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A3A BOARD CONNECTIONS

230 AC #81 → T1
#84 → T1

37 AC #57 → T1
#58 → T1

21 AC #74 → T1
#79 → T1

4 MOLEX HV

550 AC #89 → T1 } IN PUT } FEMALE CONNECTOR
#90 → T1

+1400 #91 → C8-1 OUT PUT MALE CONNECTOR

FRONT

14 PIN PLUG

5. −60 (YEL) # 42 → A5-261

6. −15 (BLU) # 3, 27, 48, 49, 50, 51, 52, 116, 382 (9) PIN DIP PLUG

14 PIN PLUG

7. +15 (RED) # 8, 29, 43, 44, 45, 46, 243, 404 (8) PIN DIP PLUG

16 PIN DIP PLUG

8. RELAY (WH) # 41 → A10-2

9. T/R (GRN) # 24, 36, 37, 38, 39, 40 (+381 IF USED) NOT USED (6 OR 7)

10. R/T (GRA) # 21, 32, 33, 34, 35 (5)

CHECK TOP LAYOUT FOR DETAILS & LOCATION

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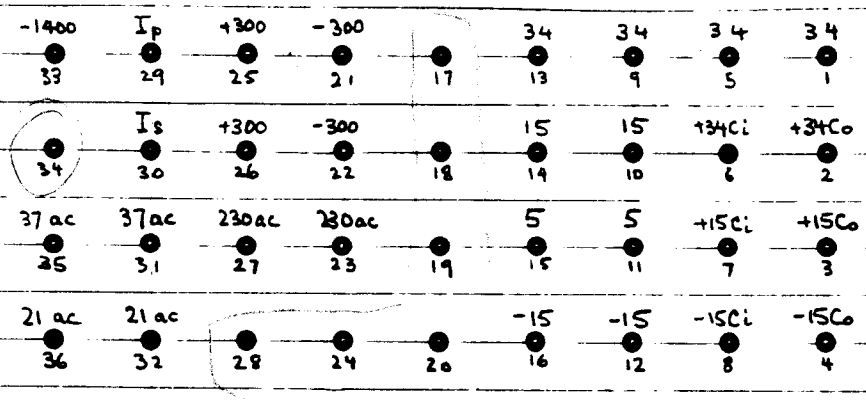
MOLEX PLUG (36 PIN)



1	+34 V	207 → J5-4	19		
2	+34 Co	64	20		
3	+15 Co	69	21	-300 acc	128 → A5-264
4	-15 Co	68	22	-300 acc	83 → C32
5	+34 V	380 → A10-3	23	230 ac	81 → T1 (viol)
6	+34 Ci	56	24		
7	+15 Ci	77	25	+300	208 → J5-5
8	-15 Ci	76	26	+300	80 → C3-1
9	+34 V	483 → A9-507	27	230 ac	84 → T1 (viol)
10	+15 V	209 → J5-6	28		
11	+5 V	211 → J5-8	29	I_p	86 → P4 C
12	-15 V	210 → J5-7	30	I_s	82 → P4 B
13	+34 V	120 → A5-251	31	37 ac	57 → T1 (blu)
14	+15 V		32	21 ac	74 → T1 (org)
15	+5 V	157 → C36	33	-1400	85 → C7-2
16	-15 V	14 → A2-52	34		
17			35	37 ac	58 → T1 (blu)
18			36	37 ac	79 → T1 (org)

NOT USED

28/36 CONTACTS USED. IF T/R #381 IS USED IT SHOULD BE ROUTED TO T/R AT FRONT OF BOARD.

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(9)

PREPARATION OF J6 (REMOVAL ALL WIRES EXCEPT 120 AC PWR)

TERMINAL	INPUT 120VAC	WIRE	TO		ACTION
1		~~444~~	E-18		REMOVE — HOOKED TO BLOCK POST WIRE #221
2		222	S1A-3		CAP ✓
3		223	S1A-1		CAP ✓
4		WH/YEL	T2-5	AUDIO	REMOVE ✓
5		WH/BLK	T2-7	AUDIO	REMOVE ✓
6	GRN	226	E-12	GND ✓	
7	BLK	227	F1-1	HOT ✓	
8		~~446~~	E-20		REMOVE ✓
9		229	TB1-20		CAP ✓
10		382	A3-122	-15V	REMOVE ✓
11		~~444~~	A2-S2	-15V	RUN TO MOLEX - 16 ✓
12		61	A3-132	34V	REMOVE ✓
13		220	A5-251	34V	RUN TO MOLEX - 13
14	WH	~~445~~	E-19	COLD	

CONNECT 221 TO E-20 (FINAL TUBE FILAMENT PWR) ✓

PREP OF S1A (OPTIONAL)

TERM	WIRE	TO	ACTION
1	223	J6-3	REMOVE AND CAP
2	246	TB1-7	REMOVE AND CAP
3	222	J6-2	REMOVE AND CAP
4			
5			
6			

JUMP 5 TO 2 AND 6 TO 1 (SWITCH IS A BIT UNDERRATED WITH ONLY ONE CONTACT)

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ORIGINAL SETUP

A3-130	S9	BRN (TIED TO 60)	→ T2-1	
A3-130	60	WHT (TIED TO S9)	→ R11-1	(ANOX HOT)
A3-124	S4	BLU (24V DC)	→ T2-2	
A3-123	S3	WHT (24V DC)	→ R11-3	(ANOX COLD)

NEW SETUP (A3A WITH T2 REMOVED)

S3 WHT TO GND; TO E-12 OR J12-2 (ANOX COLD)

60 WHT TO AUDIO OUTPUT; EG VIA A GRAY WIRE SPLICE TO A3A AUDIO PLUG - PIN 1 OR 2

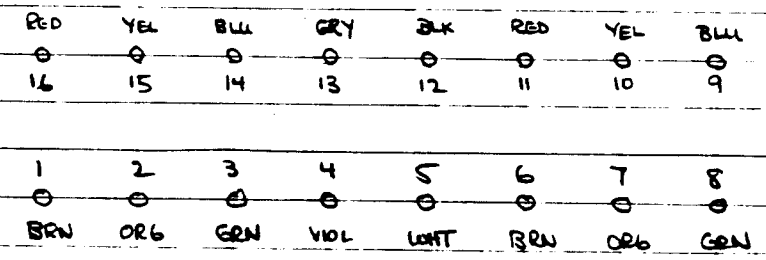
S9 REMOVE

S4 REMOVE

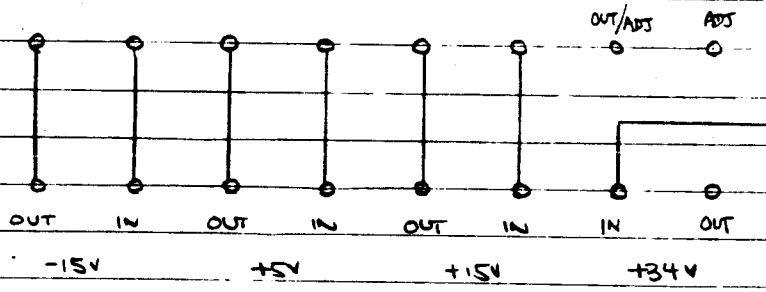
198 (FROM OLD T2-4) TO A3A AUDIO - PIN 1 OR 2

A3A (11)

REGULATORS



TOP VIEW
A3A SOCKET



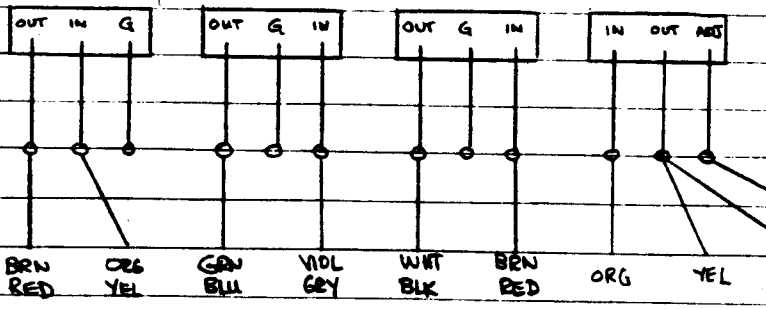
TOP VIEW
A3A SOCKET

LM 320T-15 — Q_1 (INS) SK 3674

LM 340T-50 — Q_2 GEUR 102

LM 340T-15 — Q_3 SK 3593

LM 317T — Q_4 (INS)



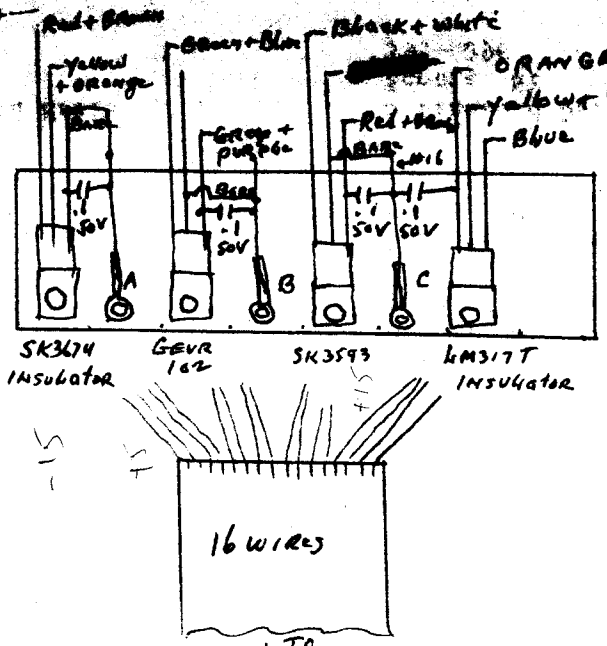
TOP VIEW
REGULATOR BAR

VIEW of VOLTAGE REGULATOR ASSEMBLY ON REAR

Chassis is upside down + Facing you.

UP

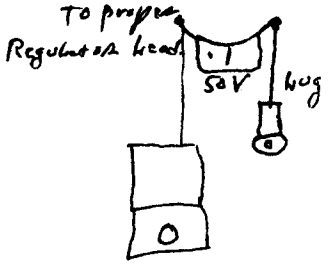
Recessed Screws For Regulators Also Have Collar Insulators (washers) Inserted From Rear.



These leads are all same length. The color code wires are from Ribbon connector. Separate Needed Colors For each Regulator + Fan out To Reach The Regulator leads + solder.

A B C are cylindrical solder lugs with #16 BARE wire soldered INTO lug cylinder + extending just above Heat SINK For easy Soldering

Capacitor bie Flat against Heat SINK with leads upward.



16 pin SOCKET BETWEEN Capacitor Bank and 10Ω 5watt Resistor Bank.

USE SILICON Heat SINK material when mounting The 4 Regulators.

MOUNT ASSEMBLED HEAT SINK To CHASSIS The TIPS pass xSISTORS are now Removed, so position Heat SINK and MARK The Four Chassis holes ON the New SINK. Just above The prepared Holes IN Heat SINK. Drill To SIZE + THREAD Holes + Mount Heat SINK assembly

New Holes for mounting

o o o o

o o o o o o o o o already used

down

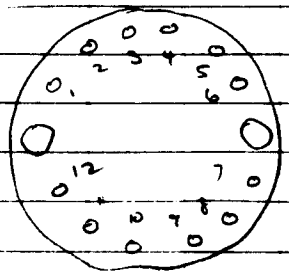
NOTE When Soldering Leads To Molex plug. Keep The plug IN the Same position ALL THE TIME. DO NOT TWIST OR ROTATE plug, as Wires already assembled Have a Tendency To break. PINS MUST be pushed ALL The way INTO each Hole so They CANNOT be pushed OUT again. : They MUST be perfectly STRAIGHT AFTER Soldering lead To them. PUSH IN as Far as possible + Then use a small punch like Tool To Seat Them Completely pushing From Rear against Solder Joint. NOT EASY

73, Mark WZ1K

* P.S.

4 PINS STANDING VERTICALLY ARE VOLTAGE TEST PINS

↑ down



?

2-3 → ... → T2 HOT

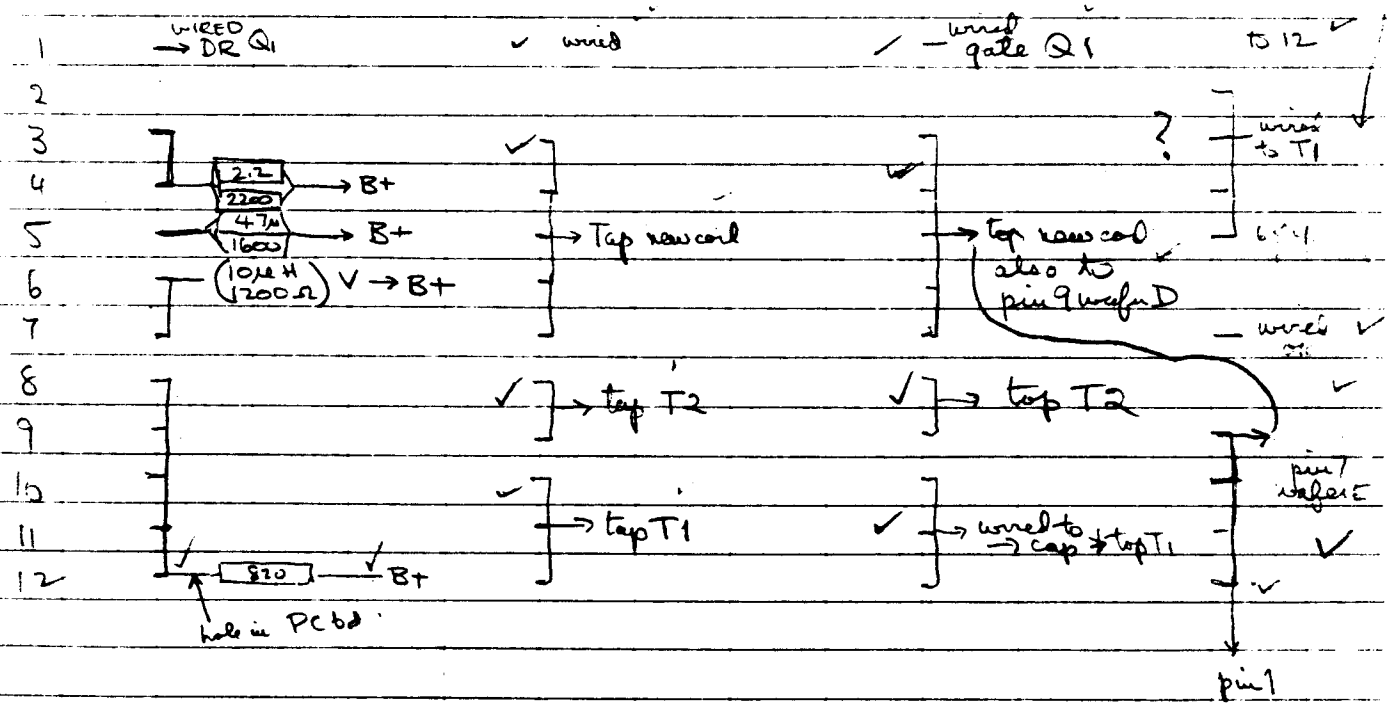
654 → HOT T1 ...

YOUR ...

6 ...

reversed

G F E D



PIN 1 WAFER E

TO ± PROCESS ...

CX7A
A3A

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POWER SUPPLY TESTS:

VOLTAGES / RESISTORS MEASURED WITH FLUKE

XMIT MODE SET FOR 150 W OUT (320 MA. I_p)

SUPPLY	R (SERIES RES)	RECEIVE MODE E	E_{IN}	E_{REG}	I_{MA}	XMIT MODE E	E_{IN}	E_{REG}	I_{MA}
-15	10.10	-15.11	-27.91	-23.41	446	-15.08	-25.90	-21.03	482
+5	20.70	+5.04	+27.16	+19.00	394	+5.03	+25.29	+17.18	392
+15	10.40	+14.70	+27.21	+23.47	360	+14.70	+25.29	+21.10	403
+34		+34.19	+44.12			+33.77	+40.60		
-60		-57.60				-51.80			

ALTHOUGH TRANSCEIVER MALFUNCTION OCCURS, EACH SUPPLY CAN BE SHORTED ONE-BY-ONE TO GROUND WITH NO LASTING DAMAGE TO THE POWER SUPPLY!

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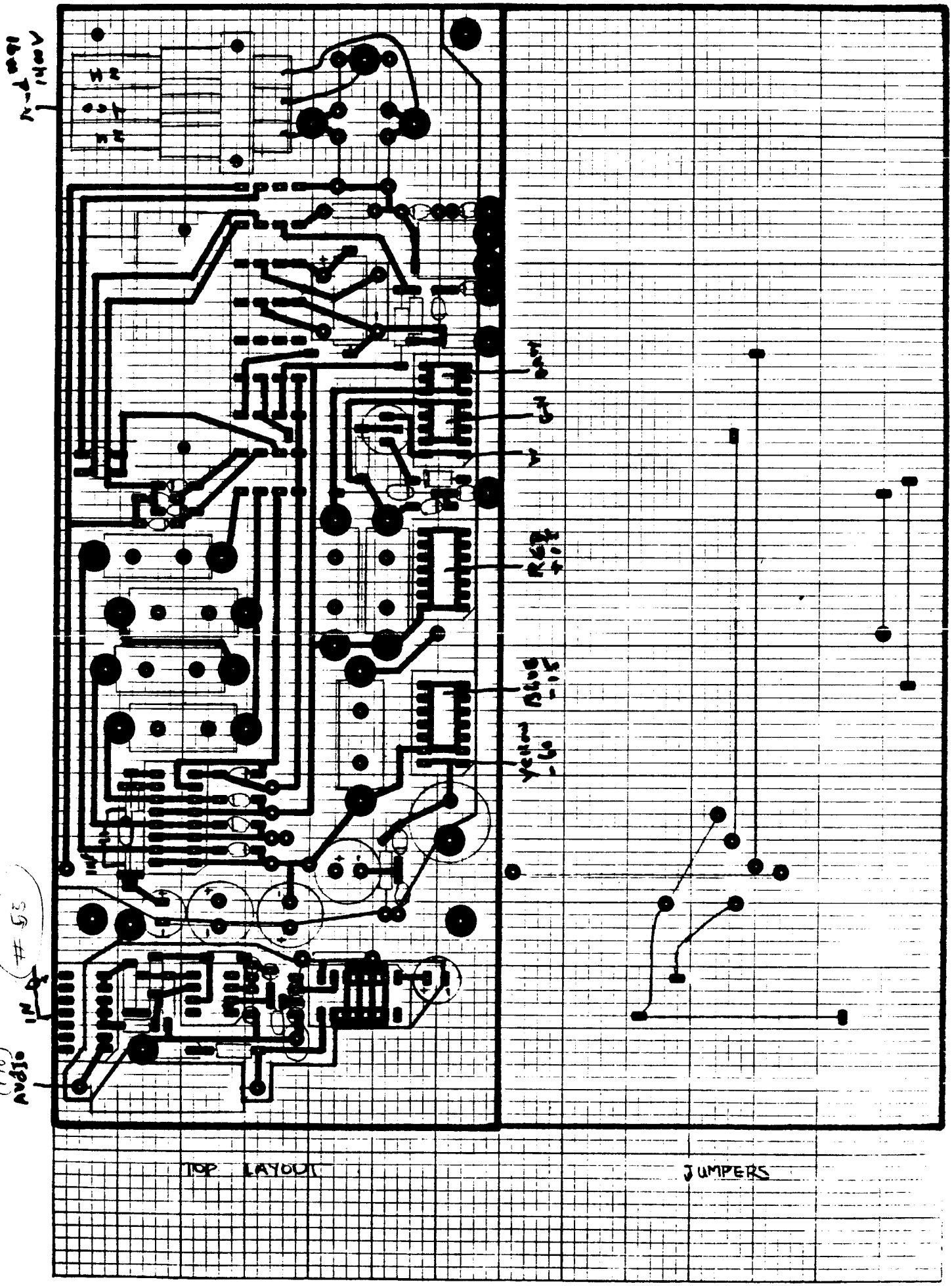
A3A

MOLEX	1619PRT	3
	36 CKT	1
SOCKETS	3 PIN XSTR	1
	16 PIN DIP	2
	14 PIN DIP	4
	8 PIN DIP	1
PLUGS	16 PIN DIP	1
	14 PIN DIP	3
CABLE	16 PIN FLAT 12"	½
CAPACITORS	150/63	1
	150/50	1
	150/35	2
	200/16	1
	22/50	1
	10/63	1
	1./50 SMALL	2
	0.1/50 SMALL	4
	0.1 DISC	1
	0.1 MYLAR	1
	0.01 MYLAR	2
	0.001 MYLAR	1
RESISTORS	20/10	1
	300/5	2
	200/5	1
	10/5	4
	240K/2	1
	15/2	1
	2.7/1 (5%)	2
	120 K	1
	100 K	1
	47K	1
	39K	1

RESISTORS	20 K	6
	6800	2
	6200 (2%)	1
	1200	2
	620	1
	510	1
	240 (2%)	1
	11. (2%)	1
	2.7	1
DIODES	IN5062	28
	3.9 ZENER	1
	VS647	1
TRANS./IC	J~~N~~ BRD 2N3904	1
	JN BRD LM 380N (SK3328)	1
	Q1 LM320T-15 (SK3674)	1
	Q2 LM340T-5.0 (GEVR102)	1
	Q3 LM340T-15 (SK3593)	1
	Q4 LM317T	1
	JN BRD MC14587P1	1

W2PW
1-81


TOP LAYOUT
JUMPERS

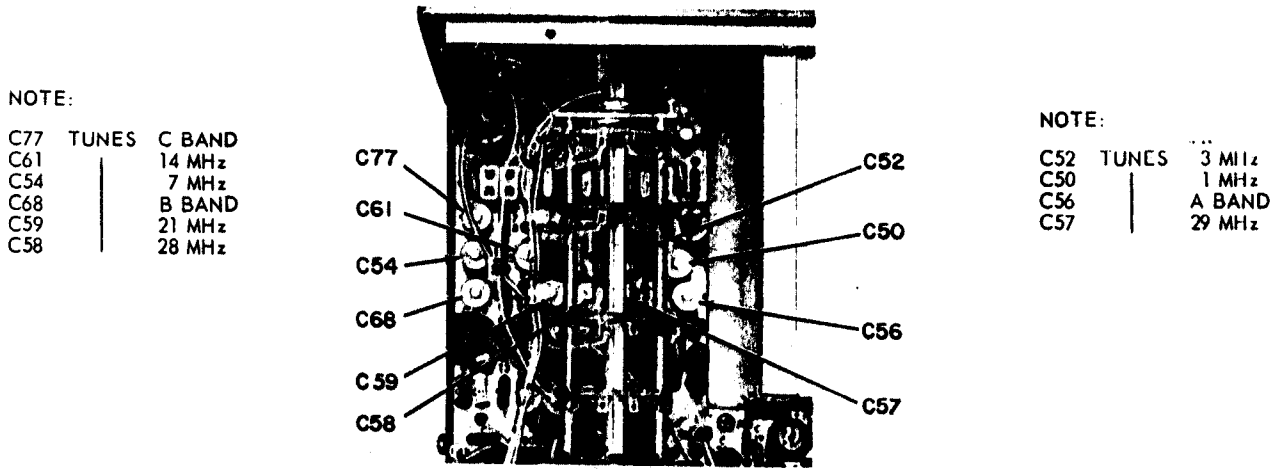


Figure 5-4. Location of Front End Board Trimmers

d. Front End Oscillator Calibration

1. Perform the touch-up adjustments covered in 5.3.1.a., b., and c. (Omit if just previously accomplished.)

2. Set the "MHZ" band switch to the position that is still out of calibration and slightly adjust the applicable trimmer (see Figure 5-4) for a zero beat.

Band Switch Position	Trimmer
1	C50
A	C56
3	C52
B	C68
7	C54
C	C77
14	C61
21	C59
28	C58
29	C57

3. If a trimmer is adjusted, check that the RF output level at the Front End board pin 71 is between 400 and 700 MVRMS. (Use an RF voltmeter.)

e. Offset 34.2 MHz Oscillator Calibration

NOTE

The offset 34.2 MHz oscillator calibration does not have to be performed if a zero beat between VFO A and offset VFO A can be achieved with the "TRANSMITTER OFFSET" control set to within ±30° of midrange. The zero beat is between the offset 34.2 MHz oscillator and the normal 34.2 MHz source. The offset oscillator is adjusted while in the receive mode. (Do not key the transmitter.) The AGC Detector and Audio boards will have to be positioned to gain access to the BFO board adjustments.

1. Perform the touch-up adjustments covered in paragraph 5.3.1.a., b., c., and d. using receive channel A. (Omit if just previously accomplished.)

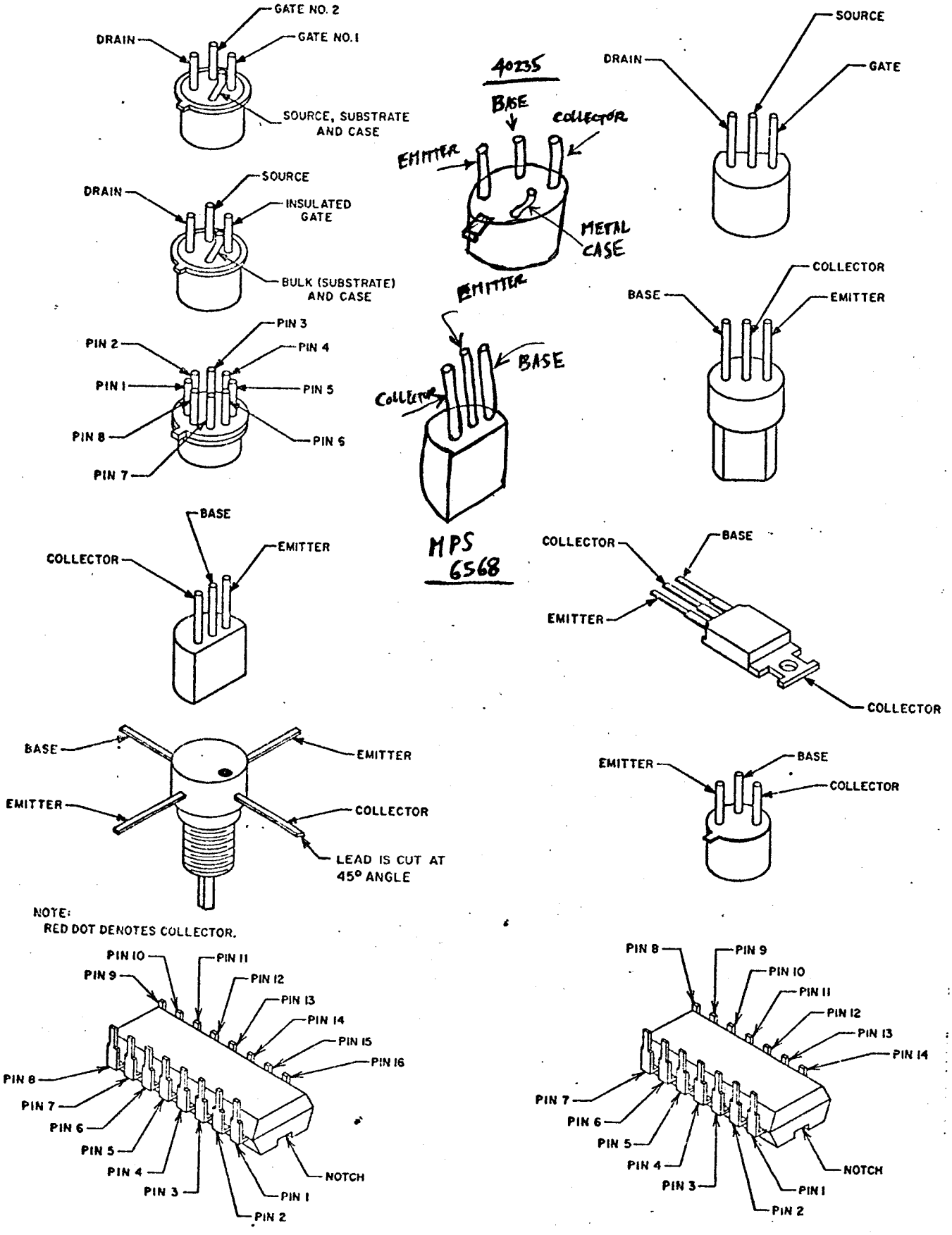


Figure 4-28. Electrode Configuration for Semiconductor Devices

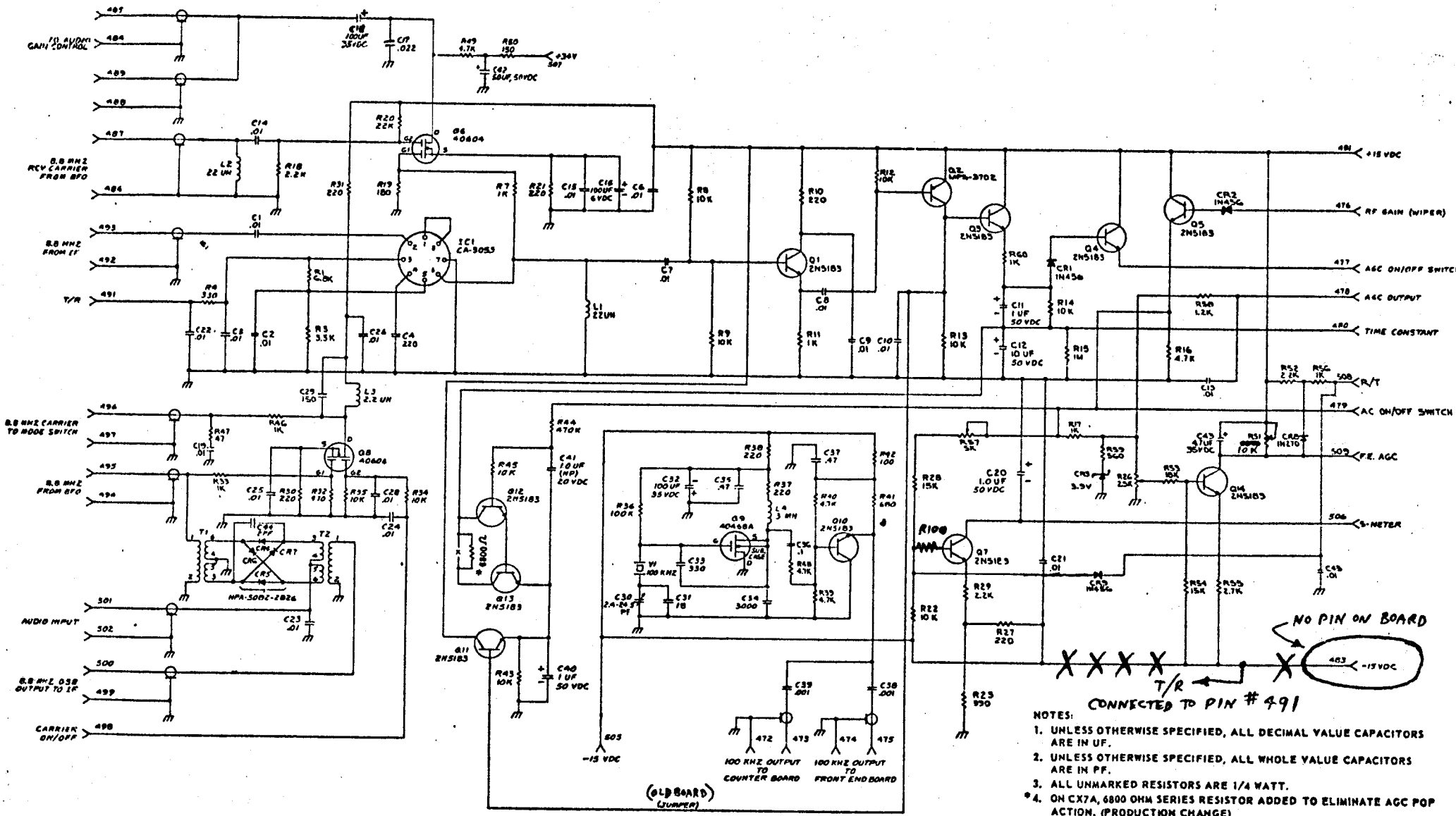


Figure 6-10. AGC Detector Board A9 Schematic Diagram

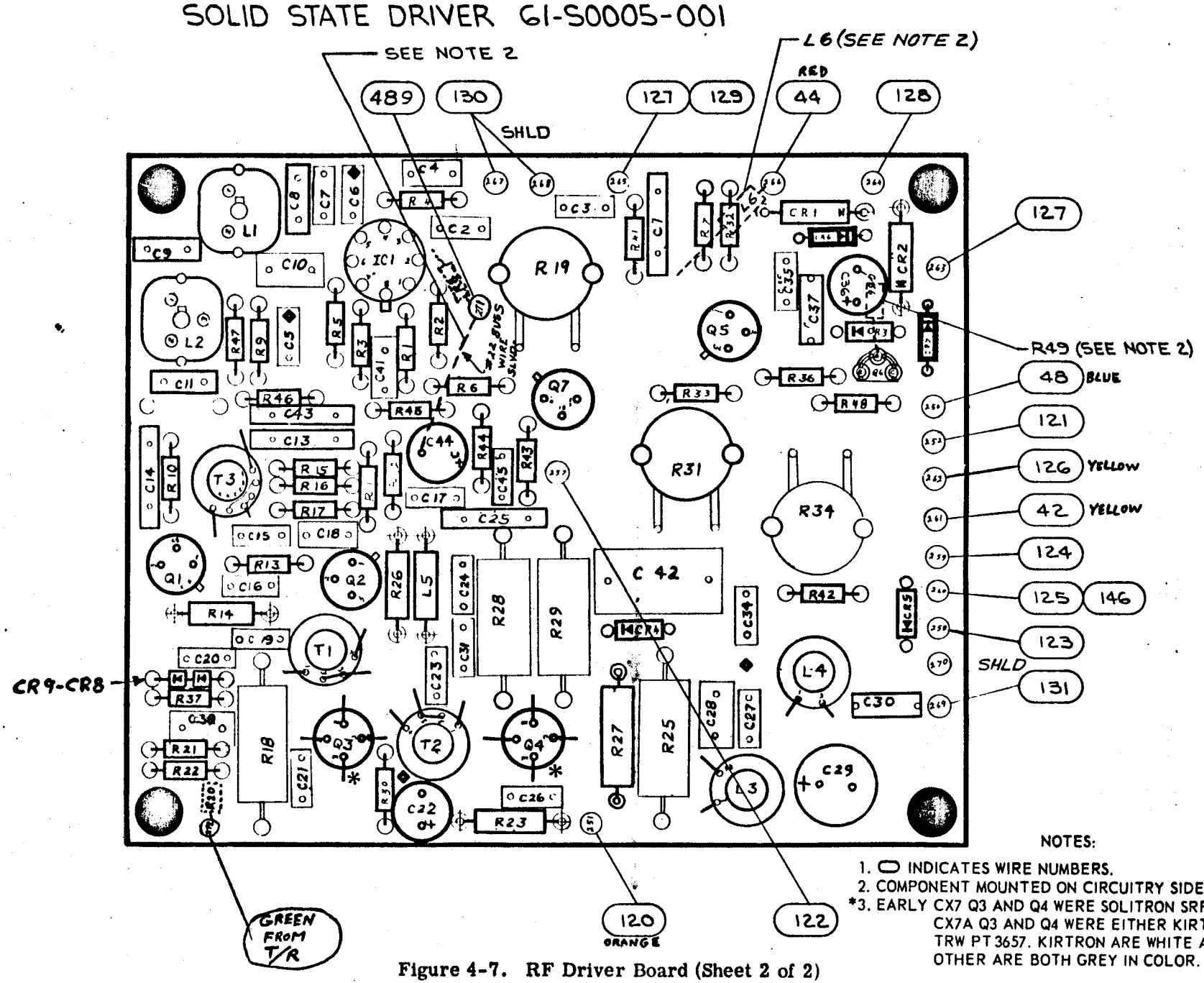


Figure 4-7. RF Driver Board (Sheet 2 of 2)

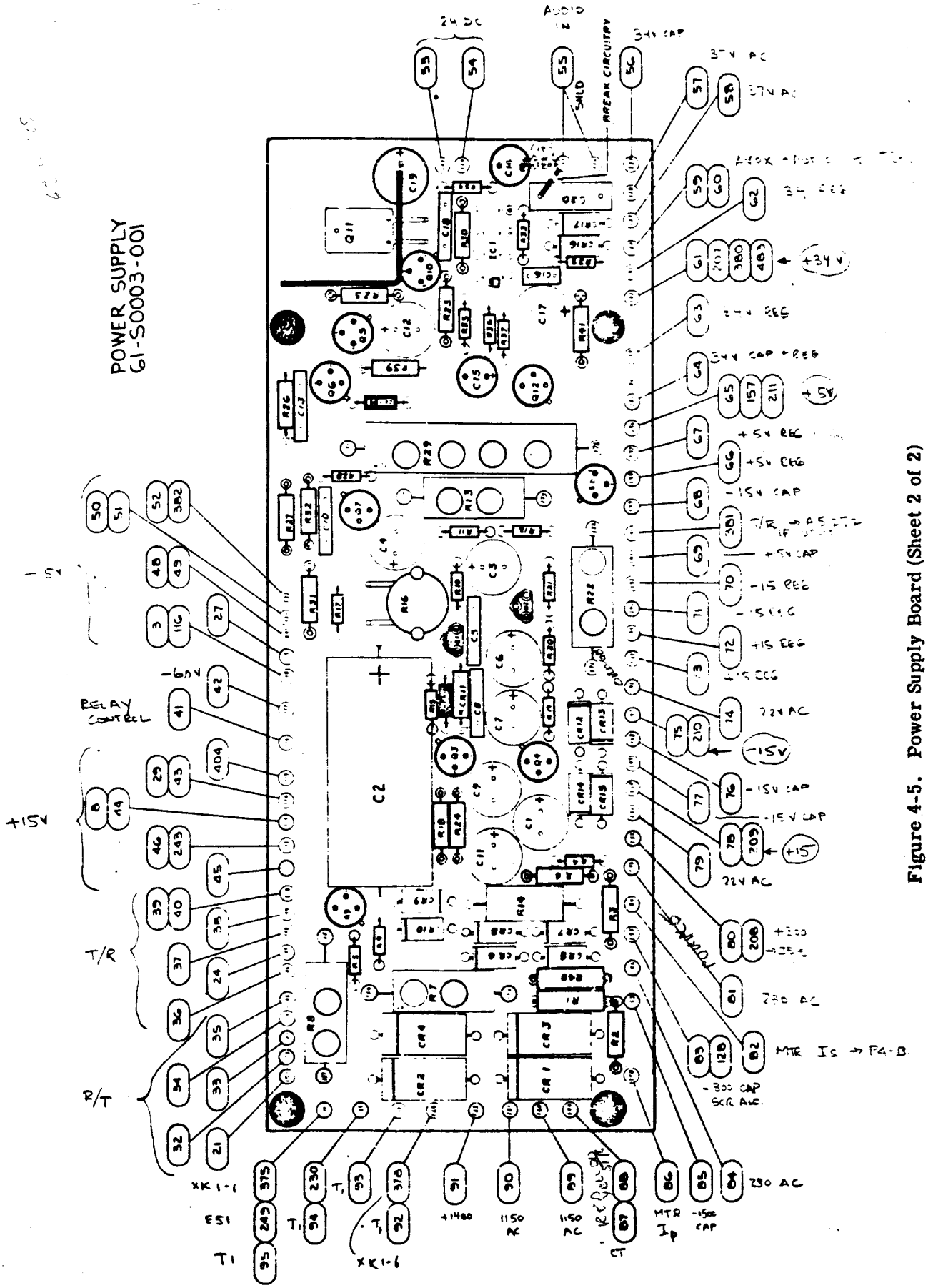


Figure 4-5. Power Supply Board (Sheet 2 of 2)

W2KE

WALT. SCHICK

(518) 346-2997

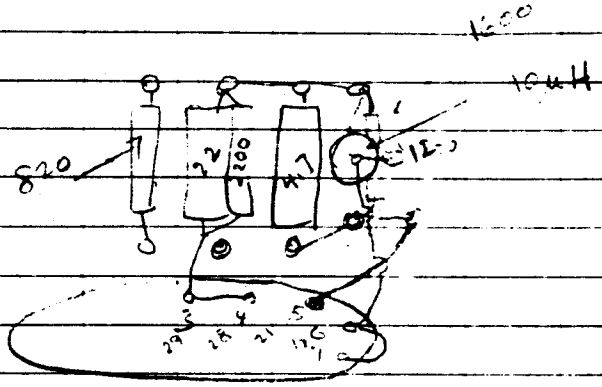
(412) 521-8356

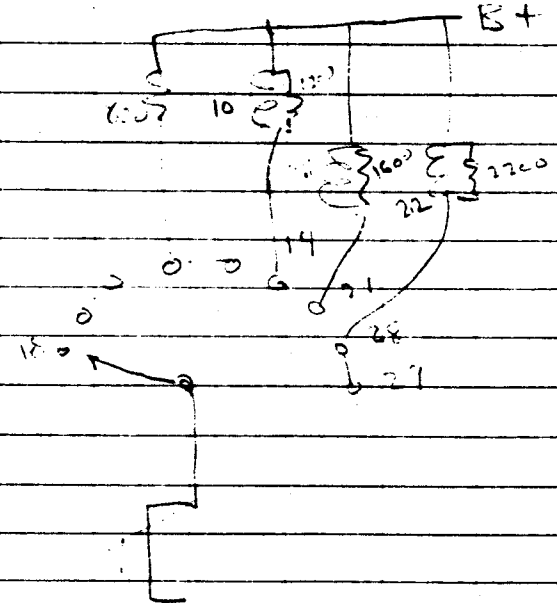
FEB 13, 1981

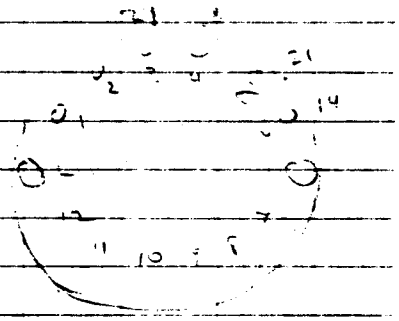
CX7A
NEWA3 BOARD [HAWSON]

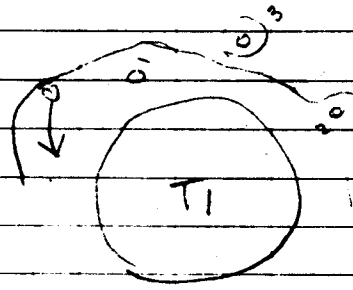
POWER SUPPLY BOARD VOLTAGES

		RECVE MODE				XMIT MODE			
V	R SCALE	E REG	E IN REG	E OUT REG	I MA	E REG	E IN REG	E OUT REG	I MA
-15	10.13	-15.43	-24.41	-15.69	397	-25.25	-24.88	-15.67	431
+5	20.42	+27.71	+18.44	+5.63	443	+24.1	+14.90	+5.045	445
+15	9.97	+27.71	+24.49	+14.79	323	+24.1	+20.75	+14.76	336
+34		+46.67	+34.12			+39.8	+33.73		
-6c		-58.47				-51.2			
+3cc		+32c				+28.7			
+14cc		+16cc				+134c			


820
10uH
12
200
47
29
25
21
17


B+
10
160
2200
22
14
18
28
21





wafer D pin 4

1 ref
2 top } 3 +
3 std.

58 ± 18

1 ref
2 top } 4 +
3 std

36 ± 30

wafer F lead 9