

SERVICE MANUAL

HT PS300

Home Theater Powered Subwoofer

**PRELIMINARY
RELEASE**

**120V & 230V
Versions**

JBL Consumer Products Inc.
80 Crossways Park West
Woodbury, N.Y. 11797

8500 Balboa Blvd.
Northridge, CA 91329

H A Harman International Company

1112-HTPS300 PRELIMINARY

Order No. 75628530
CA 52
5732

TABLE OF CONTENTS

Specifications	1	Final Checks.....	6
Warranty	2	Exact Replacement Parts	7
Safety Symbols	2	Parts Lists.....	8
Principals of Operation.....	3	Printed Circuit Boards	10
Removing the Amplifier.....	3	Schematic Diagrams	12
Trouble Shooting After Removal	4		

SPECIFICATIONS

Amplifier Power	200 Watts
Drivers	Dual 12" with polymer-laminated cones
Inputs	THX and normal line level, high level
Outputs	High level
Crossover Frequency	50-120Hz (continuously adjustable)
Normal and High Level Inputs	
Frequency Response	25Hz - crossover point
(Determined by crossover setting)	

External Dimensions (Inches)

Height	21 3/4"
Width	21"
Depth	21"
Weight	67 lbs

External Dimensions (mm)

Height	552 mm
Width	533 mm
Depth	533 mm
Weight	30.5 kg

JBL continually strives to improve its products. New materials, production methods and design refinements are introduced into existing models without notice as a routine expression of our design philosophy. For this reason, PSW800 Subwoofer may differ in some respect from their published specifications and descriptions, but will always equal or exceed the original specifications unless otherwise stated.

Warranty

This amplifier is warranted against defects in material and workmanship for a period of 90 days from date of shipment, when installed in accordance with the owner's manual in a clean, dry, interior home environment. **THIS AMPLIFIER IS NOT SUITABLE FOR OPERATION OUTSIDE OR IS HARSH ENVIRONMENTS.** During the warranty period, the manufacturer will, at its option, either repair or replace products which prove to be defective.

For warranty service or repair, this product must be properly packed and returned to a service facility designated by the manufacturer. Buyer shall prepay shipping charges to the designated facility and the manufacturer shall pay shipping charges to return the product to buyer. However, Buyer shall pay all shipping charges, duties and taxes for products returned to the manufacturer from another country.

The manufacturer does not warrant that the operation of the product will be uninterrupted or error-free. The Buyer must determine the suitability of the product for his or her purposes.

LIMITATION OF WARRANTY

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by Buyer, Buyer-supplied interfacing, unauthorized modification or misuse, operation outside of the environment specifications for the product including inadequate ventilation, or improper site preparation, installation, or maintenance.

NO OTHER WARRANTY IS EXPRESSED OR IMPLIED. THE MANUFACTURER SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

EXCLUSIVE REMEDIES

THE REMEDIES PROVIDED HEREIN ARE BUYER'S SOLE AND EXCLUSIVE REMEDIES. THE MANUFACTURER SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY.

SAFETY SYMBOLS

The following symbols are used throughout this manual and in the product. Familiarize yourself with each of the symbols and its meaning before servicing this amplifier.



Instruction manual symbol. The product will be marked with this symbol when it is necessary for the user to refer to the instruction manual in order to protect the unit against damage.



Indicates dangerous voltages are present. Be extremely careful.

CAUTION

The **CAUTION** sign denoted a hazard. It calls attention to a procedure which, if not correctly performed or adhered to, could result in damage to or destruction of the amplifier. Do not proceed beyond a **CAUTION** sign until the indicated conditions are fully understood and met.

WARNING

The **WARNING** sign denotes a hazard. It calls attention to a procedure which, if not correctly performed or adhered to could result in injury or loss of life. Do not proceed beyond a

WARNING sign until the indicated conditions are fully understood and met.

GENERAL SAFETY CONSIDERATIONS

Although this amplifier has a power switch, hazardous

WARNING

voltages are present within the unit whenever it is plugged in. This still applies when the over-temperature thermo-stat opens, as it may automatically reset at any time.

WARNING

There are voltages and hot components at many points in the amplifier which can, if contacted, cause serious injury. Be extremely careful. Any adjustments or service procedures that require operation of the amplifier out of its enclosure should be performed only by trained service personnel.

CAUTION

BEFORE THIS AMPLIFIER IS PLUGGED IN, make sure its rated voltage corresponds to the voltage of the AC power source to be employed. Failure to use the correct voltage could cause damage to the amplifier when the AC power cable is plugged in. Do not exceed the rated voltage by more than 10%; operation below 90% will degrade performance or cause the unit to shut off.

1. PRINCIPLES OF OPERATION

Basic Bulk DC of $\pm 50V$ nominal is rectified by bridge D1 from the 76AVC center-tapped winding of T1. The primary of T1 is protected by an embedded, non restorable thermo-stat, a 4A, 250V fuse (2A for 230V input) F1 (in clips on the PCA), and panel thermo-stat TM1. Resistors R1-R6 and zener diode D2 and D5 provide auxiliary $\pm 15V$ DC for the low level signal processing circuits.

In non-THX mode, the pair of low level signal inputs are summed at U1b together with attenuated and inverted (U1A) high level inputs. The feedback gain control, R95, closely approximates a logarithmic characteristic. The adjustable low pass section U2B combines with the fixed section U3A to attenuate high frequencies at an ultimate slope of -36dB/octave to minimize voice content in the sub-woofer.

Selector switch SW2 chooses either the above (processed) inputs or a fixed-again direct "THX" input to pass on through the first stage of speaker EQ (U5A0 to phase selection (U5B) and then to the fixed two EQ stages (U4A & U4B). R144 is factory preset to compensate for small variations in wooferefficiencies to meet THX calibration and should only be re-adjusted if the drivers are changed and the shop has proper equipment and experience to carry out the procedure in appendix A.

U8B and U8A continually monitor +V and -V respectively for their minimum values which automatically adjust the threshold for the signal peak detectors U9B (+) and U9A (-) which in turn control the onset of AGC compression by J-FET (voltage - controlled resistor) Q20. U10A provides linearizing feedback to Q20, while U7B and U10B generate out-of-phase signals for the two power amps with optional negative output impedance if components associated with speaker current sense resistors R160 & R154 are fitted.

Each power amplifier includes U1 feedback amplifier, class A level shifter Q1-Q4 and complementary Darlington buffer Q5-Q6. FET Q7 in series with Q6 sustains half of the rail-to-output voltages, as does Q8 for Q5 (with quasi-complementary driver Q9).

The amplifier also contains an "auto mute" circuit which silences the amplifier after a signal absence of about 6 minutes. U6B amplifies level inputs by 40dB for threshold comparator U6A. U11 is a retriggerable one-shot formed

from a 16 stage counter and as oscillator of about 93 HZ which times out about 6 minutes after the last signal input is detected by U6A. Some models also contain an LED indicator DS1B (showing that the amplifier is enabled) driven by current source Q19. The versions, a second LED DS1C is illuminated in "stand by" by Q21, and on others, a dual color DS1A/DS1B combines the modes.

The balanced bridges R205, 6, 7 & 11 and R208, 12 & 13 inverter U3B and Schmidt trigger Q23-24 detect the blowing of any of the amplifier fuses (F2-F5) and force counter U11 to flash the LED's at about 0.5 Hz to alert the user to the need for service.

2. TROUBLE SHOOTING BEFORE OPENING

Check connections, control settings, driver and other possible external problems. If there is Output, determine if all controls and inputs function properly. Rotate Pots over full range while applying lateral and vertical oscillating forces to locate possible intermittent function. High Level Inputs should be tested individually both differentially (signal from "-" to "+" with normal output) and in common mode (signal from low level ground to both "+" and "-" shorted together, giving virtually no output). While passing a signal, corner drop the enclosure a few inches to expose possible intermittent problems. Check woofer for rubbing of voice coil or tears in cone or surround. Check cabinet for loose extraneous articles which may have been pushed into rear port. If LED(s) are flashing at about 0.5Hz, then one or more of the internal fuses are below.



3. REMOVING THE AMPLIFIER

WARNING

This amplifier has a power switch. Hazardous voltages are present within the unit whenever it is plugged in. This still applies when the over-temperature thermo-stat opens

WARNING

There are voltages and hot components at many points in the amplifier which can, if contacted, cause personal injury. Be extremely careful. Any adjustments or service procedures that require operation of the amplifier out of its enclosure should be performed only by trained service personnel. Refer to drawings for locations of hazards and familiarize yourself with their locations before starting.

WARNING

The bulk DC electrolytics contain a large amount of stored energy. Wear safety glasses, and remove rings and jewelry when operating the amplifier out of its enclosure. Fully disconnect the AC source and wait one minute for capacitors to discharge before touching the circuit. Do not bridge capacitors or bulk DC tracks, or components connected to them. Dangerous fragments of molten metal or shattered components may be ejected.

- A.) Disconnect the amplifier AC plug. Wait 60 seconds.
- B.) Remove 14 large screws within 0.5" of edge of panel; remove top 2 last while holding panel in place. (**DO NOT** remove any other screws).
- C.) Carefully tip panel with PC boards assembly partly out of cabinet, holding by edges of panel only. Disconnect 4 quick connects near the center of the power amp PC board.

CAUTION

DO NOT pick up or support assembly by PC board(s) or any components on PC assembly. Always support or handle by metal panel.

4. TROUBLE SHOOTING AFTER REMOVAL**WARNING**

Verify AC plug is disconnected See WARNINGS in section 3.

WARNING

To prevent loose hardware from reducing safety spacings, it is essential that all hardware be replaced in the same manner as it was removed, with lock washers under

all nuts, proper torque on screws and thread locking sealer on the transformer nuts.

CAUTION

If line core, its strain relief, or the AC switch are replaced, it is necessary to seal them completely to panel with an approved conformal coating to prevent air "whistling" through any openings from woofer pressure.

WARNING

To reduce the risk of electric shock and/or fire, replace items as marked on schematic with the safety marking only with the exact replacements listed in the safety component list, section 6. If exact replacements are not available, order them from the factory or an authorized service center.



- A.) Check fuse F1. If blown visually check transformer for discoloration, and large capacitors (C1-C4) for bulges or venting. Check for shorts in Q3-Q8 with an Ohmmeter, or across bulk DC (D1, etc.)(see schematic), or from cases of Q3-Q8 to panel.

CAUTION

IC u11 and MOSFETS Q7 and Q8 are susceptible to damage from static discharges. Use good ESD control procedures when handling, testing or replacing them, or components connected to them.

- B. With ohmmeter, verify contacts of thermo-stat are closed, voice coil of woofer is about 4 to 8 ohms (model dependent), and windings of transformer are continuous.
- C. Examine board and wiring for obvious damage, broken or poorly soldered connections, or discoloration.
- D. Repair or replace items identified above. Procedures for replacing power transistors and removing PCA are as follows:

CAUTION

Use low power, grounded temperature regulated iron with small tip such as Weller PTA7 and ESD control. Use SN63/37 solder 0.032" diameter with "no clean" flux core, Alpha Metals P2 or equal.

- I) **Replacing power transistors:** Clip all 3 leads near body or transistor. Remove screw and discard device (keep hardware and insulator). Holding each lead in turn with needle nose pliers, gently heat and remove cut lead from hole in edge of PCB.

Clean insulator and seating area on back of panel. Coat both sides of insulator with zinc oxide (white) thermal compound (unless silicone rubber pads are provided), position it centered on back of device with holes aligned. Insert leads into PCB then place pair over hole in panel; ensure hole in insulator is aligned. Insert screw from far side, pass shoulder bushing over screw and carefully seat shoulder in hole in tab, add flat washer, lock washer and nut (finger tight). Center insulator tighten screw first then solder all three leads in respective slots with full fillet, being careful not to bridge pads. Use ohmmeter to verify there is no short from tab of transistor to panel, or between pads. See also section (E.,XI) below.

- II) **Removing PC assembly** (only if absolutely necessary): Remove eight screws in power transistors. Remove pot knobs and panel nuts. Remove ten screws attaching signal jack cluster, high level input supporting brackets and PCB from outside of panel. Carefully lift PCA away from panel, lifting power transistors with small screwdriver if needed. Leave sealing gasket in place on back of PCB; When re-installing the assembly, make sure this foam gasket completely seals all around its periphery.

CAUTION

Never operate amplifier with load connected when PC assembly is not attached to panel or when any of output transistors is not properly screwed to panel.

- E) If fuse is not blown, and no obvious faults are identified above, proceed cautiously as follows after reading and understanding instructions as well as warnings above, and identifying hazardous line voltage areas on assembly from component locator drawings (if you are unsure, consult the manufacturer before energizing):
- I) Connect lab audio oscillator (output level at zero) to left. Set Line/THX switch to "Line". Set amplifier "output level" control fully clockwise, "crossover" to 60Hz. Place unit with panel and knobs down on a clean, convenient area of bench so that it is not necessary to reach across amplifier to access test equipment.

Use foam blocks to hold securely prevent rocking or damage to panel.

Tests for Channel 1

- II) Connect negative lead of DVM to speaker "SPK1A" tab (satellite PCA). Use an insulated, shrouded probe for positive lead and connect to "OUT 1" Refer to Component Locator for test point locations to follow, and take care not to short to adjacent points with probe tip.

- III) Position a switched "power bar" with the switch in a convenient location near the edge of the bench well away from the unit so that it can be reached safely to turn AC power ON and OFF of unit without risk of accidental contact with exposed areas of assembly. See Safety Warnings in Preface.

With "bar" switch OFF, plug amplifier cord into this controlled "power bar".

- IV) Observing appropriate safety procedures, turn "bar" ON.



With DVM probe, test following voltages:

+V	+50VDC±10%
-V	-50VDC±10%
A+	+15VDC±10%
A-	-15VDC±10%

If any of these is incorrect, switch OFF and investigate power supply.



- V) If DC is OK, check:

Speaker "OUT 1" tab	0VDC	±0.03V
collector tab of Q6	≈25VDC	(+V ÷2)
collector tab of Q5	≈-25VDC	(-V ÷2)

Trouble shoot power amplifier if not correct.

- VI) Turn AC OFF. After 60 seconds connect scope probe tip to speaker "OUT 1" tab and ground clip to speaker "SPK1A" tab (satellite PCA). Set for 20V/div. (DC) and 50 msec/div. No load is needed.

- VII) Turn AC ON. Set oscillator for about 42Hz sine wave and raise output level. Observe output of amplifier rise with oscillator level until sine begins to compress without distortion symmetrically, at about 3 volts inside +V/-V levels.



If there is no output, carefully probe each IC amplifier output in signal flow sequence starting from the input, with scope at about 0.5V/div., until the location of signal loss is located.

VIII) TURN AC OFF. Wait 60 seconds and move oscillator to Right input. Repeat (VII). Flip "Phase" switch and confirm no loss of main output. With about 10V output, sweep oscillator frequency to verify filter and EQ functions.



Raise "crossover" to "100Hz" and confirm change in LPF corner. Operation of "Phase Reversal switch" should be readily apparent in this mode.



IX) TURN AC OFF. Wait 60 seconds. In turn, repeat VII) for Left and Right high level inputs, both differentially (normal) and common mode (null output). Return to II) above bend more connections to "out 2", then repeat IV), V), VI) and VII).

X) Trouble shoot and repair sections found faulty. Refer to schematic and table of values used in different versions. Replace safety items marked ▲ with exact replacement, only. See WARNING at head of this section.

XI) If output transistors or other major components of power amplifier are replaced, recommission the unit without load using the following procedure (DO NOT just reapply full AC source).



If a dual tracking, current-limited DC supply is available (preferable method), attach it to +V, -V and common (WITH AC CORD UNPLUGGED!). Set current limit to about 1A and slowly raise output voltage to $\pm 40V$, monitoring output with DC scope (10V/div). Initially, output should stay at about zero volts, then deviate a small amount (<10 volts) due to offsets and imbalances, and quickly return to zero. In normal start up with fast rising voltages, this doesn't occur.

CAUTION

Return supply voltages to zero immediately if output has offset as soon as DC is applied, or if DC supply current exceeds 100 mA (trouble shoot further!)

At $\pm 40V$, carefully check following voltages with DMM (to speaker "black" tab):

tab of Q6 about +20V (approx. $+V/2$)
 tab of Q5 about -20V (approx. $-V/2$)
 Voltage across R25 about 0.43V

A+ +15V $\pm 10\%$
 A- -15V $\pm 10\%$
 Speaker "OUT 1" tab less than $\pm 0.03V$



If a DC supply is not available, use variable auto-transformer (VARIAC™, etc) with a series AC ammeter. Follow the procedure above, observing Safety WARNINGS, as the AC input is slowly raised from zero to about 80% of rated voltage ($+V \approx 40V$).

CAUTION

Return AC input to zero immediately if the output voltage immediately deviates from zero as AC is initially raised, or if AC input current exceeds about 0.2A. Further trouble shooting is required.



XII) After the fault has been corrected, re-test using an 8 Ω 100watt load resistor. Amplifier should deliver about 60W RMS at 8 Ω (about 110W at 4 Ω) from a stiff source of rated voltage at frequencies within its bandpass. Turn input down and disconnect load. There should be no instability or ringing on any of the output waveforms, unloaded, loaded. If some is observed, check compensation and gain-setting components, by-pass caps and damping networks (especially those involving C15, C17 and C12).

XIII) Tack a 100 ohm 1/4W resistor in the R185 location. Turn unit ON apply input signal. Measure the DC voltage on pin 8 of IC U11 with the amplifier operating. The voltage should be approx. -15 Volts, and the oscillator frequency on pin 1 about 93 Hz. Carefully short pins 6 & 7 and observe the output shuts down within 2 seconds. Remove short and amplifier output should return. Turn OFF and remove R185 resistor to restore full 350 second delay.

5. FINAL CHECKS

After repair, inspect for possible safety hazards, including loose hardware, missing lock washers, correct fuses and lead dress of primary wires (these must be held in position with cable ties so that they cannot touch secondary components). With ohmmeter, check that panel is connected to signal ground.

Attach speaker wire(s) with Yellow to OUT 1A (satellite PCA), Blue to "SPK1A" tab(s) and Black to SPK2A and Red

to OUT 2A (satellite PCA) tab(s). Re-install amplifier in cabinet using reverse of procedure in section 3.

WARNING

It is essential that the following safety insulation test be performed prior to returning the Power Sub-Woofer to the customer, using one of the following methods with power switch **ON**:

A) Insulation Resistance Test

With a 500VDC Insulation Tester, Check insulation from the outer metal contact of the RCA jack (chassis) to the line neutral of AC cord. Resistance should be >100MΩ.

B) Hi-Pot Test

If a UL approved Hi-Pot tester is available, test line & neutral of AC cord to outer shell of RCA jack (chassis) at 1100VAC for 2 seconds. Observe all of instrument manufacturer's instructions and safety warnings in performing this test.

Connect sub-woofer system to a music source. Play at high level while checking for air leaks around panel edge, driver on panel jacks and controls, and voice coil problems such as rubbing or loose turns. With the crossover "frequency" set to 50Hz, very little of the voice content should be heard.

6. LIST OF SAFETY COMPONENTS REQUIRING EXACT REPLACEMENTS

- F1 120VAC input units: Fuse, 4A/250V 1/4 x 1 1/4 NORMAL BLOW, UL & CSA approved.
- 230VAC input units: Fuse, 2A 250V 5mmX 20mm, IEC127 approved.
- F2-F5 Fuse, 4A/250V 1/4 x 1 1/4 NORMAL BLOW, UL & CSA approved
- TM1 Thermo-stat, Open on Rise, 60°C, 15°C hysteresis, 10A 240VAC, UL and CSA approved. 230VAC version must also be VDE approved for Class II circuits.
- SELCO OA-140-QCV or equal for 120VAC, or ELMWOOD P/N for 230VAC.
- T1 POWER TRANSFORMER, CLASS B (130°C) INSULATION, UL & CSA approved. Order from factory quoting model number, serial and rated AC voltage. 230VAC version must also meet IEC 65 requirements

- R22, R75 Resistor 3R3, 1/3W, Metal Film, Fusible, Non Flammable
Philips CR25, P/N 2322 211 *3338
Philips NFR25, P/N 2322 205 *3338
- R140 Resistor 220R, 1/4W Metal film, Fusible, Non-Flammable
Philips NFR25, P/N 2322 205 *3221
- Line Cord For 120VAC, use SPT-2 or better, with polarized plug, UL and CSA marked and approved. Connect "HOT" side (phase) to fused side, and neutral (wider pin) to "N" pad on PCB. Use cable ties to dress AC wires so that they cannot touch PCB assembly or parts. A UL/CSA approved panel strain relief, Heyco 1127 (UL/CSA SR-4L-4) or equal, is required.
- For 230VAC versions, follow electrical code requirement for country of installation.

HT PS300 PARTS LISTS

ELECTRICAL PARTS LIST

Ref. Number	Part Number	Description	Quantity
Capacitors			
C1, 2, 3, 4	105199	CAP 4700UF 63V M AER 22x50	4
C5, 6, 16, 82	105205	CAP 220UF 25V AER 8x11 85C	4
C7	101018	CAP 1.5NF 100V K X7R .2 CPL	1
C8	102429	CAP 68PF 100V C NPO .2 CPH	1
C9, 97, 98	081121	CAP .1NF 100V C NPO .2 CPH	3
C10, 56, 87	081121	CAP .1NF 100V C NPO .2 CPH	3
C11, 12, 13, 14, 20, 21	101365	CAP .1UF 100V K X7R MCR	6
C15, 44, 45, 52, 69	081023	CAP 2.2NF 100V K X7R .2 CPL	- 5
C17, 42, 43	105221	CAP MKTER .33UF 63V M .2	2
C33	102957	CAP 100UF 35V M AER 8x11	1
C35	105823	CAP .33UF 250V J/K MKT	1
C40, 41, 50	081103	CAP .33NF 100V K X7R .2 CPL	3
C46, 47, 51	102314	CAP MKTER 33NF 63V 5%	3
C48	105794	CAP MKTER 015UF 63V 5%	1
C49	105793	CAP MKTER .022UF 63V 5%	1
C53	103088	CAP 22UF 63V M AER 105	1
C57	103232	CAP MKTER .1UF 100V K .2	1
C58	100381	CAP MKTER 22NF 100V K .2	1
C60, 61, 68, 99, 107, 108	101842	CAP 15NF 50V K X7R MCR .2	6
C62, 63, 64, 65, 71, 74, 75, 77, 78, 79, 80, 83, 88, 96	082006	CAP .1UF 50V K X7R MCR .2	14
C66	101257	CAP 33NF 100V K X7R MCR .2	1
C67, 101, 105	082002	CAP .22UF 50V K X7R MCR .2	3
C72	089037	CAP MKTER 22NF 63V K.2	1
C73, 91	104095	CAP MKTER 47NF 100V K .2	2
C76, 102	081019	CAP 1NF 100V K X7R .2 CPL	2
C81, 95	105588	CAP 1UF 35V K .2 ETR 85C	2
C89, 90	081011	CAP .22NF 100V K X7R .2 CPL	2
C92, 93	102156	CAP 47UF 50V M AER .16x11	2
C94	081116	CAP 39PF 100V C NPO .2 CPH	1
C106	105777	CAP 39NF 50V K X7R	1
Resistors			
R1, 2, 3, 4, 5, 6	103870	RES 1.2KΩ 1.6W/2W 5% MF SIL	6
R8	093014	RES 1.3KΩ .6W 1% MF LAQ	1
R9	093024	RES 39KΩ .6W 1% MF LAQ	1
R10	091154	RES 150Ω .3W 5% CF LAQ	1
R11	091133	RES 13KΩ .3W 5% CF LAQ	1
R12, 13	091153	RES 15KΩ .3W 5% CF LAQ	2
R14, 19	091331	RES 330Ω .3W 5% CF LAQ	2
R15, 18	092222	RES 2.2KΩ .5W 5% SF LAQ	2
R16, 17, 36	091472	RES 4.7KΩ .3W 5% CF LAQ	3
R20, 25, 27, 35	091270	RES 27Ω .3W 5% CF LAQ	4

R21, 23, 24, 98, 117, 123, 127, 201	091223	RES 22KΩ .3W 5% CF LAQ	8
R22, 75	092339	RES 3.3Ω .5W 5% SF LAQ	2
R28, 29, 38, 39	092472	RES 4.7KΩ .5W 5% SF LAQ	3
R30, 137, 185	091101	RES 100Ω .3W 5% CF LAQ	3
R31, 37	092103	RES 10KΩ .5W 5% SF LAQ	2
R31	091102	RES 1KΩ .3W 5% CF LAQ	1
R32, 40	092689	RES 6.8Ω .5W 5% SF LAQ	2
R33, 76	091109	RES 1Ω .3W 5% CF LAQ	2
R80, 81	091222	RES 2.2KΩ .3W 5% CF LAQ	2
R82, 83, 90, 91, 205, 206, 212, 213	100036	RES 49.9KΩ .6W 1% MF LAQ	8
R84, 85, 86, 87	093016	RES 100KΩ .6W 1% MF LAQ	4
R88, 89	102084	RES 7.15KΩ .6W 1% MF LAQ	2
R92, 93	104976	RES 24.9KΩ .6W 1% MF LAQ	2
R94, 112, 174	091225	RES 2.2MΩ .3W 5% CF LAQ	3
R95, 100	105100	RES POT 100KΩ LIN PANEL MNT	2
R96	091363	RES 36KΩ .3W 5% CF LAQ	1
R97, 126, 133	091394	RES 390KΩ .3W 5% CF LAQ	3
R99, 148	091623	RES 62KΩ .3W 5% CF LAQ	2
R101, 188	091333	RES 33KΩ .3W 5% CF LAQ	2
R102, 103, 104, 189	093066	RES 20KΩ .6W 1% MF LAQ	4
R105	091123	RES 12KΩ .3W 5% CF LAQ	1
R106, 108	105781	RES 124KΩ .6W 1%	1
R107	102978	RES 249KΩ .6W 1% MF LAQ	1
R109, 110	093034	RES 39.2KΩ .6W 1% MF LAQ	2
R111	101899	RES 27KΩ .6W 1% MF LAQ	1
R113	105662	RES 976KΩ .6W 1% MF LAQ	1
R114	102203	RES 1.5KΩ .6W 1% MF LAQ	1
R115	093008	RES 24.3KΩ .6W 1% MF LAQ	1
R116	105051	RES 5.23KΩ .6W 1% MF LAQ	1
R119	091203	RES 20KΩ .3W 5% CF LAQ	1
R118, 120, 122, 132, 161, 202	091103	RES 10KΩ .3W 5% CF LAQ	6
R121	093045	RES 30KΩ .6W 1% MF LAQ	1
R125, 130	091392	RES 3.9KΩ .3W 5% CF LAQ	2
R128	091330	RES 33Ω .3W 5% CF LAQ	1
R129	091132	RES 1.3KΩ .3W 5% CF LAQ	1
R131, 136, 141, 149, 178, 179, 180	091104	RES 100KΩ .3W 5% CF LAQ	7
R134, 194, 197	091224	RES 220KΩ .3W 5% CF LAQ	3
R135	091474	RES 470KΩ .3W 5% CF LAQ	1
R138, 142, 143, 203, 207	091473	RES 47KΩ .3W 5% CF LAQ	5
R140	100383	RES 220Ω .3W 5% MF LAQ	1
R144	105605	RES TRPOT 5KΩ TAJ 1T	1
R145	091682	RES 6.8KΩ .3W 5% CF LAQ	1
R146, 158	090225	RES 2.2MΩ .5W 5% SF LAQ	2
R147, 157	091221	RES 220Ω .3W 5% CF LAQ	2

R150, 155, 162, 163, 190, 195, 209, 210	093020	RES 10KΩ .6W 1% MF LAQ	8	U1(driver board)	105603	IC TL071CP OP AMP	1
				U6	031003	IC LM393N 8P DUAL OP AMP	1
R151	093018	RES 1KΩ .6W 1% MF LAQ	1	U11	042541	IC 4541 14P PROG TIMER	1
R160	003057	RES 3.74KΩ .6W 1% MF LAQ	1	Fuses			
R164, 166	091470	RES 47Ω .3W 5% CF LAQ	2	F1(120V), 2, 3, 4, 5	102566	FUSE 4A 250V	5
R165	091339	RES 3.3Ω .3W 5% LAQ	1	F1(230V)	_____	FUSE 2A 200V (230V VERSION)	1
R167	103885	RES 47.5KΩ .3W 1% MF	1	F3, 4, 5	103654	FUSE 4A 250V PIGTAIL FUSES	3
R168	091564	RES 560KΩ .3W 5% CF LAQ	1	Miscellaneous			
R170	091913	RES 91KΩ .3W 5% CF LAQ	1	DS1	101687	LED GREEN	1
R171	104875	RES 665Ω .6W 1% MR LAQ	1	DS2	101218	LED RED	1
R172	091431	RES 430Ω .3W 5% CF LAQ	1	J1, 2	105268	CONN SPEAKER TERM	2
R173	105780	RES 7.32KΩ .6W 1% MF LAQ	1	J3	104863	CONNECTOR 4XRCA HSG PANEL	1
R175	091220	RES 22Ω .3W 5% CF LAQ	1	T1(120V)	105539	XFMR 200VA 120V/60HZ	1
R176, 181	091911	RES. 910Ω .3W 5% CF LAQ	2	T1(230V)	105672	XFMR 200VA 230V/50HZ	1
R177	105597	RES 5.1KΩ 1.6W/2W 5% MF SIL	1	TM1(120V)	104843	THST 60C NC 10A/240V	1
R191	102344	RES 57.6 KΩ .6W 1% MF LAQ	1	TM1(230V)	105425	THST ___ VD_ 0_/240V	1
R192	090305	RES 3MΩ .5W 5% SF LAQ	1	SW1	105614	SWITCH ROCKER 125/250V DPST 1	1
R198	091471	RES 470Ω .3W 5% CF LAQ	1	SW2, 3	105198	SW SLD DRY AG SPPT PCV 20	2
R204	091154	RES 150KΩ .3W 5% CF LAQ	1				
R208, 211	104976	RES 24.9KΩ .6W 1% MF LAQ	2				
R214	090333	RES 3MΩ .5W 5% SF LAQ	1				

Diodes

D1	105670	DOIDE PBPC 10 5 600V 10A	1
D2, 3, 4, 5	014437	ZENER 1N4737A 7.5V 1W	4
D6, 7	014530	ZENER 1N5230B 4.7V W5 D035	2
D10, 12, 16, 42, 44	014537	ZENER 1N5237B 8.2V W5 D035	5
D11, 30, 31, 32, 33, 34, 35, 36, 43, 45, 50, 51, 52, 53	010001	DOIDE 1N4248 75V D035 UHS	14
D8, 9, 13, 14	102836	DIODE 1N4004 1A 400V D041	4
D15	014540	ZENER 1N5240B 10V W5 D035	1
D17, 40, 41	014545	ZENER 1N5245B 15V W5 D035	3
D37	014531	ZENER 1N5231B 5.1V W5 D035	1

Transistors

Q1	103790	XSTR MPSA06 80V NPN	1
Q2, 9	104869	XSTR MPSA56 80V T092 PNP	2
Q3	104408	XSTR MJE350 300V PNP	1
Q4	104868	XSTR MJE340 300V NPN	1
Q5	105007	XSTR TIP 147 100V PNP	1
Q6	105005	XSTR TIP 142 100V NPN	1
Q7, 8	105525	XSTR IRF540N 100V	2
Q19, 24	021001	XSTR PN2907A 60V T092 PNP	2
Q20	105652	XSTR PN4392 40V T092 SW	1
Q21	105599	XSTR MPS8098 60V T092 NPN	1
Q22	020004	XSTR MPSA18 45V T092 NPN	1
Q23	020003	XSTR PN2222A 40V T092 NPN	1

Integrated Circuits

U1(main board), 2, 3, 4, 5, 7, 8, 9, 10	100952	IC LF353N 8P DUAL OP AMP	9
---	--------	--------------------------	---

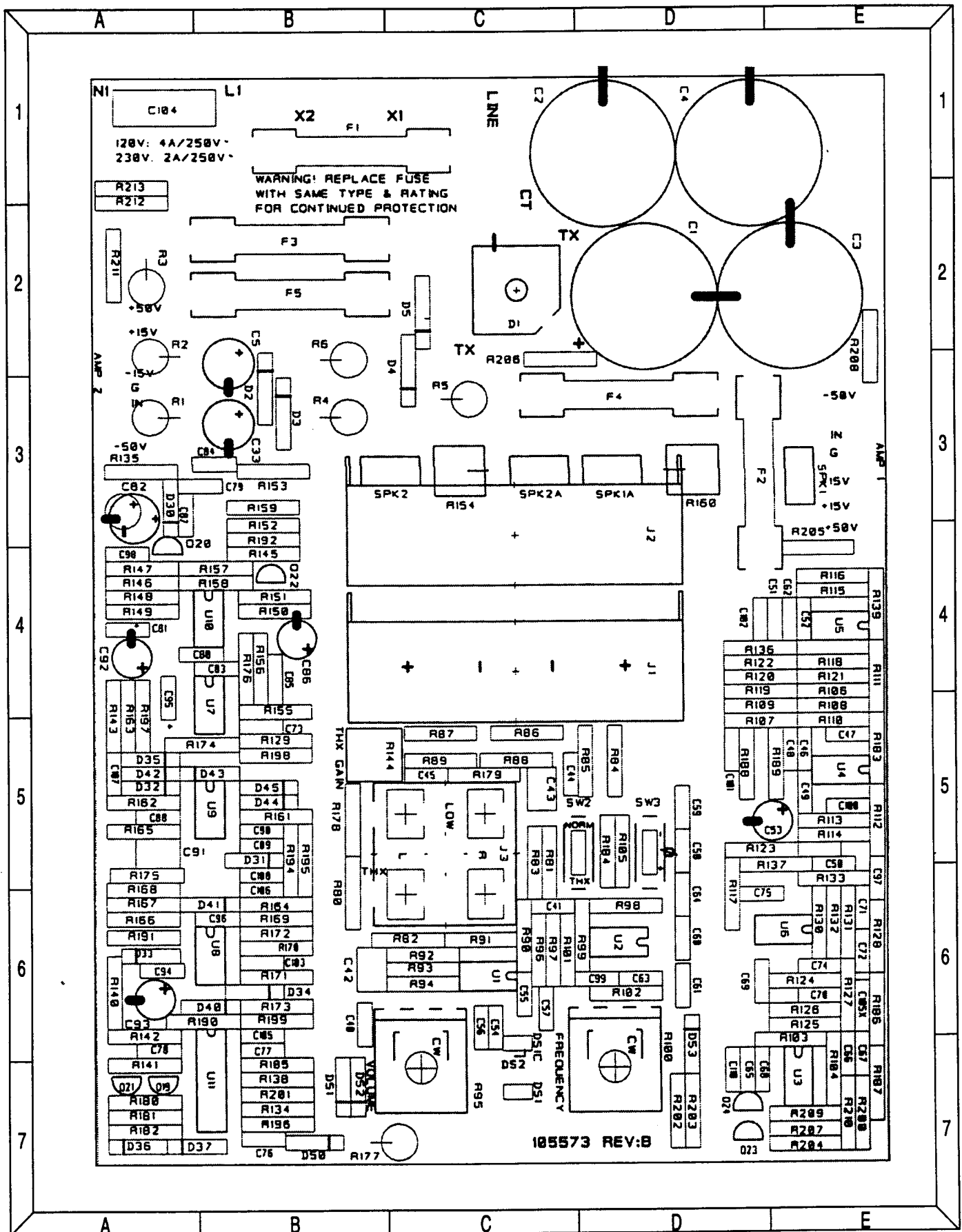
MECHANICAL PARTS LIST

Ref. Number	Part Number	Description	Quantity
F1/F2 FUSE CLIPS	051203	FUSE CLIP .25D PC SPRG B/T	2
FP120V	105574	FACE PLATE 120V VERS.	1
FP230V	105684	FACE PLATE 230V CD VERS.	1
STNRLF(120)	104880	BUSHING STRAIN RELIEF 120V	1
STNRLF(230)	105826	BUSHING STRAIN RELIEF 230V	1
KNOBS	104881	KNOBS	
PWRCORD	105204	PWR CORD SPT2 BLK 6'	1
HSQ3, 4	006006	HS TO126 FIN VERT NTAB	2
	101400	12" WOOFER (2/CABINET)	
	101410	GRILLE (2/CABINET)	

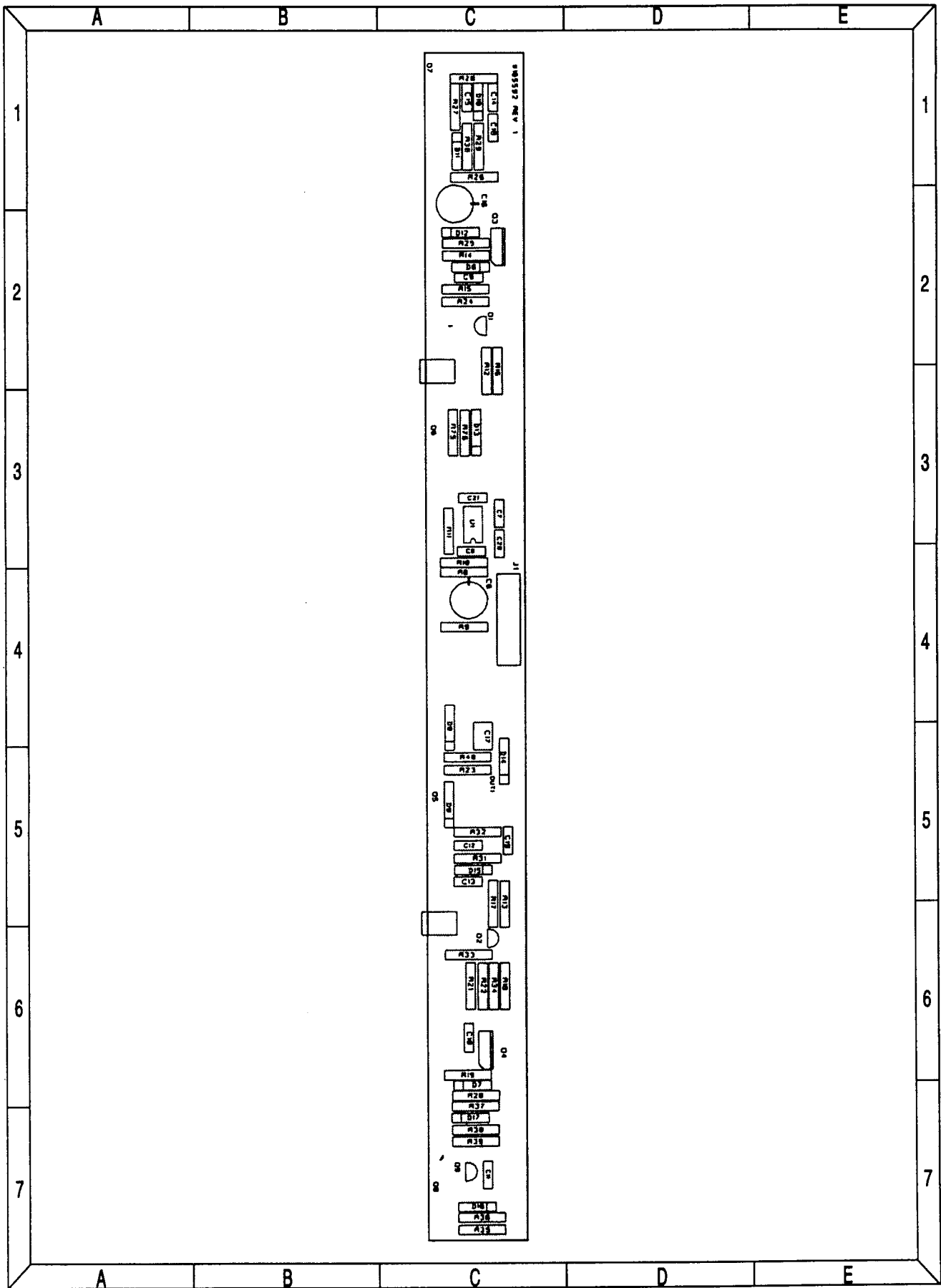
PACKING PARTS LIST

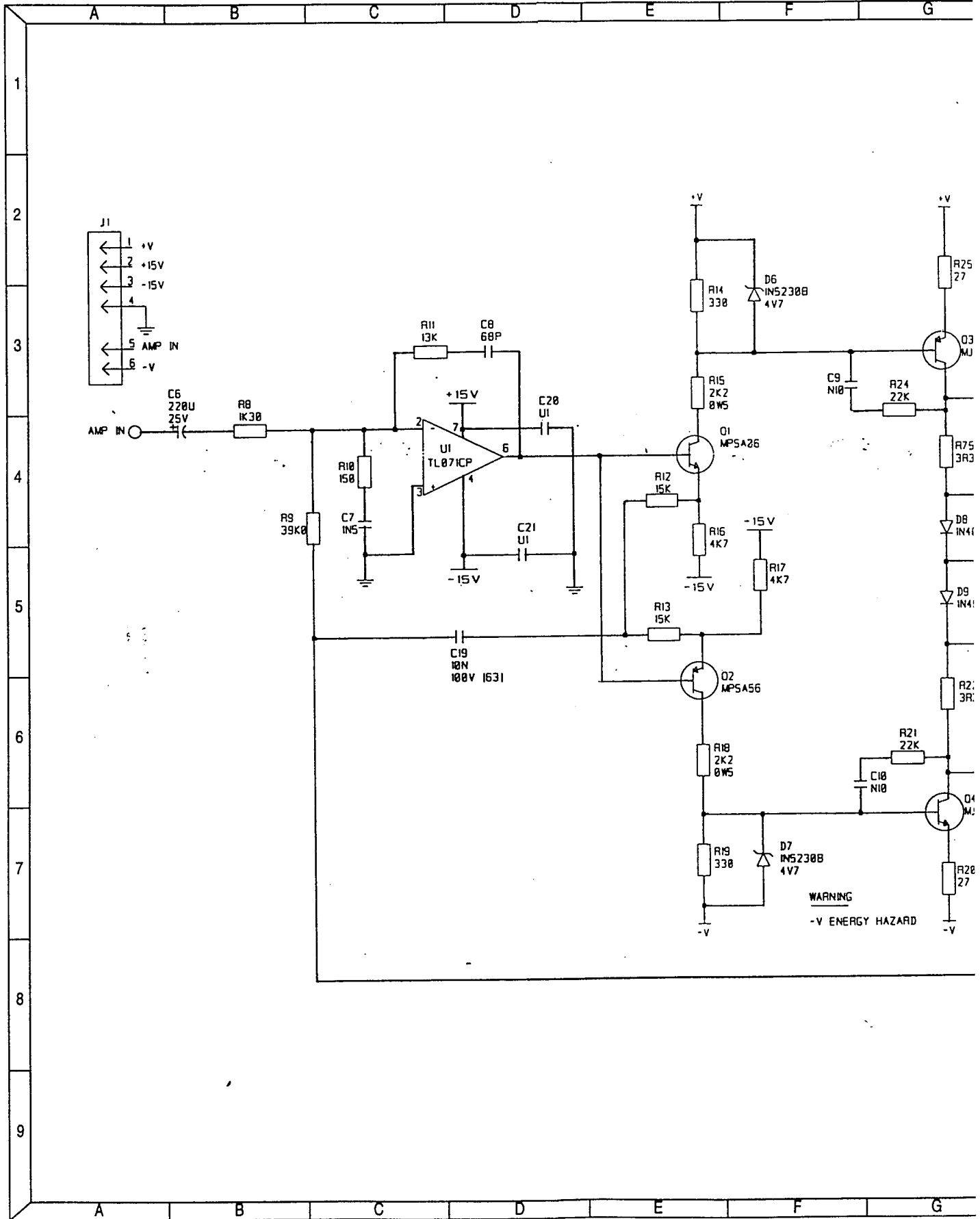
Ref. Number	Part Number	Description	Quantity
	101420	CARTON 120V	1
	101470	CARTON 230V	1
	101421	PLASTIC BAG	1
	101425	CORRUGATED RAIL FOR LOGO	1
	101426	CORRUGATED RAILS	3
	101428	STYRO SHAPED PAD SET (2 SETS PER CARTON)	2
	101429	STYRO T/B PAD (2/CARTON)	2
	101430	OWNER'S MANUAL	1

PRINTED CIRCUIT BOARDS (TOP VIEW)



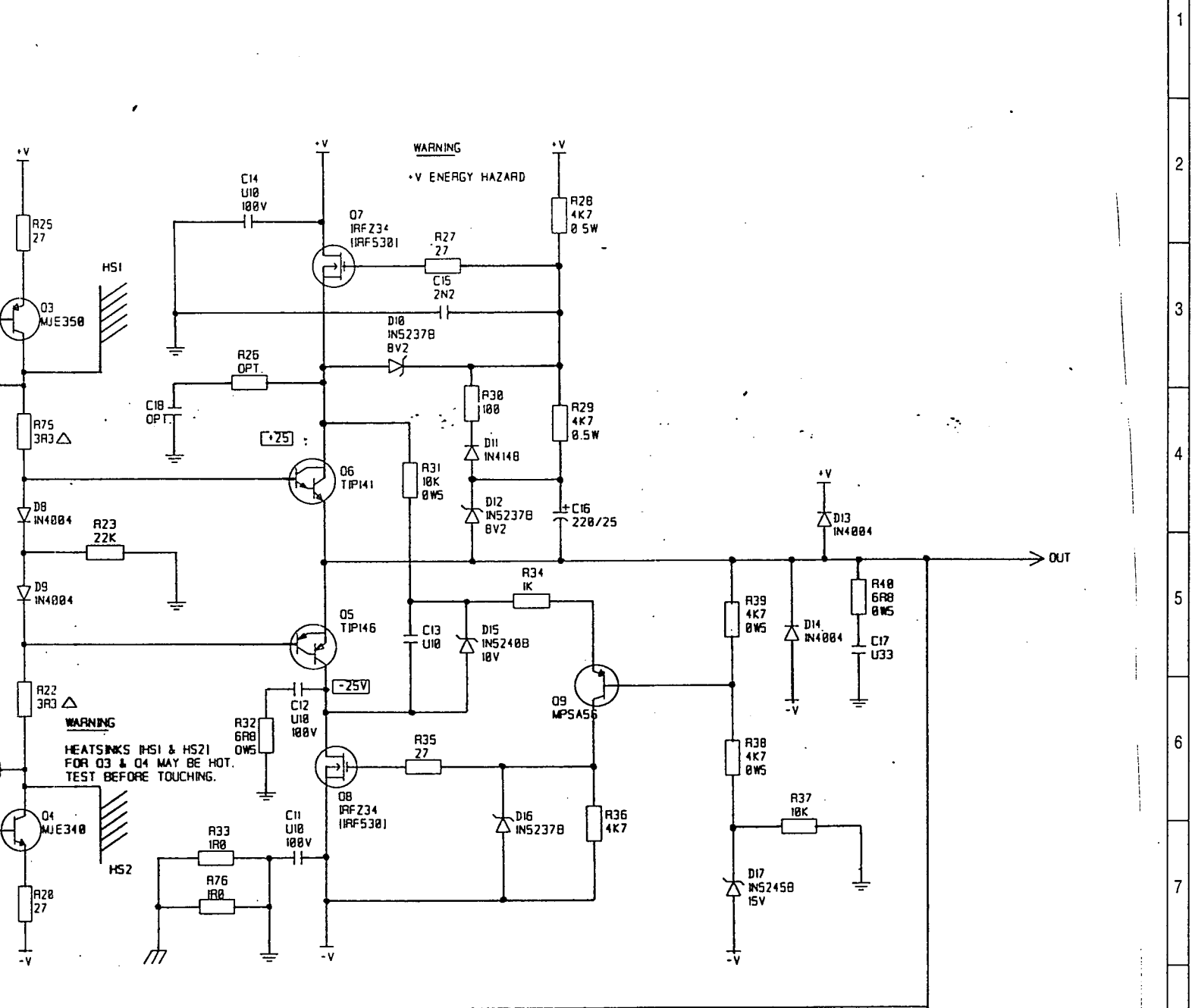
PRELIMINARY RELEASE
PRINTED CIRCUIT BOARDS (TOP VIEW)





ASSEMBLY THX DRIVER 1

G H I J K L M N

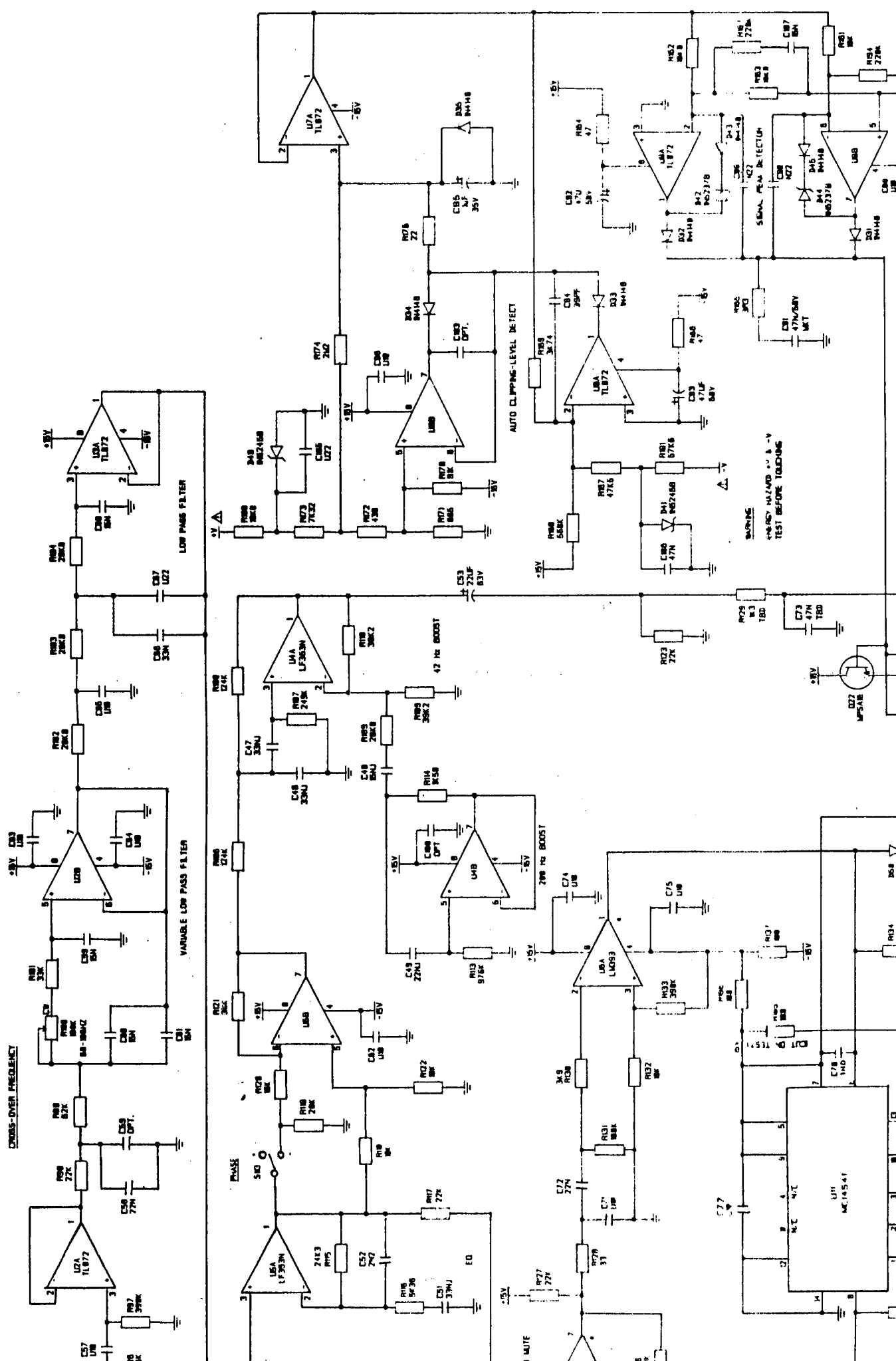


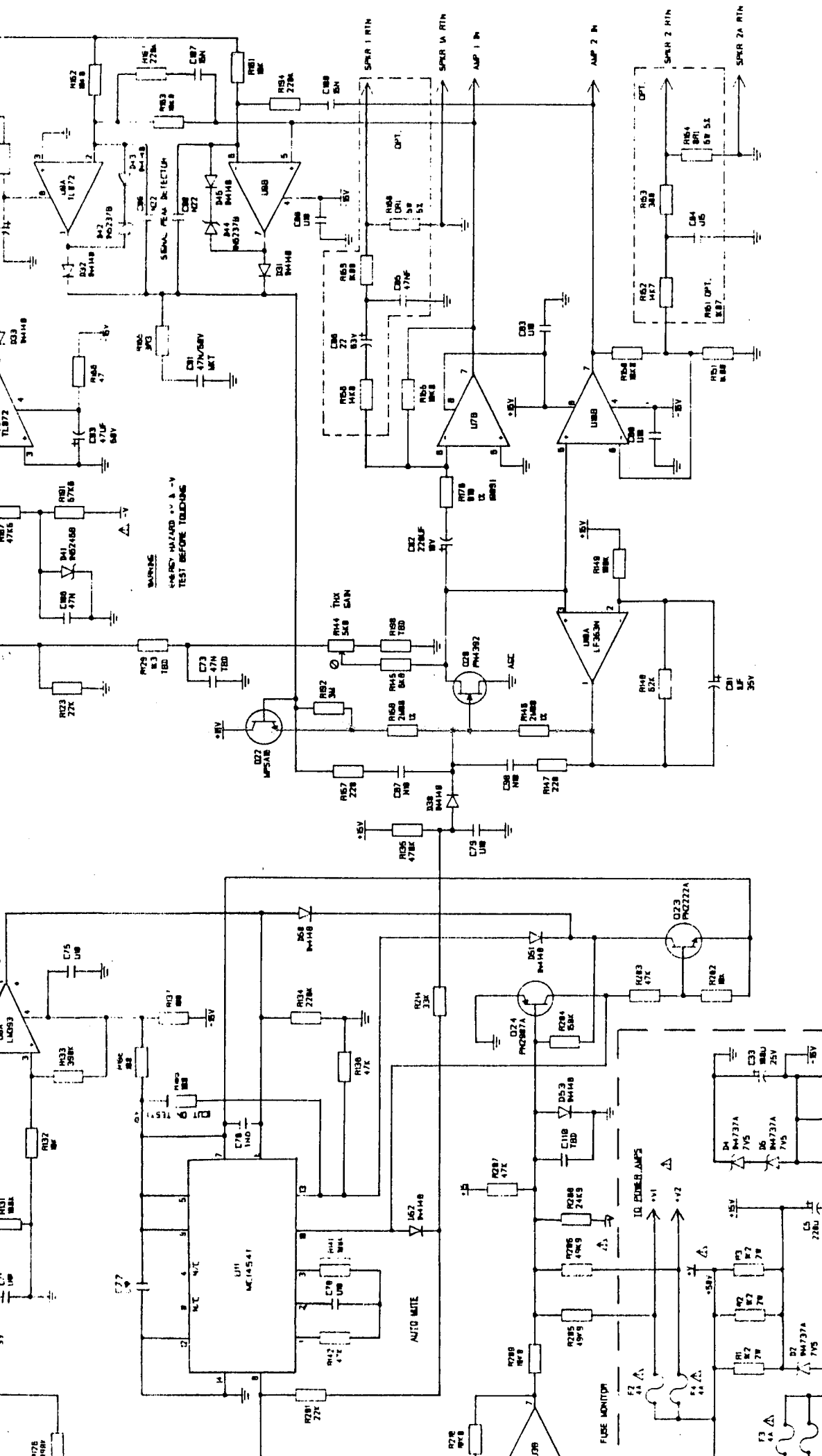
PRELIMINARY RELEASE

G H I J K L M N

REVISIONS

REV.	DESCRIPTION	ECO	DATE
A	INITIAL RELEASE		02/24/97





JBL HT PS300
 SCHEMATIC DIAGRAM FOR AMPLIFIER
 PRELIMINARY RELEASE

