

TC-60/120

# Schematic



# Service Bulletin



Biamp Systems, Inc.

## GUIDES AND MODIFICATIONS FOR THE TC/60 & TC/120

### EARLY TC/60 AMPLIFIERS only:

Resistors R5 and R6 are 1500 ohm,  $\frac{1}{2}$  watt components. These have proven to be under-rated and should be replaced with 1 watt resistors any time these units are serviced.

The trouble symptom for failure of either of these resistors is D. C. voltage on the speaker terminals.

### TC/60 and TC/120

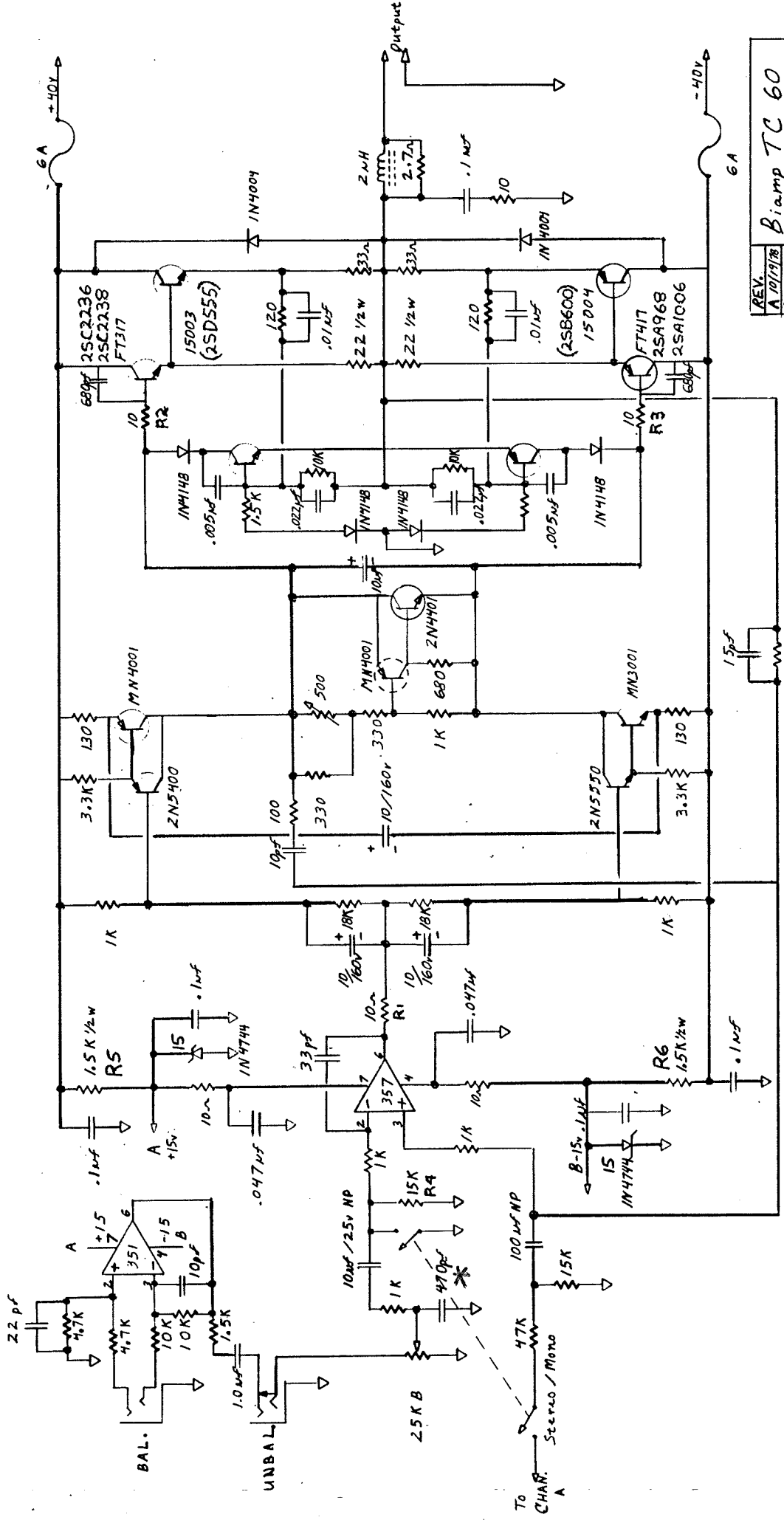
The LF357 input IC was changed during production to a 5534 IC. This change requires that R4 also be replaced with 47,000 ohm resistor.

D.C. voltage on the speaker terminals can originate anywhere within the circuit. Isolation of stages is possible by lifting on end of both R2 and R3. When these resistors are lifted the D.C. voltage across the speaker post terminals will be about 0.5 volt D.C., no load. If this voltage is correct the driver and output transistors are OK. Reconnect ~~R2~~ and ~~R3~~.

To separate the input IC from the pre-driver circuit requires a 25K ohm potentiometer with 3 wires and miniature clips to allow simulation of the IC operation.

1. Lift the IC end of R1 and attach the wire from the pot wiper to the loose end of R1.
2. Attach the two remaining wires to the plus and minus 15 v Zener regulators
3. Connect a DMM to the speaker posts (no load) and set the range for 100 volts or more.
4. Rotate the 25K ohm pot from one stop to the other. If the pre-drivers are operating properly the D.C. voltage across the speaker post will switch polarity and can be "0" centered with careful adjustment. If these results are obtained the trouble is the input IC or the ground reference resistors (TC/120). If the above results are not attainable the problem lies in the pre-driver stages. Measure the emitter-base junctions for 0.6 V to indicate proper operation.

When properly operating the D.C. offset voltage across the speaker posts should be less than 10mV D.C. Bias should be set at 1.5-2.0mV across the 0.33 ohm emitter resistors.

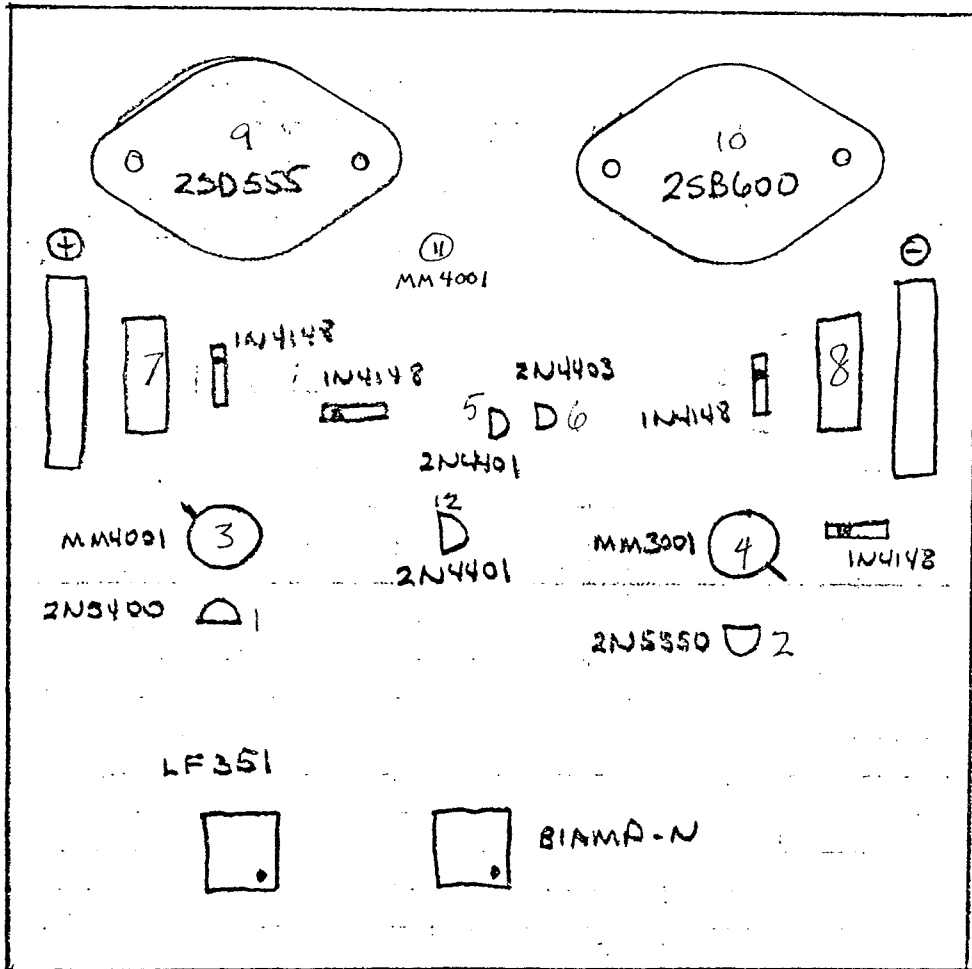


REV.	DATE	BY
A	10/19/78	Biamp TC 60
B		Drawing JOHN PAYNE
C		Design DALE SLIGER
D		
E		
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H		

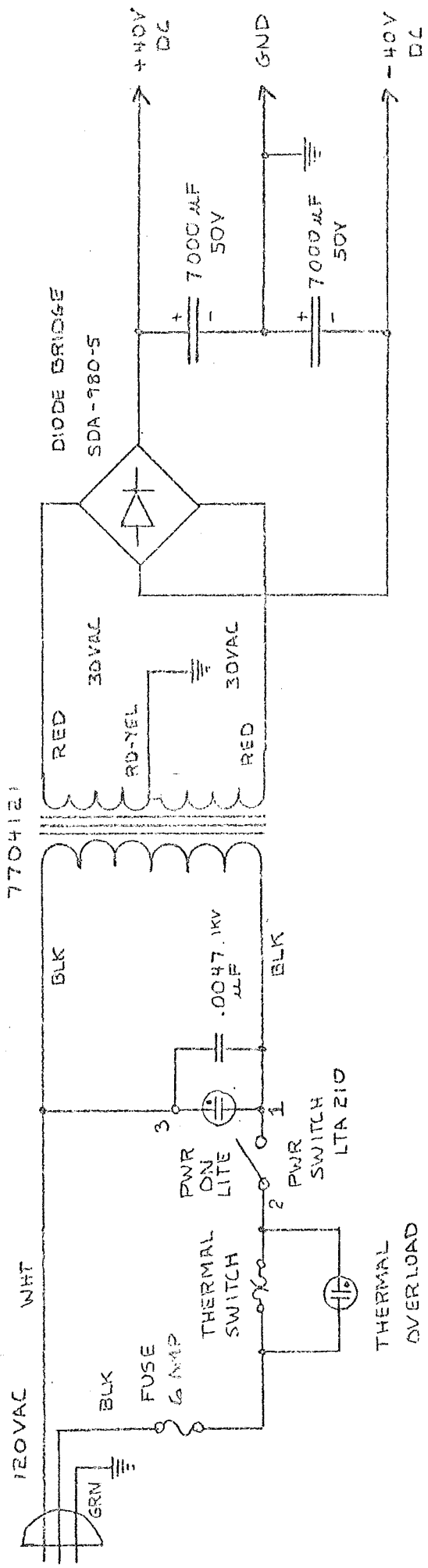
NOTE: IF OSCILLATION OCCURS AFTER TWEET-OFF  
 47uF CPP MARKED \* IS MISSING

42,381 50 SHEETS 5 SQUARE  
42,382 100 SHEETS 2 SQUARE  
42,389 200 SHEETS 1 SQUARE

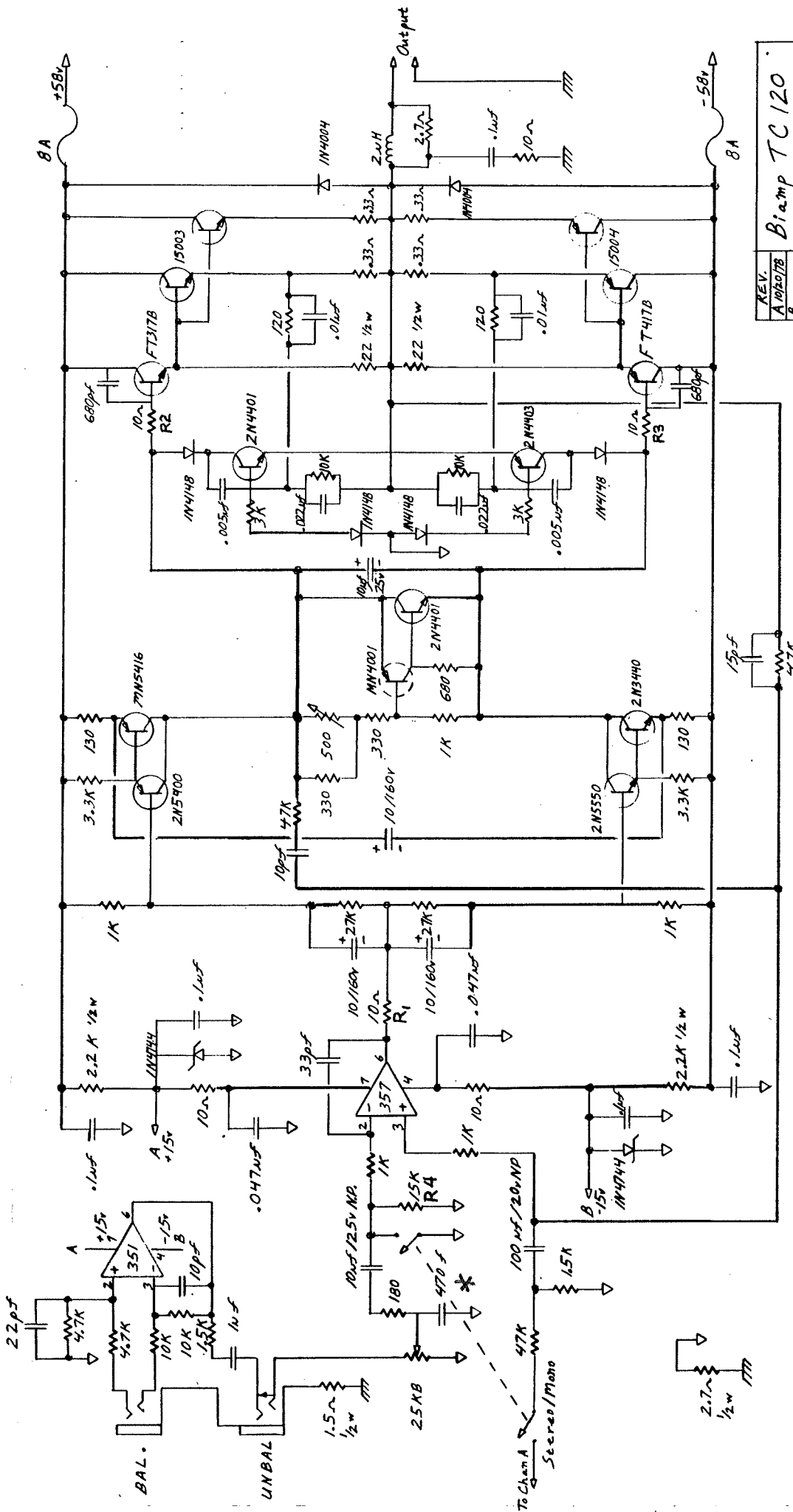
  
NATIONAL



TC60  
LOCATION CHART



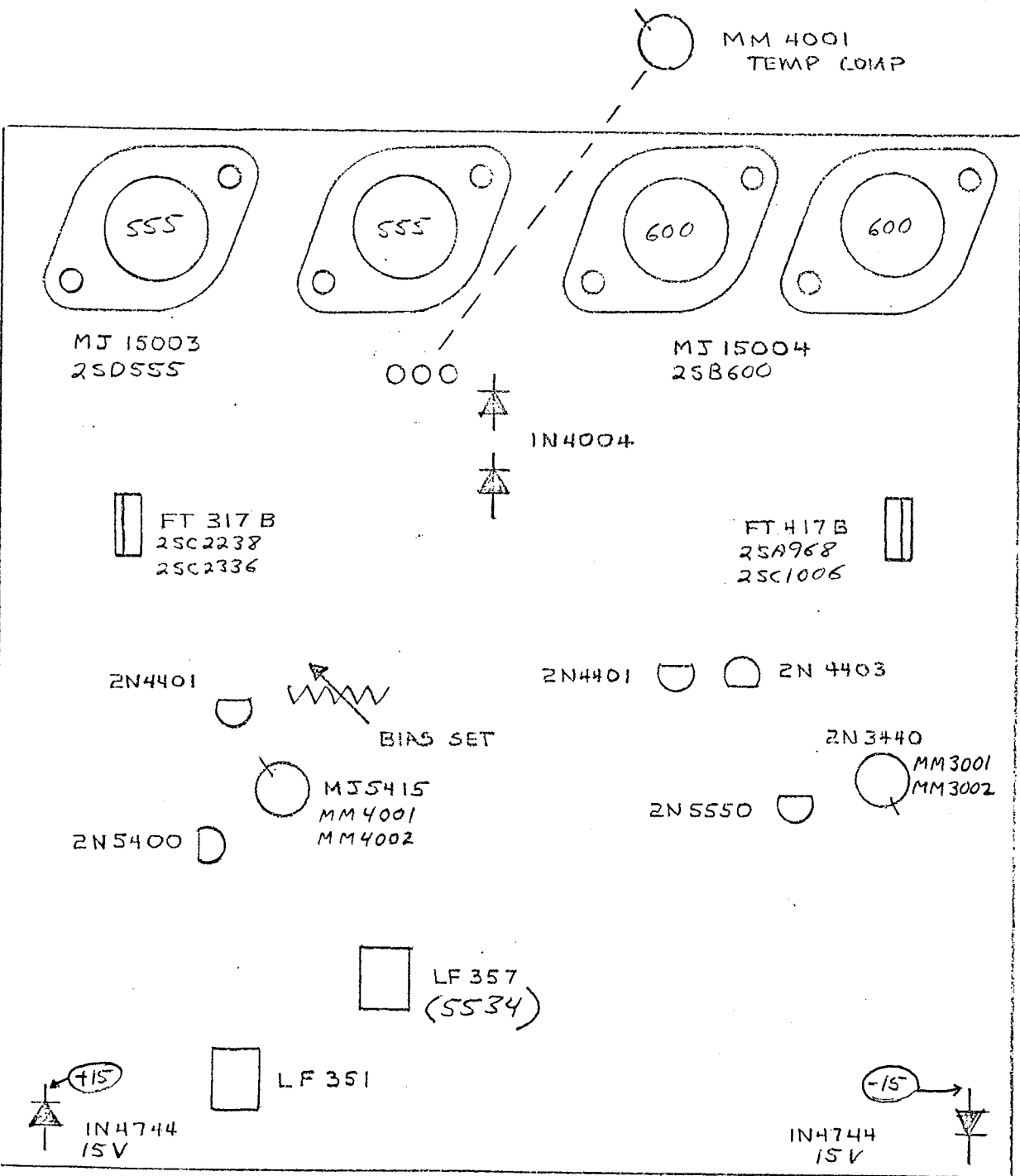
TC 60 AMPLIFIER  
 POWER SUPPLY  
 APRIL 18, 1979  
 DRAWN BY JIM DUNCAN



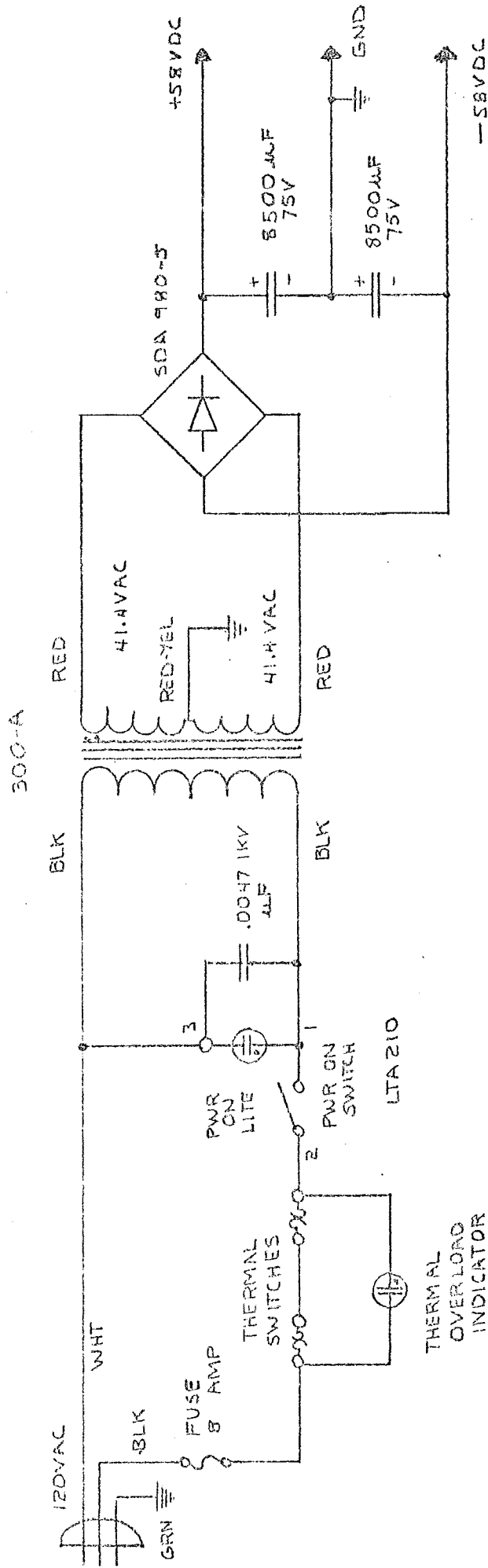
REV.	DESCRIPTION
A	1/16/50/78
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Biamp TC 120  
 Drawing JOHN PAYNE  
 Design DALE SLIGER  
 Beaverton, Ore.

Note: If oscillation occurs AFTER Turn-off Then the 470pF capacitor \* is missing

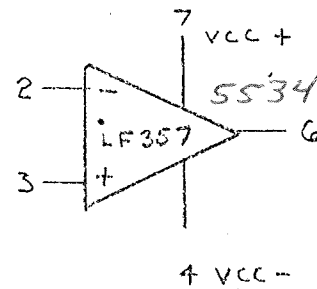
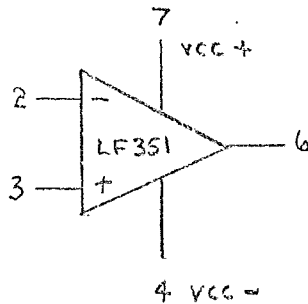
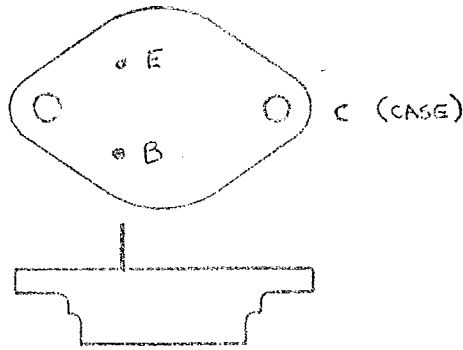
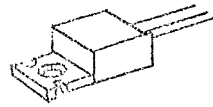
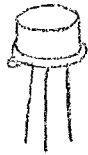


TC-120 AMPLIFIER  
 TRANSISTOR  
 LOCATION CHART  
 JULY 17-1978



TL 120 AMPLIFIER  
 POWER SUPPLY  
 APRIL 18 1979  
 DRAWN BY J. DUGGAN





TRANSISTOR PIN  
LOCATION CHART  
8-2-78