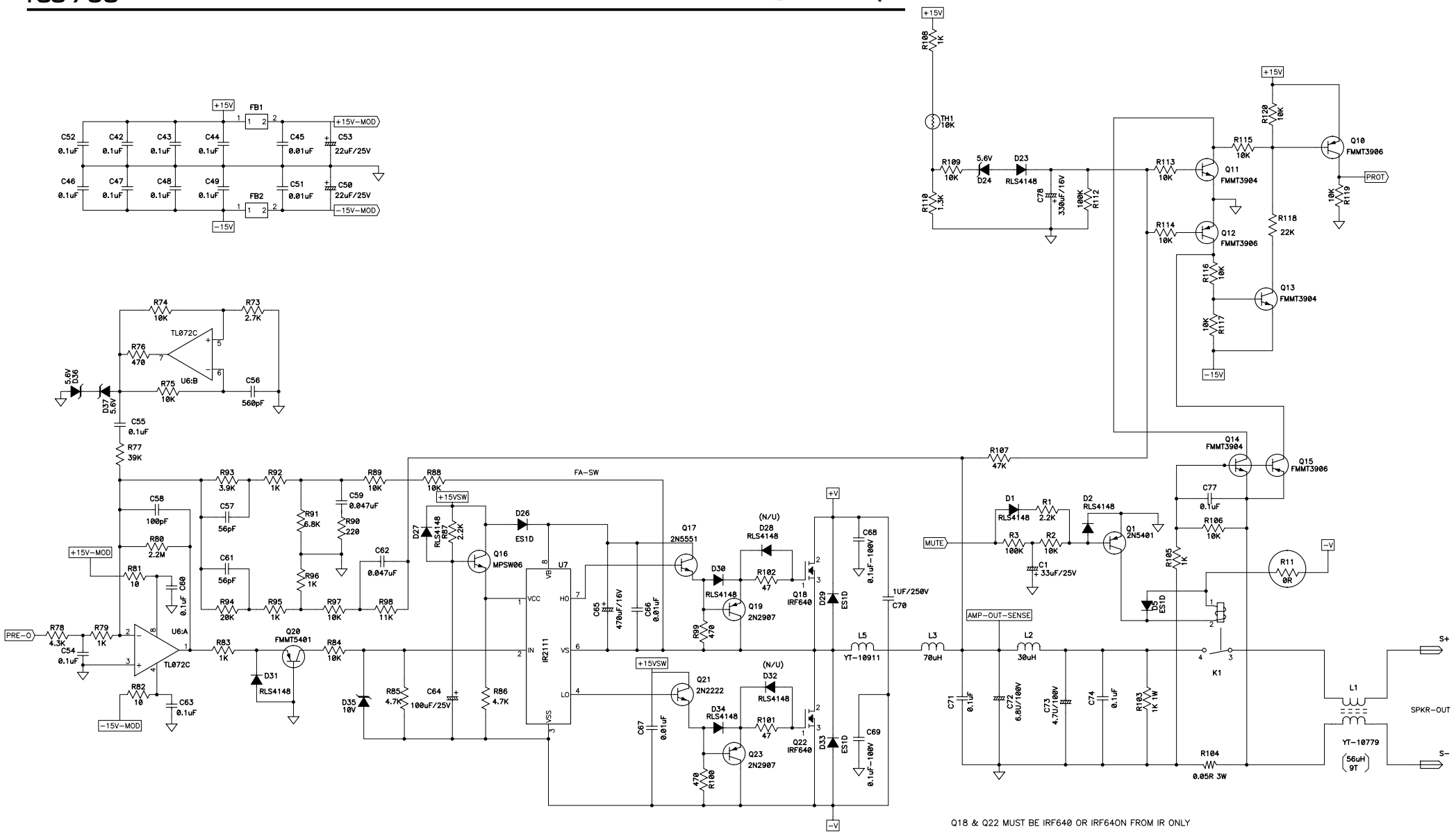


TRANS PNP MPSW56, MPS2709A, 2N5401

Q1,3,19,23



TSS-750



Q18 & Q22 MUST BE IRF640 OR IRF640N FROM IR ONLY

SCH : Rev.02, PCB : Rev.P1A

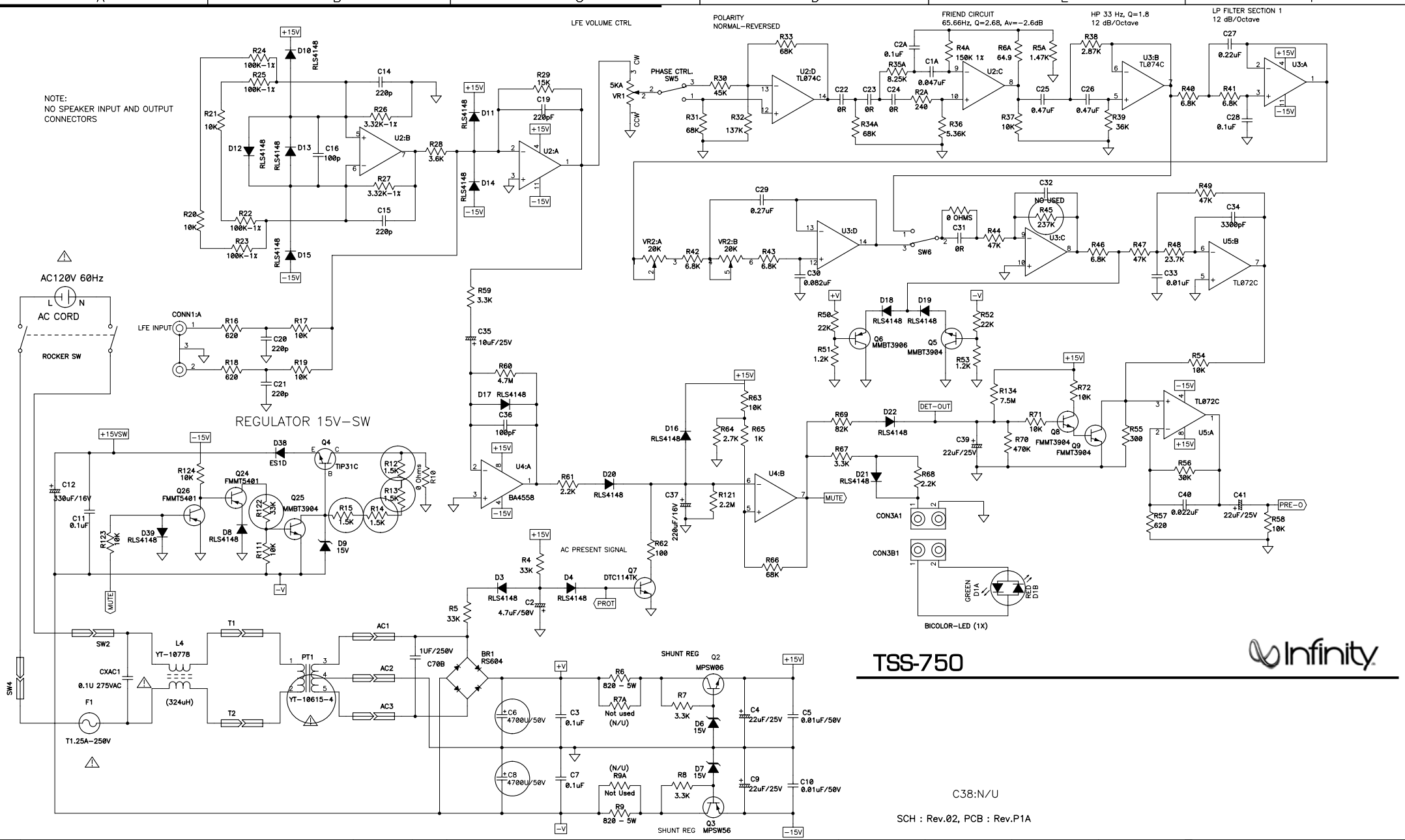
Rev:	Notes:	Date:
01	PS-10 SUB D	2003/02/11
02	R11 WAS 2.2K IS 0R, R12-15 WAS 3.3K IS 1.5K, R45 WAS 133K IS 237K,	
	R122 WAS 56K IS 33K, DEL D28,32 PT1 WAS YT-10616-4 IS YT-10615-4	2003/06/05

Rev:	Notes:

Draw by	Designed by	Checked by	Approved By

Customer:	HARMAN
P/N:	416-0340904
Model no:	SUB 750 (120Vac)
Sch name:	POWER AMP PCB
Issue no:	ET-01-21-4254
Date:	2003/06/05
Sheet: 13	Rev: 02
Size: A2	Author: VITA

.,LTD.



Rev:	Notes:	Date:	Rev:	Notes:	Draw by	Designed by	Checked by	Approved By	Customer:	HARMAN
00	SUB750 D D FROM PB10	2003/02/11							P/N:	416–0340904
01	Modify R67, 68	2003/05/05							Model no:	SUB 750 (120Vac)
02	R11 WAS 2.2K IS 0R, R12–15 WAS 3.3K IS 1.5K, R45 WAS 133K IS 237K,								Sch name:	PRE AMP PCB
	R122 WAS 56K IS 33K, DEL D28,32 PT1 WAS YT–10616–4 IS YT–10615–4	2003/06/05							Issue no:	ET–01–21–4254
									Date:	2003/06/05
				22			,LTD.		Sheet: 12	Rev: 02
									Size: A2	Author: VITA

TSS-750
Packaging