Infinity

Compositions Series
Overture 1
Powered Loudspeakers
Service Manual

Infinity Systems, Inc

250 Crossways Park Dr.

Woodbury, New York 11797

REV 0 12/00

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Specifications

Frequency Response:	35Hz - 20,000Hz (±3dB)
Recommended Amplifier Power Range	10-100 watts*
Amplifier Peak Output:	250VA
Maximum Output:	108 dB SPL
Sensitivity:	92dB 2.83V @ 1 meter (anechoic conditions)
Nominal Impedance:	8Ω
Crossover Frequencies:	300 and 3,000Hz
Low-Frequency Driver:	8” (203MM) high-efficiency, ultralinear, long-throw, magnetically shielded woofer.
Mid-Bass Driver:	(2) 4” (101mm) high-efficiency, magnetically shielded midrange drivers
High-Frequency Driver:	1” (25mm) soft dome, high-efficiency, neodymium magnet, magnetically shielded tweeter
Dimensions (H x W x D):	12-1/2"H x 5-3/4"W x 12-1/2"D (318mm x 146mm x 318mm)
Weight:	28.5 lb (13.0 kg) Each
Power Consumption:	150 watts (Maximum) 7 watts (Standby)

* The maximum recommended amplifier power rating will ensure proper system headroom to allow for occasional peaks. We do not recommend sustained operation at these maximum power levels.

Detailed Specifications

Overture - 1- 120 VAC Version

Item	Input conditions	Output conditions	Reference value	Results
Output Power	Speaker Input @ 50 Hz 120 VAC	1 % THD 12 Ohms Load.	>100W	102 Watts Graph No.1
THD	Speaker Input @ 50 Hz 120 VAC	90 W, 12 Ohms	0.2 % Nom.	0.09 % Graph No.1
THD @ 1 Watt	Speaker Input @ 50 Hz 120 VAC	1 Watt , 12 Ohms	1.0 % Nom.	0.3 % Graph No.1
Low Pass filter Subsonic filter	50 Hz ref. Frequency REF. 0 dB			Graph No.2
S/N	Input short	REF. 90 W Output	> 80 dBr	85 dBr Graph No.3
Residual Noise	Nothing VR Minimum	IHF-A	< 1.5 mV	
Input Sensitivity	30 Hz,	REF 32.80 V, 30 Hz	1.0 V Nom.	1.07V
Input Impedance			> 10 K	>20 K
HUM	No signal in, Bandpass 10Hz-2Khz		< 3.0 mV	1.5 mV Graph No.4
Auto power ON Level	30 Hz,			20 mV
Auto Power OFF Time	Time in minutes		3-6	5 .0
Stand-by Input Wattage	Nothing VR Minimum		< 10 W	8.1 W
AC Input Power	REF. 50 Hz	90 Watts, 12 Ohms	<200 Watts	198.5 W

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Wiring The System

Turn Off All Power...

After placing the speakers, you are ready to connect your system. First turn off all audio system power. Use high-quality speaker wire to make your connections. For speaker connections, use #18 gauge speaker wire (or #16 for runs over 25 feet) with polarity coding. The side of the wire with a ridge or other coding is usually considered negative polarity (i.e., -). Also, consult the owner's manuals that were included with your amplifier, receiver, or television to confirm connection procedures.

Important!

If your system includes a Dolby ® Surround Pro Logic® or AC-3 ® preamplifier or A/V receiver, set the center-channel mode to NORMAL. This will route the low frequencies (below 100Hz) away from the center-channel speaker to the front left and right speakers.

Observe polarities when making speaker connections, as shown in Figures 1 and 2 below. Connect each + terminal on the back of the amplifier, receiver, or television to the respective + (red) terminal on each OVTR 1 speaker. Similarly, connect the (black) terminals in the same way.

Important!

Do not reverse polarities (i.e., + to - or - to +) when making connections. Doing so will cause poor imaging and diminished bass response.

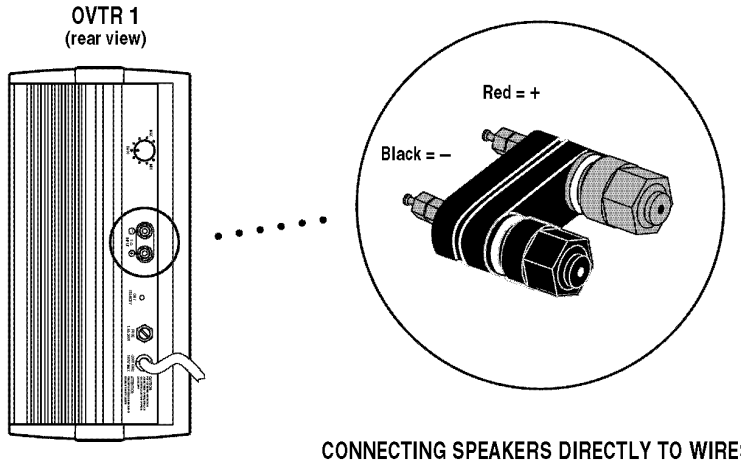

Figure 1. Compositions Overture OVTR 1 speakers feature gold-plated terminals that can be connected in several different ways, e.g., spade terminals, and direct wiring (as shown here).

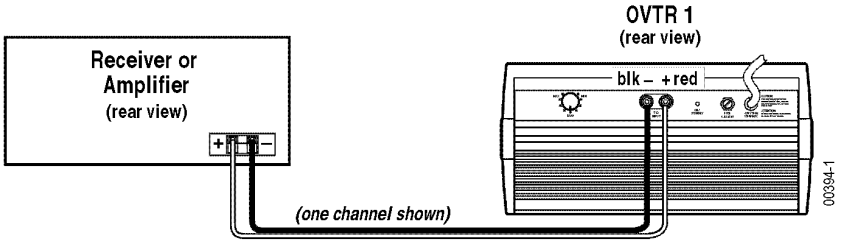

Figure 2. Wiring diagram shows polarity connections for one channel of a stereo or home theater system.

Operating The System

For your convenience, the system is fitted with a power on/off switch. Once the system is turned on, it will automatically go into a standby mode. Once an audio signal is present, the system will automatically turn on. It will revert to standby (drawing only 7 watts) when audio is absent for a minimum of 90 minutes. A dual-color "Power On" LED (see Figure 3 below) glows red when the amplifier is in the standby mode and green when the amplifier is on.

If you plan to leave for an extended period of time (e.g., vacation), switch the system off (or unplug the AC power cord).

IMPORTANT!

This product is designed for (USA) 120 Vac use only. Do not connect it to any other line voltages.

IMPORTANT!

This product is fitted with a 3-prong grounded power cord. Do not use without ensuring the outlet is grounded.

POWER ON...

1. After speaker wiring has been completed, connect each speaker's AC power cord to the nearest AC receptacle. You should see an LED illuminate, indicating the amplifier is on (see Figure 3 below). If not, verify the AC outlet is delivering power or refer to *Troubleshooting* on page 8.

CHECKING PLAYBACK...

2. Check the speakers for playback by first setting the audio system volume control for a minimum level, and then applying power to your system. Play a favorite music or video segment and increase the volume control to a comfortable level.

   NOTE: You should hear balanced audio reproduction across the entire frequency spectrum. If not, check all wiring connections and refer to the "Troubleshooting" section on page 8 for more help.

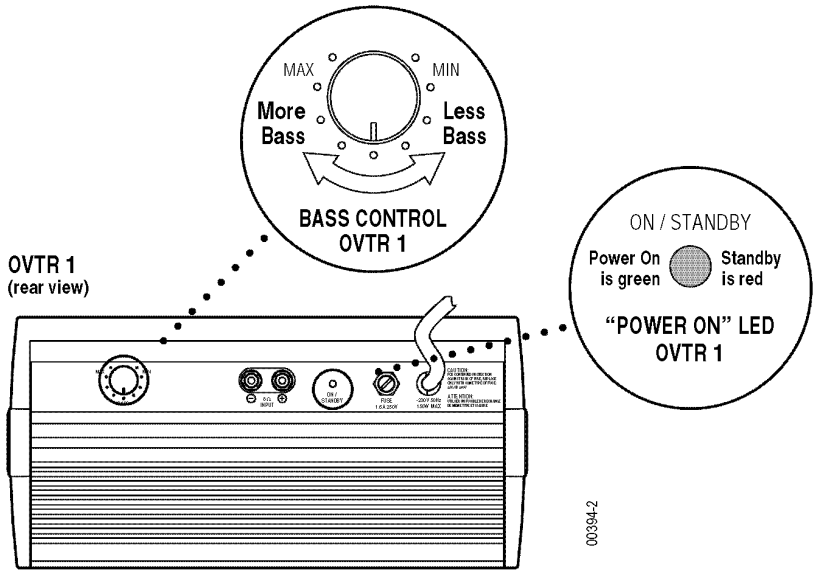

Figure 3. Located on each OVTR 1's rear panel are a BASS level control and a dual-color "Power On" LED.

Replacing The Fuse

Replacing The Fuse

Compositions Overture OVTR 1 speakers each use a built-in fuse to protect the subwoofer amplifier. To replace a fuse with a new one (see enclosed spare), perform the following procedure:

1. Switch off the speaker and unplug the power cord. Then turn the speaker around to access the fuse holder on the rear panel (refer to Figure 4 below).
2. Using a small flat-blade screwdriver, place the tip in the indent and turn the fuse cap counterclockwise.
3. Remove the old fuse and replace it with a new one having the same value and rating, a 2AG 3A SB 250V fuse.

   IMPORTANT!

   Do not substitute the blown fuse with another fuse value or rating. Doing so will void the warranty.
4. Insert the cap holding the new fuse into the holder and turn clockwise to lock it.
5. Rotate the speaker to its original position. Then plug the speaker's AC power cord back into the nearest AC outlet.

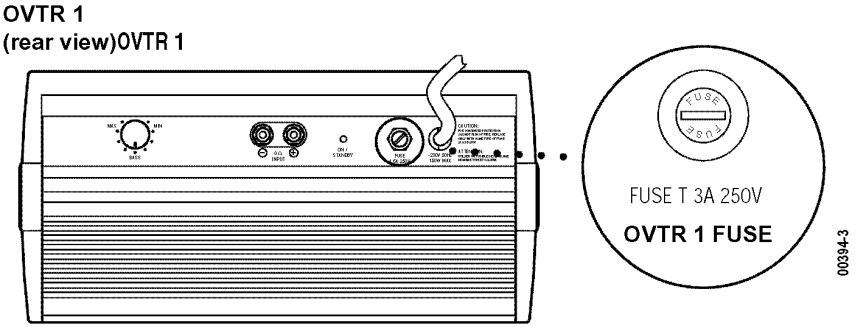

Figure 4. The OVTR 1's fuse is located on the rear panel next to the AC power cord.

Care Of Your Speaker System/Troubleshooting

Care Of Your Speaker System

The dark grey metallic finish does not require any routine maintenance. When needed, use a soft cloth, dampened with water only, to remove any fingerprints or to wipe off dust. Clean the grille by gentle vacuuming or with a damp cloth.

NOTE: Do not use any cleaning products or polishes on the cabinet or grille.

For maximum acoustic transparency, the grille uses a lightweight structure that needs to be handled with care for removal. To remove the grille, gently pull on the corners to unfasten the frame from the cabinet. To replace it, make sure to align the frame pins first and then gently snap the frame into place. Never force the grille frame onto the cabinet.

Troubleshooting*

Symptom	Cause	Solution
Bass is too loud	Bass reinforcement in room	Move speakers away from walls
	Bass level is too high	Rotate BASS control toward "1" (see page 7)
Bass sounds distorted	Subwoofer amplifier has reached maximum output	Turn down volume control on receiver or preamplifier
	Bass level on preamp/ receiver is set too high	Set bass and treble flat; use controls sparingly
Distortion with volume control near minimum	Defective receiver or preamplifier; shorted speaker wires	Repair defective receiver or preamplifier
Distortion on music or effects peaks (e.g., pops or noise)	Dynamic sound track causes subwoofer to "bottom" out	Turn down master volume control to lower overall range
	Tone controls are set too high	Set bass and treble flat; use controls sparingly
Buzz, hum, or crackle when connecting wires	Connecting wires with power on causes transient signal spikes	Connect wires only when audio system power is off
No sound from system; power LED not on	Power cord not connected; no AC power	Connect AC power cord; speaker check AC outlet
	Blown fuse	Check or replace fuse (see page 7)

If you need further assistance, contact your local Infinity retail dealer.

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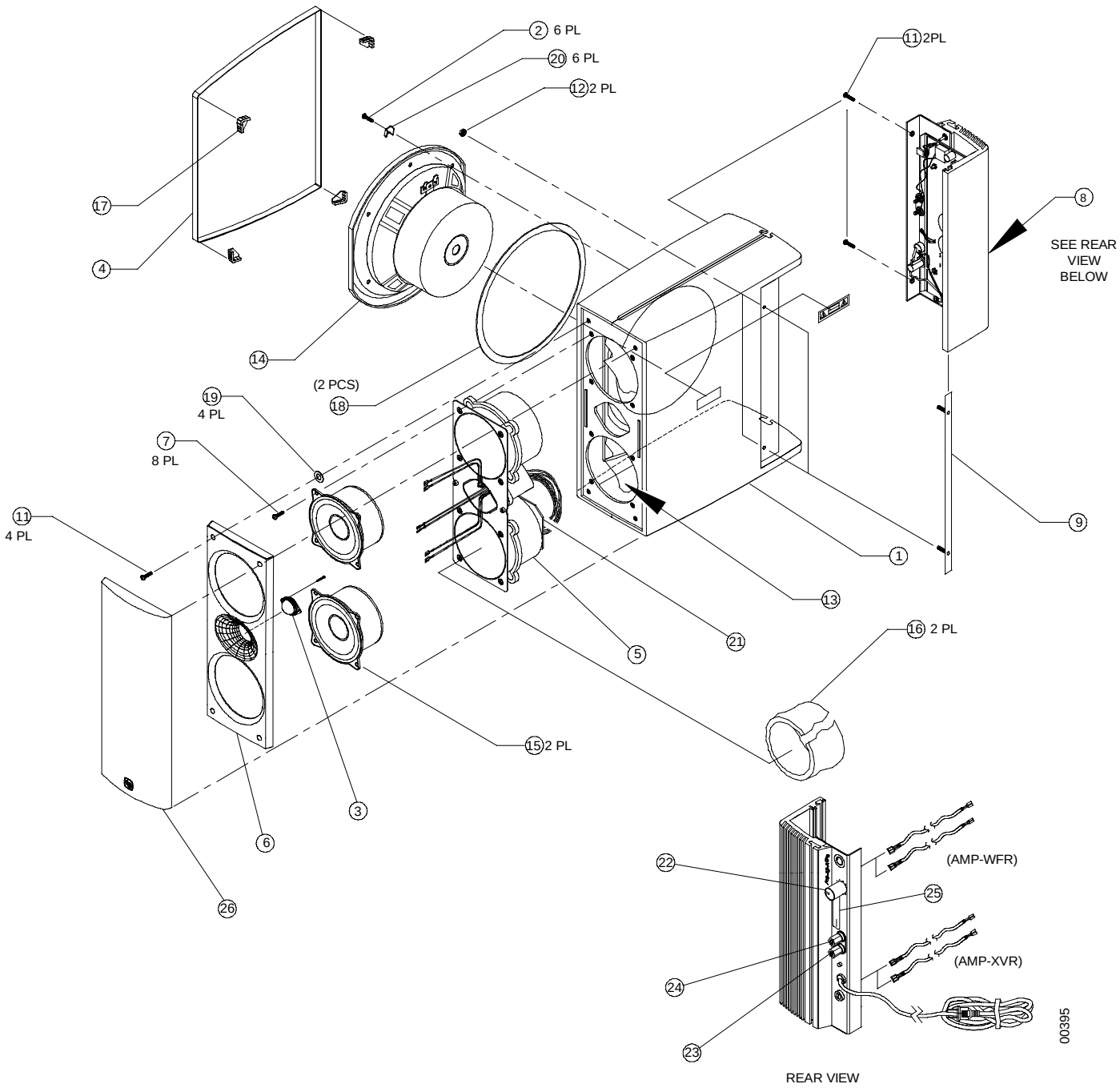
Mechanical/Packaging Parts List

Ref No.	Description	Qty	Part No.
1	CABINET		NOT FOR SALE
2	SCREW, 8-32 x1/2	6	60673
3	1” (25mm) HIGH FREQUENCY TRANSDUCER, DCR=4.0 Ohms±10%	1	333232-001
4	WOOFER GRILLE	1	330956-001
5	MD/TWT ISOLATOR CUP	1	331914-001
6	FRONT BAFFLE	1	331181-001
7	SCREW, 6-32 x 3/8, PPHMS, CADCAD PLATED	8	10811
8	OVERTURE 1 AMPLIFIER	1	NOT FOR SALE
9	BAR	1	332091-001
11	SCREW, 6-32 x .5, MS, PPH, BLACK	6	900301-008
12	NUT, 8-32, KEP HEX, ZINC	2	907102-001
13	DACRON-1407		63991
14	WOOFER		
	(120v) 8” (203mm) WOOFER, DCR=14.1 Ohms±10%	1	331663-001*
	(230v) 8” (203mm) WOOFER, DCR=28.0 Ohms±10%	1	333385-001
15	4” (101mm) MIDRANGE TRANSDUCER, DCR=7.3 Ohms±10%	2	330638-001
16	FOAM, MIDRANGE CUP	2	324324-001
17	GRILLE RETAINER, KIT, (4 PCS)	1	332162-001
18	GASKET, WOOFER	2	332204-001
19	WASHER, #6, FL	4	11638
20	CLAMP, WOOFER	6	332032-001
21	CROSSOVER NETWORK (120V)	1	331211-001
	CROSSOVER NETWORK (230V)	1	333580-001
22	GAIN KNOB	1	146-8021
23	INPUT BINDING POST (RED)	1	331723-001
24	INPUT BINDING POST (BLACK)	1	331724-001
25	LOGO	1	332622-001
26	FRONT GRILLE	1	331185-001
PACKAGING			
27	FOAM END PAD TOP AND BOTTOM	2	331213-001
28	FRONT GRILLE	1	331185-001
29	ACCESSORY KIT (See separate parts below)		N/A
	FOOT W/ ADHESIVE		332337-001
	RUBBER FRONT FOOT		332068-001
	FOOT, BUMP-ON, SQ, BLK. 1/8 X ½”		332182-001
	FOOT, BUMP-ON, SQ, BLK. 1/4 X ½”		332183-001
	SLOT PLUG		332067-001
	FUSE 3A SLO-BLO 250V (120V)	1	331630-001
	FUSE 1.6A SLO-BLOW 250V (230V)	1	333398-001
30	OUTER CARTON, (120V)	1	331212-001
	OUTER CARTON, (230V)	1	333393-001
31	BAG, ZIPLOCK	1	315953-001
32	OWNER’S MANUAL (120V)	1	331214-001
	OWNER’S MANUAL (230V)	1	333390-001
33	SURVEY CARD	1	330033-001
34	SAFETY SHEET	1	330100-001
Optional Center Stand		1	332518-001

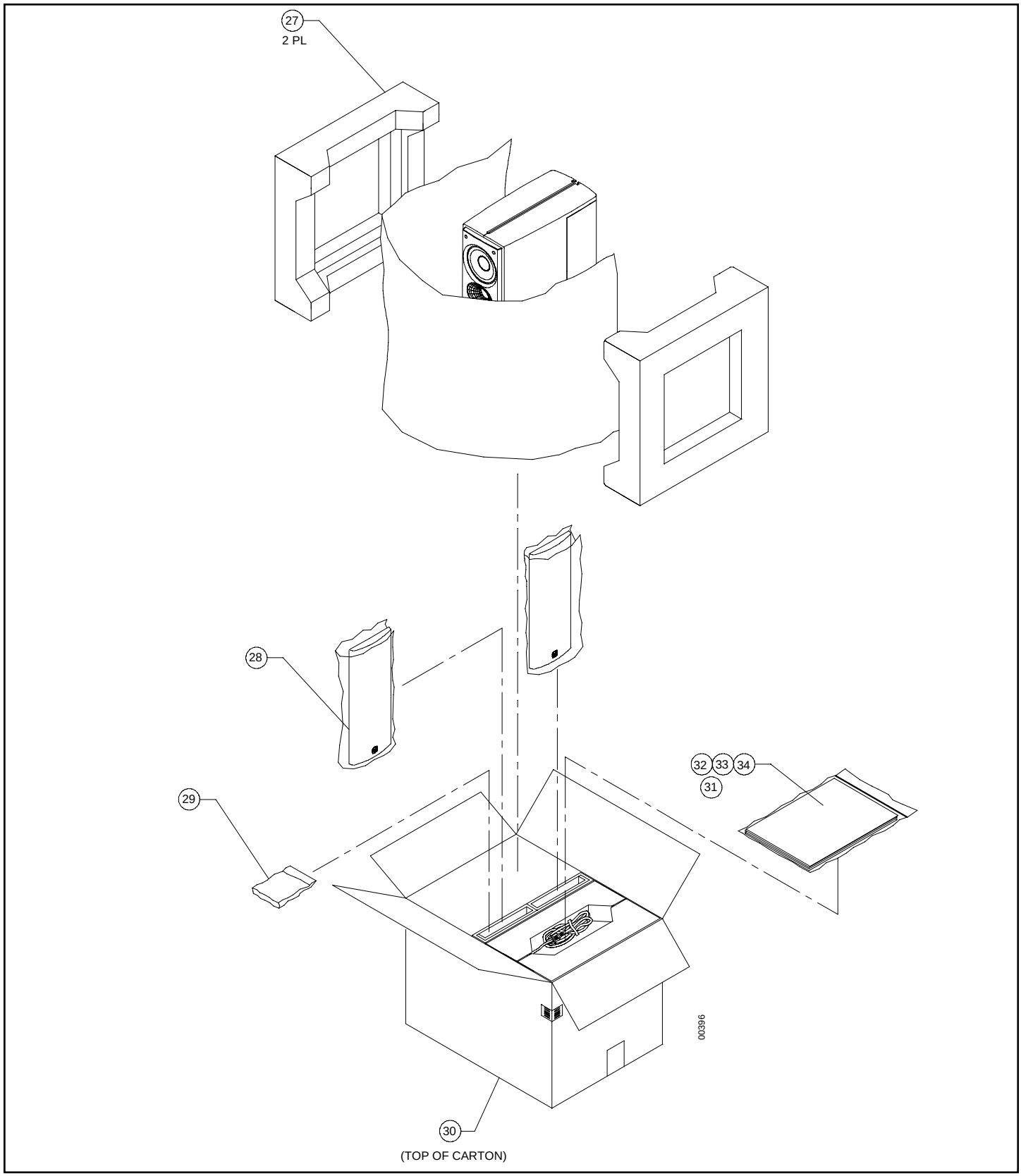
Optional wall mount bracket can be obtained from:
OMNIMOUNT CO.
Model 100 WIN-1
OMNIMOUNT phone# (602) 829-8000

* 8” WOOFER (120v) part# 331663-001 represents the latest revision of low frequency transducer.
Earlier version, cast frame 8” WOOFER, part# 331284-001 is NLA.

Exploded View



Packaging



Service Bulletin

Service bulletin INF9704 - Nov. 1997 — This is considered a Major repair

To: All Infinity Service Centers

Models: Overture 1; Overture 2; Overture 3

Subject: Premature muting

At the moment the bass information at the audio input terminals exceeds 30 mV, the amplifier in the Overture series switches from the STANDBY mode to the ON mode. Approximately 10 minutes after the bass information drops below the sensing threshold, the subwoofer amplifier returns to STANDBY.

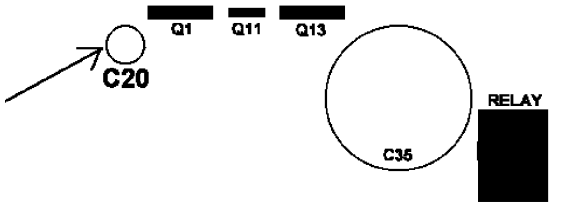
Some customers may experience a tendency for the Overture 1, 2 or 3 to "mute" or shut down when played at a low level and negligible bass information is present. Actually, this is normal behavior for the loudspeaker. *If* the unit was designed to be extremely sensitive, the bass amplifier could sense small amounts of 60 Hz hum or noise picked up by the customer's input cables, random RF noise, etc. and *the unit would never turn off.*

In the event you receive a Overture 1, 2 or 3 with the complaint "unit is shutting off (muting) when low levels of music are being played", this complaint can be resolved by the replacing C20 (220uf/25v) on the PCB with a 2200uf/25v capacitor.
This change will lengthen the delay time for muting to 50-60 minutes.

Procedure, Overture 1:

1) With a sharp instrument, carefully pry out and remove the metal grille covering the woofer, taking note of the (4) rubber corners on the grille.
2) Pull back the circular rubber flap and remove the (6) woofer mounting screws and their clamps.
3) Remove the woofer from the cabinet by pulling on the rubber flap, then unplug the yellow connecting wires.
4) Remove the dacron section from the cabinet.
5) Outside the cabinet, remove the (2) Phillips screws on the cabinet end, amplifier side.
6) Inside the cabinet, remove the (2) amplifier mounting nuts. These may be covered with a sealant and will have to be cleaned off before removal.
7) Unplug the (2) white wires w/spade terminals connected to the crossover assembly.
8) Remove the amplifier assembly from the cabinet.
9) Unplug the AC input wires; remove the transistor clamp and the two mounting nuts from the PCB.
10) Locate C20 (See Figure 1). Remove and replace with 2200uf/25v capacitor (Infinity part # 201-8120).
11) Replace the PCB in the heatsink, taking care to replace the insulating fishpaper under the PCB and the output transistors.
12) Re-assemble and replace the amp assembly into the cabinet in reverse order, taking special precautions:
    a) There are <u>two</u> gaskets under the woofer basket, assure they are both in place upon re-assembly.
    b) The (6) clamps under the woofer mounting screws are not symmetrical; make sure the shorter side of the clamps are pointing towards the center of the woofer cone.
    c) Tighten the (6) final woofer mounting screws sequentially; <u>do not over tighten.</u>
    d) Before replacing the metal grille, place the rubber corner(s) on each corner of the grille.

FIGURE 1



00403-2

Infinity Systems, Inc. 250 Crossways Park Drive, Woodbury, New York 11797 (516) 496-3400

Infinity®

Service Bulletin

Service bulletin INF9705 - Nov. 1997 — This is considered a Minor repair

To: All Infinity Service Centers

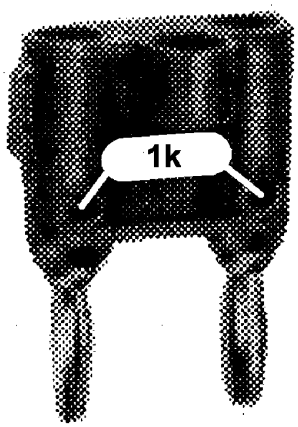
Models: Overture 1; Overture 2; Overture 3

Subject: Unit cycles on & off with no music signal

Operation principle of Auto ON/OFF circuit: in Overture 1, Overture 2, Overture 3:
The Mid and High frequency transducers of Overture 1 or 2 or 3 are powered by the receiver or power amplifier connected to the input terminals of Overture 1 or 2 or 3. The Subwoofer transducer in Overture 1 and 2 and 3 is powered by a subwoofer amplifier inside the Overture speaker enclosure. At the moment audio signals at the Overture input terminals exceeds a level of 30 mV, the Overture Auto detect circuit will switch the subwoofer amplifier from the STANDBY to the ON mode. Approximately 10 minutes after the audio information drops below the sensing threshold, the Auto detect circuit will switch the subwoofer amplifier from the ON mode to the STANDBY mode.

AUTO ON due to noise:
Most amplifiers or receivers, while in the Power OFF mode, have an output impedance at their speaker terminals in the order of several kilo Ohms. However, certain types or receivers and power amplifiers disconnect the power amplifier section from the speaker terminals by means of a relay. As result, the speaker cables connected to the Overture input terminals may pick up RF or 50/60 Hz noise. This noise can activate the Auto detect circuit in Overture and switch the subwoofer amplifier to the ON mode. Approximately 10 minutes after the noise disappears, the Auto detect circuit will switch the subwoofer amplifier back to the STANDBY mode. As result, the customer may hear continual ON-OFF cycling of the subwoofer amplifier.

In the event you receive a Overture 1, 2 or 3 with the complaint "unit is turning on & off (audible relay clicking) even though the receiver is turned off", insert a banana plug w/ 1000 terminating resistor (Infinity part# 518-0425) into the Overture banana speaker jacks.



00403-1

Infinity Systems, Inc. 250 Crossways Park Drive, Woodbury, New York 11797 (516) 496-3400

Infinity® TECH TIPS

Troubleshooting tips and solutions to common service problems

For models: Overture 1

TIP# INFTT2000-02

Complaint:

When driven at moderate to loud volumes, there is distortion or a "fluttering" sound coming from my Overture 1 loudspeakers.

Probable Cause:

Air leak in the cabinet enclosure. Can confirmed by removing the woofer grille (steps 1-2 below) and gently pressing down on the woofer cone. There should be firm resistance; if woofer depresses easily, there is an air leak. In either case follow steps below.

Solution:

1) Unplug all external cables; place the loudspeaker on a padded surface.
2) With a sharp instrument, carefully pry out and remove the metal grille covering the woofer, taking note of the (4) rubber corners on the grille.
3) Pull back the circular rubber flap and remove the (6) woofer mounting screws and their clamps.
4) Remove the woofer from the cabinet by pulling on the rubber flap, then unplug the yellow connecting wires.
5) Inspect the woofer cone and spider for tears or defects. Inspect the seating area of the (6) woofer mounting holes in the enclosure. Measure the DC resistance across the woofer terminals with an ohmmeter; it should be 14.0 ohms ±10% (120V system) or 39.0 ohms ±10% (230V system). If any defects are found, the woofer should be replaced, Infinity part# 331663-001* (120V system) or 333385-001 (230V system). If no defects are found, proceed:
6) Remove the dacron filler from the cabinet.
7) Make sure the (2) amplifier mounting nuts inside the enclosure, and the (2) Phillips screws on the cabinet end, amplifier side, on the outside, are tight.
8) Inside the enclosure, seal all internal cracks and joints with "silicon seal" or similar compound. Follow the instructions on the tube for drying time – overnight is recommended.
9) Re-assemble the loudspeaker, taking special precautions:
    a) There are <u>two</u> gaskets under the woofer basket, assure they are both in place upon re-assembly.
    b) The (6) clamps under the woofer mounting screws are not symmetrical; make sure the shorter side of the clamps are pointing towards the center of the woofer cone.
    c) Tighten the (6) final woofer mounting screws sequentially; <u>do not over tighten.</u>
    d) Before replacing the metal grille, place the rubber corner(s) on each corner of the grille.
10) Test the loudspeaker by connecting and powering it up, playing program material with sufficient volume and bass to confirm distortion is no longer occurring.

* If upon removal, your 8" woofer is stamped with #331284-001, this part is No Longer Available. Later version woofer 331663-001 will NOT fit in the enclosure.

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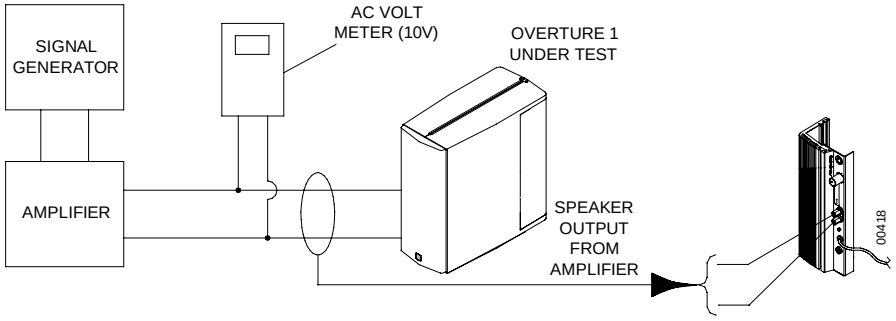
Test Set Up and Procedure



SYSTEM AURAL SWEEP TEST
Equipment needed:
Function/signal generator/sweep generator
High Gain Integrated Amplifier
Multimeter
Speaker cables

General Unit Function (UUT = Unit Under Test)
1. From the signal generator, connect a mono cable to the Integrated amplifier; with speaker cables connect the amplifier's output to the UUT Line Level Input binding posts.
2. On the UUT, turn the BASS (level) control full counterclockwise (MIN).
3. Turn on generator, adjust to **1.3V, 40 Hz**.
4. Plug in UUT; LED should be Red. Turn BASS (level) control full clockwise (MAX)
5. LED should now be Green and immediate bass response should be heard (and observed if the grille is removed).

Sweep Function
7. Follow steps 1-5 above.
8. Sweep generator from 20Hz to 300Hz. Listen to the cabinet and drivers for any rattles, clicks, buzzes or any other noises. If any unusual noises are heard, remove woofers and test; refer to Tech Tip INFTT2000-02.

Driver Function
9. Remove woofer from cabinet; (disassembly procedure Page 16); detach + and - wire clips.
10. Check DC resistance of woofer; it should be:
    (120v) - **14.1 Ohms ±10%**
    (230v) - **28.0 Ohms ±10%**
11. Connect a pair of speaker cables to driver terminals. Cables should be connected to a high-gain integrated amplifier fed by a signal generator. Turn on generator and adjust so that speaker level output is **20.0V**. *
12 Sweep generator from 20Hz to 1kHz. Listen to driver for any rubbing, buzzing, or other unusual noises.

* Only the 120v version will be driven to near maximum excursion at this voltage; because of the unusually high DCR of the voice coil, driving the 230v version at twice this voltage is not practical with simple test equipment and 20v should suffice for test purposes.

Amplifier bias adjustment

1) Power up loudspeaker and drive at low levels for 3 minutes for warm-up.
2) Remove amplifier assembly (disassembly procedure Page 16).
3) Power up on the bench; attach DMM (on low DC voltage range) across TP1 and TP2 on schematic – R77 - (120v) .22 Ω 5W fuse resistor. (230v) .47 Ω 5W fuse resistor. Mini-grabbers can be used on the resistor leads without PCB removal.
4) Adjust POT2 (bias pot on PCB) to read **5.9 mV** for both 120v and 230v units.

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Dissassembly Procedure

1) With a sharp instrument, carefully pry out and remove the metal grille covering the woofer, taking note of the (4) rubber corners on the grille.
2) Pull back the circular rubber flap and remove the (6) woofer mounting screws and their clamps.
3) Remove the woofer from the cabinet by pulling on the rubber flap, then unplug the yellow connecting wires.
4) Remove the dacron filler from the cabinet.
5) Outside the cabinet, remove the (2) Phillips screws on the cabinet end, amplifier side.
6) Inside the cabinet, remove the (2) amplifier mounting nuts. These may be completely covered with a sealant and will have to be cleaned off with an exacto knife or similar tool before removal. Because the nuts are so close to the heatsink and may prevent the use of traditional socket sets, a needle-nose "Vise-Grip" pliers have been used with success.
7) Unplug the (2) white wires w/spade terminals connected to the crossover assembly.
8) Remove the amplifier assembly from the cabinet.

REASSEMBLY

9) Re-assemble and replace the amp assembly into the cabinet in reverse order, taking special precautions:
    a) There are <u>two</u> gaskets under the woofer basket, assure they are both in place upon re-assembly.
    b) The (6) clamps under the woofer mounting screws are not symmetrical; make sure the *shorter* side of the clamps are pointing towards the *center* of the woofer cone.
    c) Tighten the (6) final woofer mounting screws sequentially; <u>do not over tighten.</u>
    d) Before replacing the metal grille, place the rubber corner(s) on each corner of the grille.

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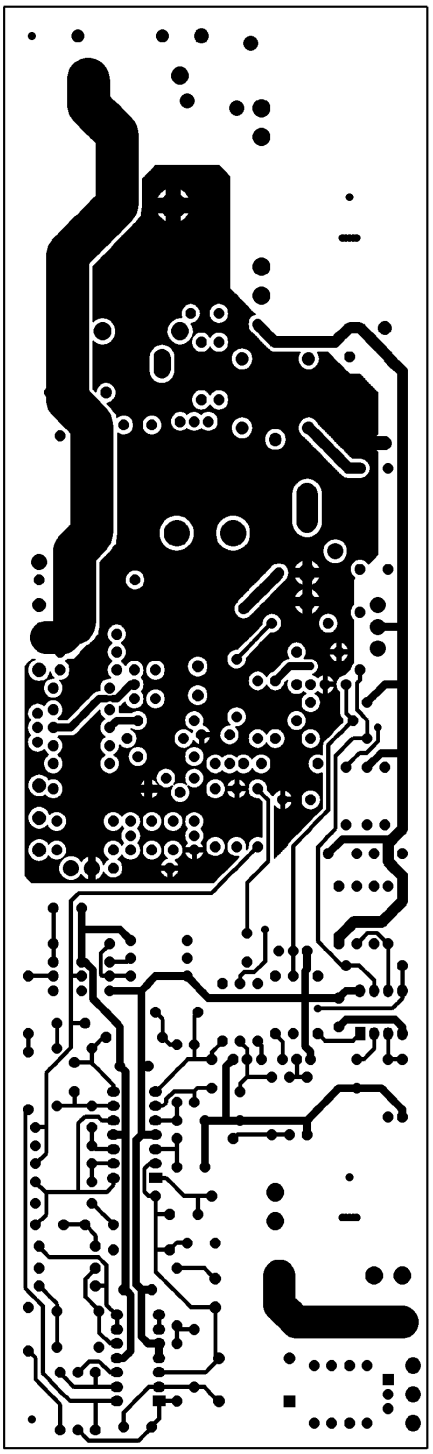
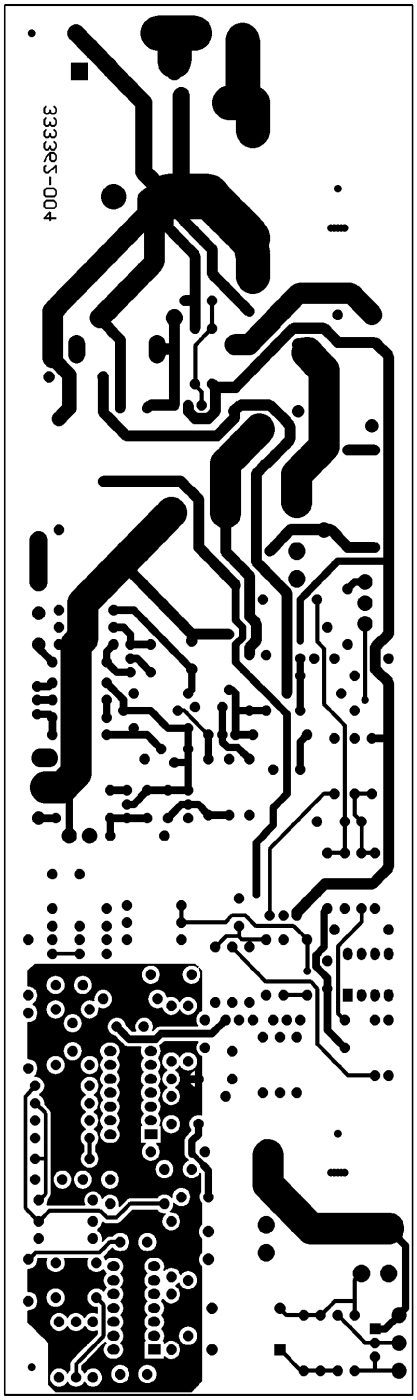
Amplifier PCB Components Side



INFINITY SYSTEMS INC. COPYRIGHT 08/06/97
OVERTURE 1 BASS AMPLIFIER PCB, P/N 333362-004
PADMASTER & COMPONENT SIDE
SHEET 1 OF 6

Bass Amplifier PCB Solder Side



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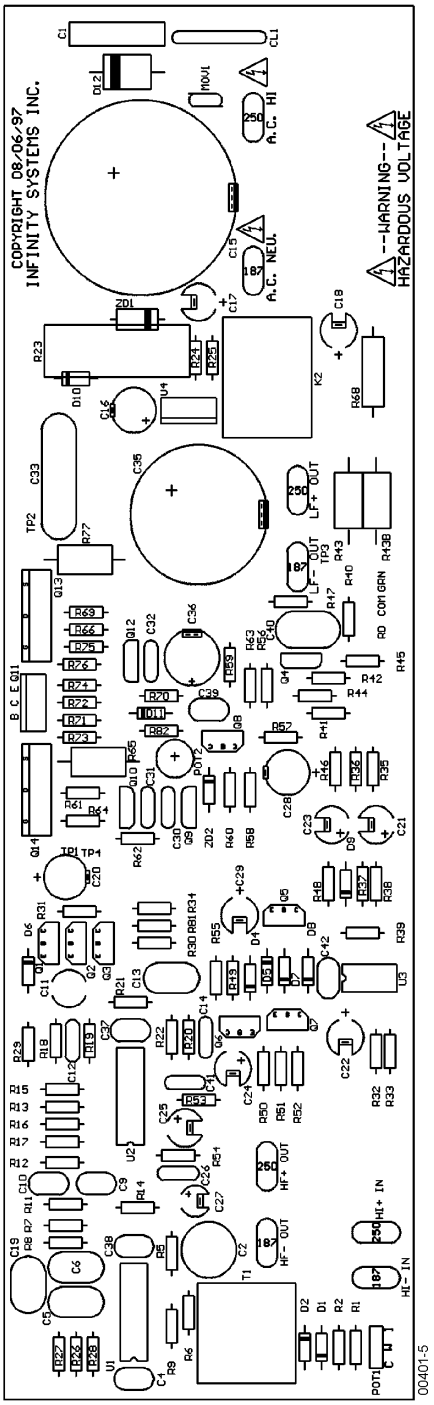
OVERTURE 1 BASS AMPLIFIER PCB, P/N 333362-004
PADMASTER & SOLDER SIDE
SHEET 2 OF 6

Bass Amplifier PCB Component Side Silkscreen



INFINITY SYSTEMS INC. COPYRIGHT 08/06/97
OVERTURE 1 BASS AMPLIFIER PCB, P/N 333362-004
COMPONENT SIDE SILKSCREEN
SHEET 5 OF 6

Electrical Parts List (120v)

Part#	Qty	Description	Ref Designation
Semiconductors			
DI1004	1	DIODE ZENER 6.2V 1/2W T/R	ZD2
DI1060	9	Diode Switching 500mW 75V	D1-2, 4-5, 6-9, 11
DI1089	1	Diode 1N4003	D10
DI1101	2	DIODE ZENER 10V 1/2W T/R	ZD3, 5
CI1186	1	Diode Zener 36V 5% 5W T/R	ZD1
DI1187	1	Di, Bridge Power 400v/8A	D18
IC1045	1	Three-Term. Adj. Pos. V R LM317T	U4
IC1215	2	IC TL064CN Quad OP AMP	U1-2
IC1216	1	IC TL062CP Dual OP Amp.	U3
TR1002	3	NPN Transistor TO-92 2N3904	Q1, 5, 7
TR1017	4	Transistor PNP T/R 2N3906	Q2-3, 6, 8
TR1257	2	MOSFET Power IRFS250	Q13-14
TR1259	3	NPN 300V/0.5A/20W BF469	Q4, 9, 12
TR1260	1	PNP 300V/0.5A/20W BF470	Q10
LE1034	1	Led Green/Red Common Cathode	LED1
TR1304	1	NPN 60V/3A 25W 2SD2012	Q11
Capacitors			
CP1126	1	CAP POLY FILM 1uF 10% 50V	C19
CP1630	1	Cap. Alum El. 220uF 20% 25v	C20
CP1656	1	Cap. Alum El. 100uF 20% NPE 25V T/R	C2
CP1657	1	Cap. Alum El. 220uF 20% NPE	C3
CP1658	4	Cap. Disc 100pF 10% 500V Y5P	C4, 12, 14, 30
CP1659	1	Cap. NPE 10uF 20% 25V T/R	C11
CP1660	2	Cap. Alum El. 1000uF 20% 200V 85C	C15, 35
CP1661	1	Cap. Alum El. 100uF 20% 50V T/R	C16
CP1662	5	Cap. Alum El. 10uF 20% 35V T/R	C17-18, 22-23, 25
CP1663	1	Cap. Alum El. 47uF 20% 25V	C21
CP1664	2	Cap. Alum El. 4.70uF 20% 63V T	C24, 29
CP1665	1	Cap. Alum El. 10uF 20% 63V T/R	C28
CP1666	2	Cap Cer Disc 68pF 20% 500V T/R	C31-32
CP1667	1	Cap. Poly Fil. 0.47uF 10% 250V	C33
CP1668	1	Cap. Alum El. 47uF 20% 100V	C36
CP1669	1	Cap. Poly Fil. .10uF 10% 400V	C40
CP1670	1	Cap. Poly Fil. .039uF 5% 50V	C41
CP1672	3	Cap Poly 0.22uF 5% 63V T/R	C5-6, 13
CP1673	1	Cap Poly Fil. 1uF 10% 50V	C26
CP1674	1	Cap. Alum El. 1uF 20% 50V	C27
CP1675	7	Cap. Poly Fil. 0.1uF 5% 5W	C7, 9-10, 37-39, 42

Electrical Parts List (120v)

Part#	Qty	Description	Ref Designation
Resistors			
RS2283	1	RES M/O F/P 5.1K ohm 5% 5W T/R	R23
RS1036	1	RES M/F 36 ohm 5% 1/4W T/R	R74
RS1058	1	RES M/F 51.1K ohm 1% 1/4W T/R	R63
RS1063	1	RES M/F 1M ohm 1% 1/4W T/R	R39
RS1150	1	RES M/F 43.2K ohm 1% 1/4W T/R	R56
RS1153	1	RES M/F 47.5K ohm 1% 1/4W T/R	R29
RS1161	1	RES M/F 11k ohm 1% 1/4W T/R	R21
RS1268	1	RES M/F 2.21K ohm 1% 1/4W T/R	R66
RS1342	1	RES M/F 9.09K ohm 1% 1/4W T/R	R52
RS1351	1	RES M/F 13K ohm 1% 1/4W T/R	R48
RS1353	3	RES M/F 3.01K ohm 1% 1/4W T/R	R50-51, 57
RS1357	1	RES M/F 100 ohm 1% 1/4W T/R	R54
RS1370	1	RES M/F 3.57K ohm 1% 1/4W T/R	R24
RS1455	3	RES M/F 150K ohm 1% 1/4W T/R	R35-36, 49
RS1492	1	RES M/F 221K ohm 1% 1/4W T/R	R30
RS1505	1	RES M/F 475K ohm 1% 1/4W T/R	R37
RS1562	1	RES M/F 82.5K ohm 1% 1/4W T/R	R47
RS1585	1	RES M/F 475 ohm 1% 1/4W T/R	R5
RS2018	3	RES M/F 10K ohm 1% 1/4W T/R	R13, 18, 26
RS2019	8	RES M/F 20K ohm 1% 1/4W T/R	R2, 12, 20, 41, 58, 69-71
RS2025	2	RES M/F 9.31K ohm 1% 1/4W T/R	R1, 22
RS2100	2	RES M/F 22.1K ohm 1% 1/4W T/R	R9-10
RS2124	1	RES M/F 2.37K ohm 1% 1/4W T/R	R6
RS2125	2	RES M/F 59K ohm 1% 1/4W T/R	R7, 15
RS2127	1	RES M/F 12.4K ohm 1% 1/4W T/R	R8
RS2129	1	RES M/F 5.49K ohm 1% 1/4W T/R	R11
RS2132	1	RES M/F 21.5K ohm 1% 1/4W T/R	R17
RS2134	1	RES M/F 324K ohm 1% 1/4W T/R	R19
RS2139	1	RES M/F 200 ohm 1% 1/4W T/R	R25
RS2140	1	RES M/F 619K ohm 1% 1/4W T/R	R32
RS2141	1	RES M/F 110K ohm 1% 1/4W T/R	R33
RS2142	3	RES M/F 100K ohm 1% 1/4W T/R	R34, 38, 53
RS2143	4	RES M/F 3.32K ohm 1% 1/4W T/R	R27, 40, 46, 55
RS2144	2	RES M/F 1.3K ohm 1% 1/4W T/R	R42, 60
RS2146	1	RES M/F 1.5M ohm 1% 1/4W T/R	R44
S2147	1	RES M/F 249K ohm 1% 1/4W T/R	R45
RS2148	1	RES M/F 130K ohm 1% 1/4W T/R	R59
RS2149	6	Res. Fuse 1K ohm 5% 1/4W T/R	R61-62, 64, 72-73, 76
RS2150	2	Res. Fuse 0.22 ohm 5% 1/2W T/R	R65, 77
RS2151	1	RES M/O F/P 1K ohm 5% 2W T/R	R68
S2152	1	RES M/F 75K ohm 1% 1/4W T/R	R81
S2155	2	RES M/F 33K ohm 5% 1/2W T/R	R43, 43B

Electrical Parts List (120v)

Part#	Qty	Description	Ref Designation
RS2158	1	RES M/F 3.3K ohm 5% 1/4W T/R	R75
RS2181	2	RES M/F 2.21M ohm 1% 1/4W T/R	R28, 31
RS2153	1	Potentiometer 20K ohm 20% BASS GAIN	P1
RS2154	1	Potentiometer 2K ohm BIAS ADJ	P2
Miscellaneous			
MI1155	1	Transformer, Coupling	T1
TH1017	1	Inrush Current Limiter 5A @10 ohms	CL1
VA1009	1	Varistor 200V	MOV1
BR1412	1	Clamp Transistor	
BR1416	1	Plate Amp	
BR1419	1	BAR AMP ASSY.	
FH1004	1	Fuseholder 2AG Chassis Mount	FH1
FS1064	1	Fuse Slo-Blo 3A/250v 2AG	F1
HS1144	1	Heatsink Snowball 97-1	
NU1049	8	Nut 8-32 x 1/4 Hex Keps Sink F	
SC1099	2	SC 6-32 x 1/4 Mach-Thr Pan Phi	
SP1084	1	Spcr Fibre ID 0.128” OD 0.245”	
SP1086	1	Clamp Insulator Snowball	
XX1280	1	Power Cord 12Ft 16AWG	
XX1282	1	Strain Relief Black	
XX1290	1	Knob, Bass Gain	
RE1019	1	Relay, 12A, 48VDC	K2
CO1345	1	Connector Binding Post Pair	

Electrical Parts List (230v)

Part#	Qty	Description
Semiconductors		
DI1186	1	Diode Zener 36V 5% 5W T/R
IC1045	1	Three-Term. Adj. Pos. V R LM317T
IC1215	2	IC TL064CN Quad OP AMP
IC1216	1	IC TL062CP Dual OP Amp.
TR1002	3	NPN Transistor TO-92 2N3904
TR1017	4	Transistor PNP T/R 2N3906
TR1316	3	Xsistor ZTX658
TR1317	1	Xsistor ZTX758
TR1318	2	Pwr Mosfet STH16NA40FI
TR1304	1	NPN XSTR 60V/3A 25W
DI1003	2	Diode Rectifier 1N4004
DI1004	1	DIODE ZENER 6.2V 1/2W T/R
DI1060	8	Diode Switching 500mW 75V
DI1224	1	DIODE PWR RECT 800V/3A
LE1034	1	Led Green/Red Common Cath
Capacitors		
CP1126	1	CAP POLY FILM 1uF 10% 50V
CP1630	1	Cap Alum El 220uF 20% 25v
CP1656	1	Cap. Al El 100uF 20% NPE
CP1659	1	Cap. NPE 10uF 20% 25V T/R
CP1661	1	Cap. Alum El. 100uF 20% 5
CP1662	5	Cap. Alum El. 10uF 20% 35
CP1663	1	Cap. Alum El. 47uF 20% 25
CP1664	1	Cap. Alum EL. 4.70uF 20%
CP1666	2	Cap Cer Disc 68pF 20% 500
CP1669	1	Cap. Poly Fil .10uF 10% 4
CP1670	1	Cap. Poly Fil .039uF 5% 5
CP1672	3	Cap Poly 0.22uF 5% 63V T/
CP1673	1	Cap. Pol Fil 1nF 10% 50V
CP1674	1	Cap. Alum El. 1uF 20% 50V
CP1675	6	Cap. Pol Fil 0.1uF 5% 50V
CP1804	1	Cap Alum El 270uF 400V
CP1805	1	Cap Alum El 22uF 20% 100V
CP1806	1	Cap Poly Fil 0.22uF 10% 4
CP1807	1	Cap Al El 22uF 20% 250V
CP1829	1	Cap Al El 4.7uF 20% 100V
CP1828	1	Cap Alum El 390uF 20% 200
CP1846	1	CAP POLY FILM 56nF 5%
CP1658	3	Cap. Disc 100pF 10% 500V
CP1904	1	CAP POLY 0.022uF 20% 250V

Electrical Parts List (230v)

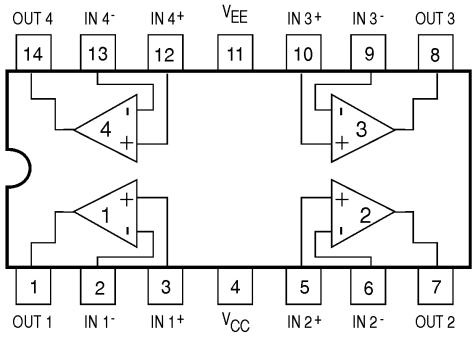
Part#	Qty	Description
Resistors		
RS2153	1	Potentiometer 20Kohm 20% Bass Gain
RS2369	1	POTENTIOMETER 1Kohm Bias Adj
RS2463	1	RES CEMENT 20Kohm 5% 5W
RS2151	1	RES M/O F/P 1Kohm 5% 2W
RS2296	2	RES M/O F/P 62Kohm 5% 2W
RS2301	2	Res Fuse 0.47 ohm 5% T/R
RS1058	1	RES M/F 51.1Kohm 1% 1/4W
RS1063	1	RES M/F 1 Mohm 1% 1/4W
RS1150	1	RES M/F 43.2Kohm 1% 1/4W
RS1153	1	RES M/F 47.5Kohm 1% 1/4W
RS1161	1	RES M/F 11Kohm 1% 1/4W
RS1342	2	RES M/F 9.09Kohm 1% 1/4W
RS1351	1	RES M/F 13Kohm 1% 1/4W
RS1353	2	RES M/F 3.01Kohm 1% 1/4W
RS1455	2	RES M/F 150Kohm 1% 1/4W
RS1492	1	RES M/F 221Kohm 1% 1/4W
RS1505	1	RES M/F 475Kohm 1% 1/4W
RS2018	5	RES M/F 10Kohm 1% 1/4W
RS2025	2	RES M/F 9.31Kohm 1% 1/4W
RS2125	2	RES M/F 59Kohm 1% 1/4W
RS2127	1	RES M/F 12.4Kohm 1% 1/4W
RS2129	1	RES M/F 5.49Kohm 1% 1/4W
RS2132	1	RES M/F 21.5Kohm 1% 1/4W
RS2141	1	RES M/F 110Kohm 1% 1/4W
RS2142	3	RES M/F 100Kohm 1% 1/4W
RS2143	2	RES M/F 3.32Kohm 1% 1/4W
RS2144	2	RES M/F 1.3Kohm 1% 1/4W
RS2146	1	RES M/F 1.5Mohm 1% 1/4W
RS2147	1	RES M/F 249Kohm 1% 1/4W
RS2149	2	Res. Fuse 1Kohm 5% 1/4W T
RS2152	1	RES M/F 75Kohm 1% 1/4W
RS2181	2	RES M/F 2.21Mohm 1% 1/4W
RS2295	1	RES M/F 511 ohm 1% 1/4W
RS2297	1	RES M/F 3.3Mohm 1% 1/4W
RS2298	1	RES M/F 301Kohm 1% 1/4W
RS2299	1	RES M/F 1.4Kohm 1% 1/4W
RS2300	1	RES M/F 374Kohm 1% 1/4W
RS2302	1	RES M/F 4.42Kohm 1% 1/4W
RS2304	2	Res Fuse 2Kohm 5% 1/3W T/
RS2305	1	Res Fuse 75 ohm 5% 1/3W T
RS2306	3	Res Fuse 6.8Kohm 5% 1/3W
RS2307	1	RES M/F 182Kohm 1% 1/4W
RS2139	1	RES M/F 200 ohm 1% 1/4W

Electrical Parts List (230v)

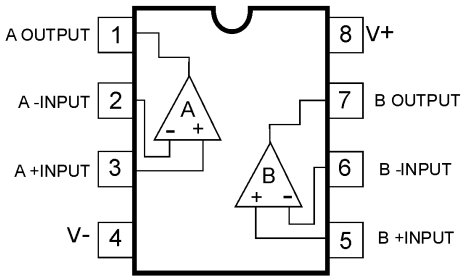
Part#	Qty	Description
RS2364	1	RES M/F 6.04Kohm 1% 1/4W
RS1479	1	RES M/F 2.43Kohm 1% 1/4W
RS2019	4	RES M/F 20Kohm 1% 1/4W
RS2370	1	RES M/F 37.4Kohm 1% 1/4W
RS2303	3	RES M/F 39.2Kohm 1% 1/4W
RS1357	2	RES M/F 100 ohm 1% 1/4W
Miscellaneous		
SC1099	2	SC 6-32x 1/4 Mach-Thr Pan
SP1084	1	“Spcr Fibre ID 0.128”” OD 0”
TE1198	1	Trmnl Female 0.187x0.020
TE1199	1	Trmnl Female 0.0250x.032
WA1084	1	Spacer Washer
XX1290	1	Knob Bass Level
XX1307	1	“AC Line Cord, 12 Ft”
XX1318	1	Terminal Blanking Plug Re
XX1319	1	Terminal Blanking Plug Bl
CC1062	4	FERRITE BEAD
WA1085	2	WASHER #6 INTERNAL STAR
BR1518	1	“BAR, SPREADER”
LB1304	1	LABEL GROUND
XX1326	1	STRAIN RELIEF
SP1092	2	NYLON STANDOFF
SC1234	1	SC 4-40x1/14 MACH-THR
SC1287	2	SC 10-32x1/4 MACH-THR
HS1169	1	HEATSINK OVTR1 EUROP
BR1419	1	BAR AMP ASSY. SNOWBALL 97
BR1500	1	“Plate, Amp “
BR1517	1	Transistor Clamp
FH1008	1	Fuseholder 5x20mm
FS1077	1	FUSE SLOW BLOW 1.6A 250V
NU1049	8	Nut 8-32 x 1/4 Hex Keps S
CO1345	1	Connector Bindingpost Pair
MI1175	1	Transformer Coupling
RE1023	1	Relay PC Mount
SW1081	1	Line Switch
TE1175	3	TERMINAL MALE TAB 0.250
TE1187	3	TERM MALE TAB 0.187
TH1017	1	Inrush Current Limiter
VA1010	1	Varistor 400V
TE1206	1	TERMINAL SOLDER RING

Integrated Circuit Diagrams

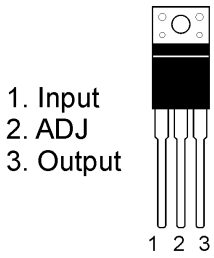
Quad Op Amp
TLO64, U1-2



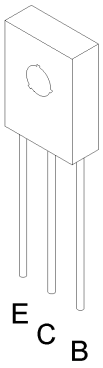
OPAMP, DUAL 8PIN DIL TLO62, U3



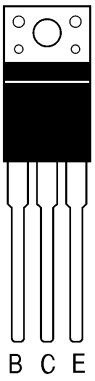
POS V R LM317T
U4



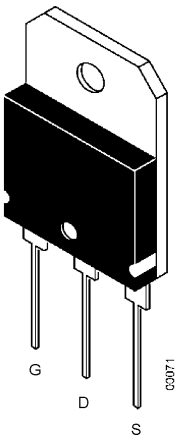
NPN,PNP, 300V/0.5A/20W
BF469, BF470
Q4,9,10,12



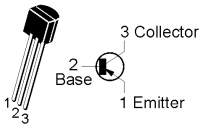
NPN XSTR 60V/3A 25W
TO-220 2SD2012
Q11



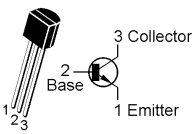
MOSFET, IRFS250
Q13,14



TRANS, PNP 150V 0.6A 2N3906
Q2,3,6,8



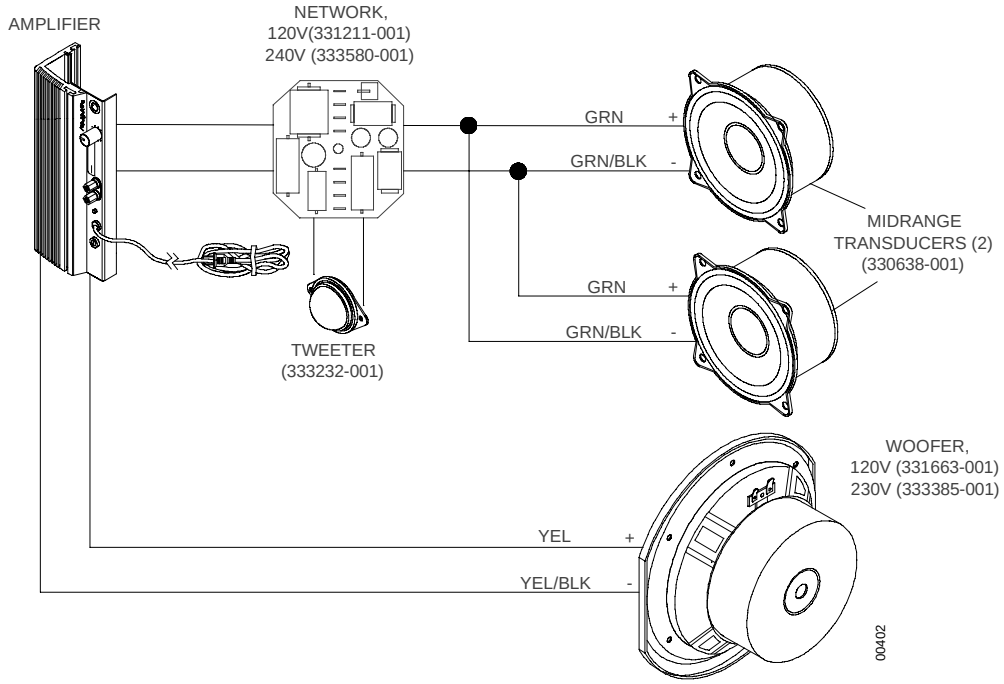
TRANS, NPN 150V 0.6A 2N3904
TO-92, Q1,5,7



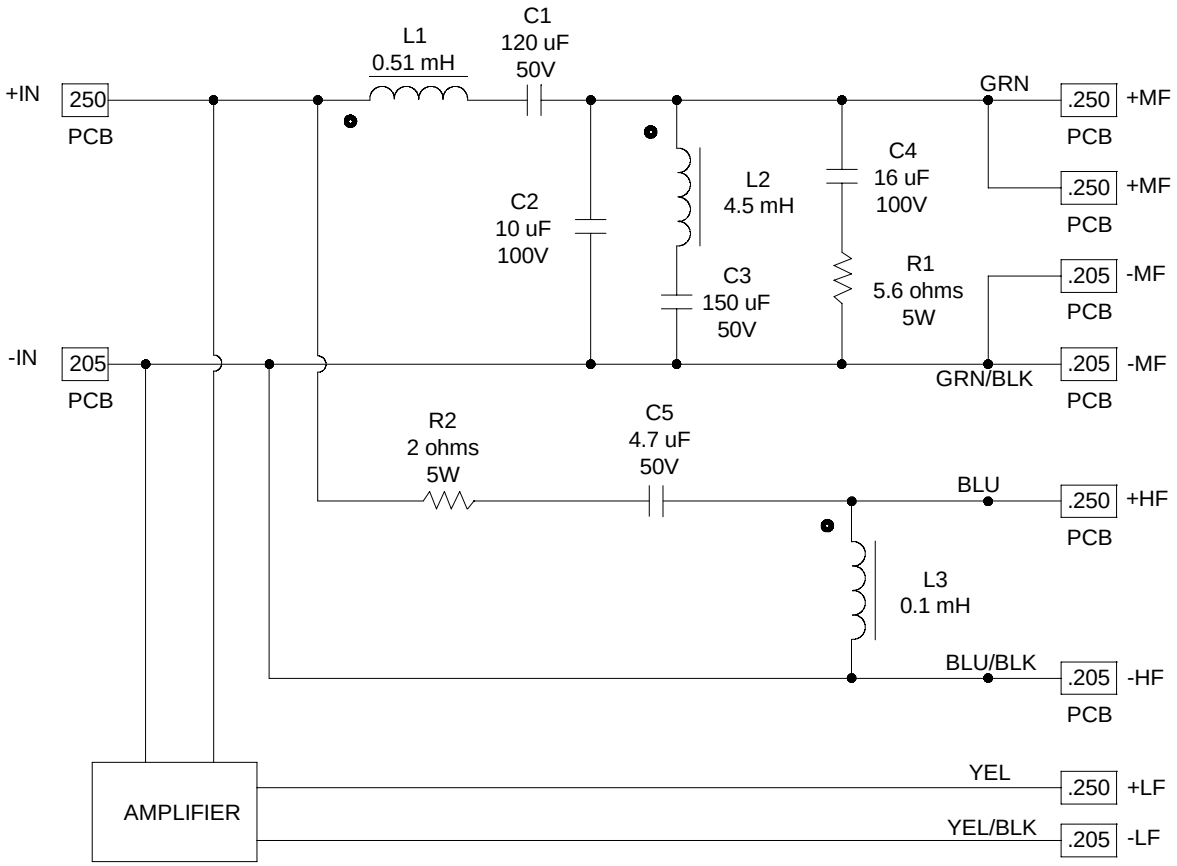
00400

Wiring Diagram/Crossover Network Schematic

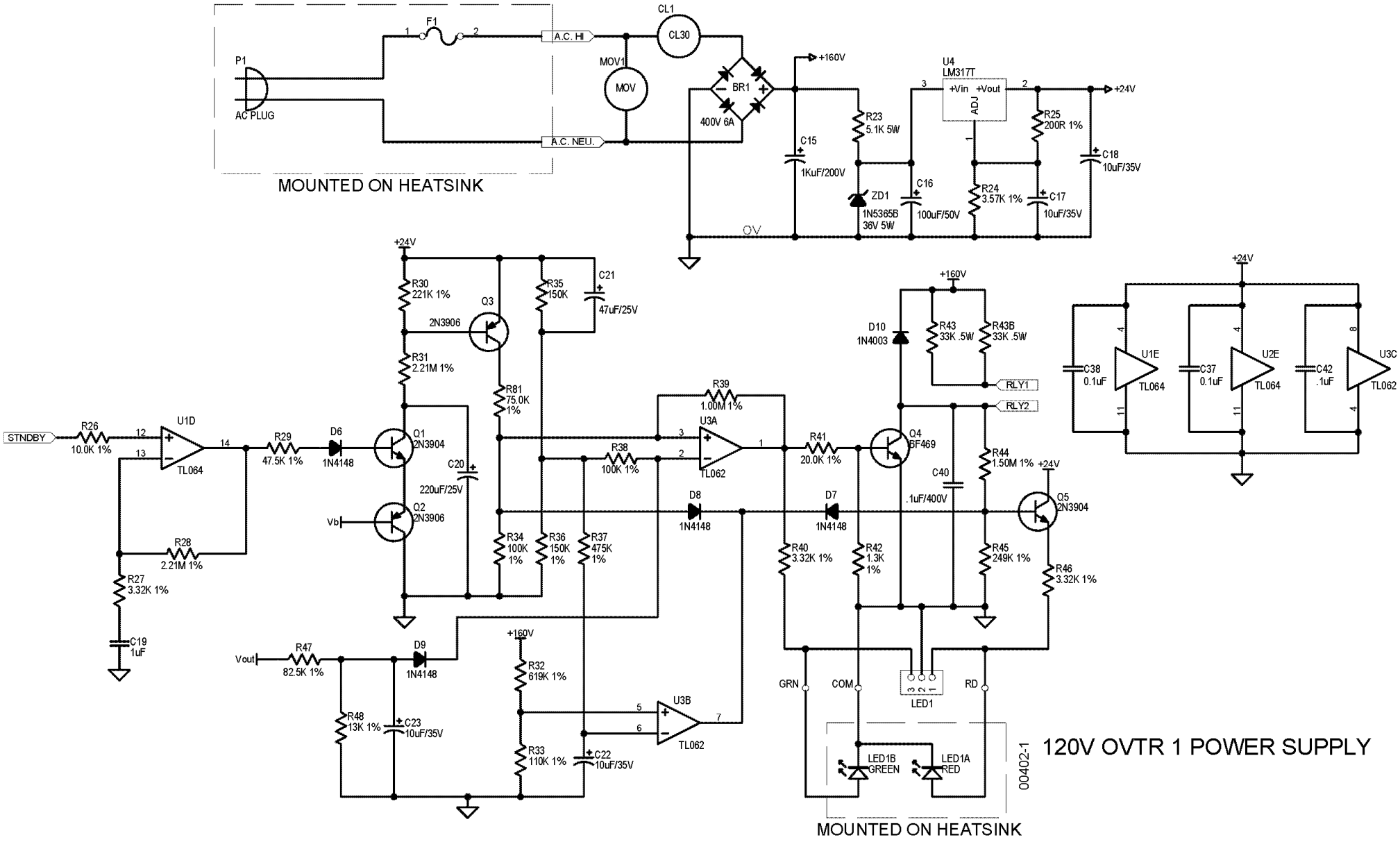
WIRING DIAGRAM



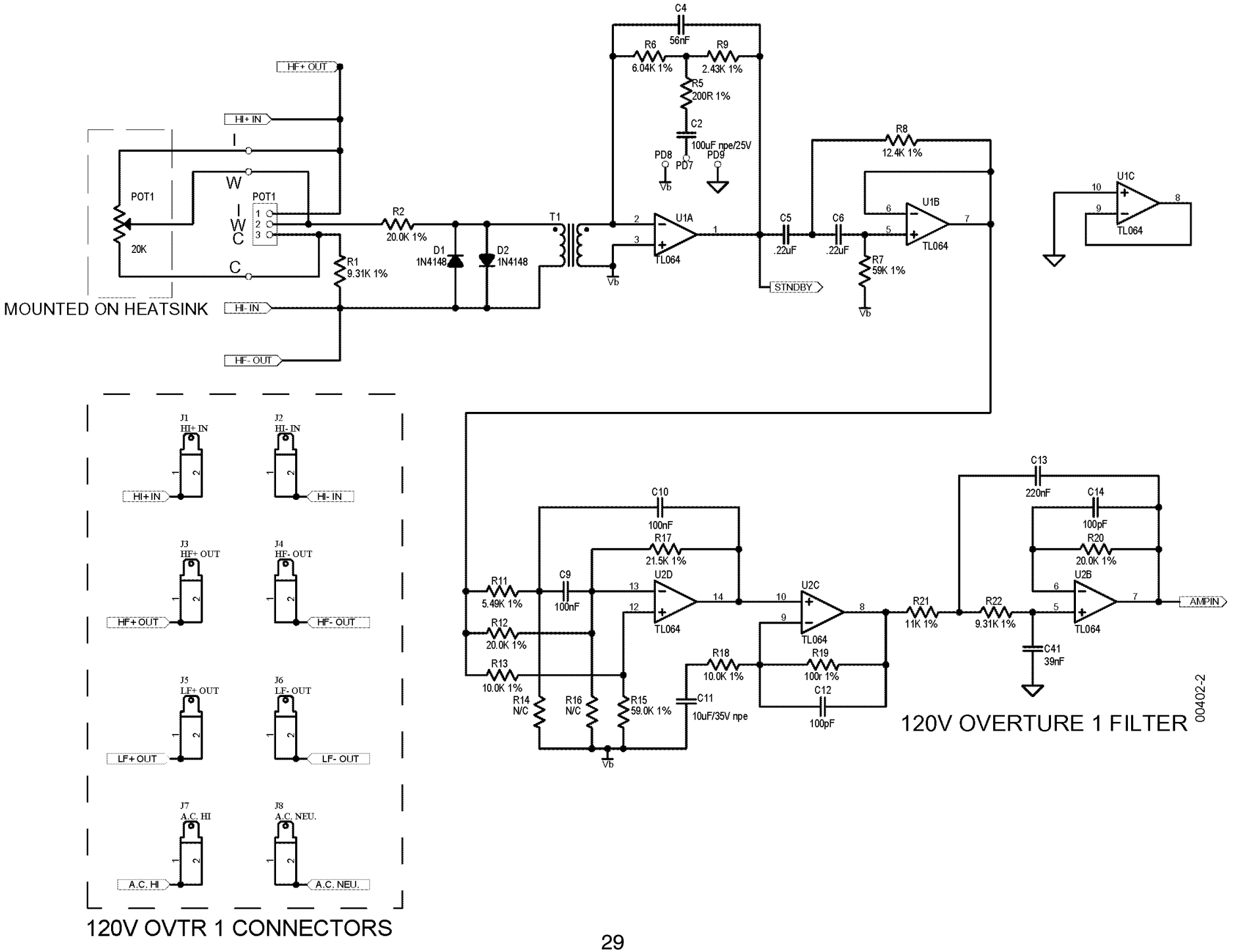
CROSSOVER NETWORK SCHEMATIC



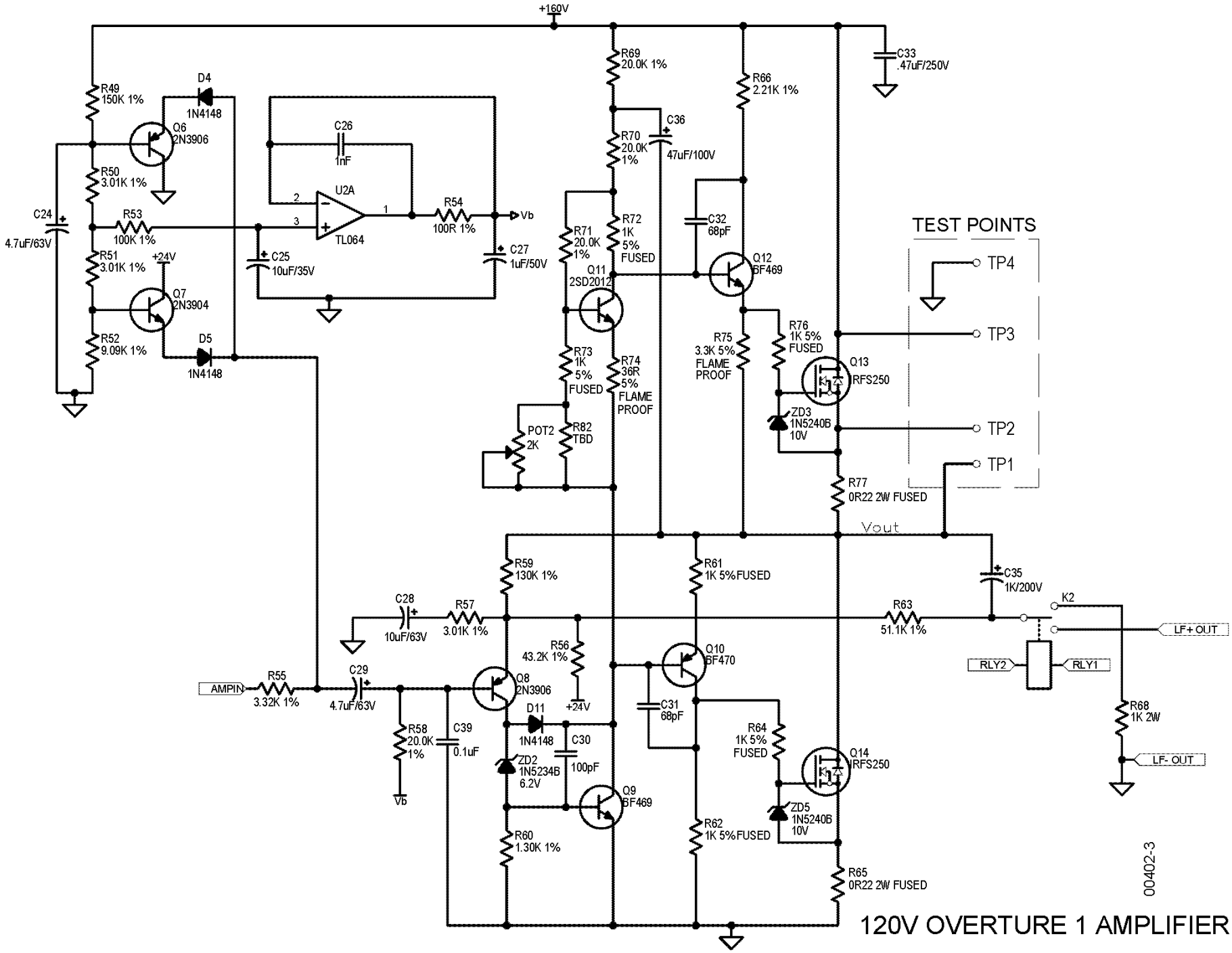
120V Power Supply



120V Filter/Connectors

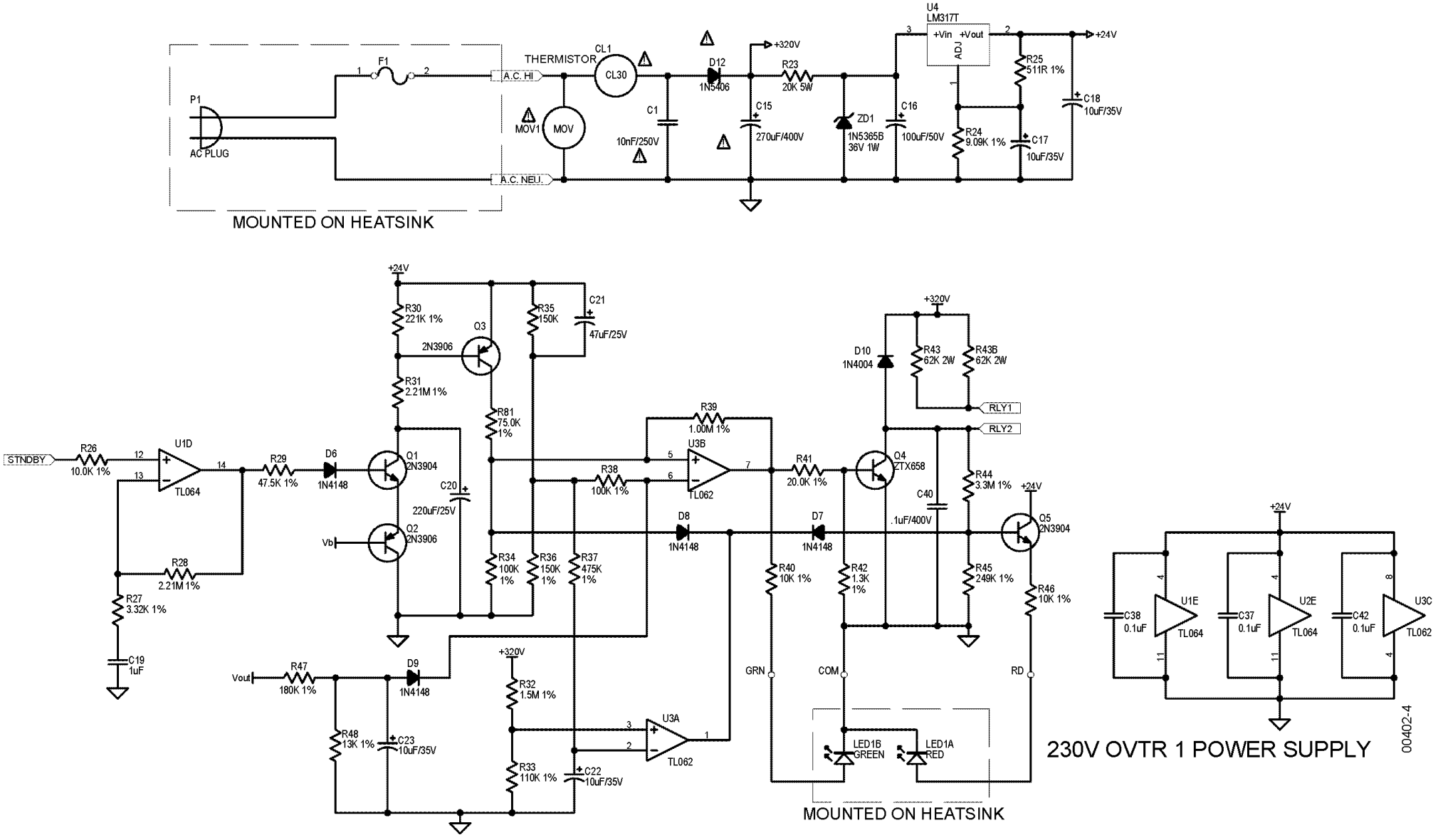


120V Amplifier

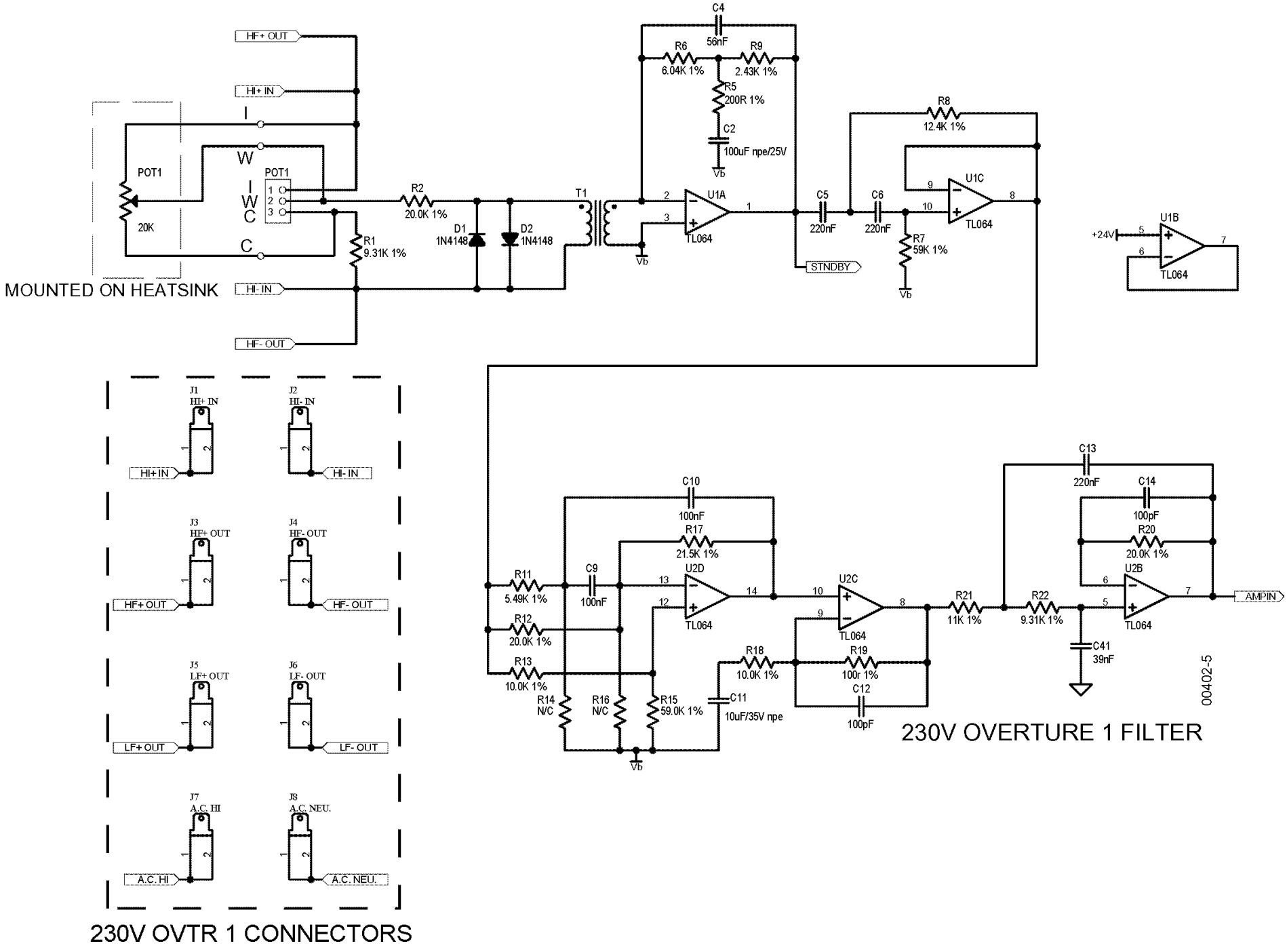


120V OVERTURE 1 AMPLIFIER

230V Power Supply



230V filter/Connectors



230V amplifier