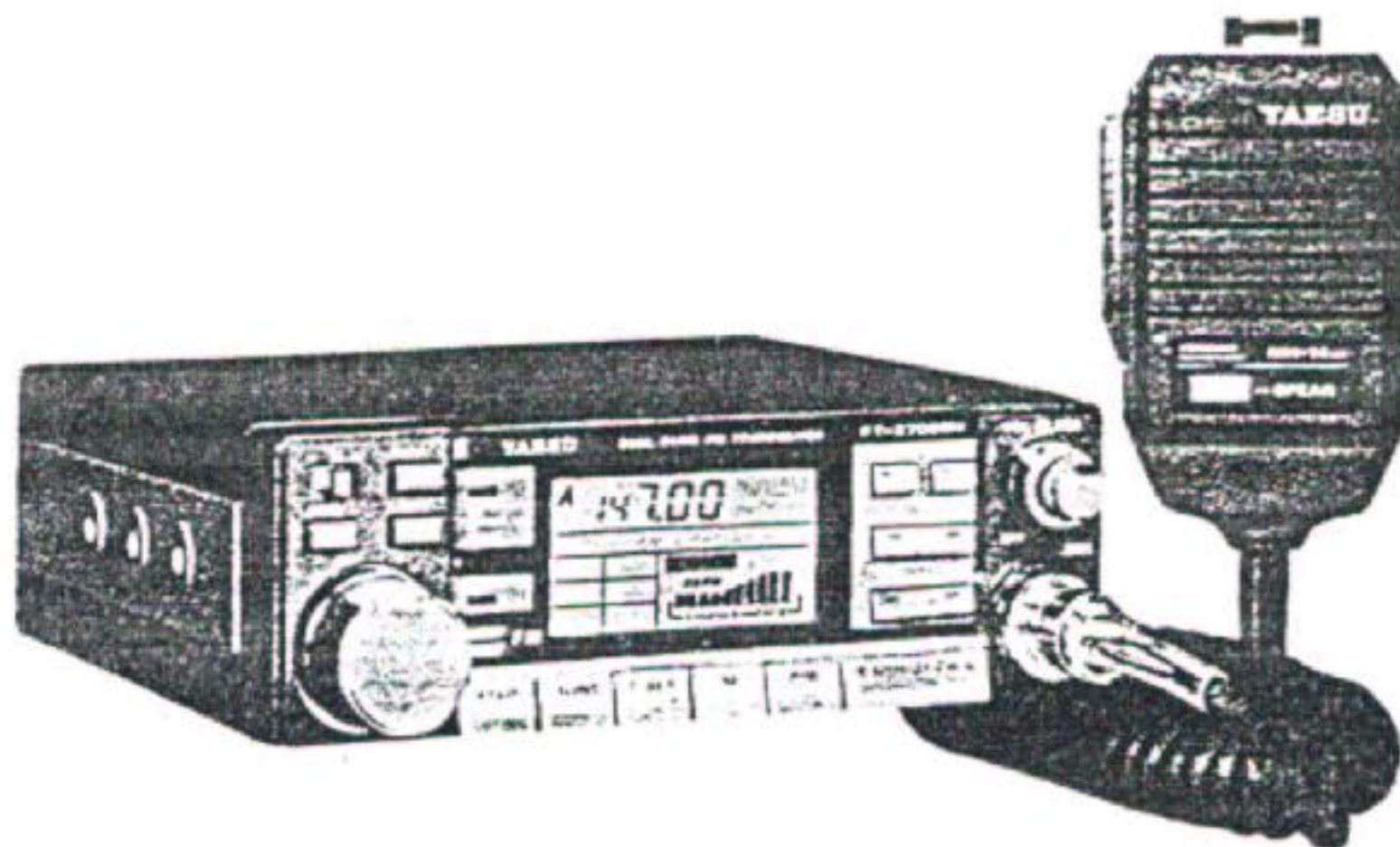


FT-2700RH TECHNICAL SUPPLEMENT



This manual is intended to serve as a supplement to the FT-2700RH Operating Manual. Detailed information regarding functions, specifications, options and operation has been provided in the Operating Manual, and is not reprinted herein. Therefore, this supplement is not intended to serve as an independent reference, but to be used in conjunction with the information provided in the Operating Manual.

Because of the compactness and complexity of the double-sided glass-epoxy circuit boards used in the FT-2700RH, four layout diagrams are provided for each board. Each side of the board is identified by the type of the majority of components installed on that side. In most cases one side has only chip components, and the other has either a mixture of both chip and lead components (trimmers, coils, electrolytic capacitors, packaged ICs, etc.), or lead components only. The two "obverse" views depict the board as it is seen when viewed directly with the eye, while the two "reverse" views depict the unseen side of the board as it would appear if one were to peer through the board from the other side without seeing the components and tracks on the near side.

While we believe the technical information in this manual is correct, Yaesu assumes no liability for damage that may occur as a result of typographical or other errors that may be present. Your cooperation in pointing out any inconsistencies in the technical information would be appreciated.

Yaesu Musen reserves the right to make changes in the circuitry of this transceiver, in the interest of technological improvement, without notification of the owners.

CHIP COMPONENT INFORMATION

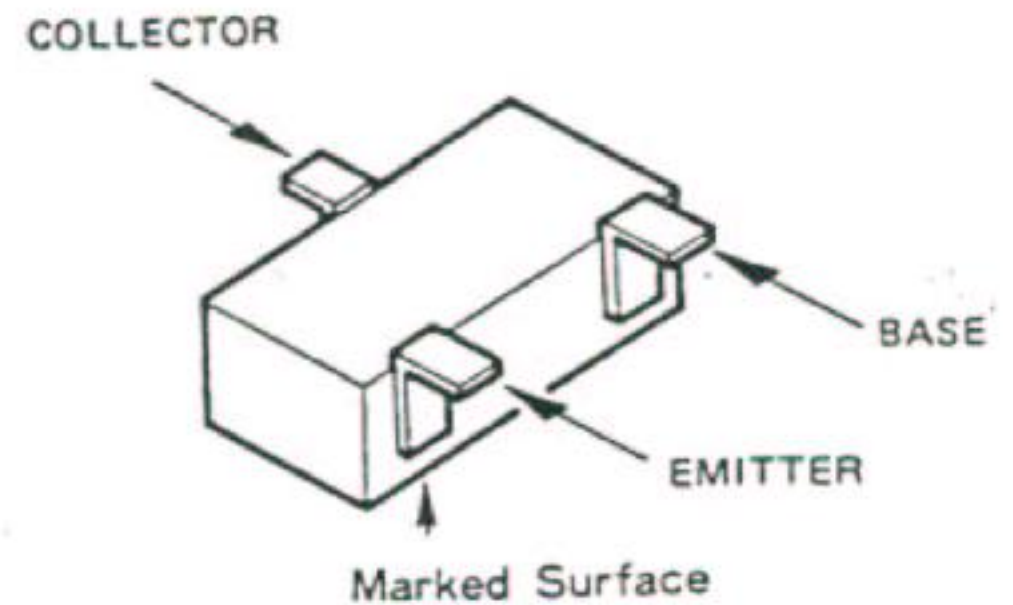
While chip components are generally more reliable and enduring than lead components, they are much more difficult to replace. The chip placement robots at the factory set the components into place on a small spot of resin adhesive before soldering, and this adhesive provides rigid mechanical support for the component independently of the solder joints. Once the resin has been cured there is no way to remove it. Therefore, to remove a chip component, it is necessary to first remove all of the solder at each connection and then forcefully break the adhesive bond. This must be done very carefully, both to avoid overheating the board and lifting tracks when desolder-

ing, and to avoid damaging the board or underlying tracks when breaking off the component. Removed components should never be reused, as they are bound to be unreliable after removal.

In spite of the following information on labelling, some chip components may have no markings at all (especially resistors and capacitors, indicated with asterisks "*" below). In this case, to identify the component, refer to the part location in the layout diagrams, note the location number, and then refer to the Parts List to determine the value or nomenclature and type.

Bipolar Transistors

Part(Location)No.	Nomenclature	Marking
Q1022, 1023, 1024, 1025, 1026, 1027, 2020, 2023, 4005, 4006	2SA1162GR	SG
Q1002, 1006, 1007, 2006, 3010	2SC2619B	FB
Q3003, 3004, 3005, 3007	2SC2620B	QB
Q1008, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1028, 1029, 1030, 1031, 1032, 1033, 1035, 1038, 1039, 1041, 1042, 2007, 2008, 2015, 2017, 2018, 2019, 2022, 2024, 3011, 3012, 4003, 4004, 4007	2SC2712GR/Y	LG/LY
Q3001, 3002	2SC3356	R22



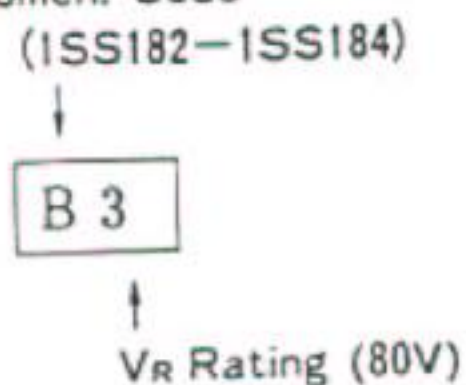
Example : Nomen. Code



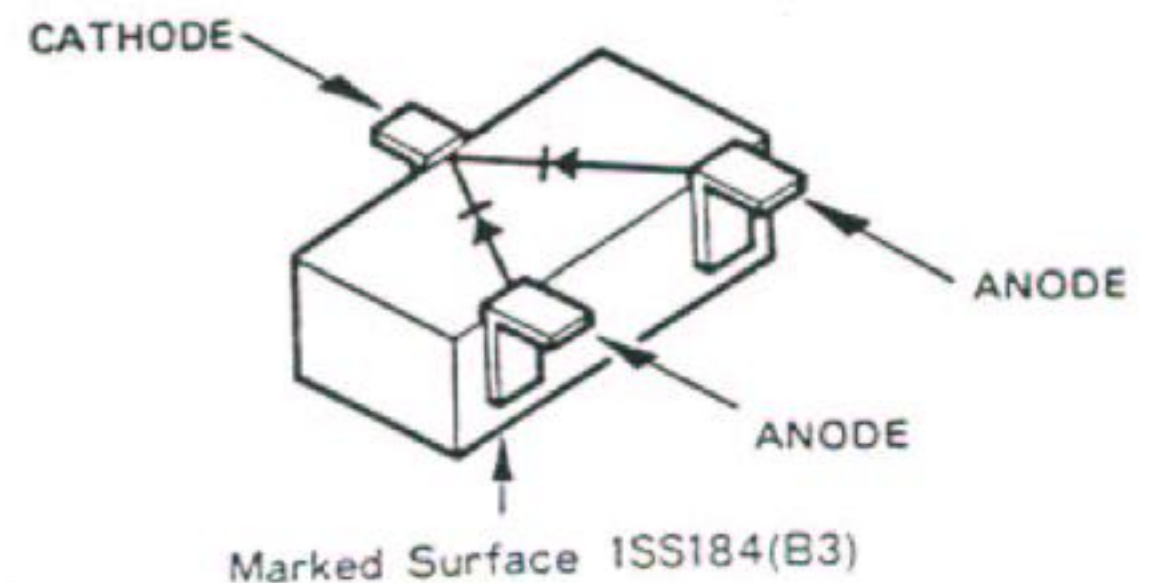
Dual Diodes

Part Location)No.	Nomenclature	Marking
D4002	1SS184	B3

Example : Nomen. Code

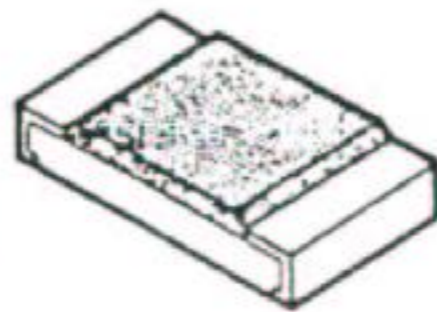


B1 = 1SS182 (30V)
 B2 = 1SS183 (50V)
 B3 = 1SS184 (80V)



Resistors

Type RMC1/10W
Mark* A1 Z6



Value code: [A1]
Multiplier code

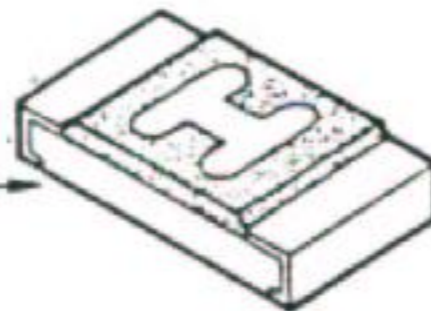
Value code	Multiplier code
A	1.0
B	1.1
C	1.2
D	1.3
E	1.5
F	1.6
G	1.8
H	2.0
J	2.2
K	2.4
L	2.7
M	3.0

Multiplier code	Value
0	1
1	10 ¹
2	10 ²
3	10 ³
4	10 ⁴
5	10 ⁵
6	10 ⁶

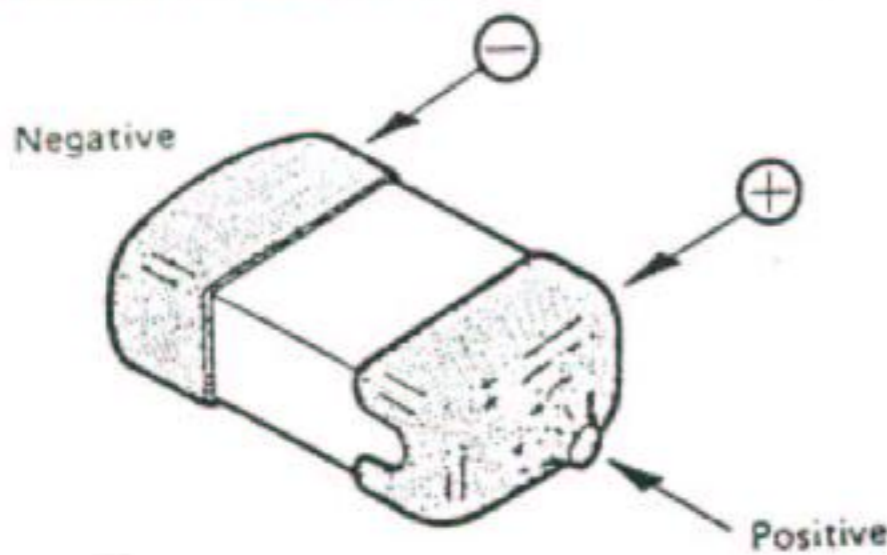
Examples :

A1 = 10Ω
J3 = 2.2kΩ
S4 = 47kΩ

Jumper (0Ω) Chip

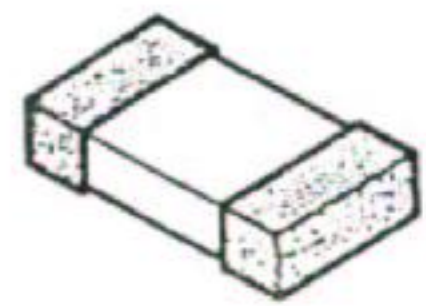


Tantalum Capacitor



Ceramic Capacitors

Types: C2012
C3216



Mark* C3216 Bar C2012

Value code: [A5] Bar [A5]
Multiplier code

Value code	Multiplier code
A	1.0
B	1.1
C	1.2
D	1.3
E	1.5
F	1.6
G	1.8
H	2.0
J	2.2
K	2.4
L	2.7
M	3.0
N	3.3
P	3.6
Q	3.9
R	4.3
S	4.7
T	5.1
U	5.6
V	6.2
W	6.8
X	7.5
Y	8.2
Z	9.1
a	2.5
b	3.5
d	4.0
e	4.5
f	5.0
m	6.0
n	7.0
t	8.0
y	9.0

Multiplier code	Value
0	1
1	10 ¹
2	10 ²
3	10 ³
4	10 ⁴
5	10 ⁵
6	10 ⁶
7	—
8	10 ⁻²
9	10 ⁻¹

C3216 types use a bar marking for either thermal coefficient or tolerance ranking (according to capacitors value range) as below.

Temperature Compensating Types (low values)

NPO(CH)	N150(PH)	N220(RH)	N330(SH)	N470(TH)	N750(UJ)
[][]	[][]	[][]	[][]	[][]	[][]

Dielectric Constant (Hi K) types (high value)
Cap. Tolerance

B	D
[][]	[][]

F No bar

B = 10%
D = 20%
F = +80%/-20%

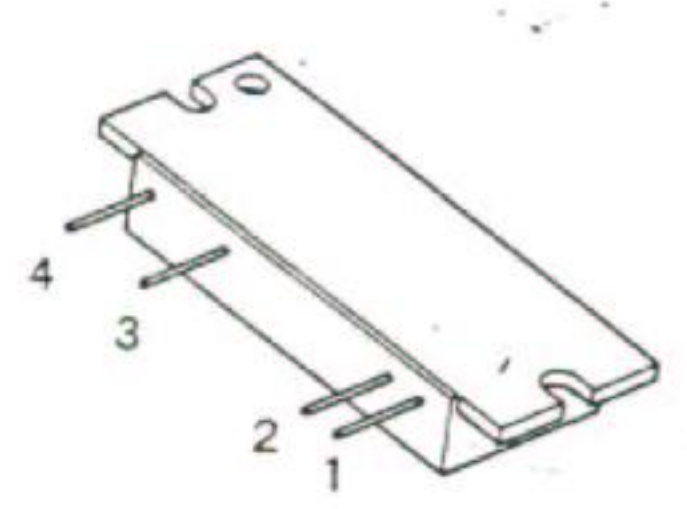
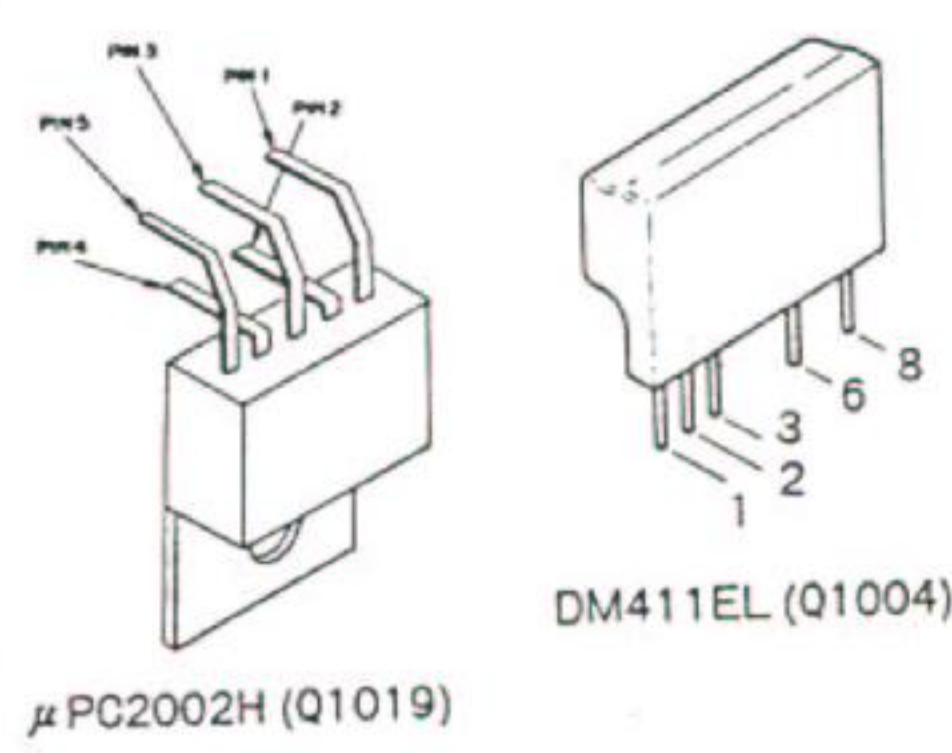
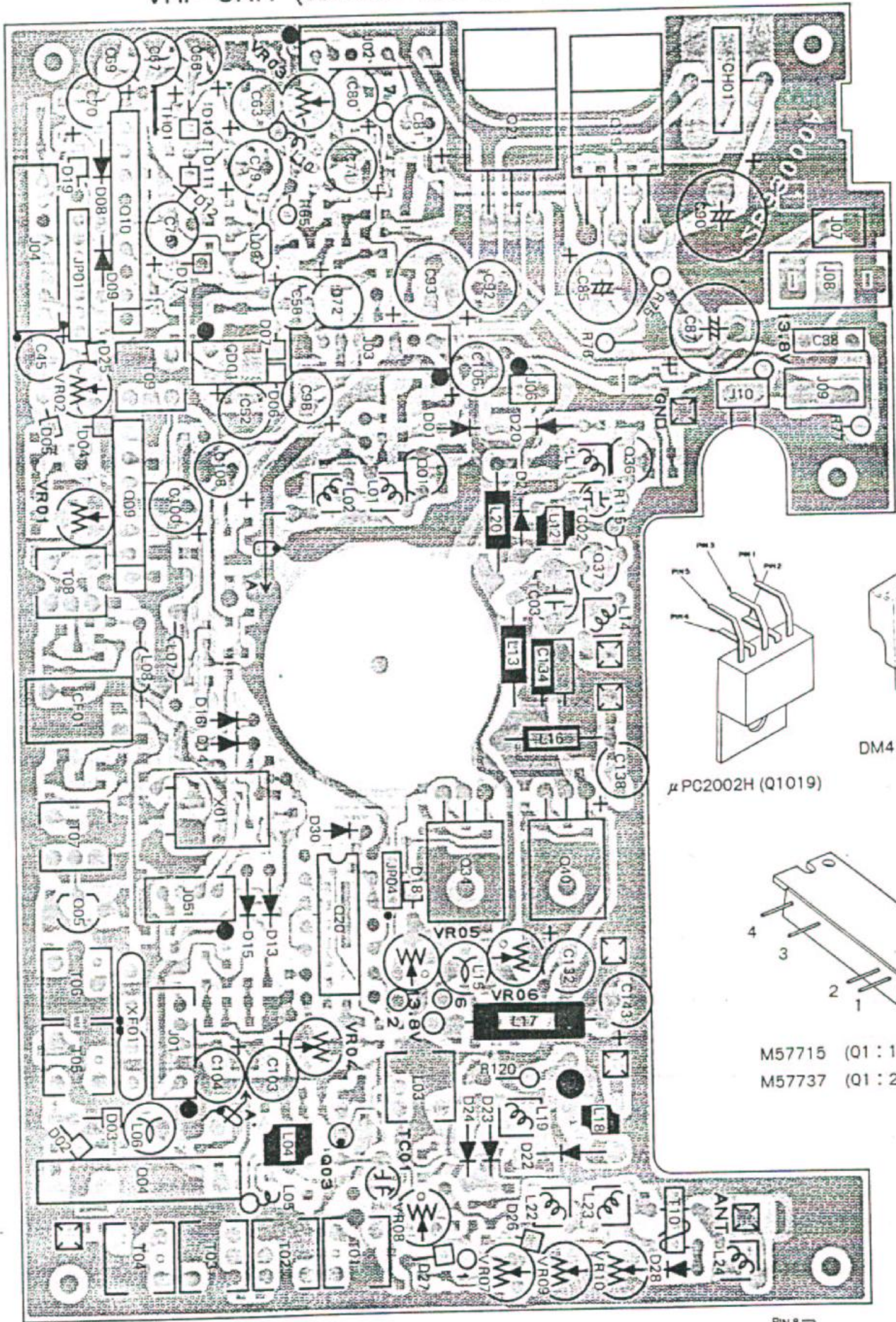
Examples : $\overline{A1}$ 10pF NPO
J3| 0.0022μF D
|A3 0.001μF B

SEMICONDUCTOR CROSS-REFERENCE

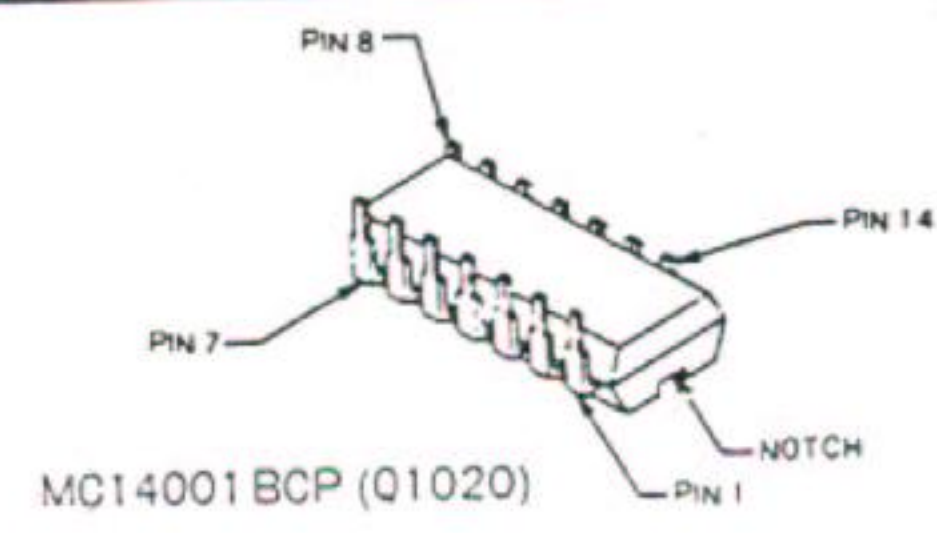
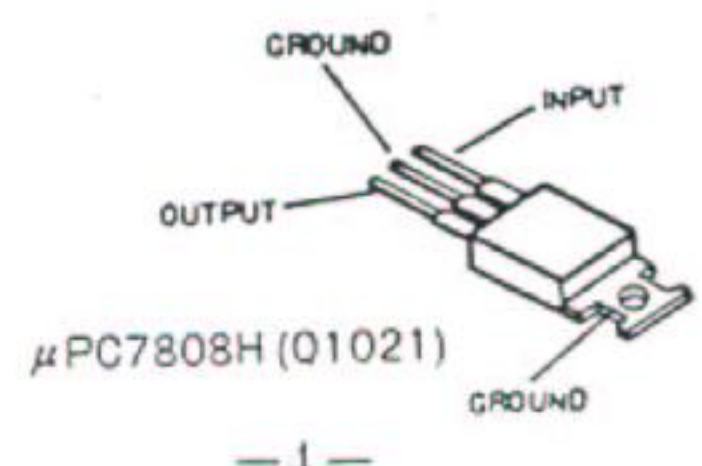
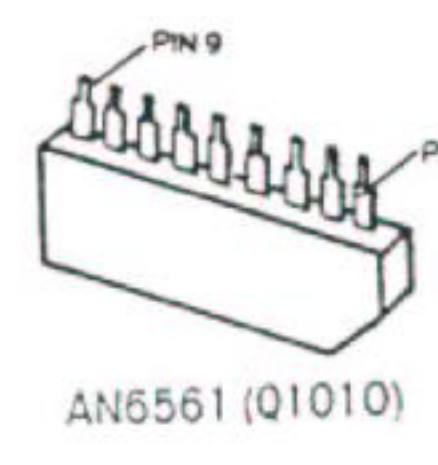
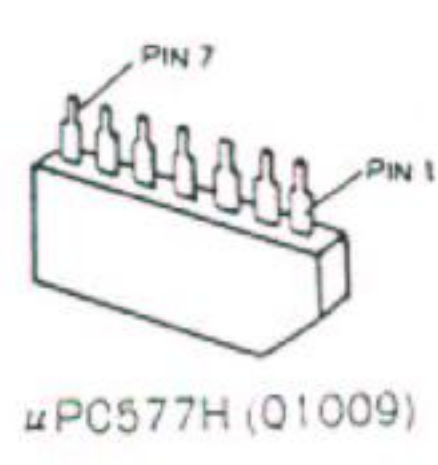
PART LOCATION No.	ORIGINAL NOMENCLATURE (MARKING) AND PART NUMBER	REPLACEMENT NOMENCLATURE (MARKING) AND PART NUMBER		
	Q1022,1023,1024,1025,1026,1027,2020,2023,4005,4006	2SA1162GR(SG) G3111620G	2SA812F/G(M6/M7) G3108120F/G	2SA1052C/D(MC/MD) G3110520C/D
Q1002,1006,1007,2006,3010	2SC2619B(FB) G3326190B	2SC1009A(FA3/FA4) G3310090A		
Q3003,3005,3007	2SC2620B(QB) G3326200B	2SC2223(F12/F13) G3322230		
Q1008,1011,1012,1014,1015,1017,1018,1028,1029,1030,1031,1032,1033,1035,1038,1039,1041,1042,2007,2008,2015,2017,2018,2019,2022,2024,3011,3012,4003,4004,4007	2SC2712GR/Y(LG/LY) G3327120G/Y	2SC1623F/G(L6/L7) G3316230F/G	2SC2462C/D(LC/LD) G3324620C/D	2SC2812F/G(L6/L7) G3328120F/G
Q3001,3002	2SC3356(R22) G3333560	2SC2734 G3327340		
D4002	1S8184(B3) G2070009	1S2838(A6) G2070018	DCR015TA(A6) G2070012	

* Use original types only for Q1013, Q1016 and Q3004

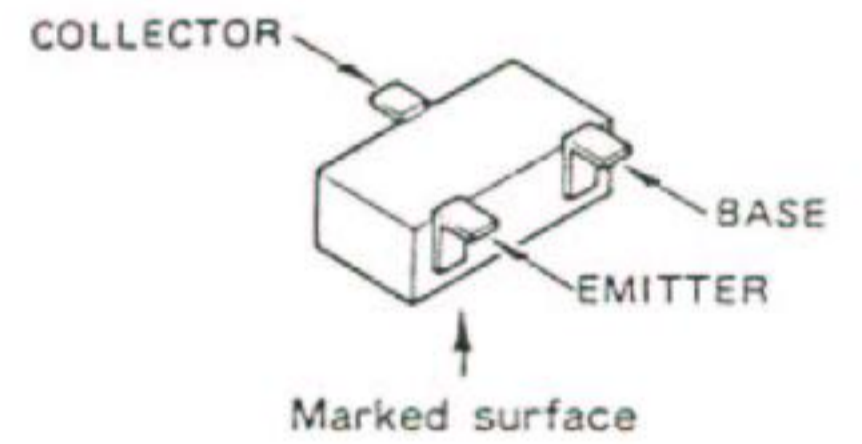
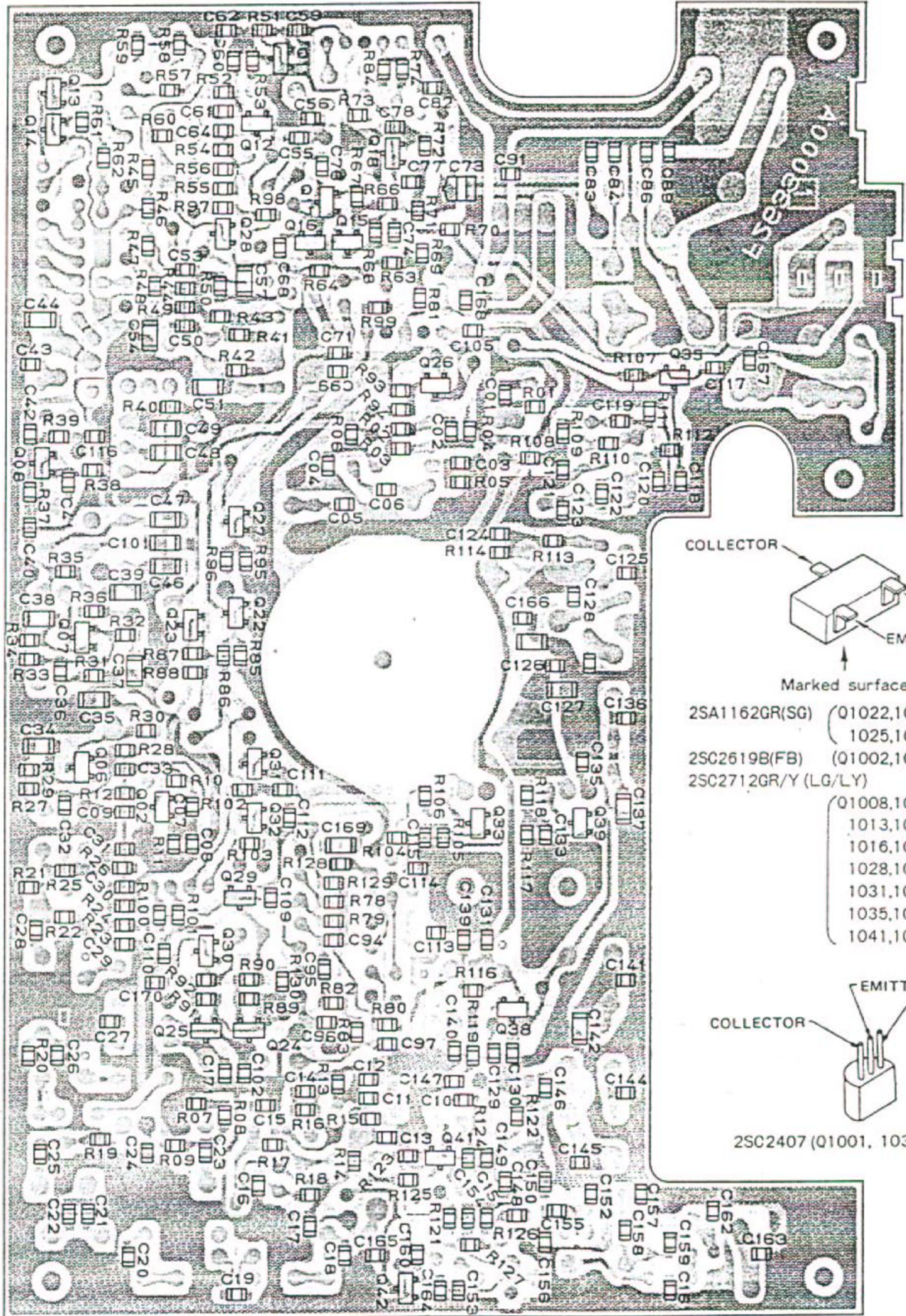
VHF UNIT (obverse view of "mixed component" side)



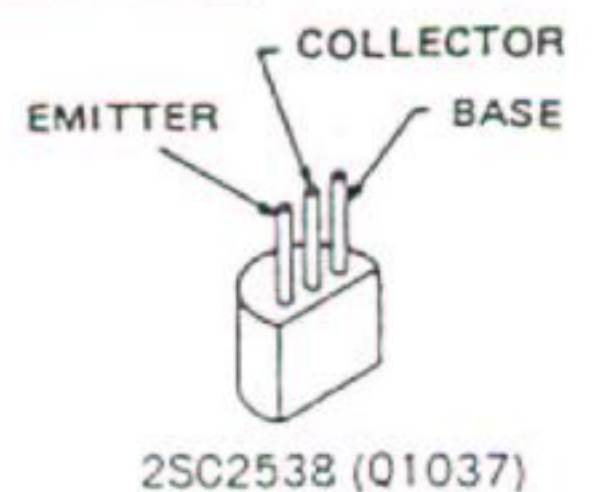
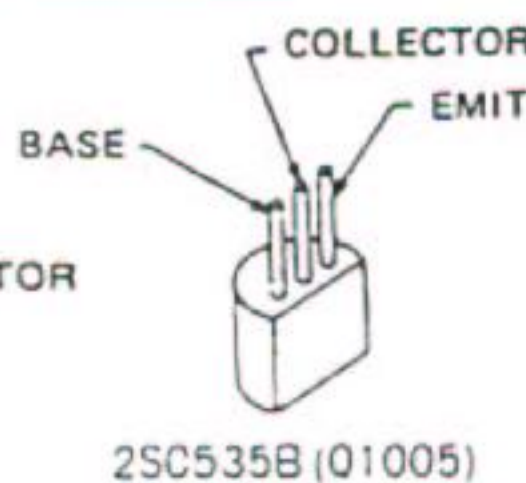
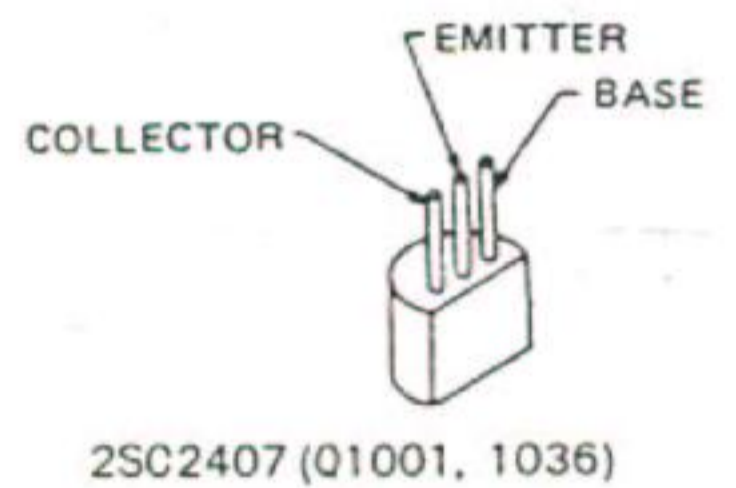
M57715 (Q1 : 10W)
M57737 (Q1 : 25W)



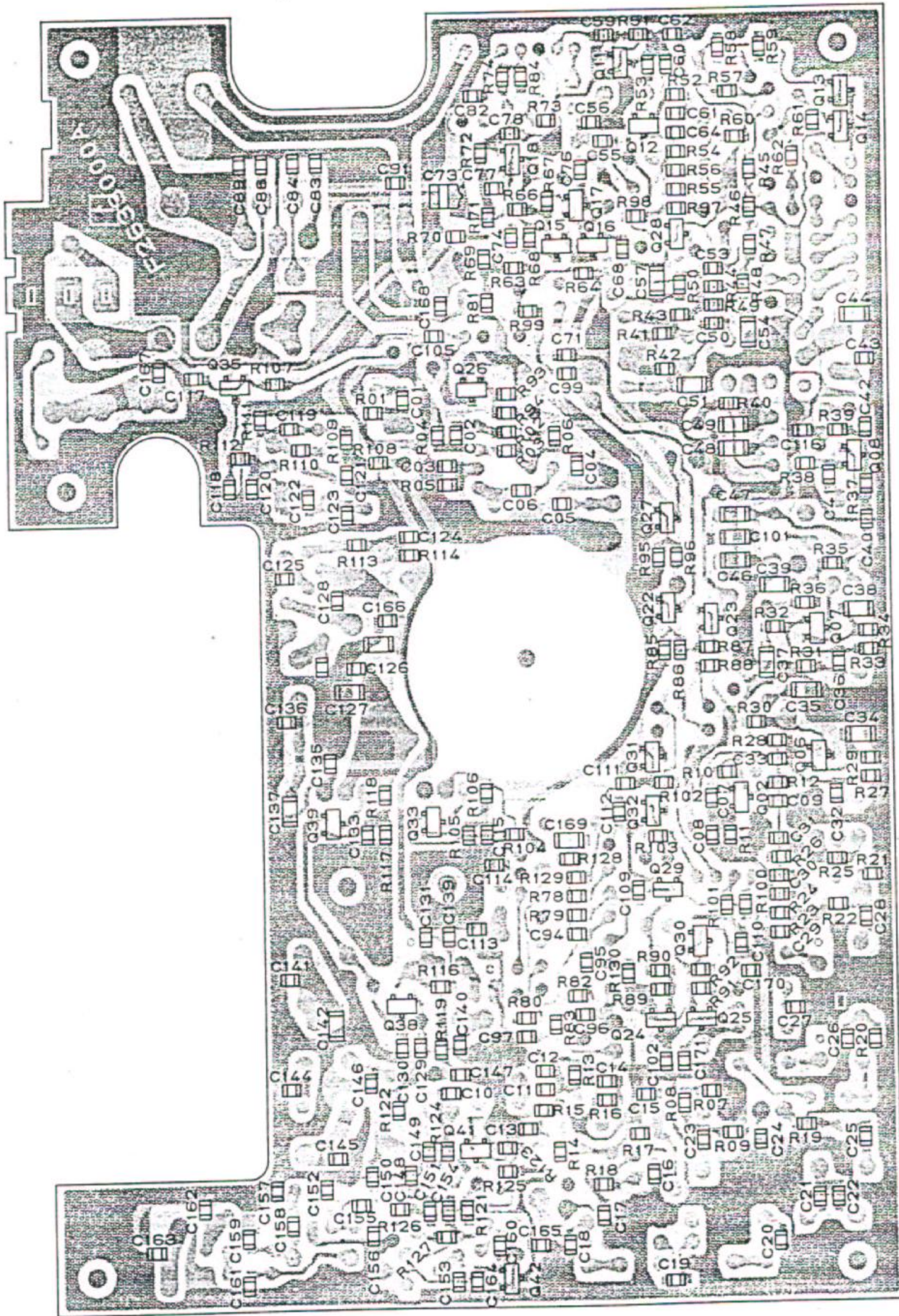
VHF UNIT (reverse view of "chip-only" side)



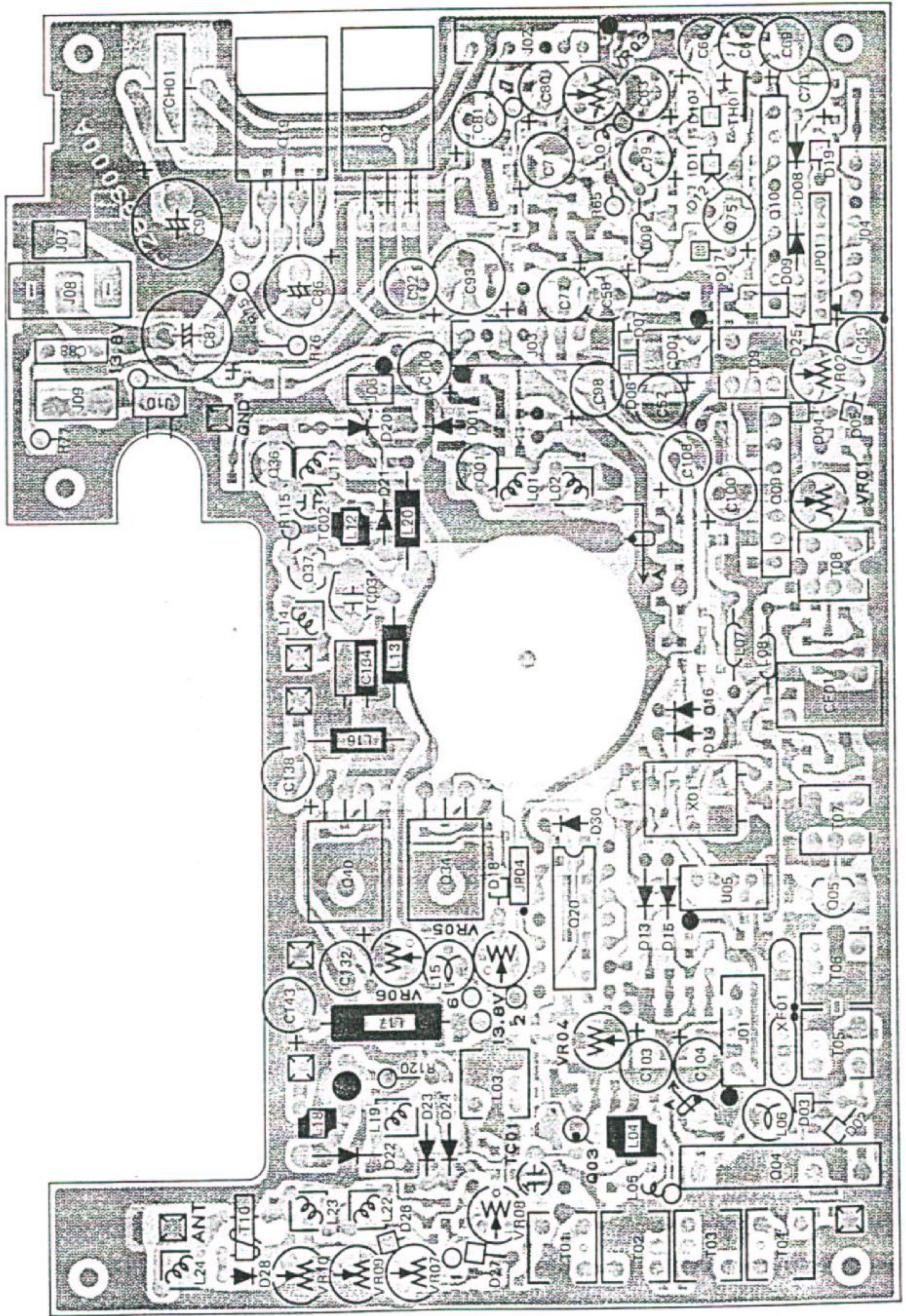
- 2SA1162GR(SG) (Q1022,1023,1024, 1025,1026,1027)
- 2SC2619B(FB) (Q1002,1006,1007)
- 2SC2712GR/Y (LG/LY) (Q1008,1011,1012, 1013,1014,1015, 1016,1017,1018, 1028,1029,1030, 1031,1032,1033, 1035,1038,1039, 1041,1042)



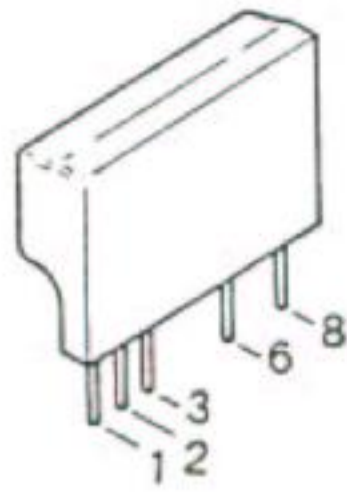
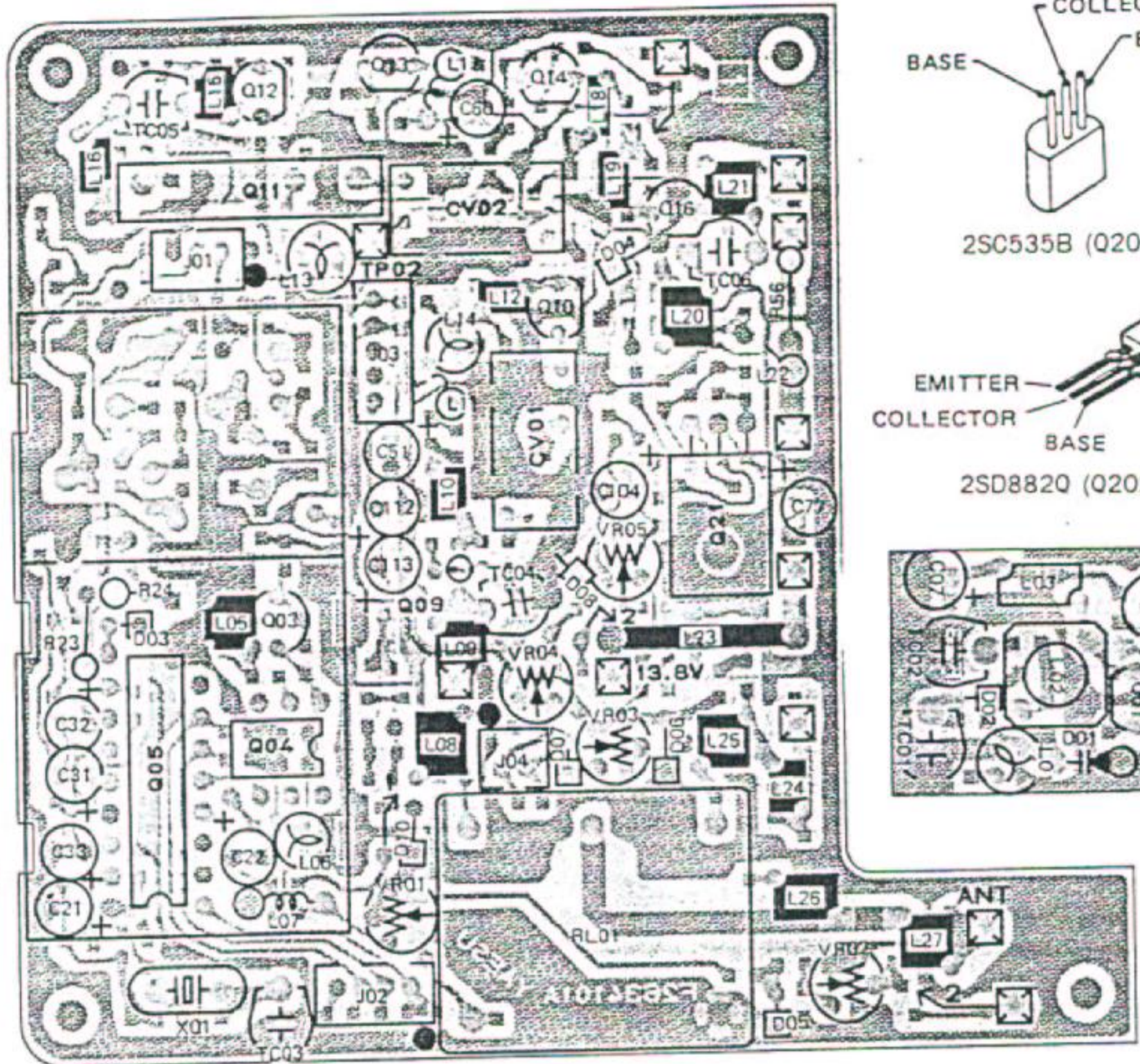
VHF UNIT (obverse view of "chip-only" side)



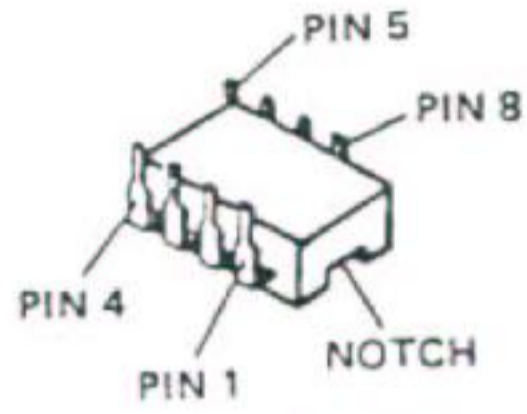
VHF UNIT (reverse view of "mixed component" side)



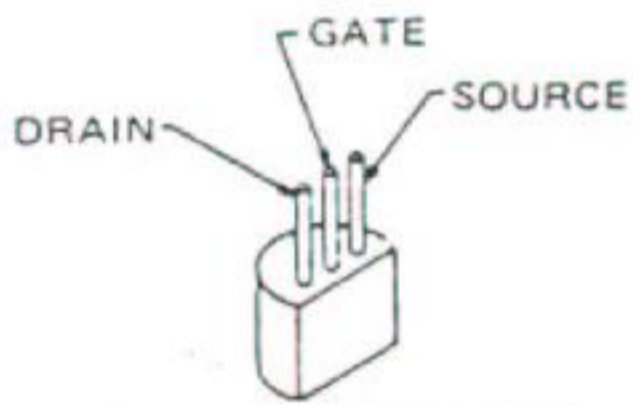
UHF UNIT (obverse view of "mixed component" side)



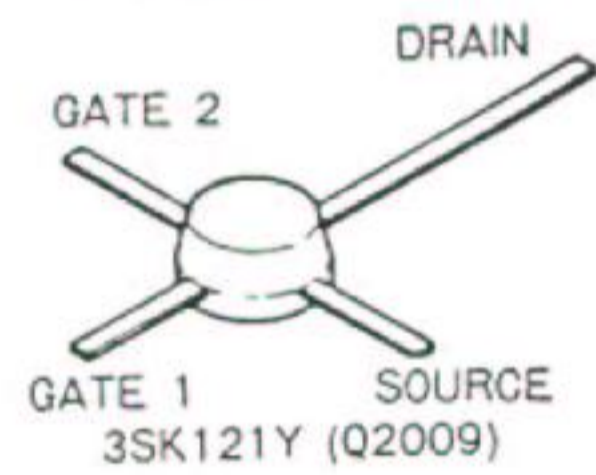
DM411EL (Q2011)



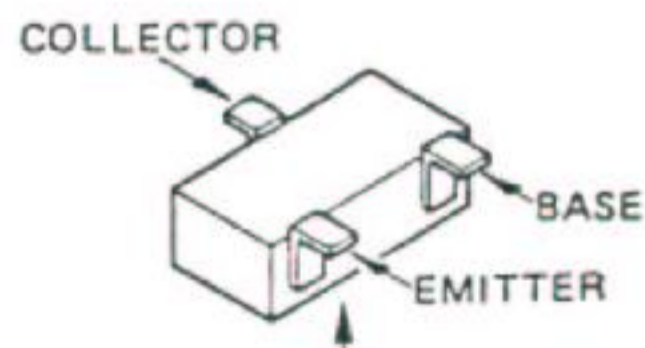
μPB571C (Q2004)



2SK125 (Q2001,2010)

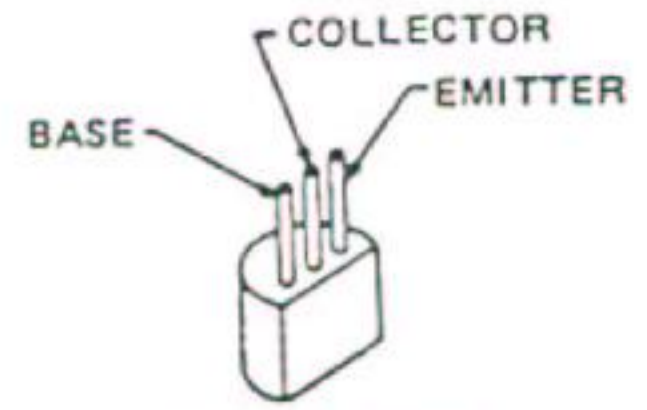


3SK121Y (Q2009)

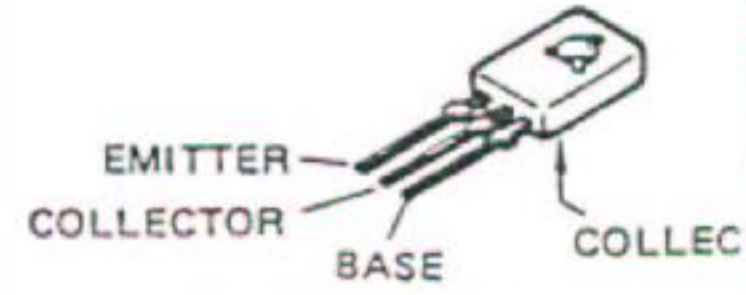


Marked Surface

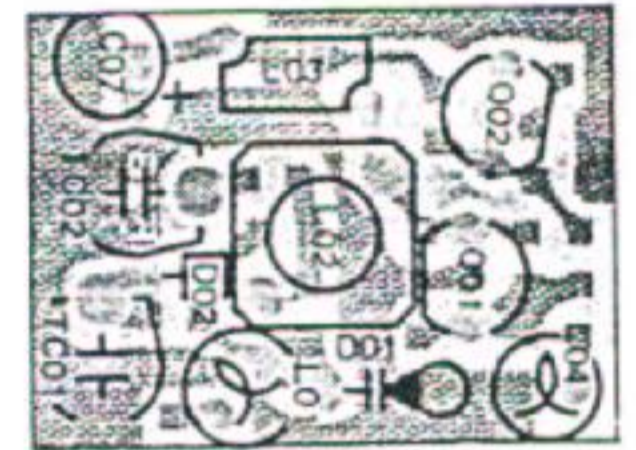
- 2SA1162GR (SG) (Q2020,2023)
- 2SC2619B (FB) (Q2006)
- 2SC2712GR/Y (LG/LY) (Q2007,2008,2015,2017,2018,2019,2022,2024)



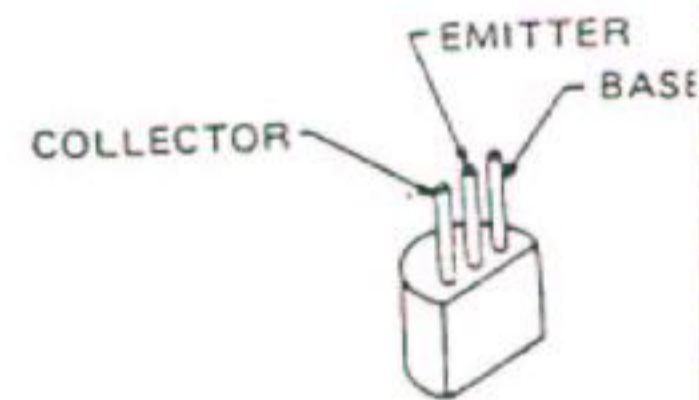
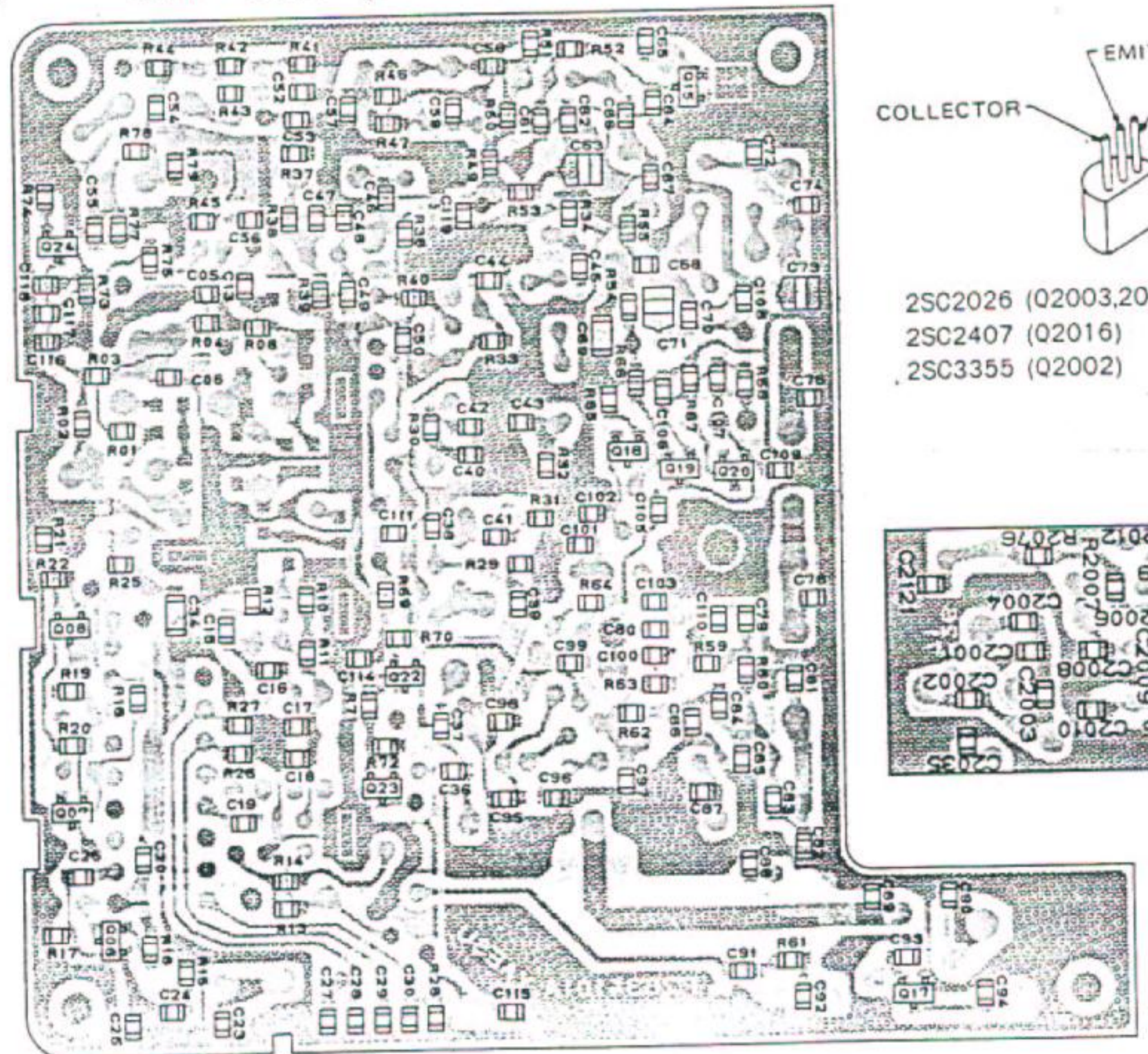
2SC535B (Q2012)



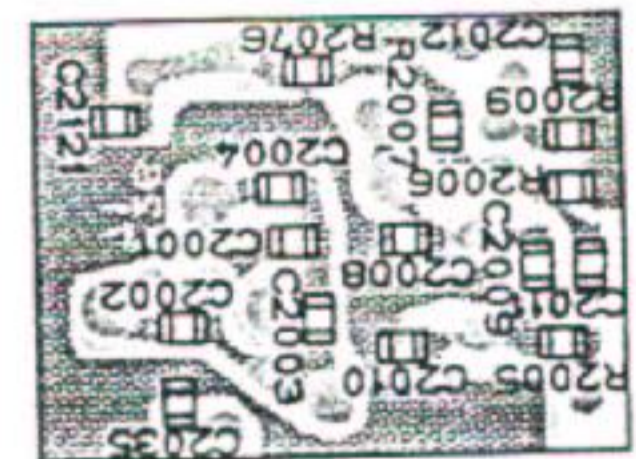
2SD882Q (Q2021)



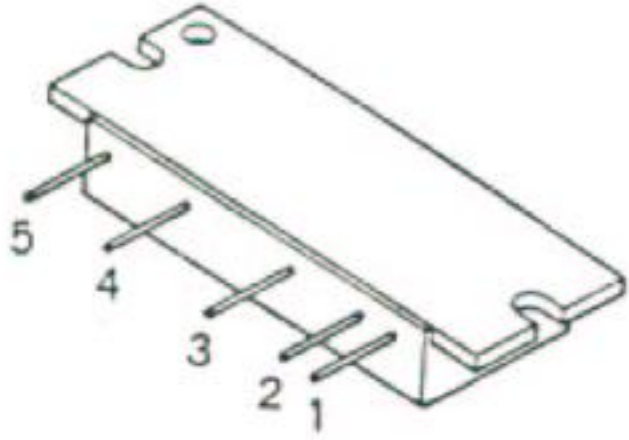
UHF UNIT (reverse view of "chip-only" side)



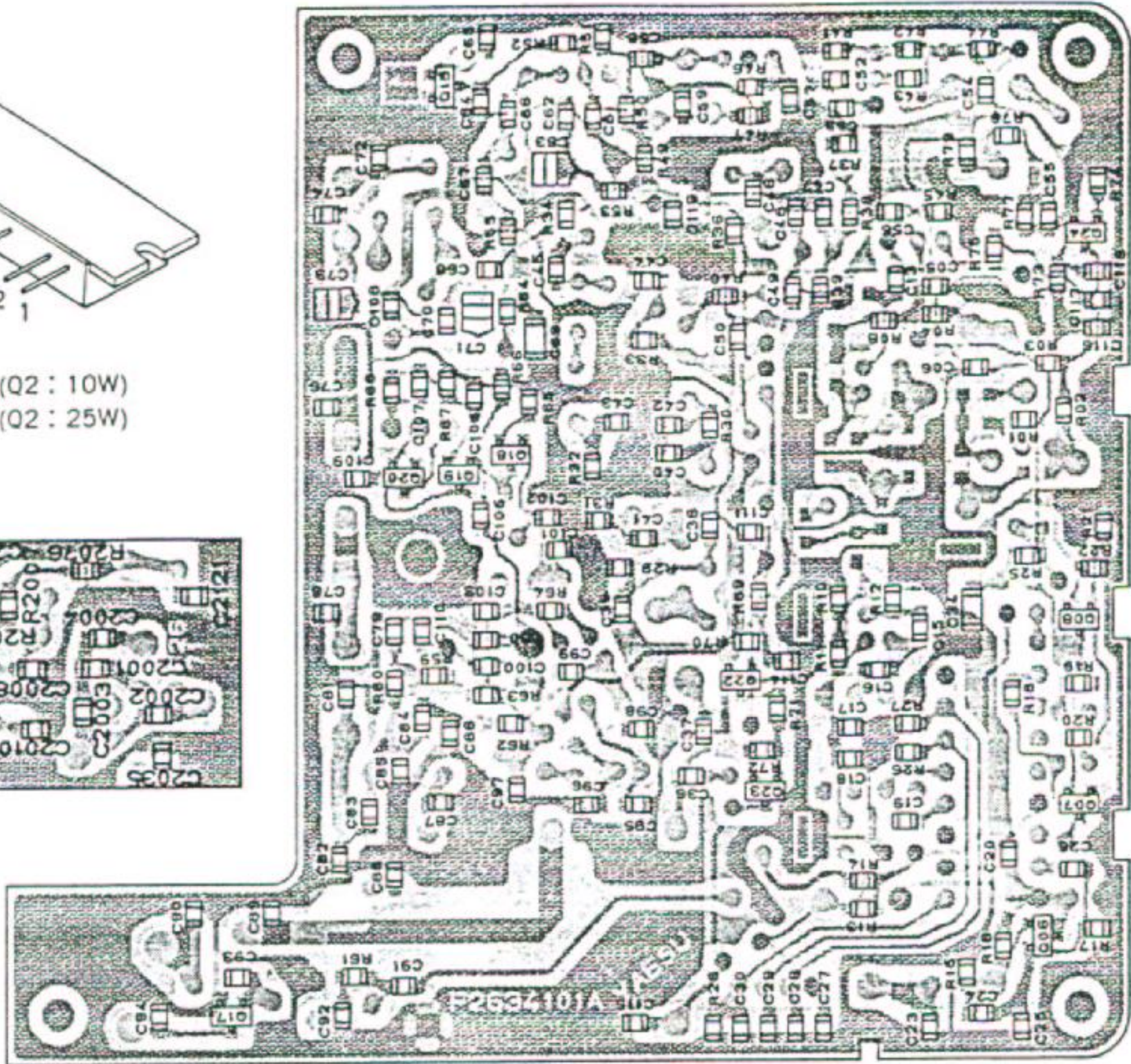
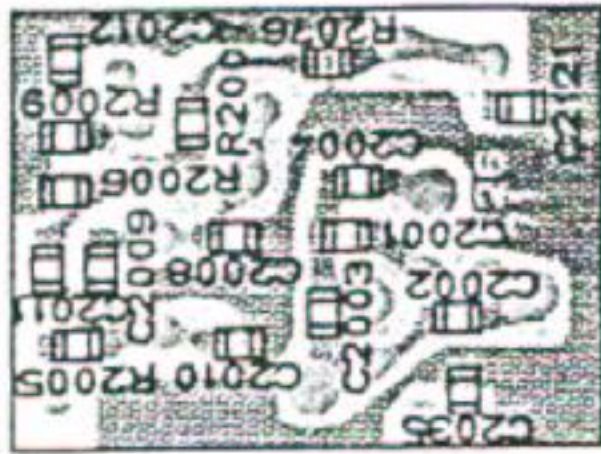
- 2SC2026 (Q2003,2013,2014)
- 2SC2407 (Q2016)
- 2SC3355 (Q2002)



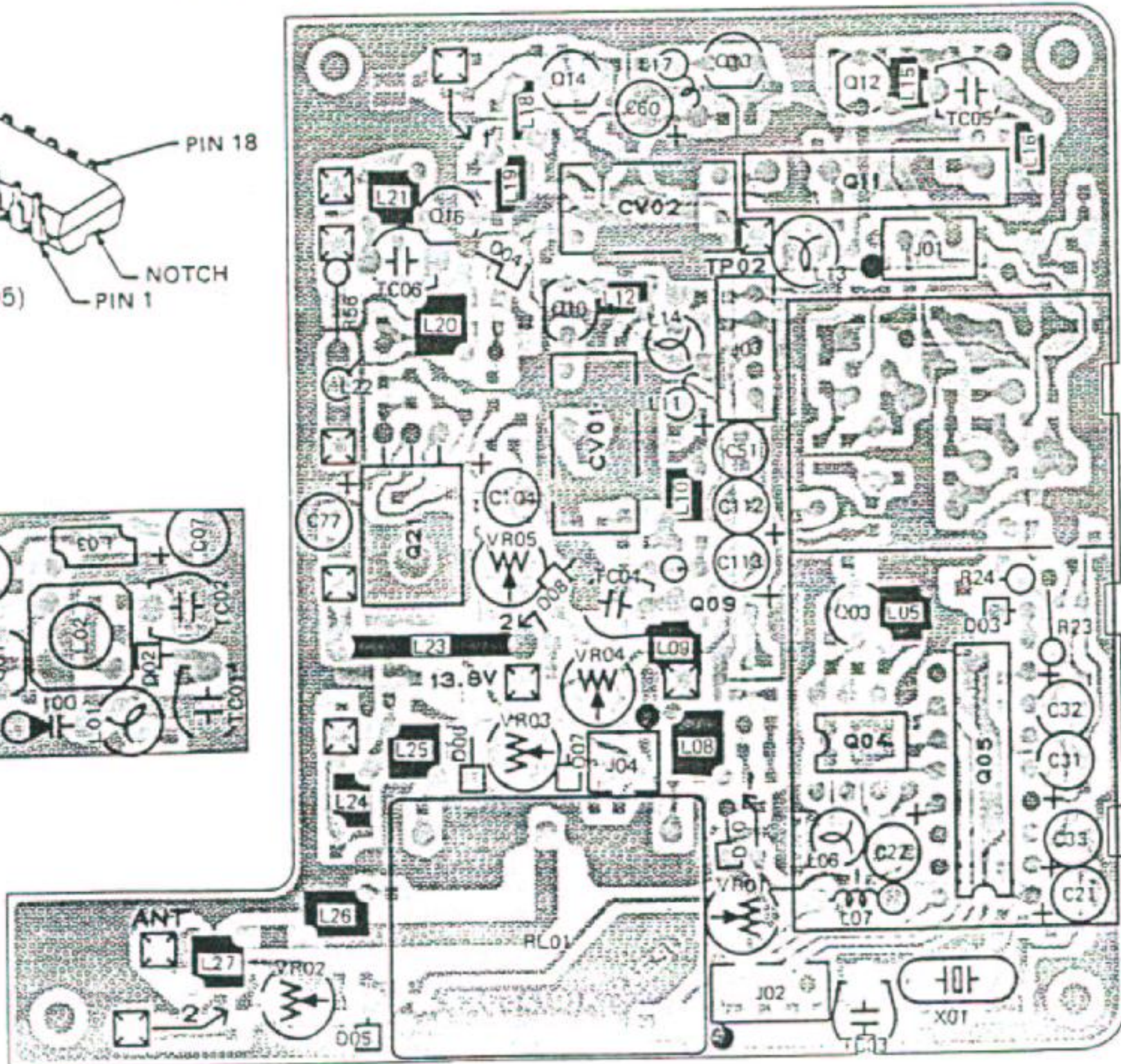
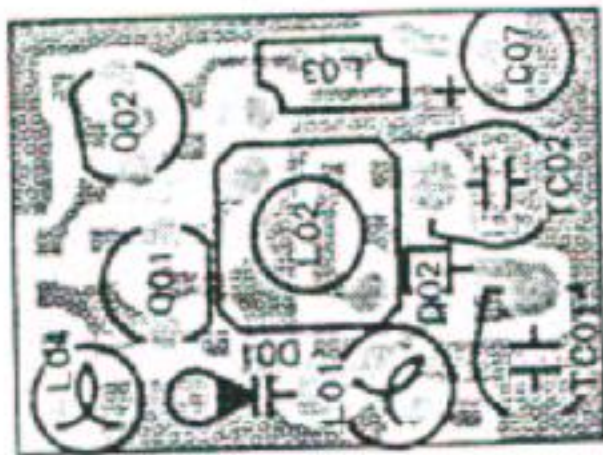
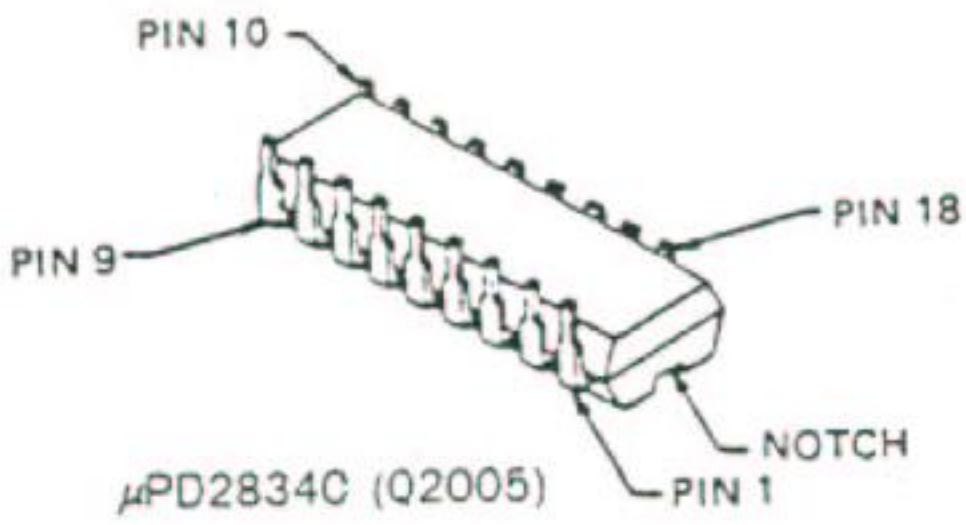
UHF UNIT (obverse view of "chip-only" side)



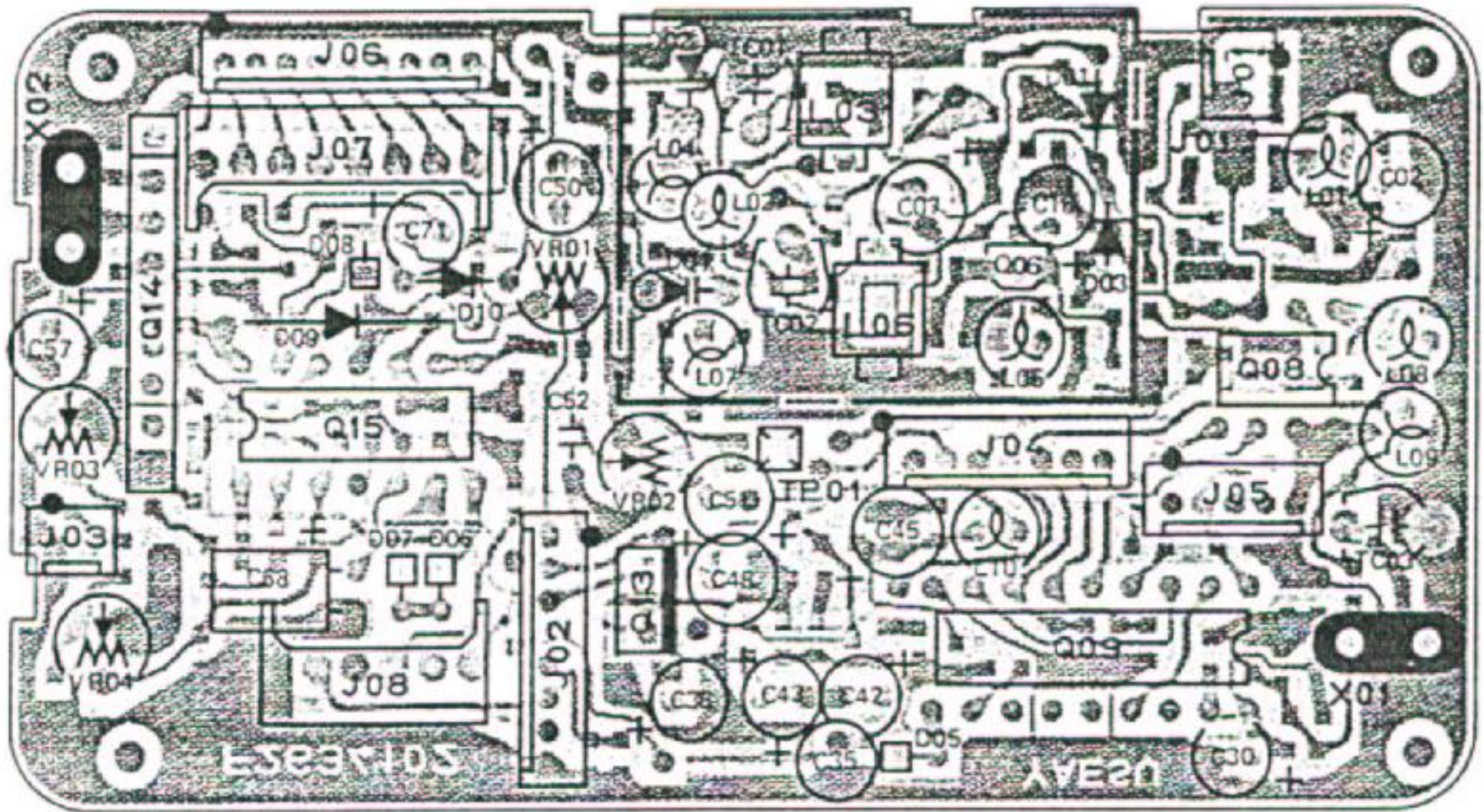
M57704M (Q2 : 10W)
M57729 (Q2 : 25W)



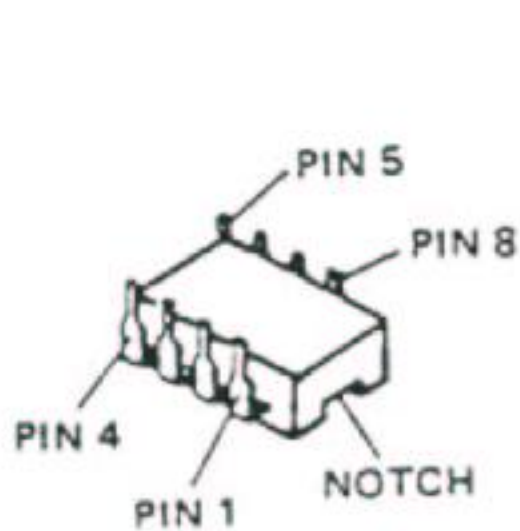
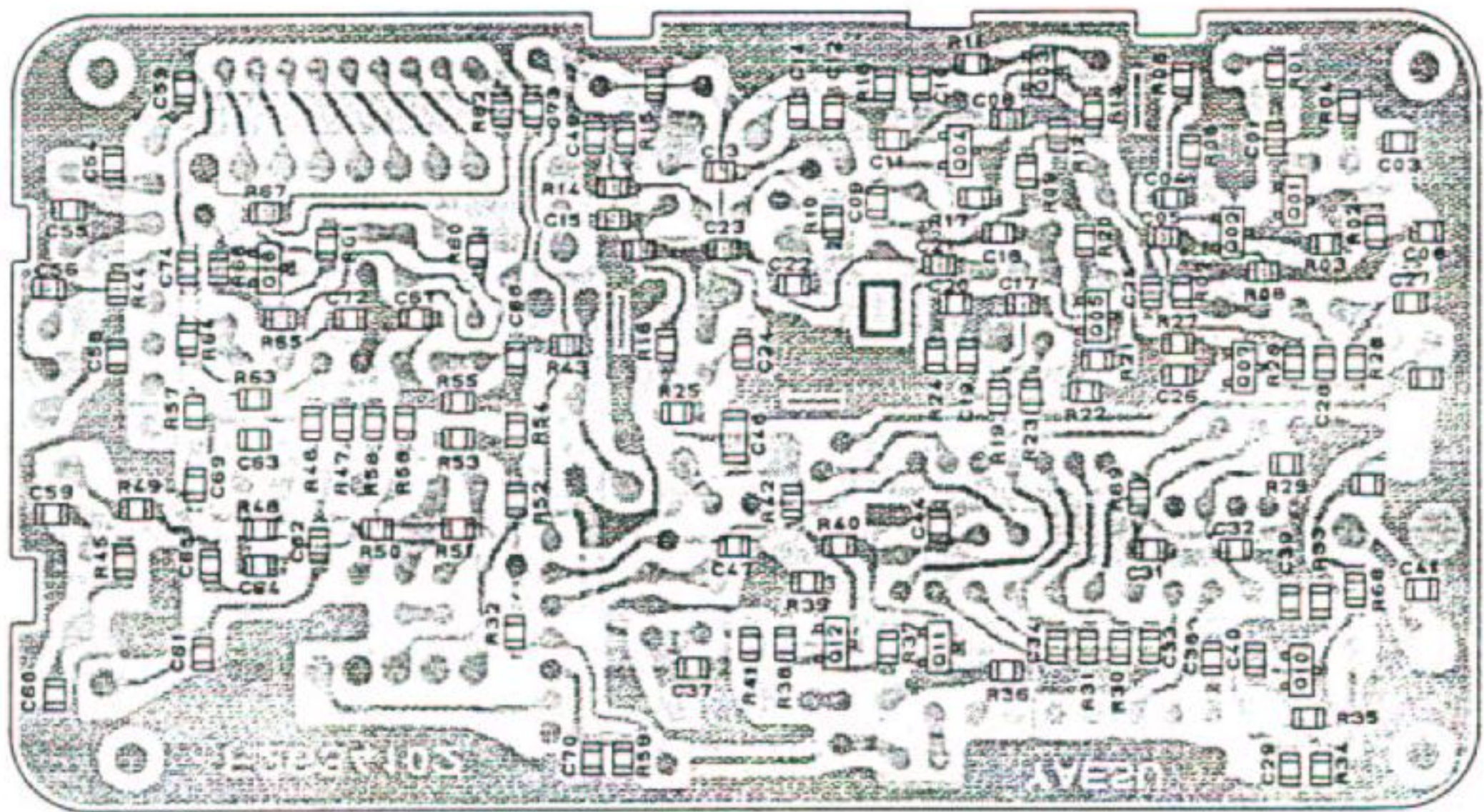
UHF UNIT (reverse view of "mixed component" side)



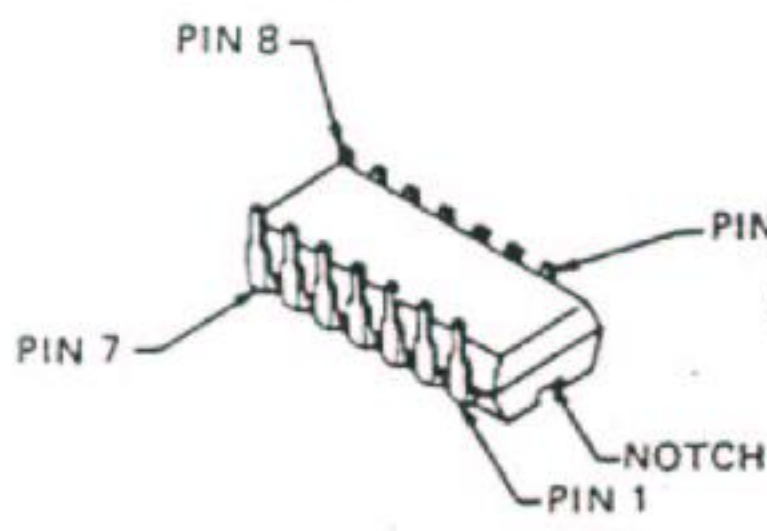
PLL UNIT (obverse view of "mixed component" side)



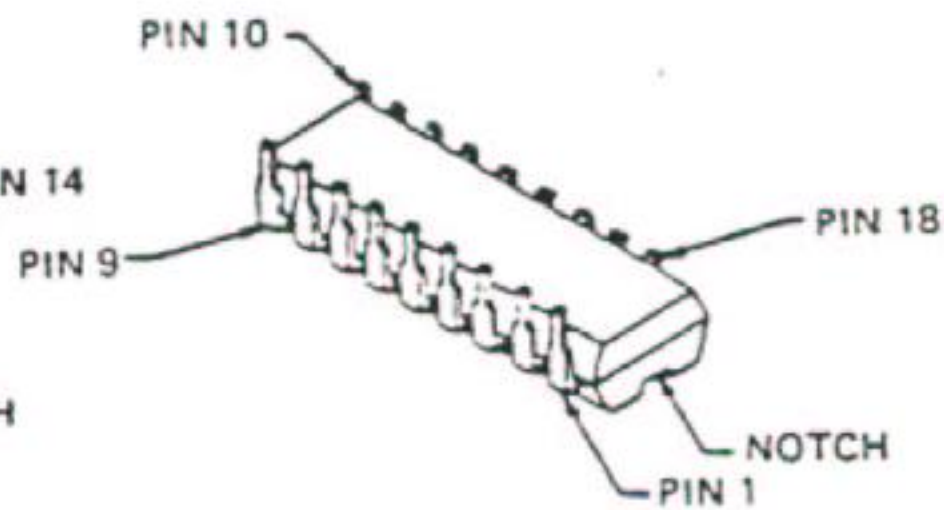
PLL UNIT (reverse view of "chip-only" side)



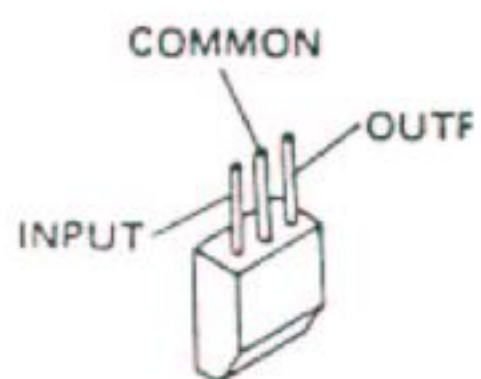
μ PB555C (Q3008)



MLM2902P (Q3015)

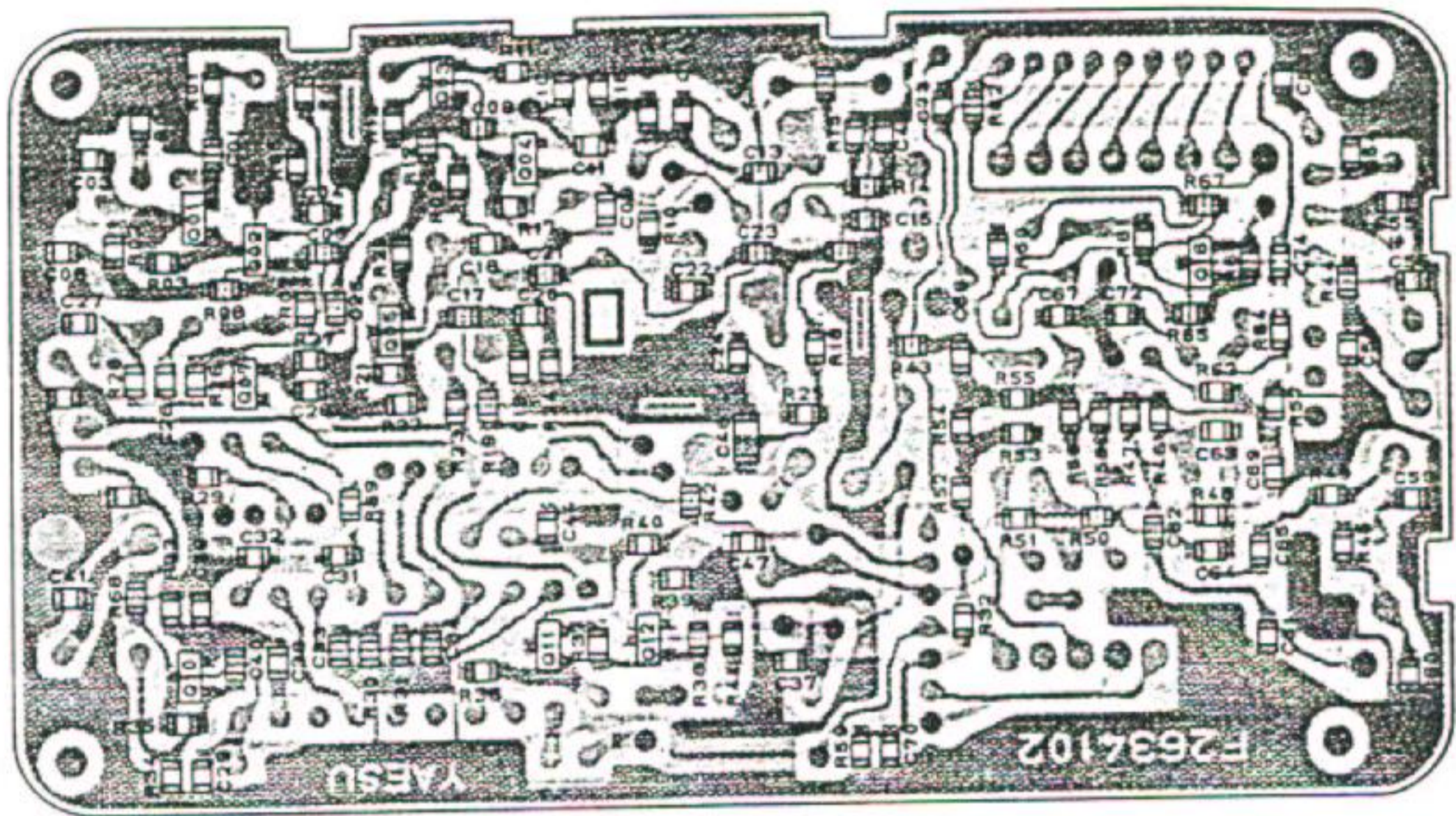


μ PD2834 (Q3009)

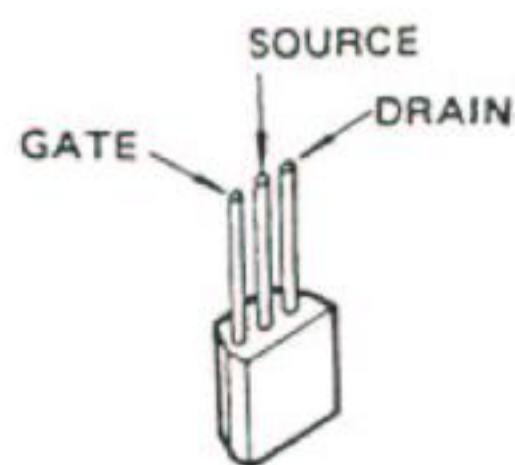
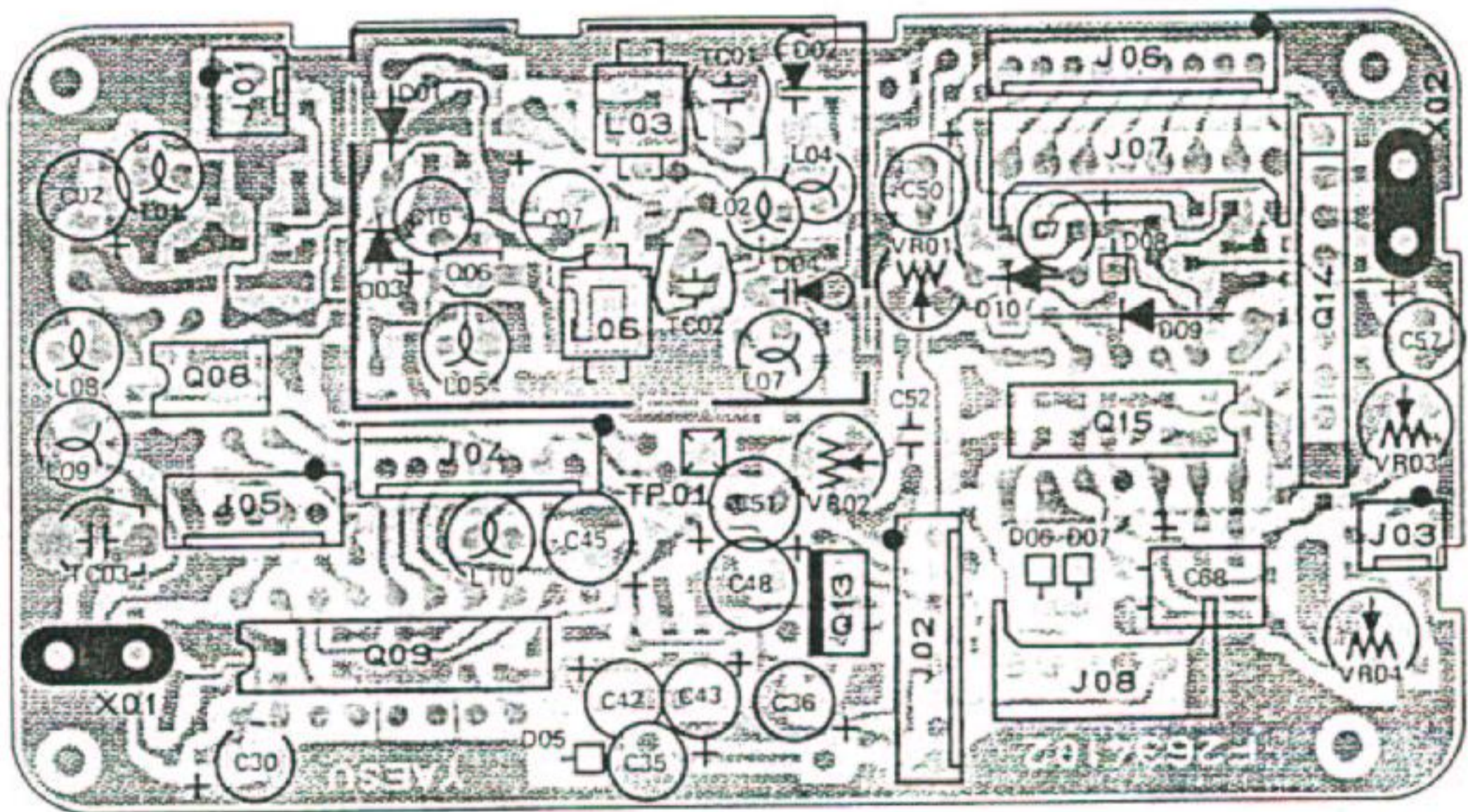


μ PC78L05 (Q3013)

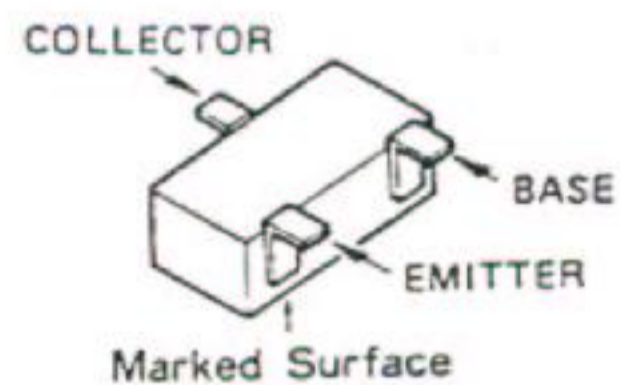
PLL UNIT (obverse view of "chip-only" side)



PLL UNIT (reverse view of "mixed component" side)

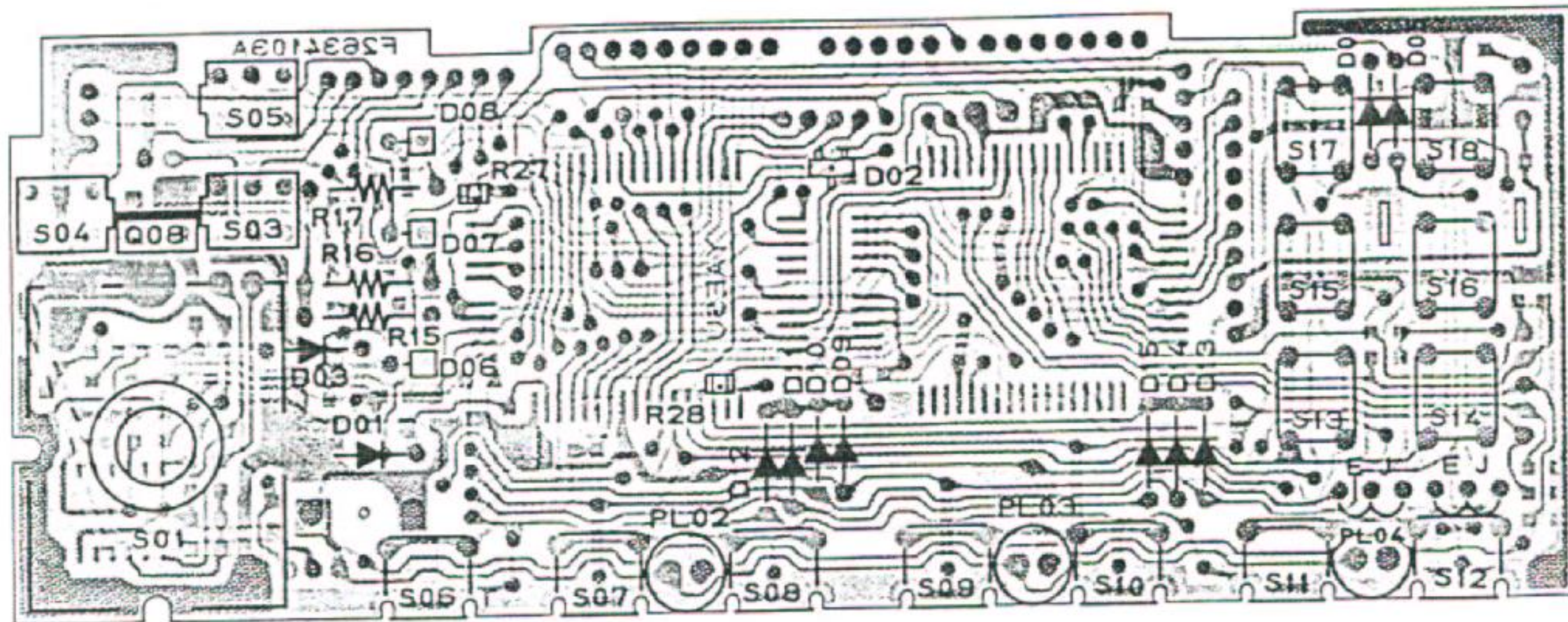


2SK192A-GR (03006)

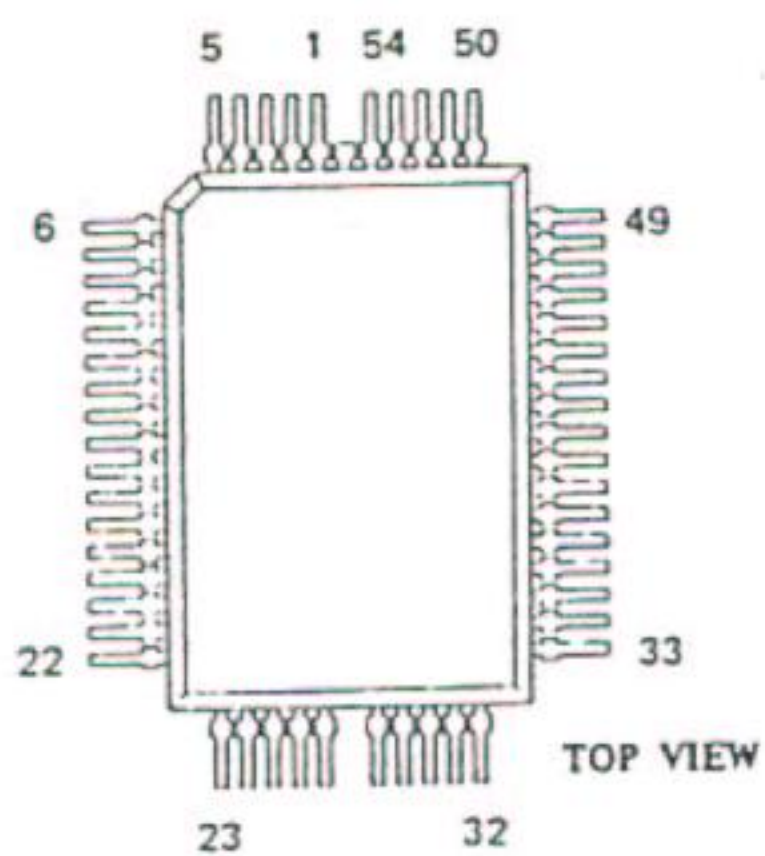
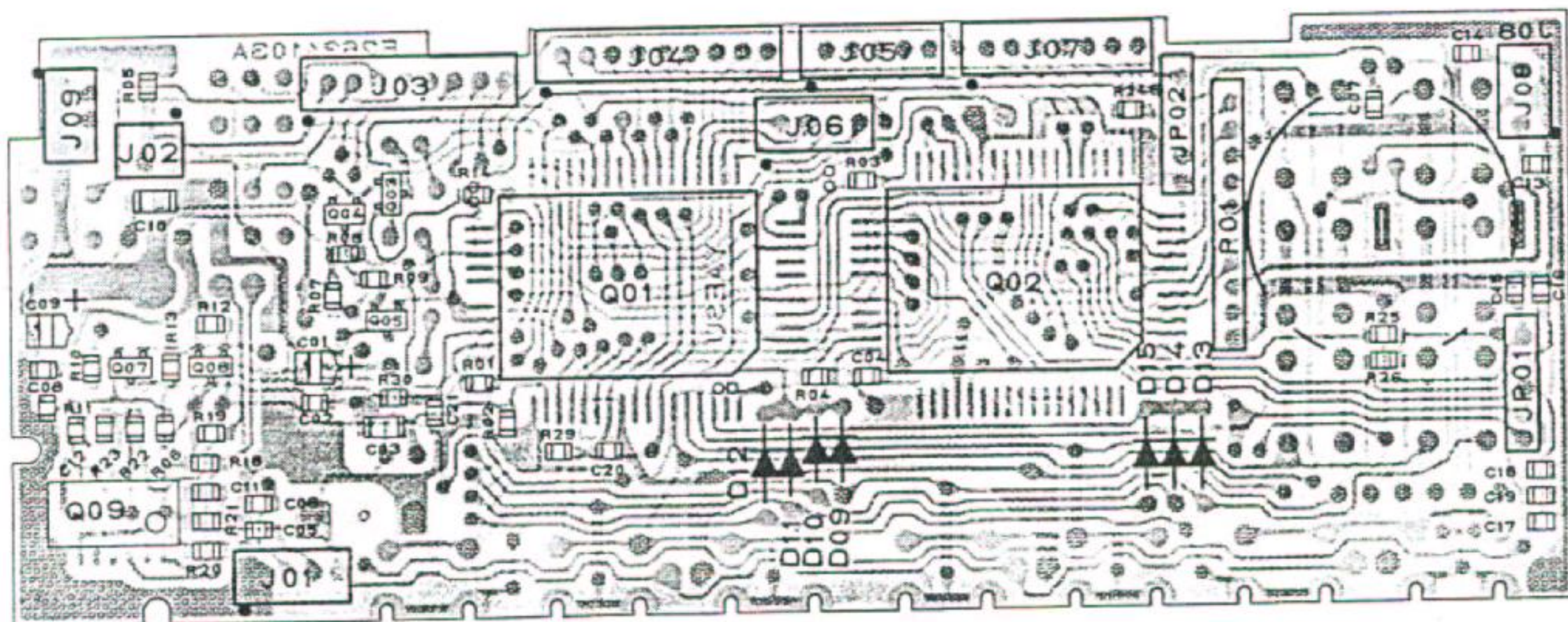


- 2SC2619B(FB) (03010)
- 2SC2620B(OB) (03003,3004,3005,3007)
- 2SC2712GR Y(LG LY) (03011,3012)
- 2SC3356 R22 (03001,3002)

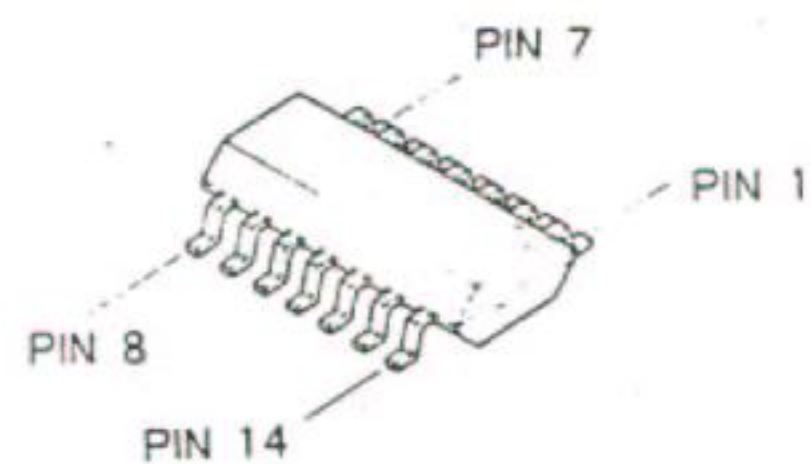
CONTROL UNIT (obverse view of "switch" side)



CONTROL UNIT (reverse view of "IC" side)

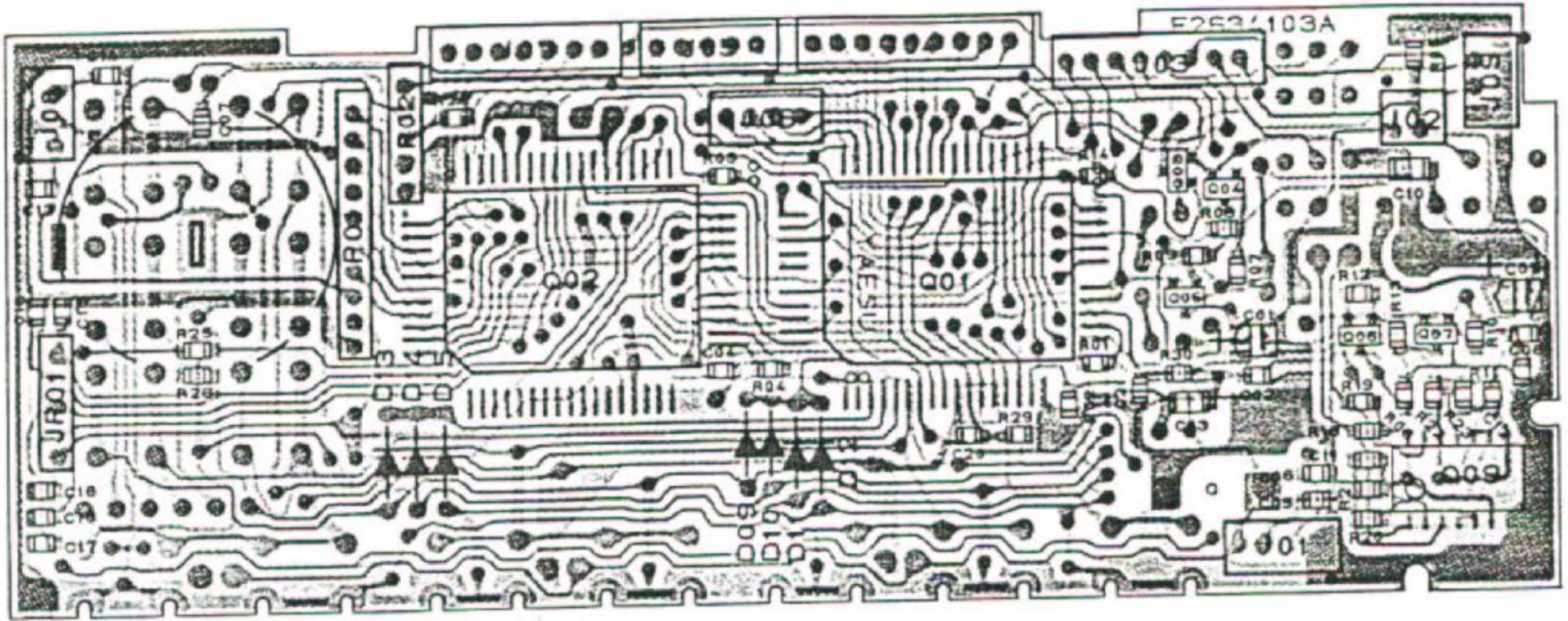


HD44750F11 (Q4002)
HD44868A03 (Q4001)

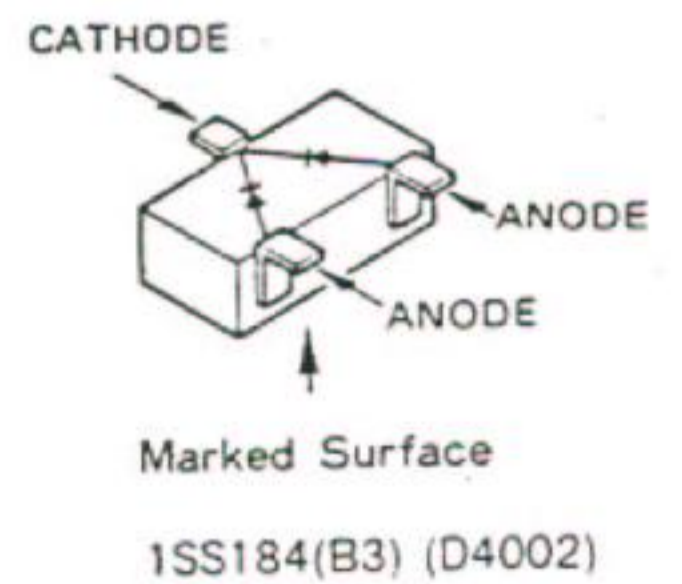
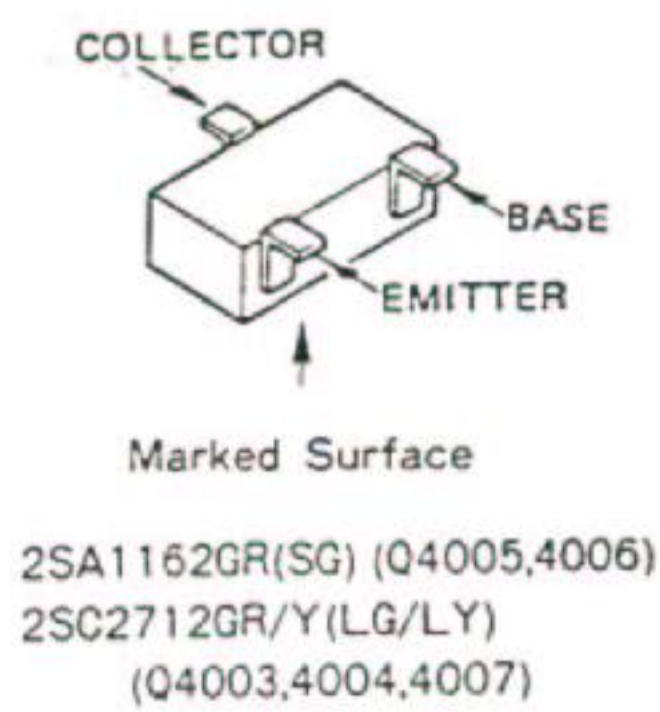
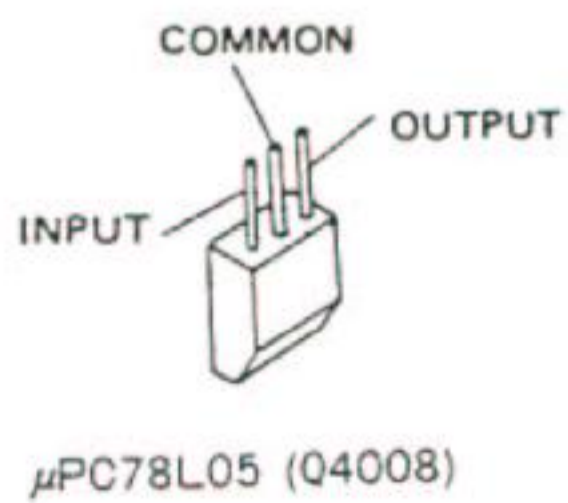
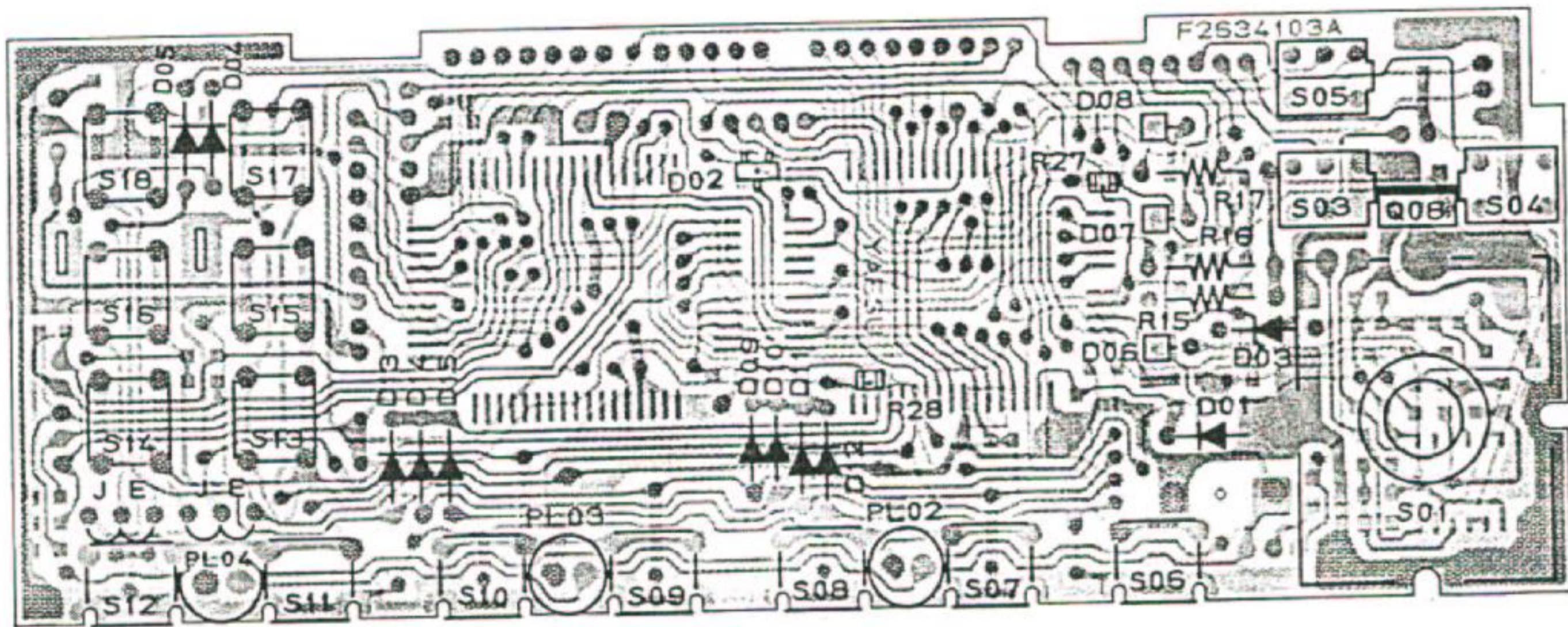


μPD4069UBG (04009)

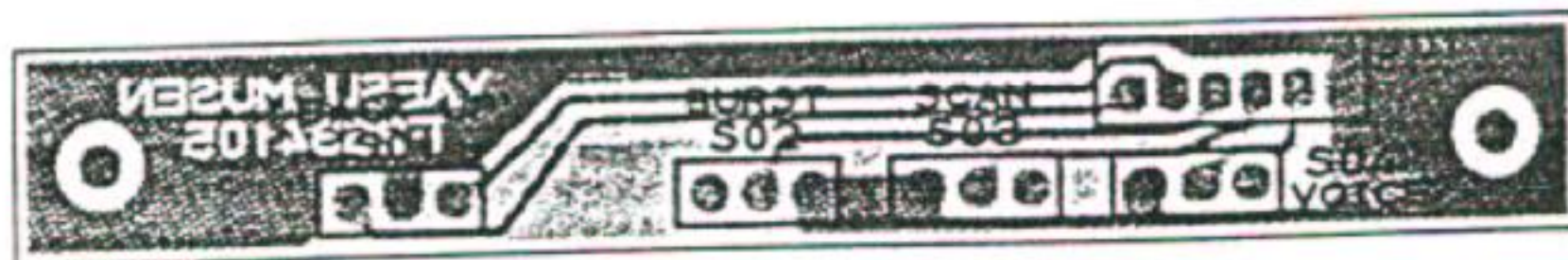
CONTROL UNIT (obverse view of "IC" side)



CONTROL UNIT (reverse view of "switch" side)



SW(A)UNIT

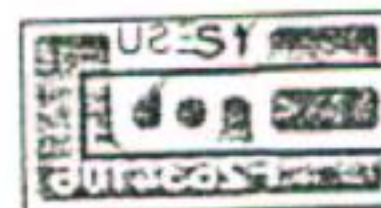


(obverse view of "component" side)

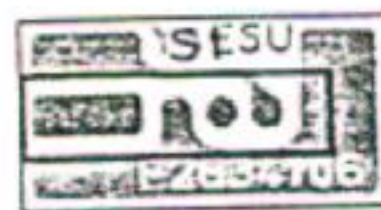


(reverse view of "component" side)

SW(B)UNIT

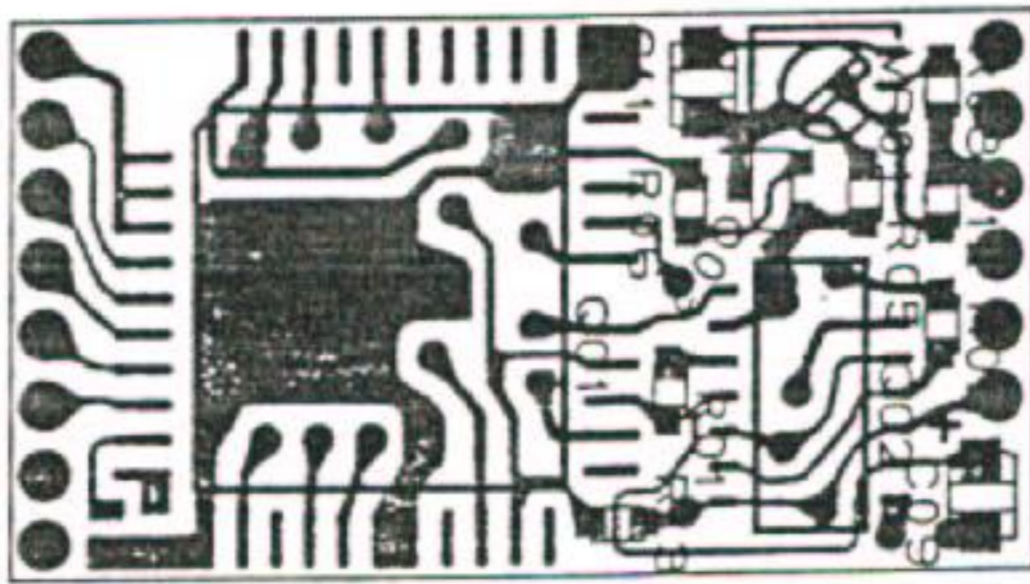


(obverse view of "component" side)

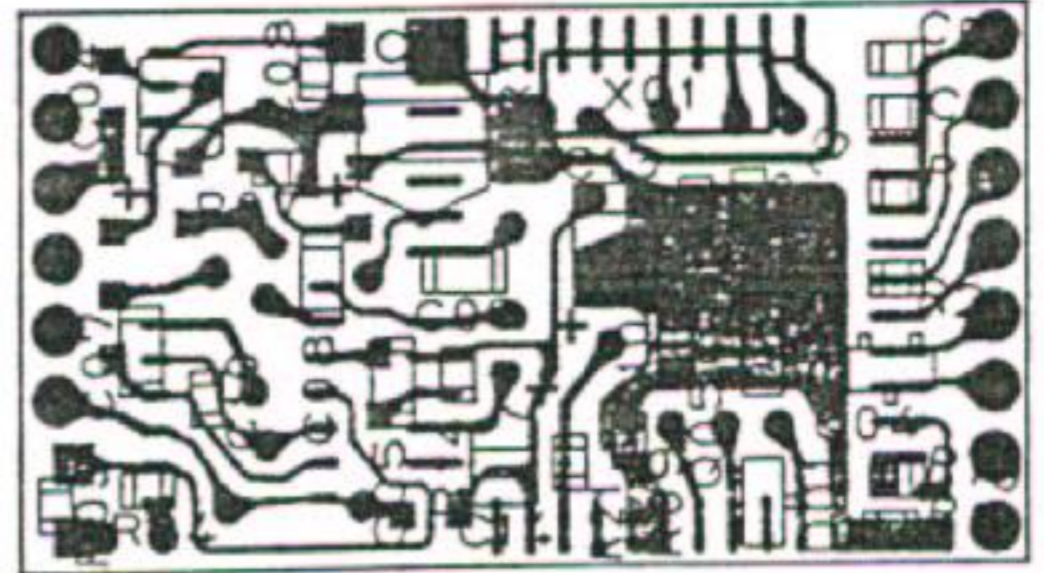


(reverse view of "component" side)

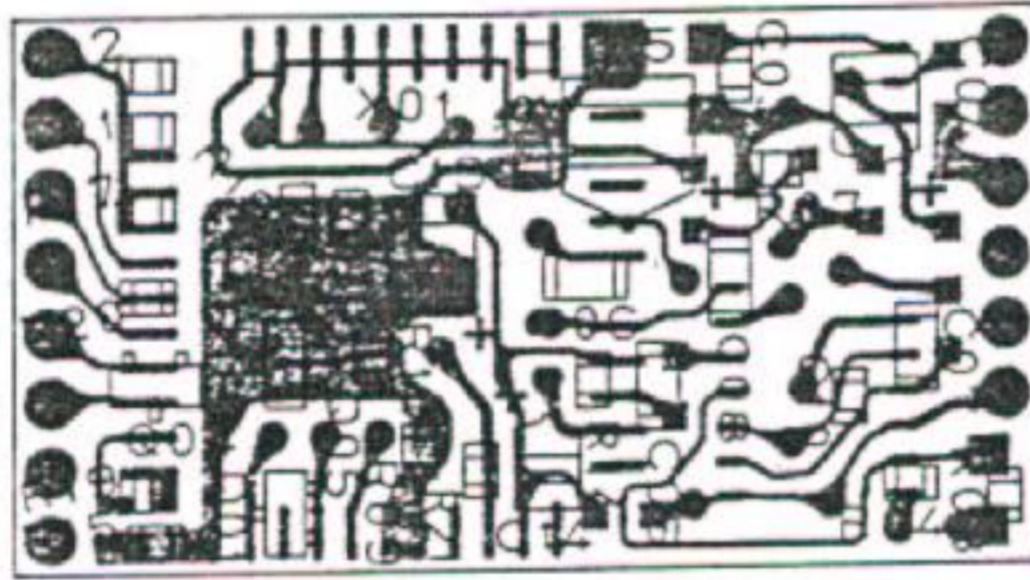
FTS-8 TONE SQUELCH UNIT



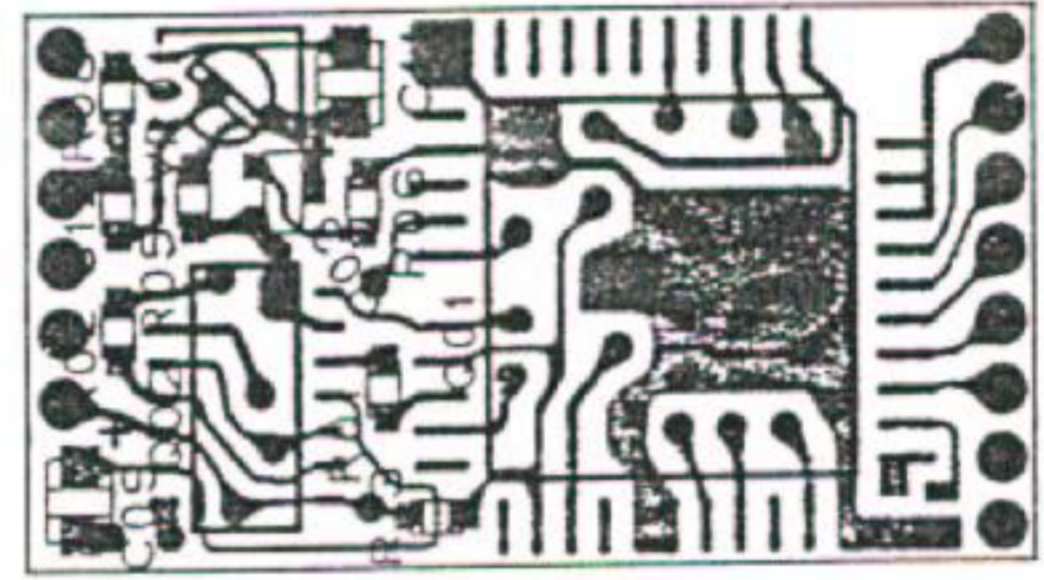
(obverse view of "IC" side)



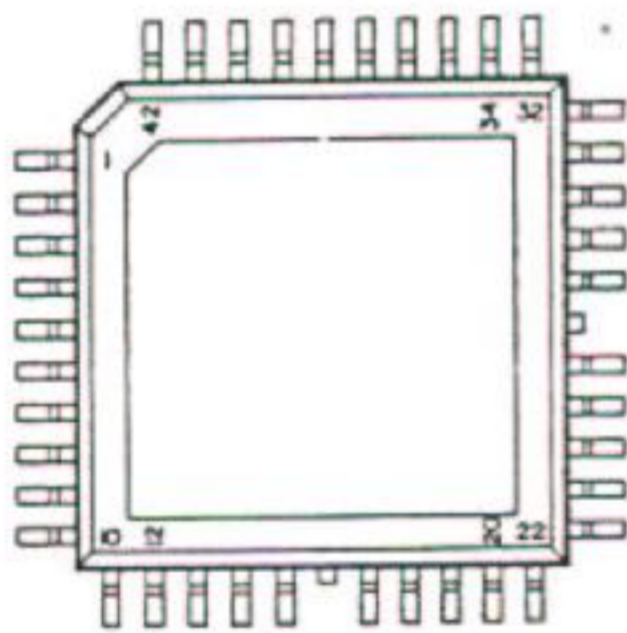
(obverse view of "crystal" side)



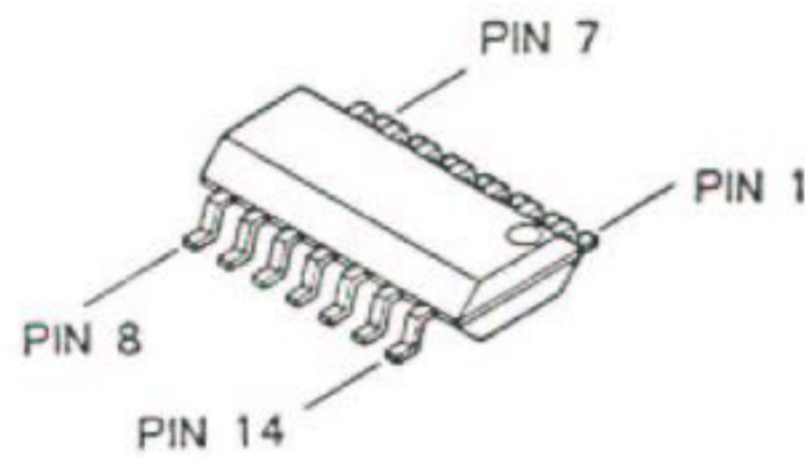
(reverse view of "crystal" side)



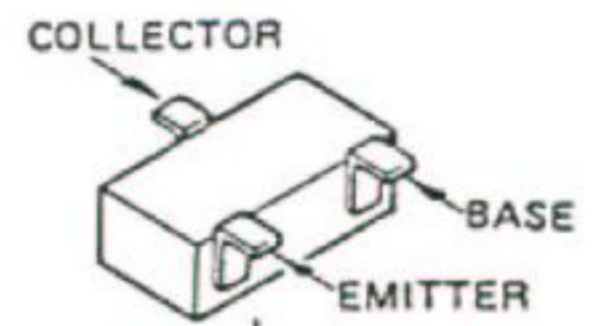
(reverse view of "IC" side)



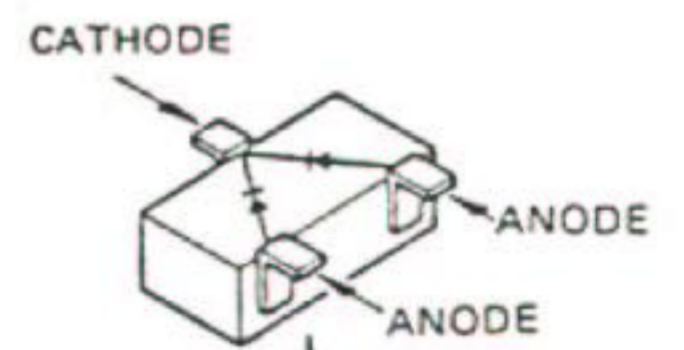
MN6520 (Q1)



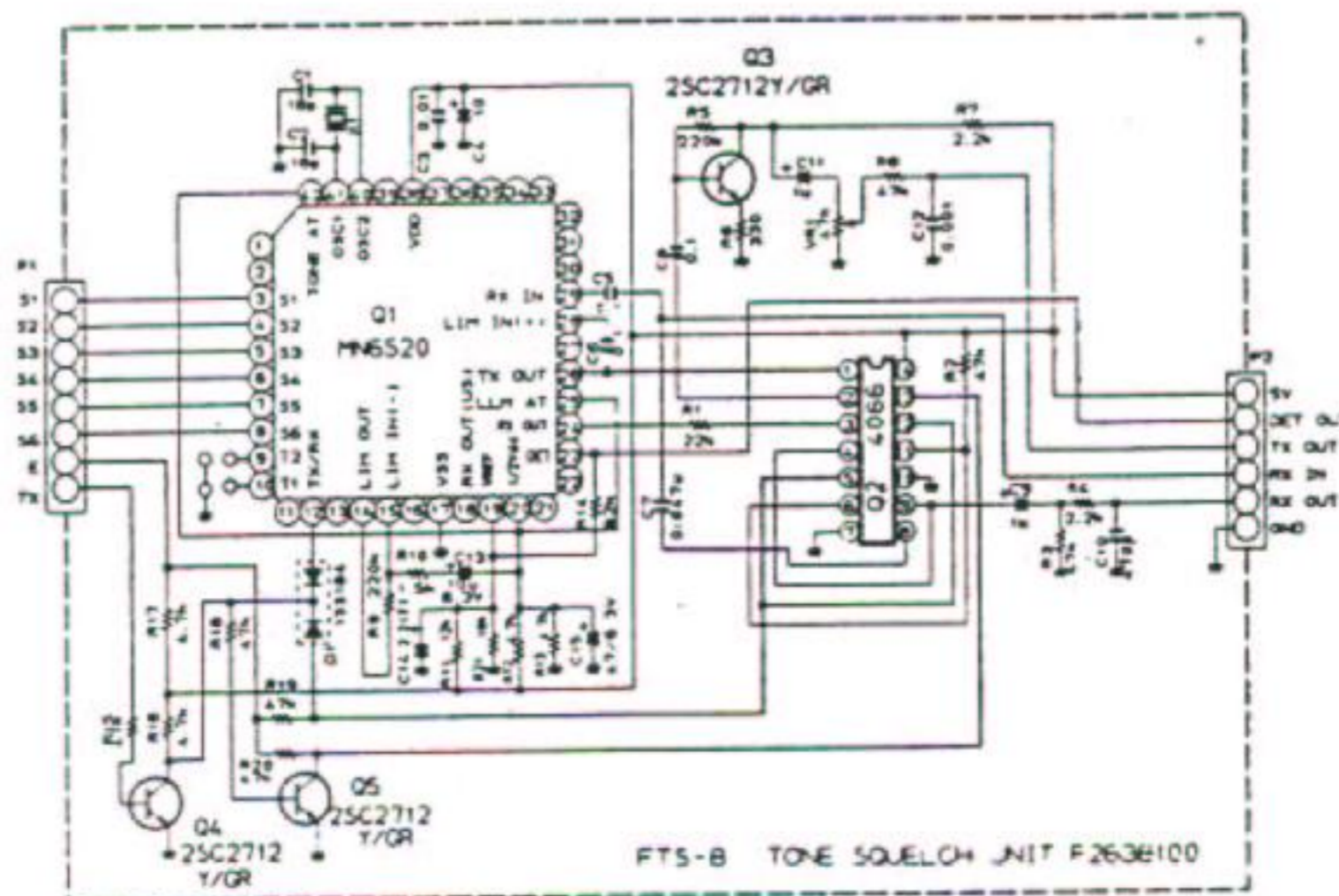
μPD4066BG (Q2)



Marked Surface
2SC2712Y/GR (LY/LG) (Q3,4,5)



Marked Surface
1SS184 (B3) (D1)



ALIGNMENT

The high reliability of the chip components and robot assembly used for the FT-2700RH make it unlikely that this transceiver will ever require repair or realignment after it has left the factory. However, if damage does occur and some parts subsequently be replaced, realignment may be required afterwards. In the event of a sudden problem during normal operation, do not attempt realignment. Such problems are usually caused by the failure of a component, which must be located and replaced before realignment.

Because of the extremely compact circuitry and dual-microprocessor design of this transceiver, we recommend that servicing be attempted only by authorized Yaesu service technicians who are experienced with the circuitry and fully equipped for repair and alignment. Therefore, if a fault is suspected, contact the dealer from whom the transceiver was purchased for instructions regarding repair. Authorized Yaesu service technicians realign all circuits and make complete performance checks to ensure compliance with factory specifications after replacing any faulty components.

Those who do undertake any of the following alignments are cautioned to proceed at their own risk. Yaesu must reserve the right to change circuits and alignment procedures in the interest of improved performance, without notifying owners.

Under no circumstances should any alignment be attempted unless the normal function and operation of the transceiver are clearly understood, the cause of the malfunction has been clearly pinpointed and any faulty components replaced, and the need for realignment determined to be absolutely necessary.

The following test equipment (and thorough familiarity with its correct use) is necessary for complete realignment. Correction of problems caused by misalignment resulting from use of improper test equipment is not covered under the warranty policy.

In those procedures so indicated, a 50-ohm dummy load that is non-reactive up to 450 MHz must be used. Correct alignment is not possible with an antenna.

Alignment Precautions

Correct alignment requires that the ambient temperature be the same as that of the transceiver and test equipment, and that this temperature be held constant between 20 and 30 degrees C (68 to 86 degrees F). When the transceiver is brought into the shop it should be allowed at least 2 hours for thermal equalization before alignment.

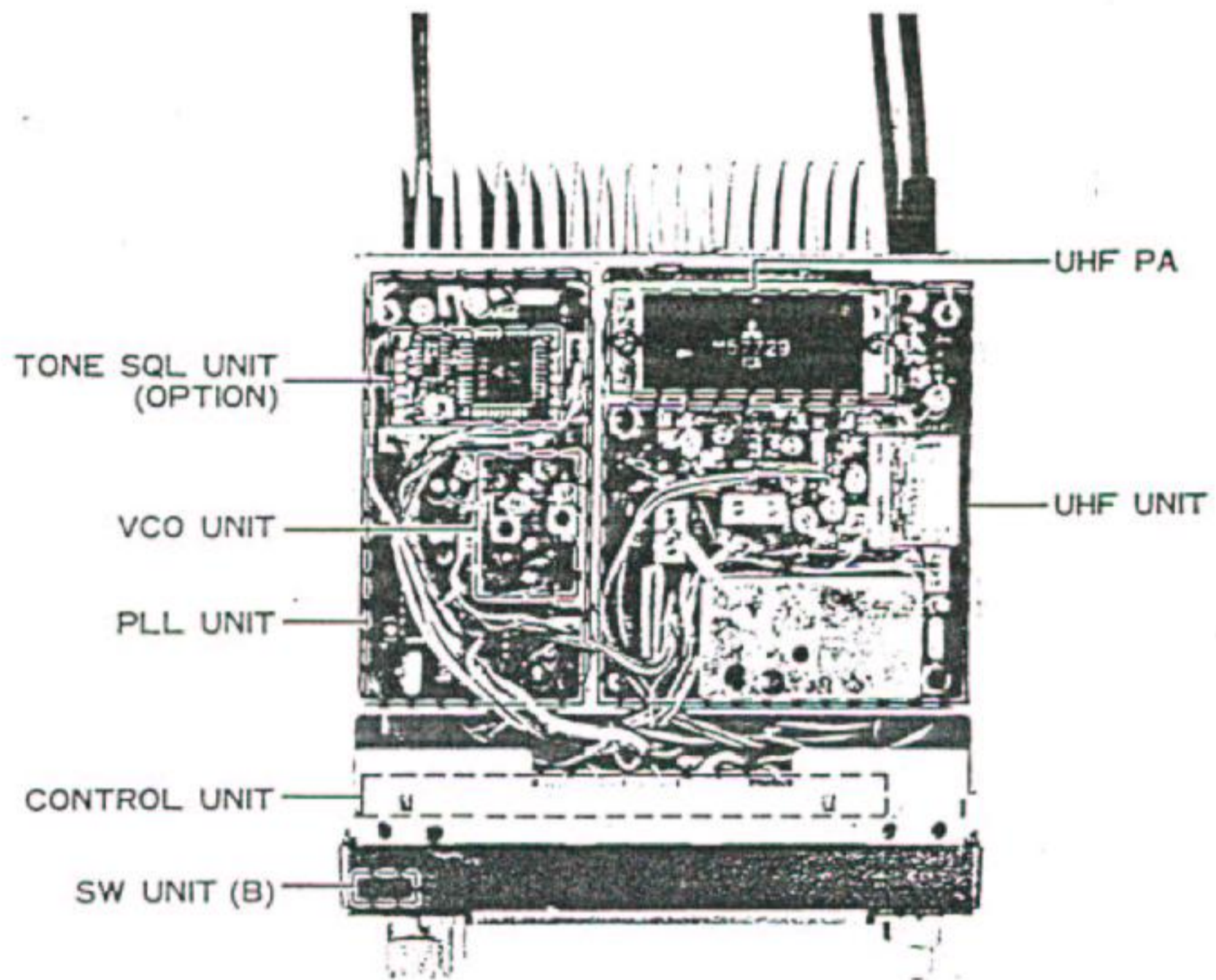
Alignments must not be made unless the oscillator shields and circuit boards are firmly affixed in place. Also, the frequency counter must be thoroughly warmed up before beginning.

Supply voltage during alignment must be held constant at 13.8V DC, except where specifically indicated otherwise. Use a well regulated, adjustable power supply capable of at least 8A continuous load. The DC ammeter should be connected in series with the supply.

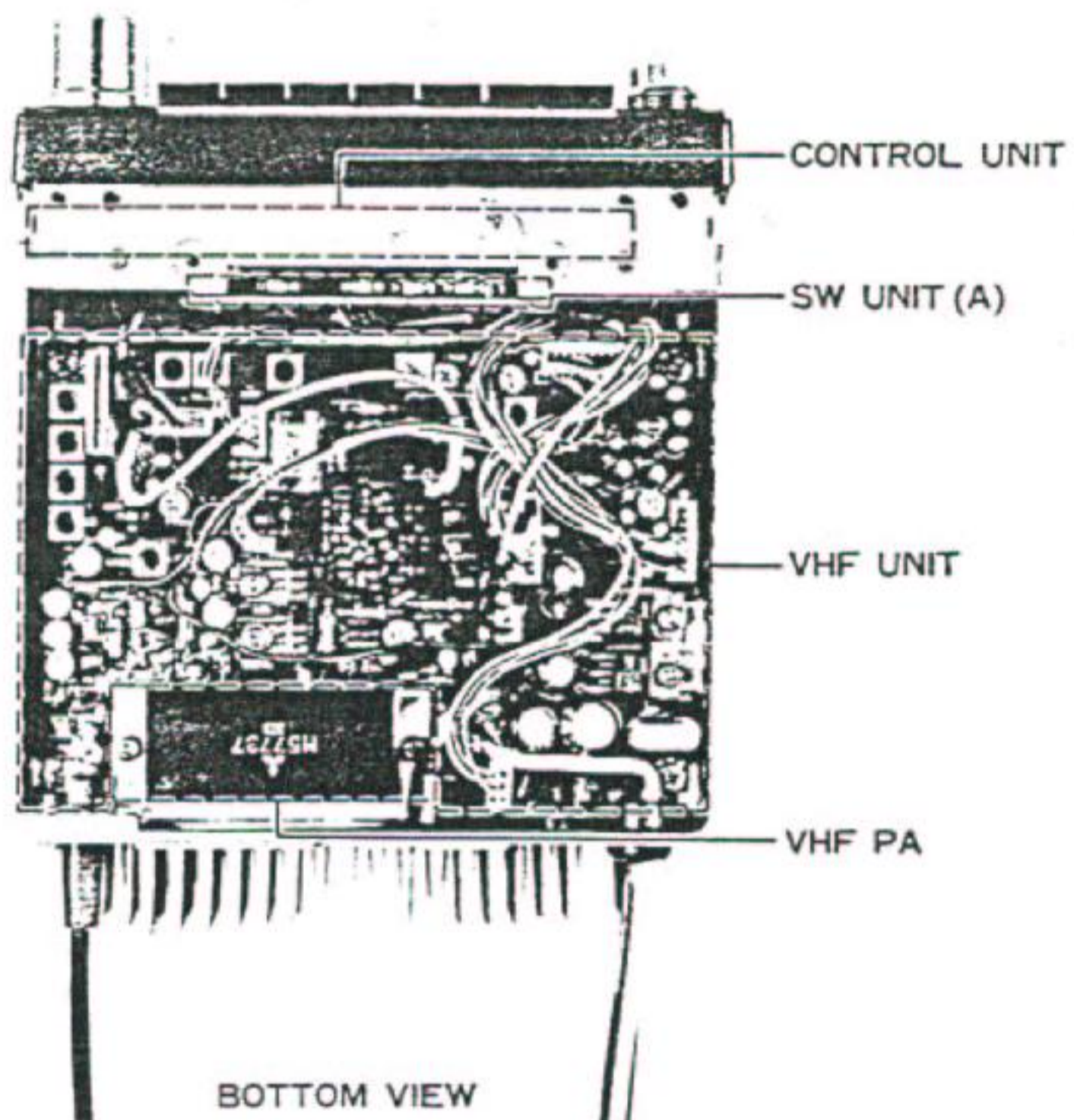
Alignment Equipment

- DC voltmeter (at least 20-kilohms/volt impedance)
- DC Ammeter (10A)
- AF millivoltmeter
- 450 MHz standard signal generator (SSG) with calibrated level and modulation (see note below)
- AF signal generator
- SINAD meter (SINADDER)
- FM linear detector (deviation meter)
- CM coupler (directional coupler)
- RF wattmeter (50W, $\pm 5\%$ @ 450MHz)
- 50-ohm non-reactive (@450 MHz) dummy load
- Frequency counter (100Hz resolution at 450MHz)
- Oscilloscope

Note: SSG levels referred to in the alignment procedure are based on $0\text{dBu}=0.5\mu\text{V}$.



TOP VIEW



BOTTOM VIEW

PLL Unit (VHF)

VCV

1. With the dummy load connected to the VHF ANT connector, connect the DC voltmeter (10V scale) to TP3001.
2. Tune the transceiver to the top of the VHF band (for the model being aligned), close the PTT line and adjust TC3001 for 3.5V (or 6.5V for version G) while transmitting. Return to receive, and adjust TC3002 for the same voltage. Now retune the transceiver to the bottom of the band, and check for at least 1.2V on the meter, in transmit and receive.

VHF Unit - Transmitter Circuits

With the wattmeter and dummy load connected to the VHF ANT connector, close the PTT line when making all adjustments.

Interstage Coupling and CM Coupler

1. Connect the DC voltmeter (3V scale) to the cathode of D1028 (located on the small tab of the VHF Unit near the antenna terminal post).
2. With the transceiver tuned to the center of the VHF band, adjust TC1002 and then TC1003 for maximum power output on the wattmeter.
3. Adjust VR1010 (near D1028) for minimum indication on the voltmeter (less than 0.7V with 28W or more output).

VERSION	CENTER FREQUENCY (MHz)	
A	VHF 146	UHF 445
B	145	435
C	146	435
D	145	435
E	146	435
G	149	435

Automatic Power Control (APC)

At the center of the band, adjust VR1006 for 25W output on the wattmeter when the LOW switch is undepressed, and then press the LOW switch and adjust VR1008 for 3W output.

PO Meter

After aligning the APC as above, adjust VR1007 so that just three segments of the S-meter show during low power transmission, and all segments show during high power transmission.

Automatic Final Protection (AFP)

With a DC Ammeter (10A scale) connected in series with the power supply, set the transceiver for high power, and remove all connections from the VHF ANT connector. Now close the PTT line and adjust VR1009, if necessary, for 4A maximum on the Ammeter.

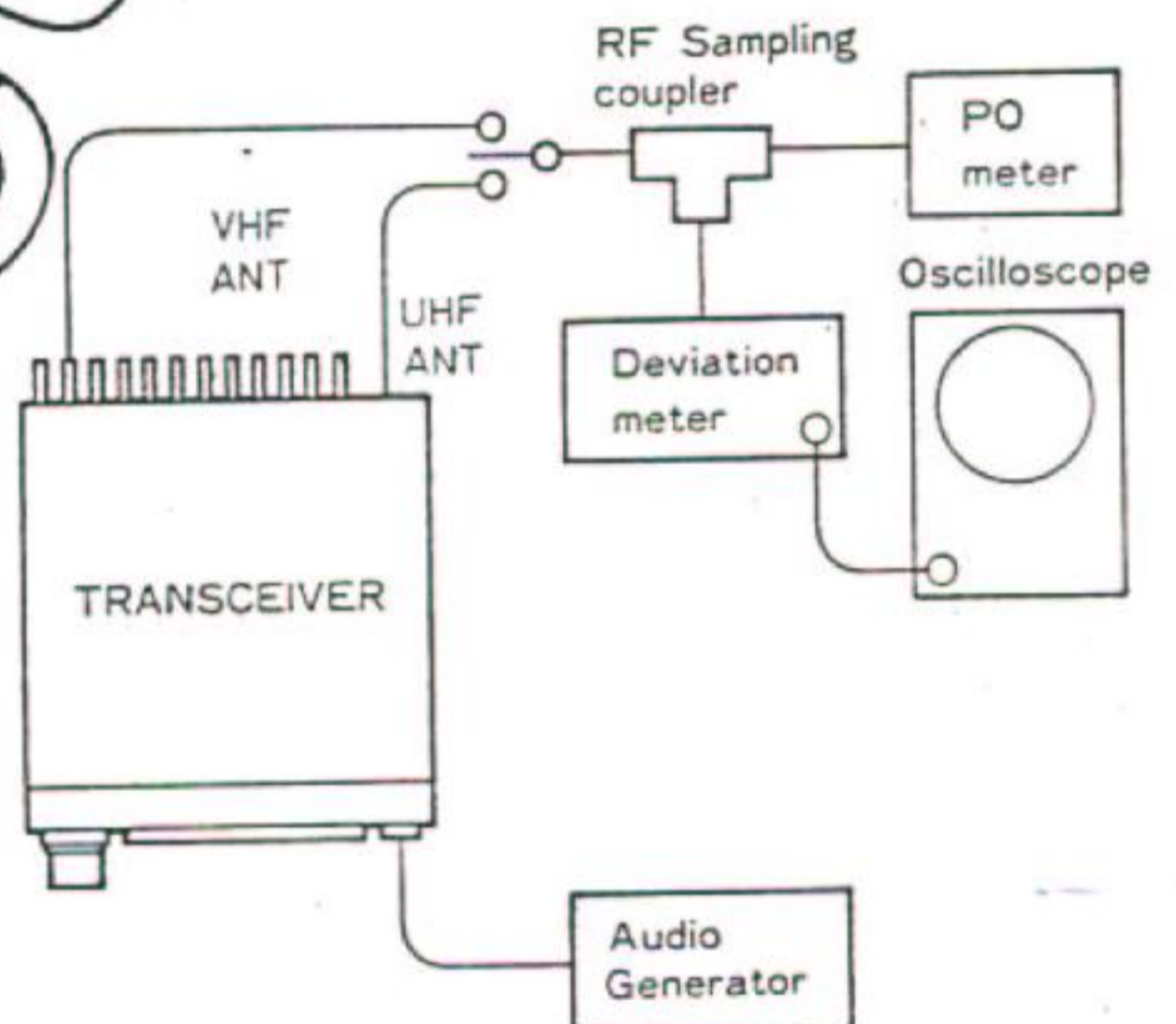
If it was necessary to adjust the AFP circuit, repeat the APC, PO Meter and AFP procedures.

Frequency Calibration

With the frequency counter coupled to the VHF output and the transceiver tuned to the center of the band, close the PTT line and adjust TC3003 on the PLL Unit for the center frequency ± 100 Hz on the counter.

Modulator Deviation

1. With the test equipment connected as shown below, set the audio generator for 25mV output at 1 kHz, and adjust VR3001 on the PLL Unit for ± 4.5 kHz deviation.
2. Reduce the generator level to 2.5mV, and adjust VR3004 on the PLL Unit for ± 3 kHz deviation.



VHF Unit - Receiver Circuits

RF and IF Resonant Circuits

1. Connect the SSG to the VHF ANT connector, and set for ± 3.5 kHz deviation of a 1 kHz tone at the low band edge of the transceiver. Tune the transceiver to the same frequency, and adjust trimmer cap TC1001 and coils T1001 - T1008, in order, for maximum indication on the S-meter (set the SSG level as necessary to keep reading on scale).
2. Disconnect the SSG from the ANT connector and adjust transformer T1009 for maximum noise output.
3. Connect the SINADDER across the speaker terminals, and reconnect the SSG, with the same output as in step 1. Adjust transformers T1005 - T1007 for maximum SINAD.
4. Retune the transceiver and SSG to the high band edge, and adjust T1002 - T1004 for maximum S-meter indication.

S-meter Calibration

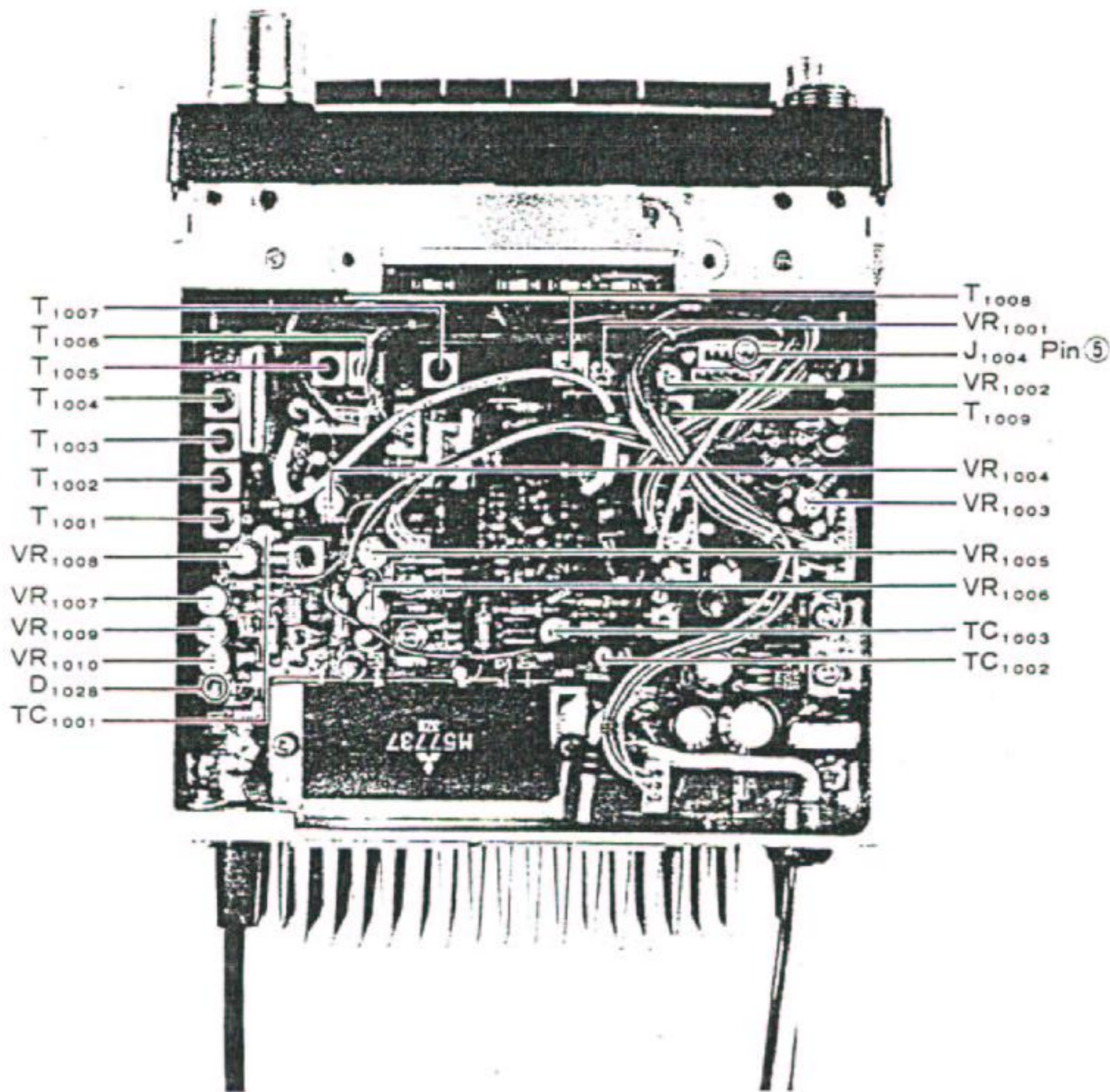
Tune the transceiver and SSG to band center, and set the SSG for 20dBu output of the same signal as used in the previous part. Adjust VR1002 so that all S-meter segments are just on.

DIM Brightness

Connect the DC voltmeter (15V scale) to pin 5 of jack J1004 on the VHF Unit, press the DIM button, and adjust VR1005 for 10V on the meter.

Beeper Volume

Adjust VR1004 to set the volume of the beeper as desired. This is normally set for maximum volume at the factory.



VHF UNIT Alignment Points

UHF Unit

UHF VCV

1. With the dummy load connected to the UHF ANT connector, connect the DC voltmeter (10V scale) to TP2001.
2. Tune the transceiver to the top of the UHF band (for the model being aligned), close the PTT line and adjust TC2002 for 6.0V while transmitting. Return to receive, and adjust TC3001 for the same voltage. Now retune the transceiver to the bottom of the band, and check for at least 1.5V on the meter in transmit, and at least 1.2V in receive.

UHF Unit - Transmitter Circuits

With the wattmeter and dummy load connected to the UHF ANT connector, close the PTT line when making all adjustments.

Interstage Coupling and CM Coupler

1. With the transceiver tuned to the center of the UHF band (see chart in previous section), adjust TC2006 for maximum power output on the wattmeter.
2. Connect the DC voltmeter (3V scale) to the center (wiper) of VR2002 (located on the small tab of the UHF Unit near the antenna terminal post). Rotate VR2002 fully clockwise, and then adjust VR2001 for minimum indication on the voltmeter.

UHF Automatic Power Control (APC)

At the center of the band, adjust VR2005 for 25W output on the wattmeter when the LOW switch is undepressed, and then press the LOW switch and adjust VR2004 for 3W output.

UHF PO Meter

After aligning the APC as above, adjust VR2003 so that just three segments of the S-meter show during low power transmission, and all segments show during high power transmission.

UHF Automatic Final Protection (AFP)

With a DC Ammeter (10A scale) connected in series with the power supply, set the transceiver for high power, and remove all connections from the UHF ANT connector. Now close the PTT line and adjust VR2002, if necessary, for 4A maximum on the Ammeter.

Repeat the UHF APC, PO Meter and AFP procedures.

Frequency Calibration

With the frequency counter coupled to the UHF output and the transceiver tuned to the center of the band, close the PTT line and adjust TC2003 for the center frequency ± 100 Hz on the counter.

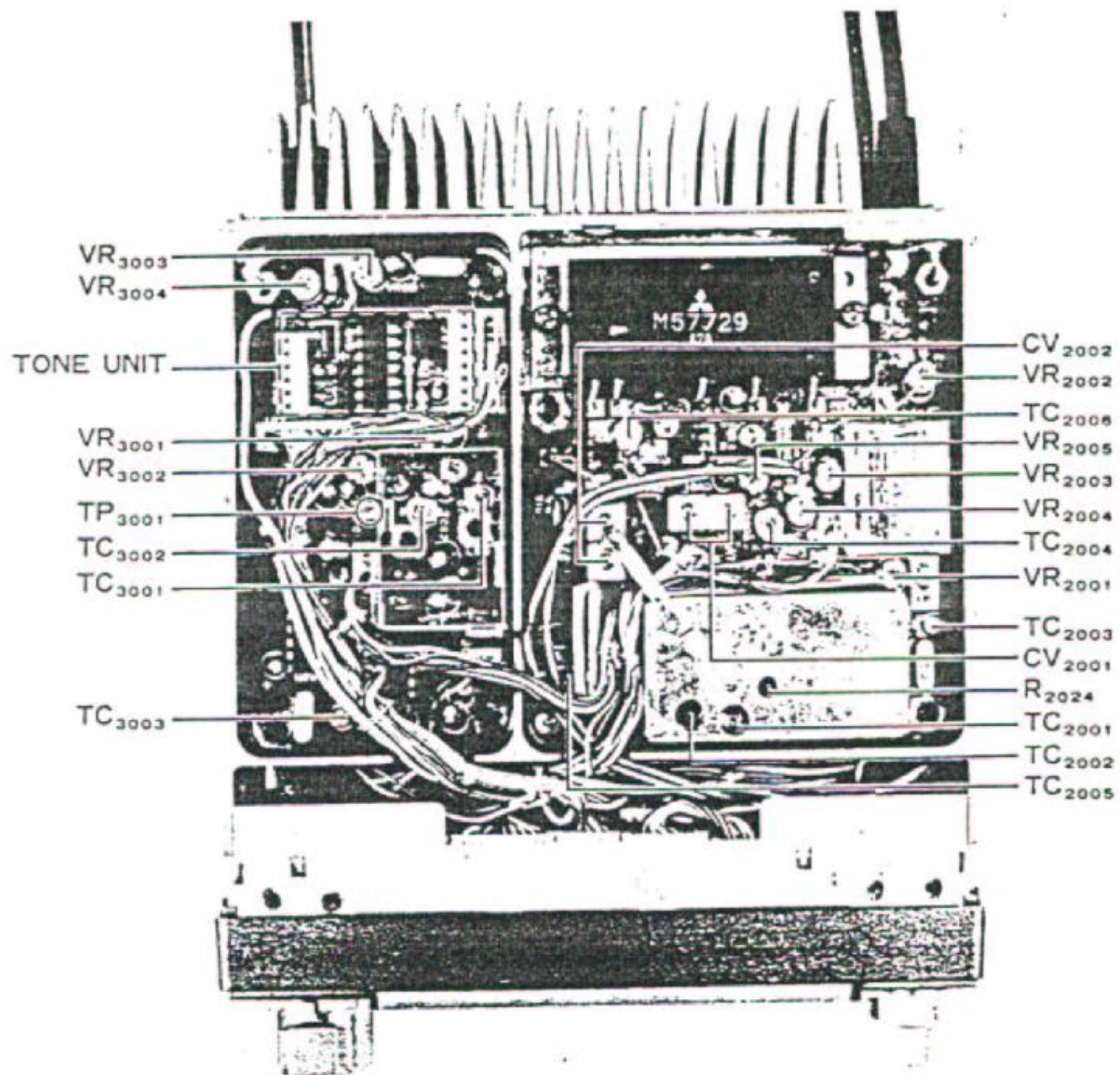
Modulator Deviation

With the test equipment connected as shown in the VHF section, set the audio generator for 25mV output at 1 kHz, and adjust VR3002 on the PLL Unit for ± 4.5 kHz deviation.

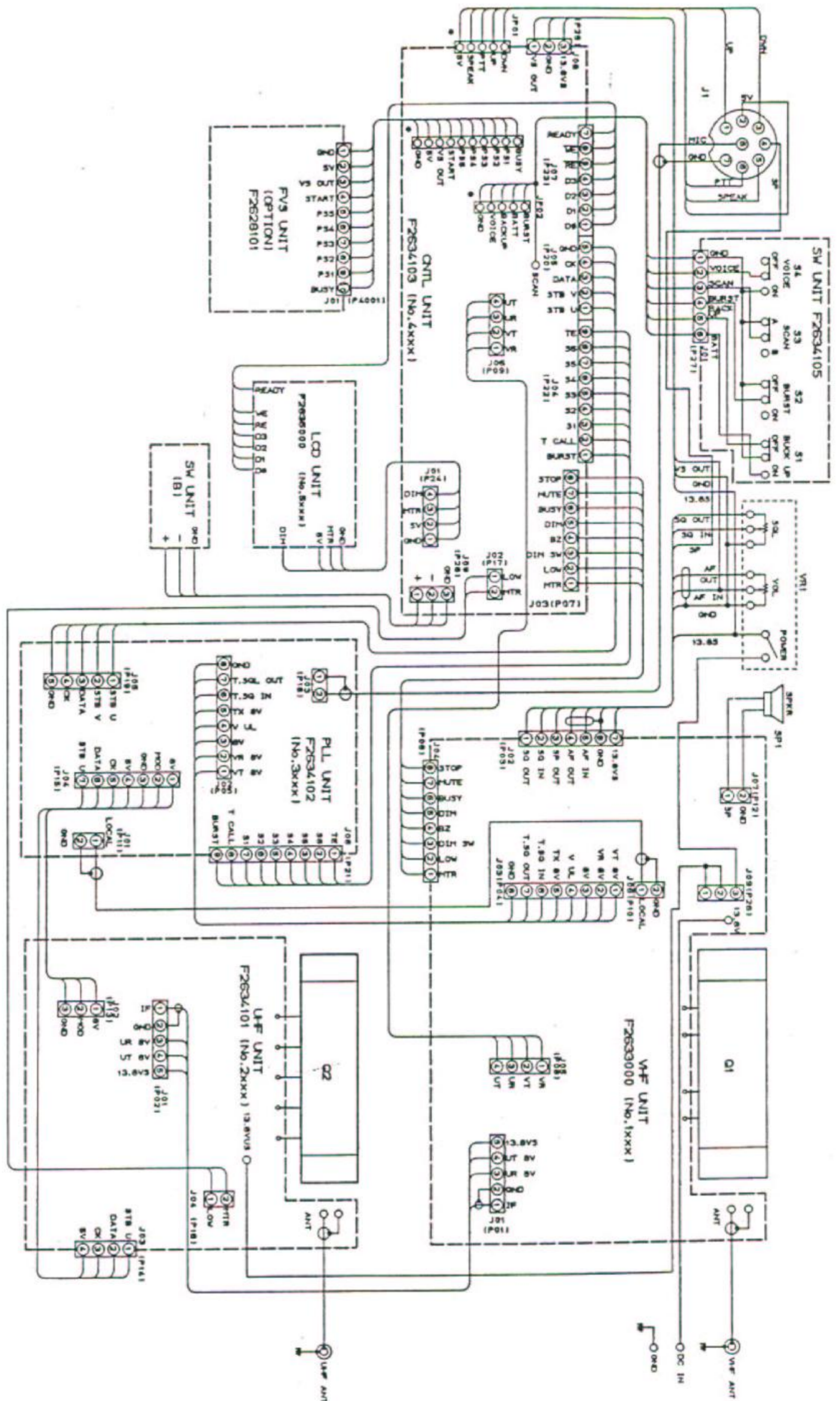
UHF Unit - Receiver Circuits

RF and IF Resonant Circuits

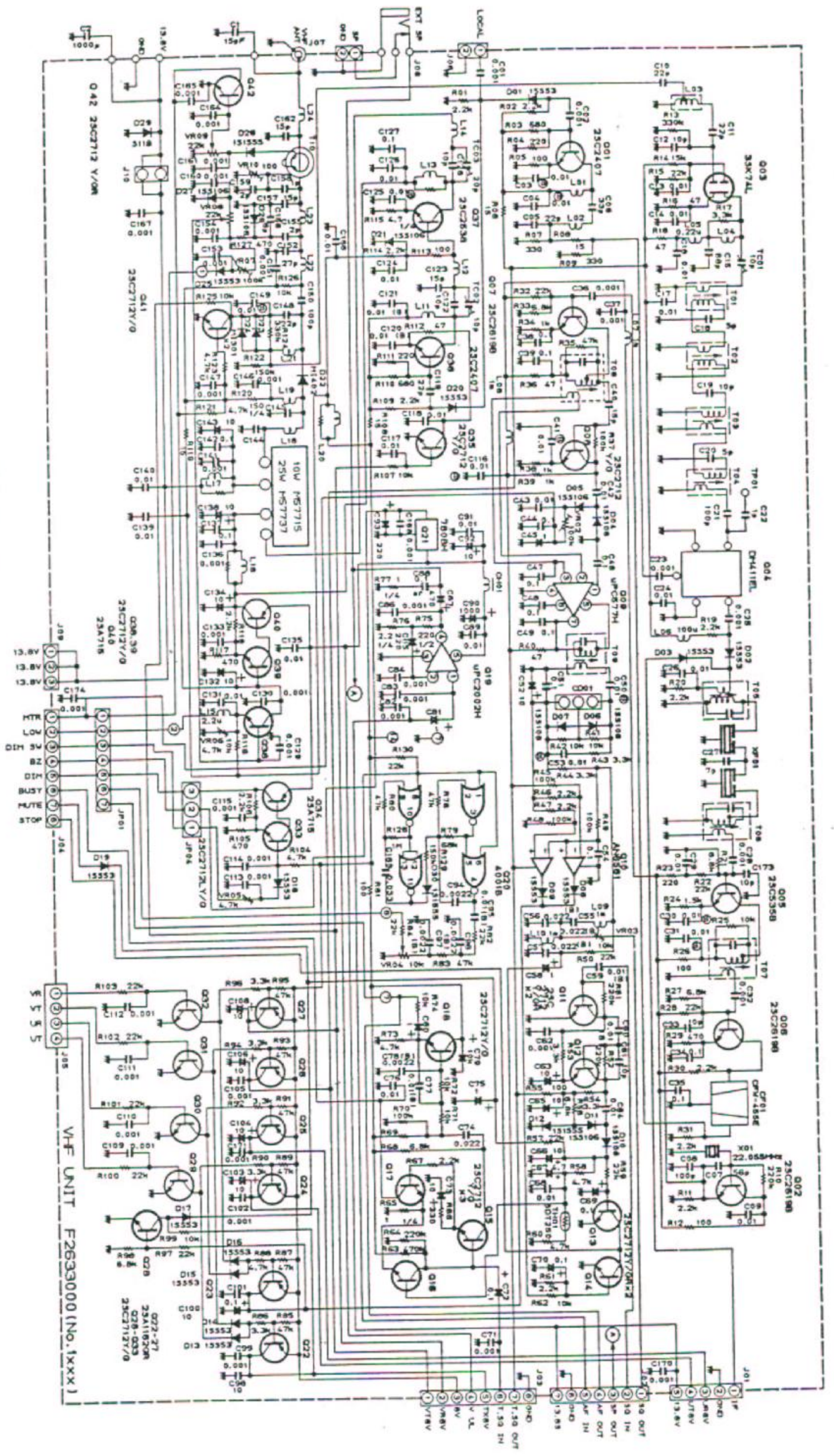
1. Connect the SSG to the UHF ANT connector, and set for ± 3.5 kHz deviation of a 1 kHz tone at the center of the band. Tune the transceiver to the same frequency, and adjust trimmer capacitors TC2004 and TC2005, and cavity resonators CV2001 and CV2002 for maximum indication on the S-meter (set the SSG level as necessary to keep reading on scale).
2. Connect the SINADDER across the speaker terminals, and readjust trimmers TC2004 and TC2005 for maximum SINAD.
3. Retune the transceiver and SSG to the low and then the high band edges, and slightly readjust CV2002 for maximum S-meter indication.



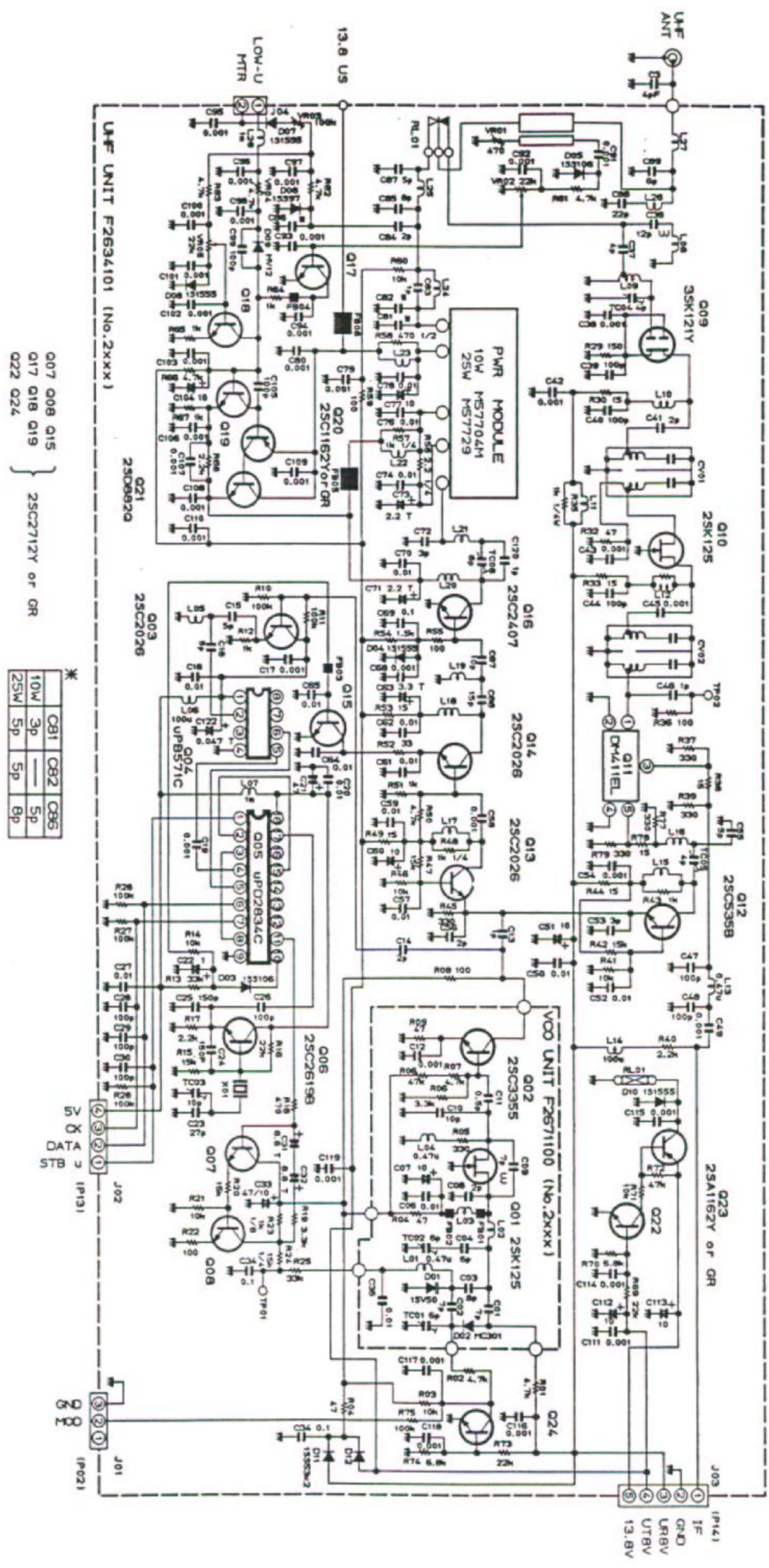
PLL UNIT, UHF UNIT Alignment Points

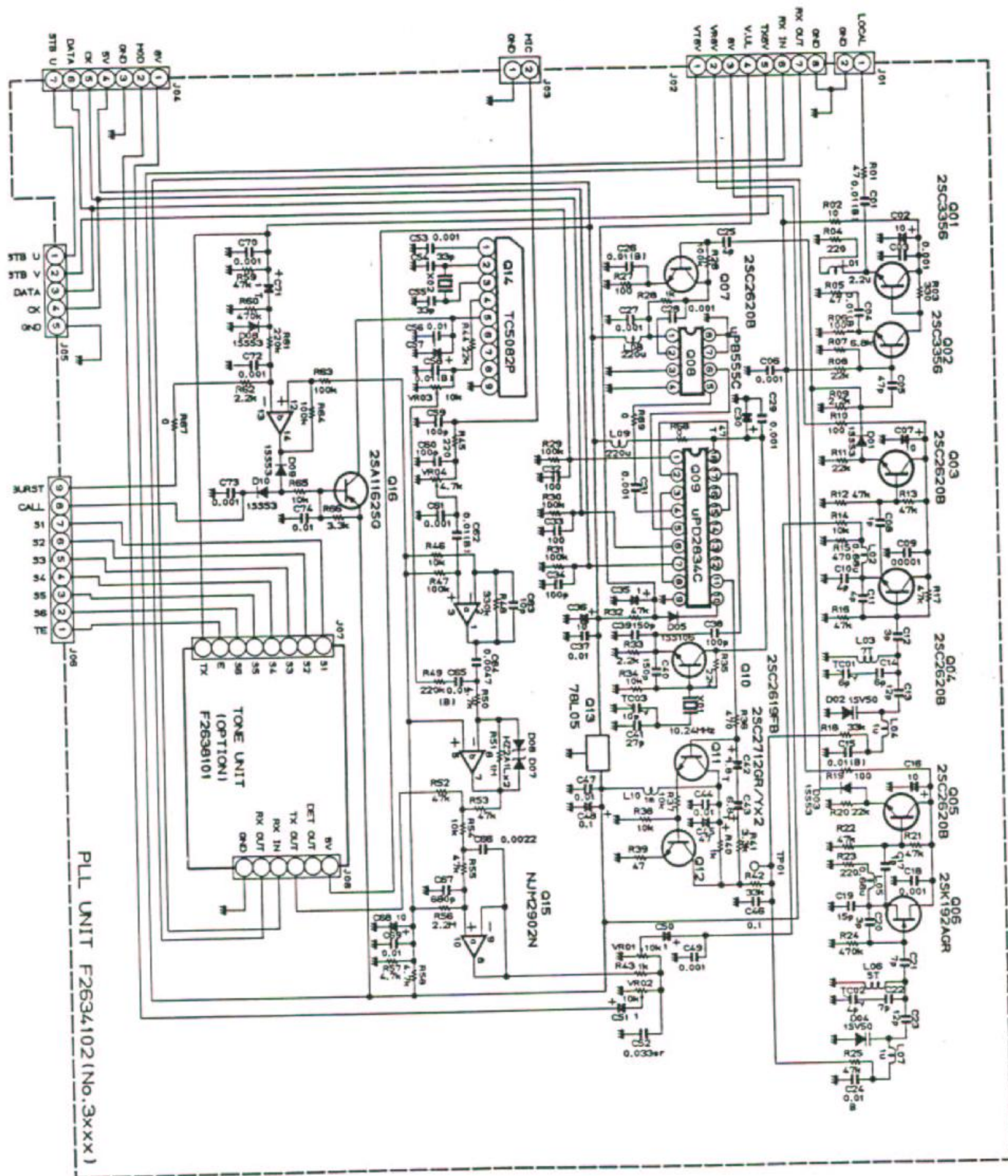


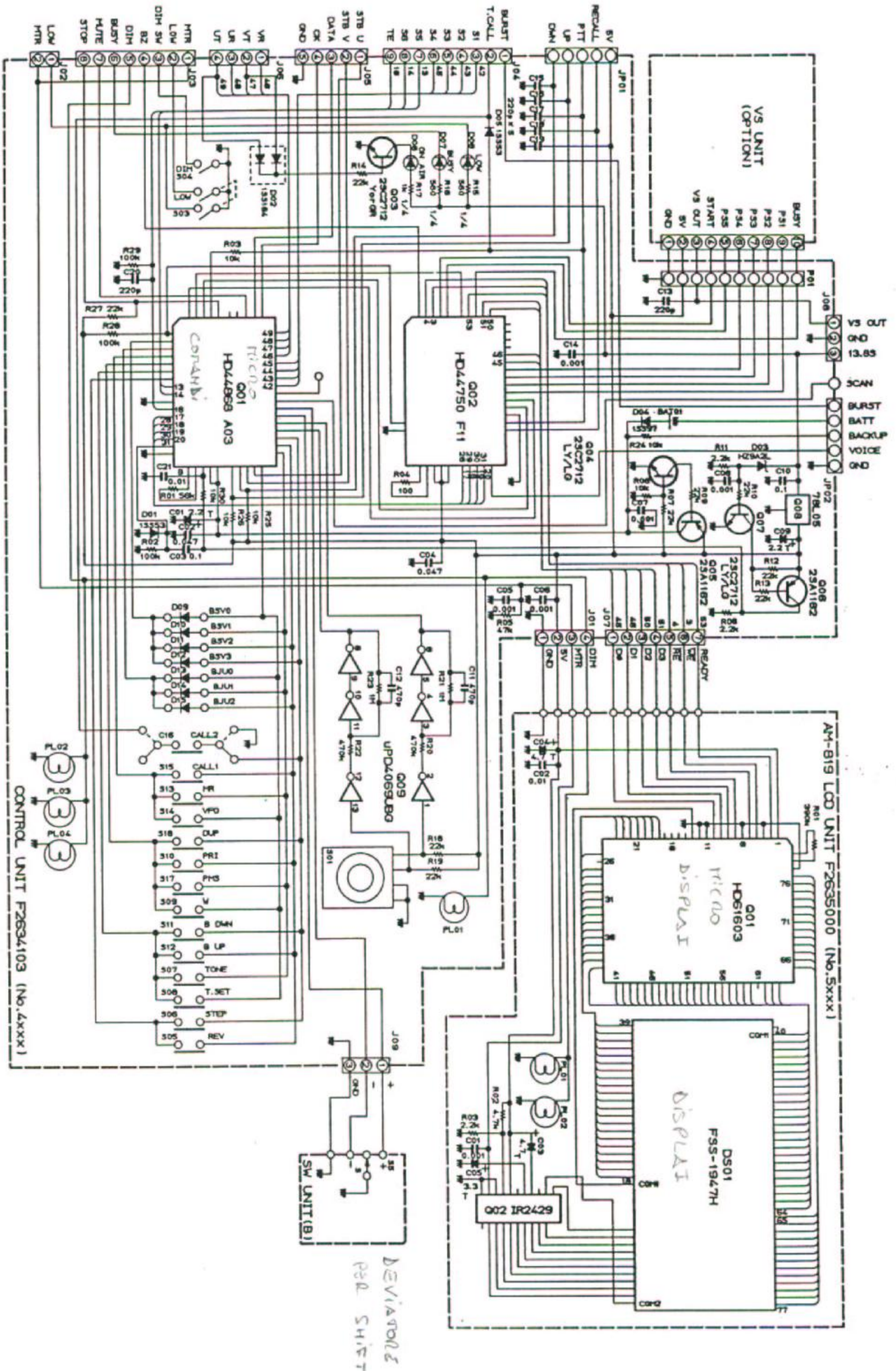
FT-2700R
CONNECTION DIAGRAM

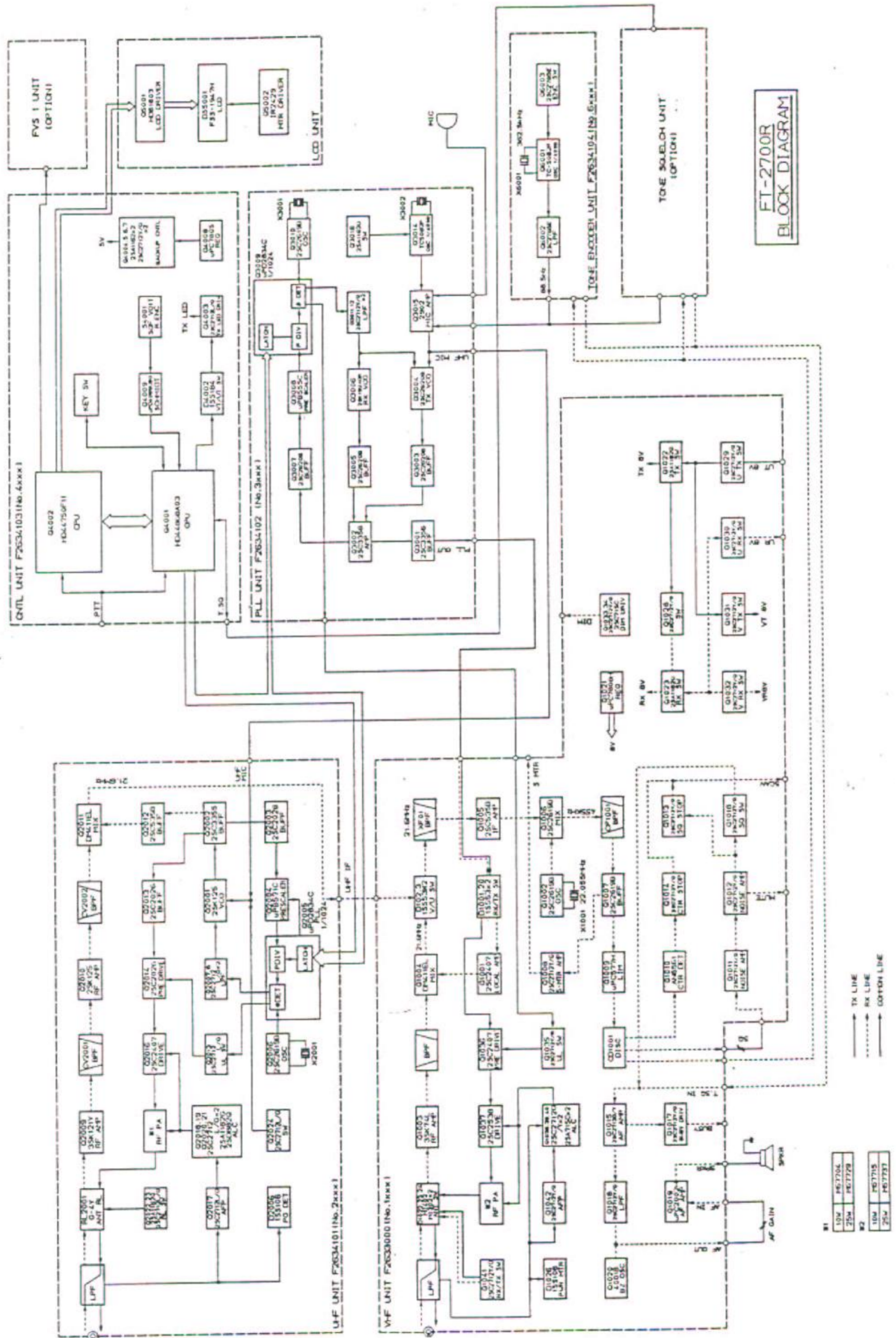


10W	25W
C144	5P
C145	15P
	22P









FT-2700RH PARTS LIST

MAIN CHASSIS			VHF UNIT		
Symbol No.	Part No.	Name & Description	Symbol No.	Part No.	Name & Description
		POWER MODULES		F2633000A	Printed Circuit Board
Q1 (10W)	G1090251	M57715			PCB with Components
Q1 (25W)	G1090509	M57737			w/o Power module
Q2 (10W)	G1090225	M57704M		C026330A	10W model
Q2 (25W)	G1090622	M57729		C026330B	25W model
		POTENTIOMETER			
VR1	J62800057	K12B1004-5N1211			ICs
		CAPACITORS	Q1009	G1090072	μPC577H
C3	K02172040	Ceramic 50WV 4pF CH (DD104CH040C50)	Q1010	G1090500	AN6561
C1	K02175150	" " 15pF " (DD104CH150J50)	Q1019	G1090164	μPC2002H
C2	K40129021	Electrolytic 16WV 1000μF (16R102S 13x16)	Q1020	G1090027	MC14001BCP
			Q1021	G1090294	μPC7808H
					FET
			Q1003	G4800740L	2SK74L
		RECEPTACLES			
	P0090384	FM214-8SSPY MIC			DBM MODULE
P1 (with wire)	T9204774B	VHF ANT (Type M)	Q1004	Q9000288	DM411EL
P2 (")	T9204687C	NJ58UNS W/RG-58/U UHF ANT (Type N)			TRANSISTORS
P2 (")	T9204774B	UHF ANT (Type M)	Q1034, 1040	G3107150C	2SA715C
	T9204868	DC POWER	Q1022-1027	G3111620G	2SA1162GR (SG)
			Q1005	G3305350B	2SC535B
		SPEAKER	Q1001, 1036	G3324070	2SC2407
SP1	M4090047	SS-77KYH	Q1037	G3325380	2SC2538
			Q1002, 1006, 1007	G3326190B	2SC2619B (FB)
		KNOBS	Q1008, 1011, 1012, 1014-1018, 1028- 1033, 1035, 1038 1039, 1041, 1042	G3327120Y /G	2SC2712Y/GR (LY/LG)
	R3503500	24S MAIN			
	R3107020	10S VOL			
	R3107030	24WN SQL			
	R3107100	- S+			
	R3107040	REV, DIM, LOW			DIODES
	R3107050	PMS, DUP	D1001-1003, 1008, 1009, 1013-1017 1019, 1020, 1025, 1031	G2090027	Si 1SS53
	R3107060	CALL, MR-VFO			
	R3503570	STEP			
	R3503571	TONE			
	R3503572	T SET	D1012, 1018, 1021 1028, 1030, 1032	G2015550	" 1S1555
	R3503573	M			
	R3503574	PRI	D1029	G2090232,	" S11B
	R3503590	MHz U/D	D1023, 1024	G2090033	PIN M1301
			D1022	G2090017	" MI402
			D1004, 1005, 1026, 1027	G2090244	Schottky 1SS106
			D1006, 1007, 1010, 1011	G2001880F	Ge 1S188FM
		SWITCH A UNIT			
	F2634105A	Printed Circuit Board			
	C026345A	PCB with Components			
		SWITCHES			CRYSTAL
S1-S4	N6090051	SSS-212	X1001	H0102608	HC-49/T 22.055MHz
		CONNECTOR			CRYSTAL FILTER
J1	P0090414	S6B-PH	XF1001	H1102087	21P15BU
					CERAMIC FILTER
			CF1001	H3900200	CFW-455E
		SWITCH B UNIT			
	F2634106	Printed Circuit Board			CERAMIC DISCRIMINATOR
	C026346A	PCB with Components	CD1001	H7900010	455D
		SWITCH			THERMISTOR
SS	N6090042	SSS-313	TH1001	G9090001	SDT-250S

*: 25W ▲: 10W

		RESISTORS				POTENTIOMETERS	
R1065, 1077	J02245010	Carbon Film 1/4W SJ	1Ω	VR1010	J51745101	H0651A005-100B	100ΩB
R1076	J02245229	" " " "	2.2Ω	VR1001	J51745102	H0651A007-1KB	1kΩB
R1115	J02245479	" " " "	4.7Ω	VR1005, 1006	J51745472	H0651A011-4.7KB	4.7kΩB
R1120	J02245151	" " " "	150Ω	VR1003, 1004	J51745103	H0651A013-10KB	10kΩB
R1126	J01215103	" " 1/8W TJ	10kΩ	VR1008, 1009	J51745223	H0651A015-22KB	22kΩB
R1075	J10276221	" Composition 1/2W	220ΩGK	VR1002, 1007	J51745104	H0651A020-100KB	100kΩB
CAPACITORS							
R1006, 1008, 1108, 1119, 1129	J24205150	Chip RMC-1/10T-150J	15Ω	C1173	K02173100	Ceramic 50WV 10pF	CH (DD104CH100D50)
R1016, 1018, 1036, 1040, 1112	J24205470	" " 470J	47Ω	C1163	K02175150	" " 15pF	(DD104B102K50)
R1005, 1012, 1026 1055, 1081, 1113	J24205101	" " 101J	100Ω	C1022, 1158	K22170202	Chip 50WV 1pF	CH (C2012CH1H010CFA)
R1004, 1023, 1111	J24205221	" " 221J	220Ω	C1155, 1159	K22170203	" " 2pF	(C2012CH1H020CFA)
R1007, 1009, 1066	J24205331	" " 331J	330Ω	C1018, 1020, 1144*	K22170206	" " 5pF	(C2012CH1H050CFA)
R1029, 1034, 1105, 1117, 1127	J24205471	" " 471J	470Ω	C1027	K22170208	" " 7pF	(C2012CH1H070DFA)
R1002, 1110	J24205681	" " 681J	680Ω	C1156	K22170209	" " 8pF	(C2012CH1H080DFA)
R1038, 1039	J24205102	" " 102J	1kΩ	C1012, 1019, 1033, 1061, 1122, 1128,	K22170211	" " 10pF	C2012CH1H100DFA)
R1024, 1058	J24205152	" " 152J	1.5kΩ	C1040, 1123, 1145*, 1157, 1162	K22170215	" " 15pF	(C2012CH1H150JFA)
R1001, 1002, 1011, 1019, 1020, 1030, 1031, 1046, 1047, 1061, 1067, 1098, 1106, 1109, 1114, 1118	J24205222	" " 222J	2.2kΩ	C1005, 1010, 1011, 1119, 1145*, 1148	K22170219	" " 22pF	(C2012CH1H220JFA)
R1017, 1043, 1044, 1053, 1054, 1086, 1088, 1090, 1092, 1094, 1096	J24205332	" " 332J	3.3kΩ	C1152	K22170221	" " 27pF	(C2012CH1H270JFA)
R1060, 1073, 1104, 1121, 1123	J24205472	" " 472J	4.7kΩ	C1006	K22170223	" " 33pF	(C2012CH1H330JFA)
R1021, 1027, 1033, 1056, 1068	J24205682	" " 682J	6.8kΩ	C1007	K22170229	" " 56pF	(C2012CH1H560JFA)
R1025, 1041, 1042, 1062, 1071, 1072, 1074, 1099, 1107, 1116, 1125	J24205103	" " 103J	10kΩ	C1015	K22170231	" " 68pF	(C2012CH1H680JFA)
R1014	J24205153	" " 153J	15kΩ	C1008, 1021, 1150	K22170235	" " 100pF	(C2012CH1H101JFA)
R1015, 1022, 1028, 1032, 1050, 1057, 1082, 1084, 1097, 1100-1103, 1130	J24205223	" " 223J	22kΩ	C1001, 1002, 1023, 1025, 1028, 1032, 1036, 1062, 1071, 1082-1084, 1086, 1099, 1102, 1005, 1109-1115, 1129, 1130, 1133, 1136, 1141, 1146, 1147, 1151, 1153, 1154, 1160, 1161, 1164, 1165, 1167, 1168, 1170, 1171	K22170805	" " 0.001μF	B (C2012B1H102MFA)
R1035, 1078, 1080, 1083, 1085, 1087, 1089, 1091, 1093, 1095	J24205473	" " 473J	47kΩ	C1078, 1094, 1096 1097	K22170809	" " 0.0022μF	B (C2012B1H222MFA)
R1037, 1045, 1048, 1049, 1069, 1070	J24205104	" " 104J	100kΩ	C1003, 1004, 1030, 1031, 1041, 1050, 1053, 1059, 1060, 1064, 1077, 1095, 1116, 1120, 1121, 1125, 1149	K22170817	" " 0.01μF	(C2012B1H103MFA)
R1122	J24205154	" " 154J	150kΩ	C1009, 1013, 1014, 1016, 1017, 1024, 1026, 1029, 1042, 1043, 1068, 1076, 1089, 1091, 1117, 1118, 1124, 1126, 1131, 1135, 1139 1140, 1166	K22171004	" " 0.01μF	B (C2012F1H103ZFA)
R1010, 1051, 1052, 1064, 1068	J24205224	" " 224J	220kΩ				
R1013, 1124	J24205334	" " 334J	330kΩ				
R1063	J24205474	" " 474J	470kΩ				
R1128	J24205105	" " 105J	1MΩ				

*: 25W ▲: 10W

C1055, 1056, 1074	K22140807	" 25WV 0.022 μ F (C2012B1E223MFA)	B	J1001	P0090372	CONNECTORS 5703-05-CPB
C1057, 1169	K22141901	" " 0.033 μ F (C3216D1E333MFA)	D	J1002	P0090374	5703-07CPB
C1034, 1035, 1037- 1039, 1044, 1046- 1049, 1051, 1054 1101, 1127, 1137 1142	K22141904	" " 0.1 μ F (C3216D1E104MFA)	D	J1003-1004	P0090375	5703-08CPB
				J1005	P0090371	5703-04CPB
				J1006	P0090369	5703-02CPB
				J1007	P0090429	3022-02A
				J1009	P0090352	3022-03A
C1174	K10176102	Ceramic 50WV 0.001 μ F (DD104B102K50)	B	J1010	P0090351	3094-02A
C1088	K19149025	Semiconductor Ceramic (UAT10X104K-L45AE)	0.1 μ F	J1008	P1090350	S-G8035
C1070, 1072	K40179002	Electrolytic 50WV (ECE-A1HK 0R1)	0.1 μ F	JP1001 (with wire)	T9204866	(JP1004, 1005)
C1045, 1058, 1075 1080, 1081, 1092	K40179001	" " 1 μ F (ECE-A1HK010)		JP1002 (")	T94262111	
C1066, 1067	K40169005	" 35WV 4.7 μ F (ECE-A1VK4R7)		JP1003 (")	T94448101	
C1052, 1063, 1065 1079, 1098, 1100, 1103, 1104, 1106, 1108, 1132, 1134, 1138, 1143	K40129012	" 16WV 10 μ F (ECE-A1CK100)				TERMINAL POSTS
					Q5000Q16	TP-E
					R7066320	Fiber washer
				PLL UNIT		
				Symbol No.	Part No.	Name & Description
					F2634102A	Printed Circuit Board
						PCB with components
C1085, 1093	K40109007	" 10WV 220 μ F (10RE220)			C026342A	5kHz steps, 1800Hz Tone Burst
C1087	K40129031	" 16WV 470 μ F (16RC470)			C026342K	5kHz steps, 1750Hz Tone Burst
					C026342D	12.5kHz steps, 1750Hz Tone Burst
C1090	K40129021	" " 1000 μ F (16R102S)			C026342T	10kHz steps, w/o Tone Burst
C1073	K72080002	Tantalum 6.3WV 4.7 μ F (F950J475MA1)				
						ICs
				Q3008	G1090470	μ PB555C
				Q3009	G1090610	μ PD2834C
				TRIMMER CAPACITORS		
				Q3013	G1090084	μ PC78L05
TC1001, 1002	K91000101	ECR-GA010D30 10 pF		Q3014	G1090239	TC5082P
TC1003	K91000029	ECV-1ZW20X53T 20 pF		Q3015	G1090220	MLM2902P
				INDUCTORS		
L1001, 1002, 1011	L0020678			Q3006	G3801921G	2SK192AGR
L1003	L0021455					
L1004	L0020724					TRANSISTORS
L1012	L0020852			Q3016	G3111620G	2SA1162GR (SG)
L1013, 1016, 1020	L1020469			Q3010	G3326190B	2SC2619B (FB)
L1014, 1022-1024	L0020679			Q3003-3005, 3007	G3326200B	2SC2620B (HB)
L1017	L1020663			Q3011, 3012	G3327120Y /G	2SC2712Y/GR (LY/LG)
L1018	L0021359					
L1019	L0021458			Q3001, 3002	G3333560	2SC3356 (R22)
L1021	L0021457					
L1005	L1190188	LAL03NA-R22M 0.22 μ H				DIODES
L1006	L1190016	FL5H-101K 100 μ H		D3001, 3003, 3008- 3010	G2090027	Si 1SS53
L1007-1010	L1190189	LAL03NA-102K 1 mH				
CH1001	L2030067	FR14/7/52001F		D3002, 3004	G2090023	Varactor 1SV50
				D3005	G2090244	Schottky 1SS106
				D3006, 3007	G2090307	Zener HZ2ALL
				TRANSFORMERS		
T1001-1004	L0020345					CRYSTALS
T1005-1007	L0021456			X3001 (5kHz steps)	H0102585	HC-18/T 5.12MHz
T1008	L0021468			X3001 (10kHz steps)	H0102587	" 10.24MHz
T1009	L0021469			X3001 (12.5kHz steps)	H0102586	" 12.8MHz
T1010	L0020335A			X3002 (1750Hz tone)	H0101982	" 7.3728MHz
				X3002 (1800Hz ")	H0101983	" 7.168MHz

RESISTORS				C3005	K22170227	" "	47pF	"
R3067-3069	J24205000	Chip RMC 1/10T-000J (Jumper)	0Ω	C3032-3034, 3038 3059, 3060	K22170235	" "	100pF	"
R3001, 3005, 3039	J24205470	" " 470J	47Ω	C3039, 3040	K22170239	" "	150pF	"
R3002, 3006, 3010 3019, 3027	J24205101	" " 101J	100Ω	C3067	K22170803	" "	680pF	B
R3004, 3023, 3045	J24205221	" " 221J	220Ω	C3003, 3006, 3009, 3018, 3027-3029, 3031, 3049, 3053, 3061, 3072, 3073	K22170805	" "	0.001μF	"
R3003	J24205331	" " 331J	330Ω	C3066	K22170809	" "	0.0022μF	"
R3015, 3036	J24205471	" " 471J	470Ω	C3062, 3064	K22170813	" "	0.0047μF	"
R3028, 3040, 3043	J24205102	" " 102J	1kΩ	C3001, 3015, 3024, 3026, 3070	K22170817	" "	0.01μF	"
R3009, 3033, 3062	J24205222	" " 222J	2.2kΩ	C3004, 3037, 3044, 3047, 3056, 3058, 3065, 3069, 3074	K22171004	" "	0.01μF	F
R3041, 3066	J24205332	" " 332J	3.3kΩ	C3046	K22141904	" 25WV	0.1μF	D
R3050, 3057, 3058	J24205472	" " 472J	4.7kΩ	C3052	K19149019	Semiconductor Ceramic (UAT08 x 333K-L45AE)	0.033μF	
R3007	J24205682	" " 682J	6.8kΩ	C3048	K40179002	Electrolytic 50WV (ECE-A1HK0R1)	0.1μF	
R3014, 3034, 3038 3046, 3054, 3065	J24205103	" " 103J	10kΩ	C3035, 3050, 3051 3057	K40179001	" "	1μF	
R3037, 3042(○,△)	J24205153	" " 153J	15kΩ	C3002, 3007, 3016 3036, 3068	K40129012	" 16WV	10μF	
R3008, 3011, 3020, 3035, 3044	J24205223	" " 223J	22kΩ	C3045	K40109002	" 10WV	47μF	
R3018, 3025, 3042(*)	J24205333	" " 333J	33kΩ	C3071	K70140007	Tantalum 25WV (489D105x0025A1)	1μF	
R3012, 3013, 3016, 3017, 3021, 3022, 3032, 3052, 3053, 3055, 3059	J24205473	" " 473J	47kΩ	C3042, 3043	K70120007	" 16WV	6.8μF	
R3026, 3029-3031, 3047, 3063, 3064	J24205104	" " 104J	100kΩ	C3030	K70100005	" 10WV	47μF	
R3049, 3061	J24205224	" " 224J	220kΩ	POTENTIOMETERS				
R3048	J24205334	" " 334J	330kΩ	VR3004 J51745472 H0651A011-4.7kΩ 4.7kΩB				
R3024, 3060	J24205474	" " 474J	470kΩ	VR3001-3003 J51745103 H0651A013-10kΩ 10kΩB				
R3051	J24205105	" " 105J	1MΩ	CAPACITORS				
R3056	J24205225	" " 225J	22MΩ	TC3001,3002	K91000059	ECV-1ZW04x53T	4 pF	
				TC3003	K91000028	ECV-1ZW10x53T	10 pF	
C3008, 3017	K22170202	Chip 50WV (C2012CH1H010CFA)	1pF CH	TRIMMER CAPACITORS				
C3012, 3020	K22170304	" " 3pF UJ (C2012UJ1H030CFA)	3pF UJ	INDUCTORS				
C3011, 3014, 3025	K22170205	" " 4pF CH (C2012CH1H040CFA)	4pF CH	L3003,3006	L0020359A			
	K22170207	" " 6pF " (C2012CH1H060DFA)	6pF "	L3001	L1190008	FL4H-2R2M	2.2μH	
C3022	K22170208	" " 7pF " (C2012CH1H070DFA)	7pF "	L3002,3005	L1190004	FL4H-R68M	0.68μH	
C3021, 3063	K22170211	" " 10pF " (C2012CH1H100DFA)	10pF "	L3004,3007	L1190005	FL4H-1R0M	1μH	
C3013	K22170213	" " 12pF " (C2012CH1H120JFA)	12pF "	L3008,3009	L1190024	FL5H-221K	220μH	
C3019	K22170313	" " 12pF UJ (C2012UJ1H120JFA)	12pF UJ	L3010	L1190017	FL5H-102K	1 mH	
C3010	K22170315	" " 15pF UJ (C2012UJ1H150TFA)	15pF UJ	TERMINAL POSTS				
C3023	K22170217	" " 18pF CH (C2012CH1H180JFA)	18pF CH		Q5000016	TP-E		
C3041	K22170221	" " 27pF " (C2012CH1H270JFA)	27pF "	CONNECTORS				
C3054, 3055	K22170223	" " 33pF " (C2012CH1H330JFA)	33pF "	J3001, 3003	P0090369	5703-02CPB		
				J3002	P0090375	5703-08CPB		
				J3004	P0090374	5703-07CPB		

• : (A.D.E) 5 kHz steps △ : (F) 10 kHz steps ○ : B.C.G 12.5 kHz steps

J3005	P0090372	5703-05CPB	R2030, 2033, 2038,	J24205150	Chip RMC 1/10T-150J	15Ω
J3006	P0090376	5703-09CPB	2049, 2044, 2053,	J24205150		
J3007	P1090250	3024-08CH	2078			
J3008	P1090419	3024-06CH	R2052	J24205330	" " 330J	33Ω
			R2004, 2009*, 2032	J24205470	" " 470J	47Ω
			R2008, 2022, 2036,	J24205101	" " 101J	100Ω
	R0106540	Shield Case	2055, 2059			
	R0106620	" (Rear)	R2029	J24205151	" " 151J	150Ω
			R2005*, 2037, 2039	J24205331	" " 331J	330Ω
			2045, 2077, 2079			
UHF UNIT			R2018	J24205471	" " 471J	470Ω
Symbol No.	Part No.	Name & Description	R2012, 2043, 2051	J24205102	" " 102J	1kΩ
	F2634101A	Printed Circuit Board	2064, 2065, 2067			
		PCB with components (w/VCO UNIT)	R2054	J24205152	" " 152J	1.5kΩ
	C026341C	12.5kHz steps, 10W	R2017, 2040, 2068	J24205222	" " 222J	2.2kΩ
	C026341D	12.5kHz steps, 25W	R2006*, 2019	J24205332	" " 332J	3.3kΩ
	C026341A	10kHz steps, 10W	R2001, 2002, 2007*,	J24205472	" " 472J	4.7kΩ
	C026341B	10kHz steps, 25W	2050, 2061-2063			
			2066, 2076*			
			R2070, 2074	J24205682	" " 682J	6.8kΩ
	* * * * * VCO	UNIT * * * * *	R2003, 2014, 2021,	J24205103	" " 103J	10kΩ
	F2671100	VCO UNIT PCB	2041, 2046, 2060,			
		ICs	2071			
Q2004	G1090498	μPBS71C	R2015, 2020, 2042,	J24205153	" " 153J	15kΩ
Q2005	G1090610	μPD2834C	2047			
		FETs	R2016, 2069, 2073	J24205223	" " 223J	22kΩ
			R2013, 2025	J24205333	" " 333J	33kΩ
Q2001*, 2010	G3801250	2SK125	R2072	J24205473	" " 473J	47kΩ
Q2009	G4801210Y	3SK121Y	R2010, 2011, 2026-	J24205104	" " 104J	100kΩ
			2028, 2075			
		DBM MODULE				
Q2011	Q9000288	DM411EL	VR2001	J51745471	H0651A005-470B	470ΩB
			VR2004	J51745472	H0651A011-4.7KB	4.7kΩB
		TRANSISTORS	VR2002, 2005	J51745223	H0651A015-22KB	22kΩB
Q2020	G3111620Y	2SA1162Y/GR (SY/SG)	VR2003	J51745104	H0651A019-100KB	100kΩB
	/G					
Q2012	G3305350B	2SC535B				CAPACITORS
Q2003, 2013, 2014	G3320260	2SC2026	C2083*, 2120	K02179001	Ceramic 50WV 1pF	CH
Q2016	G3324070	2SC2407			(DD104CK010C50)	
Q2006	G3326190B	2SC2619B (FB)	C2014	K02172020	" " 2pF	"
Q2007, 2008, 2015,	G3327120Y	2SC2712Y/GR (LY/LG)			(DD104CK020C50)	
2017-2019, 2022,	/G		C2011*	K22170201	Chip 50WV 0.5pF	CH
2024					(C2012CH1H0R5CFA)	
Q2002*	G3333550	2SC3355	C2013, 2046, 2083*	K22170202	" " 1pF	"
Q2021	G3408820Q	2SD882Q			(2012CH1H010CFA)	
			C2041, 2045, 2056,	K22170203	" " 2pF	"
		DIODE	2084		(C2012CH1H020CFA)	
D2004, 2007, 2008-	G2015550	Si 1S1555	C2088*	K22170303	" " 2pF	UJ
2012					(C2012UJ1H020CFA)	
D2002*	G2090044	" MC301	C2036, 2053, 2081*	K22170204	" " 3pF	CH
D2006	G2090118	Schottky 1SS97			(C2012CH1H030CFA)	
D2003, 2005	G2090244	Schottky 1SS106	C2037	K22170205	" " 4pF	"
D2001*	G2090023	Varactor 1SV50			(C2012CH1H040CFA)	
			C2015, 2016, 2055	K22170206	" " 5pF	"
		CRYSTAL	2066, 2081*		(C2012CH1H050CFA)	
X2001 (10kHz steps)	H0102609	HC-18/T 10.24MHz	2082*, 2086*			
X2001	H0102610	" 12.8MHz	C2004*, 2087, 2089	K22170207	" " 6pF	"
(12.5kHz steps)					(C2012CH1H060DFA)	
			C2001*, 2002*,	K22170208	" " 7pF	"
		CAVITIES	2009*		(C2012CH1H070DFA)	
CV2001, 2002	Q90000114	CV-441B	C2003*, 2085, 2086*	K2217209	" " 8pF	"
		RESISTORS			(C2012CH1H080DFA)	
R2056	J02245229	Carbon Film 1/4W 2.2Ω SJ	C2067	K22170211	" " 10pF	"
R2080	J01215471	" 1/8W 470Ω TJ			(C2012CH1H100DFA)	
R2023	J01215102	" 1/4W 1kΩ SJ	C2010*, 2072	K22170311	" " 10pF	UJ
R2024	J02245153	" 1/4W 15kΩ SJ			(C2012UJ1H100DFA)	

Marked * components on the VCO UNIT

C2088	K22170219	" " 15pF CH (C2012CH1H220JFA)			
C2023	K22170223	" " 33pF CH (C2012CH1H330JFA)			FERRITE BEADS
C2026, 2038-2030, 2039, 2040, 2044, 2047, 2048, 2099, 2105	K22170235	" " 100pF " (C2012CH1H101JFA)		L9190001	Ri3x3x1
				L9190012	FBH 5/1.7/7-1801F
			RL2001	M1190044	RELAY G4Y-152P
C2024, 2025	K22170239	" " 150pF " (C2012CH1H151JFA)			CONNECTORS
C2012*, 2017, 2019 2042, 2043, 2049, 2054, 2058, 2068, 2079-2091-2098, 2100-2103, 2106- 2111, 2114-2119 2119	K22170805	" " 0.001μF B (C2012B1H102MFA)	J2001 J2002 J2003	P0090370 P0090371 P0090372	5703-03CPB 5703-04CPB 5703-05CPB
					TERMINAL POSTS
				Q5000016	TP-E
				Q5000026	TP-F
				Q5000049	TP-J
C2005, 2006, 2018, 2020, 2027, 2035*, 2038, 2050, 2052, 2057, 2059, 2061, 2062, 2064, 2065, 2070, 2074, 2076, 2078, 2080	K44170817	" " " 0.01μF (C2012B1H103MFA)			R0106510 Shield Case R0106520 Shield Cover R0106530 " (Rear)
C2034, 2069	K22141904	" 25WV D 0.1μF (C3216D1E104MFA)	CONTROL UNIT		
			Symbol No.	Part No.	Name & Description
C2022	K40179001	Electrolytic 50WV 1μF (ECE-A1HK010)		F2634103A	Printed Circuit Board
C2051, 2060, 2077, 2014, 2112, 2113	K40129012	" 16WV 10μF (ECE-A1CK100)		C026343A	PCB with Components w/o Battery (BAT4001)
C2033	K40109002	" 10WV 47μF (10RE47)			
C2071, 2073	K72120002	Tantalum 16WV 2.2μF (F951C225MA1)			
C2063	K72100002	" 10WV 3.3μF (F951A335MA1)			
C2031, 2032	K70120007	" 16WV 6.8μF (48PD685x0016C1)			ICs
C2021	K70100003	" 10WV 10μF (489D106x0010B1)	Q4001 Q4002	G1090623 G1090619	HD44868 A03 HD44750 F11
C2007*	K70100005	" " 47μF (489D476x0010D1)	Q4008 Q4009	G1090084 G1090584	μPC78L05 μPD4069UBG
C2122	K70160001	" 35WV 0.047μF (MDST473F)			
					TRANSISTORS
		TRIMMER CAPACITORS	Q4005, 4006	G3111620Y /G	2SA1162Y/GR (SY/SG)
TC2004, 2005	K91000059	ECV-1ZW04x53T 4pF			
TC2001*, 2002*, 2006	K91000055	ECV-1ZW06x53T 6pF	Q4003, 4004, 4007	G3327120Y /G	2SC2712Y/GR (LY/LG)
TC2003	K91000028	ECV-1ZW10x53T 10pF			
		INDUCTORS			DIODES
L2002*	L0190121		D4001, 4005, 4009- 4015	G2090027	Si 1SS53
L2003*	L0021520				
L2005, 2015, 2018	L0020852		D4002	G2070009	" 1SS184 (B3)
L2026	L0020342		D4003	G2090183	Zener HZ9A2L
L2009	L0021262		D4004	G2090118	Schottky 1SS97
L2008, 2010	L0020678		D4006, 4007	G2090115	LED LN317GP
L2011, 2016, 2017, 2019, 2021, 2022, 2024	L1020673		D4008	G2090114	" LN217RP
L2023	L1020663				LAMP
L2012, 2025, 2027	L0021359			Q1000058	M1075-8-4
L2001*, 2004*	L1190092	FL4HR47M 0.47μH			
L2006, 2014	L1190016	FL5H101K 100μH			
L2007, 2028	L1190189	LAL03NA102K 1mH			

* : 25W

▲ : 10W

		RESISTORS					CONNECTOR	
R4015, 4016	J01245561	Carbon Film	1/4W 560Ω	TJ	P5001 (with wire)	T9204864		
R4017	J01245102	"	" 1kΩ	"	P5002 (")	T9204865		
R4006	J24205222	Chip RMC	1/10-222J	2.2kΩ				
R4003, 4008, 4011, 4024-4026	J24205103	"	" 103J	10kΩ				
88.5 Hz TONE ENCODER UNIT (Version F)								
R4007, 4009, 4010, 4012-4014, 4018, 4019, 4027	J24205223	"	" 223J	22kΩ	Symbol No.	Part No.	Name & Description	
						F2634104	Printed Circuit Board	
						C026344A	PCB with Components	
R4005, 4030	J24205473	"	" 473J	47kΩ			IC	
R4001	J24205563	"	" 563J	56kΩ				
R4002, 4004, 4028, 4029	J24205104	"	" 104J	100kΩ	Q6001	G1090239	TC5082P	
R4020, 4022	J24205474	"	" 474J	470kΩ			TRANSISTORS	
R4021, 4023	J24205105	"	" 105J	1MΩ	Q6002, 6003	G3327850E	2SC2785E	
CERAMIC RESONATOR								
					CO6001	H7900200	CSB361.5MT	
CAPACITORS								
C4013, 4015-4020	K22170243	Chip	" 220pF	CH			RESISTORS	
		(C2012CHI221JFA)						
C4011, 4012	K22170801	"	" 470pF	B	R6007	J00215101	Carbon film	1/8W 100Ω VJ
		(C2012B1H471MFA)			R6006	J00215222	"	" 2.2kΩ "
C4005-4008, 4014	K22170805	"	" 0.001μF	"	R6009	J00215103	"	" 10kΩ "
		(C2012B1H102MFA)			R6001, 6004, 6008	J00215473	"	" 47kΩ "
C4021	K22170817	"	" 0.01μF	B	R6005	J00215683	"	" 68kΩ "
		(C2012B1H103MFA)			R6002, 6003	J00215104	"	" 100kΩ "
C4002, 4004	K22171008	"	" 0.047μF	F			POTENTIOMETER	
		(C2012F1H473ZFA)						
C4003, 4010	K22141904	"	25WV 0.1μF	D	VR6001	JS1745104	H0651A019-100KB	100kΩB
		(C3216D1E104KFA)						
C4001, 4009	K72120002	Tantalum	16WV	2.2μF			CAPACITORS	
		(F951C225MA1)			C6002, 6003	K00175101	Ceramic	50WV 100pF SL
							(DD105SSL101J50V)	
					C6001, 6005, 6008	K19149013	"	" 0.01μF
							(UAT05x103K-L05AE)	
CONNECTORS								
J4002	P0090369	5703-02CPB			C6007	K19149023	"	" 0.068μF
J4003	P0090375	5703-08CPB					(UAT10x683K-L45AE)	
J4004	P0090376	5703-09CPB			C6010	K70167104	Tantalum	35WV 0.1μF
J4005	P0090372	5703-05CPB					(CS15E1V0R1M)	
J4006	P0090371	5703-04CPB				K70167474	"	" 0.47μF
J4007	P0090374	5703-07CPB					(CS15E1VR47M)	
J4008, 4009	P0090370	5703-03CPB			C6006	K70127225	"	16WV 2.2μF
							(CS15E1C2R2M)	
JP4001 (with wire)	T9204857				C6004	K70120002	"	" 10μF
JP4002 (")	T9204856						(489D106x0016C1)	
P4001 (")	T9204841							
CONNECTORS								
					P6001	P0090352	3022-03A	
S4001	Q90000290	SGFV01T009			P6002	P0090069	3022-06A	
S4003, 4004	N4090085	SPH221A	LOW, DIM					
S4005	N4090094	SPH222A	REV					
S4006-4018	N4090051	KHH10902	STEP, TONE, ETC.					
BATTERY								
BAT4001	Q9000106	CR2025			ENCODER DUMMY UNIT (Versions A, X, B & C)			
					Symbol No.	Part No.	Name & Description	
						F2634104A	Printed Circuit Board	
						C026344B	PCB with Components	
DISPLAY UNIT								
Symbol No.	Part No.	Name & Description						
							RESISTOR	
		LCD ASSY			R6501	J01215473	Carbon Film	1/8W 47kΩ TJ
	Q9000291	AM-819						
	R7071980	Cusion					CONNECTORS	
					P6501	P0090352	3022-03A	
					P6502	P0090069	3022-06A	

ACCESSORIES			C9	K72100001	Tantalum 10WV (F951A105MA1)	1µF	"	
Symbol No.	Part No.	Name & Description						
		*Optional same models	C14	K72120002	" 16WV (F951C225MA1)	2.2µF	"	
		MICROPHONE	C4, 13	K72080003	" 6.3WV (F950J106MC1)	10µF		
	M3090047	MH-14A8*						
	M3090049	MH-15A8 (w/DTMF)*						
		DC POWER CORD	C15	K72080006	" " (F950J476MG1)	47µF		
	T9015605	FT-2700R (10W)						
	T9015610	FT-2700RH(25W)						
		SPARE FUSE	P1	P0090092	3022-08A			
	Q0000005	5A (10W)	P2	P0090069	3022-06A			
	Q0000007	10A (25W)						
		EXT SPEAKER PLUG	FVS-1 VOICE SYNTHESIZER UNIT (D3000371) OPTION					
	P0090034	C-107	Symbol No.	Part No.	Name & Description			
	D6000041	WIRE STAND STAND-2		F2628101	Printed Circuit Board			
		MOBILE MOUNT BRACKET ASSY						
	D6000039	MMB-27 (w/mounting screws)			ICs			
				G1090620	HD61887C45			
				G1090626	LA6358M			
			Q2		TRANSISTOR			
	F2638101	Printed Circuit Board		G3111620Y	2SA1162Y/GR			
				/G				
		ICs			CERAMIC RESONATOR			
Q1	G1090577	MN6520	CO1	H7900210	CSB800A			
Q2	G1090602	µPD4066BG						
		TRANSISTORS			RESISTORS			
Q3-5	G3327120Y	2SC2712Y/GR (LY/LG)						
	/G		R2	J24205470	Chip RMC1/10T	470J	47Ω	
			R3	J24205471	" "	471J	470Ω	
			R5	J24205332	" "	332J	3.3kΩ	
		DIODE	R6, 9-11	J24205123	" "	123J	12kΩ	
D1	G2070009	1SS184 (B3)	R7, 8, 12-14	J24205153	" "	153J	15kΩ	
			R4	J24205334	" "	334J	330kΩ	
		CRYSTAL	R1	J24205105	" "	105J	1MΩ	
X1	H0102571	MS41F 4.194304 MHz						
		RESISTORS			POTENTIOMETER			
R6	J24205331	Chip RMC1/10T 331J 330Ω	VR1	J51750103	H0423A043-10KB	10kΩB		
R10	J24205152	" " 152J 1.5kΩ			CAPACITORS			
R4,7	J24205222	" " 222J 2.2kΩ						
R12, 13, 16, 17	J24205472	" " 472J 4.7kΩ	C1, 2	K22170235	Chip 50WV 100pF (C2012CH1H101JFA)	CH		
R21	J24205103	" " 103J 10kΩ						
R11	J24205123	" " 123J 12kΩ	C9, 11	K2217805	" " 0.001µF (C2012B1H102MFA)	B		
R1	J24205223	" " 223J 22kΩ						
R2, 3, 8, 15, 18-20	J24205473	" " 473J 47kΩ	C7	K22170811	" " 0.0033µF (C2012B1H332MFA)	B		
R14	J24205823	" " 823J 82kΩ						
R5, 9	J24205224	" " 224J 220kΩ	C8	K22170813	" " 0.0047µF (C2012B1H472MFA)	B		
		POTENTIOMETER	C5-10	K22170817	" " 0.01µF (C2012B1H103MFA)	B		
VR1	J51750473	H0423A047-47KB 47kΩ						
		CAPACITORS	C3, 6, 12	K72160001	Tantalum 35WV (F951V104MA1)	0.1µF		
C1, 2	K22170211	Chip 50WV 18pF (C2012CH1H180JFA)						
C10	K22170801	" " 470pF (C2012B1H471MFA)	C4	K72080003	" 6.3WV (F950J106MC1)	10µF		
					SWITCH			
C12	K22170805	" " 0.001µF (C2012B1H102MFA)	S1	N6090051	SS212			
					CONNECTOR			
C3	K22171004	" " 0.01µF (C2012F1H103ZFA)	J1	P0090377	5703-10CPB			
C7	K22141902	" 25WV 0.047µF (C3216D1E473MFA)						
C5, 6, 8	K22141904	" " 0.1µF (C3216D1E104MFA)						