MINISTRY OF SUPPLY D.L.R.D.(A)/R.A.E.

VALVE ELECTRONIC

CV137

Specification MOSA/CV137
Issue 6 Dated 19.4.55
To be read in conjunction with BS.448,BS.1409 & K1001

SECURITY	
Specification	Valve
UNCLASSIFIED	UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Minature Diode Triode

CATHODE - Indirectly heated

ENVELOPE - Glass

PROTOTYPE - EAC91

RATING

			Note
Heater Voltage	(V)	6.3	
Heater Current	(A)	0.3	
TRIODE			
Max. Operating Anode Voltage	(V)	300	A
Max. Anode Dissapation	(W)	2.0	A
Max. Mean Cathode Current	(mA)	11.0	A
Amplification Factor		36.0	B
Mutual Conductance	(mA/V)	2.5	B
Max. Operating Frequency	(Mc/s)		
(a) As Frequency Changer		300	A
(b) As Oscillator		600	A
DIODE			
Max. Peak Anode Current	(mA)	55.0	A
Max. Mean Anode Current	(mA)	5.5	A
Max. Peak Inverse Voltage	(V)	400	A

CAPACITANCES (pF)

C in (nom.)	1.85	C
C out (nom.)	1.15	C
Cat, g (nom.)	1.7	C
Cg, ad (nom.)	0.05	C
Cat, ad (max.)	0.2	C
Cad, kd (nom.)	1.6	C
Ckt, kd (nom.)	0.01	C
Cad,h (max.)	1.0	C

MARKING

See K.1001/4

BASE

BS.448/B7G

CONNECTIONS

Pin	Electrode
1	ad
2	kd
3	h
4	h
5	kt
6	gt
7	at

DIMENSIONS

See BS.448/B7G/2.1
Size Ref. No.2

Dimensions (mm)	Min.	Max.
A seated height	-	47.5
C diameter	16.0	19.0
D overall height	-	54.5

MOUNTING POSITION

Any

NOTES

A. Absolute maximum values.

B. At Va = 200, Vg = -3.0 (Ia = 8 mA)

C. To be measured with a close fitting metal screen.

CV137

TESTS

To be performed in addition to those applicable in K.1001

	Test Conditions			Test	Limits		No. Tested	Note
					Min.	Max.		
a	See K.1001/A.III Measured at a frequency of 0.5 Mc/s or some other agreed high frequency			CAPACITANCES (pF)				
	Links to H.P.	Links to L.P.	Links to E					
	6	3,4,5, 8,9	1,2,7,10 T.C.1,T.C.2	C in	1.6	2.1	6 per week	1
	7	3,4,5, 8,9,	1,2,6,10, T.C.1,T.C.2	C out	0.9	1,40		
	6	7	1,2,3,4, 5,8,9,10, T.C.1,T.C.2	Cat,g	1.5	1.9		
	2	1	3,4,5,6, 7,8,9,10 T.C.1,T.C.2	Cad, kd	1.2	2.2		
	1	7	2,3,4,5, 6,8,9,10, T.C.1,T.C.2	Cat, ad	-	0.20	TA	
	3,4	1	2,5,6,7, 8,9,10 T.C.1,T.C.2	Cad,h	-	1.0	6 per week	

	Vh	Vad	Vg	Vat					
b	6.3	0	0	0	Ih (A)	0.27	0.33	100% or S	
→ c	6.3	-100	0	0	Reverse Iad (μA)	-	2.0	100%	
d	6.3	-0.2	0	0	Iad (μA)	5.0	-	100%	
→ e	6.3	Vhk = ± 100			Ih,k (μA)	-	40.0	100%	4
f	6.3	-1.0	0	0	Iad (μA)	-	5.0	100%	
g	6.3	10	0	0	Iad (mA)	34.0	-	100%	
h	6.3	0	0	200	Iat (mA)	12.0	24.0	100%	2
j	6.3	0	-4	200	Iat (mA)	3.0	8.0	100%	
→ k	6.3	0	-10	200	Iat (mA)	-	0.5	100%	
m	6.3	0	-1,5	200	Reverse Ig (μA)	-	0.5	100%	
n	6.3	-	15 A.C.	15A.C.	Ikt (mA)	15.0	-	100%	2&3

NOTES

See Page 3

TESTS (Continued)

CV137

NOTES

1. Measured with a close fitting metal screen

2 Conditions maintained only for sufficient time to take necessary reading.

3. 15V R.M.S 50 c/s, applied to anode and grid connected together

4. See K.1001/53 except that the test voltages shall be applied in each polarity. The cathodes shall be connected together.

DATA SHEET

Valve Electronic Type CV 137

TYPICAL OPERATING CONDITIONS

Triode Section

Anode Voltage	200	Volts
Anode Current	7.5	mA
Grid (G1) Voltage	-2.8	Volts
Mutual Conductance	2.8	mA/V
Amplification Factor	36	-
Anode Impedance	12,800	Ohms

U.H.F. Frequency Changer - Typical Details

(See attached circuit diagram)

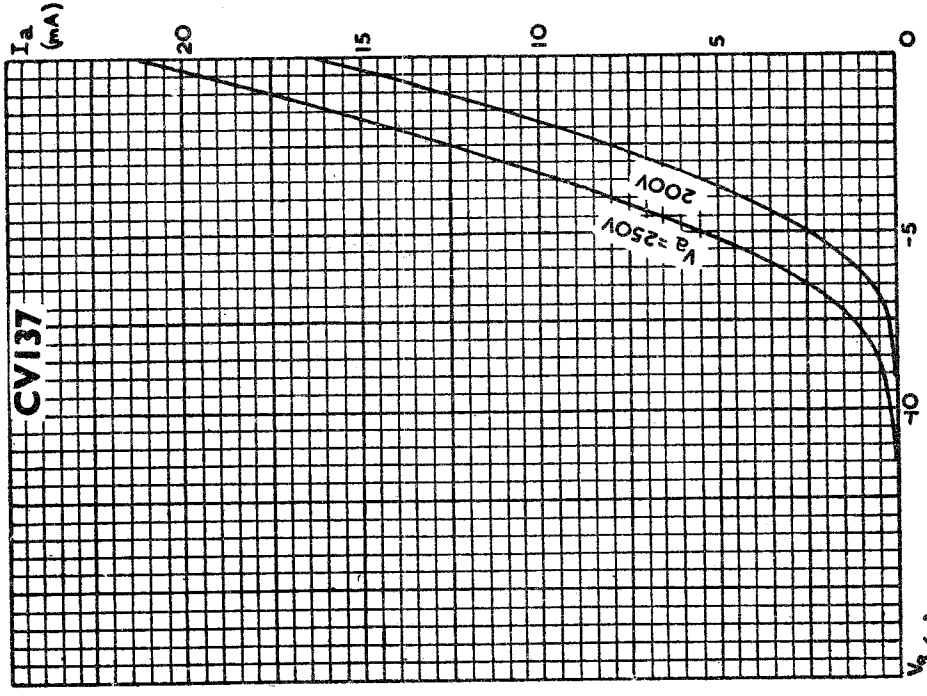
Approx. Coil Data -

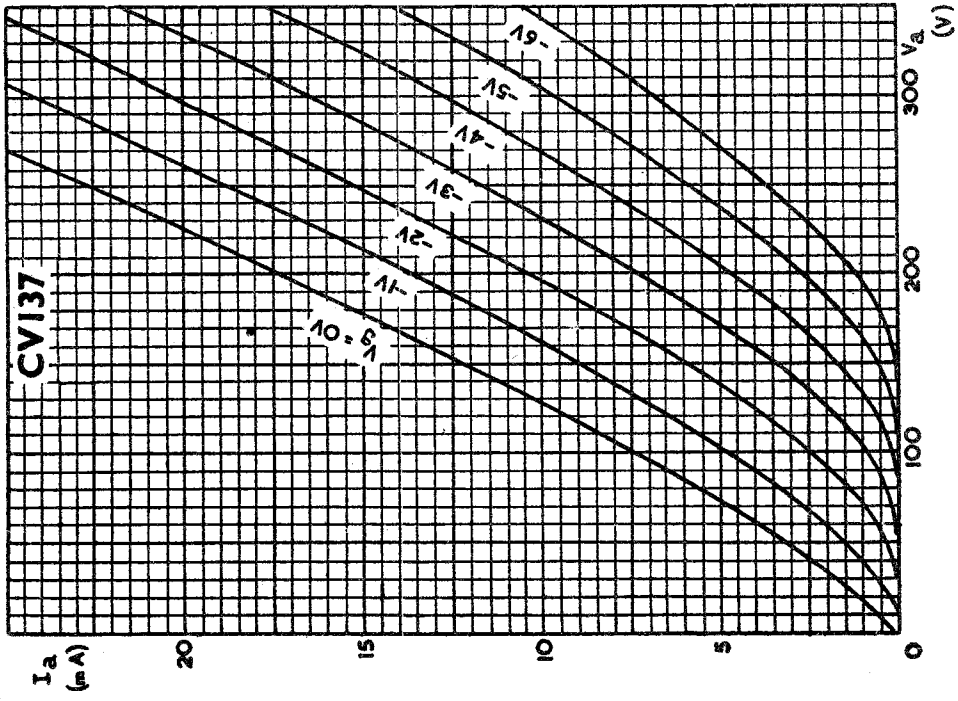
L1 - Turns		3½
Coil diameter		10 mm
Coil length		7 mm
Wire diameter		1 mm

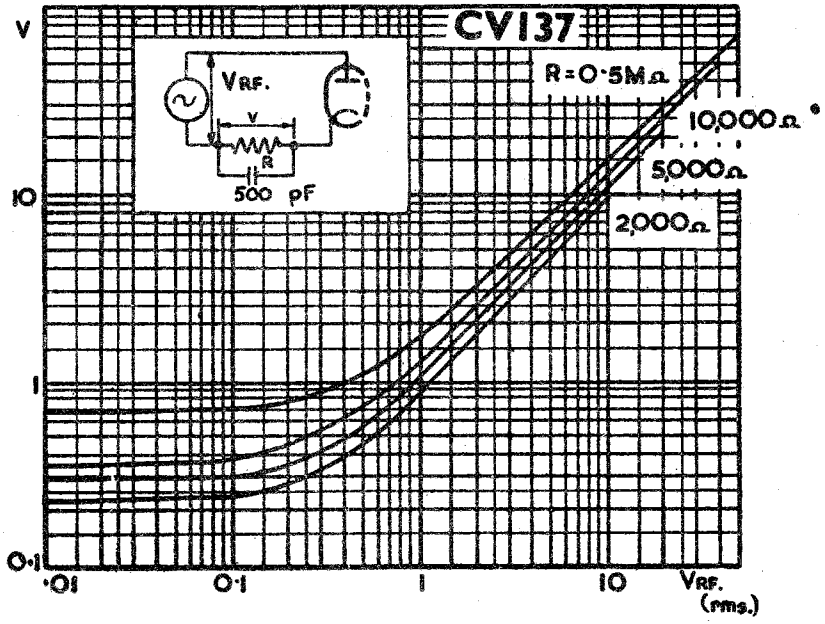
L2 - Dust cored, tunable to intermediate frequency

L3) Dependent upon
L4) signal frequency

Mounting position - Any.

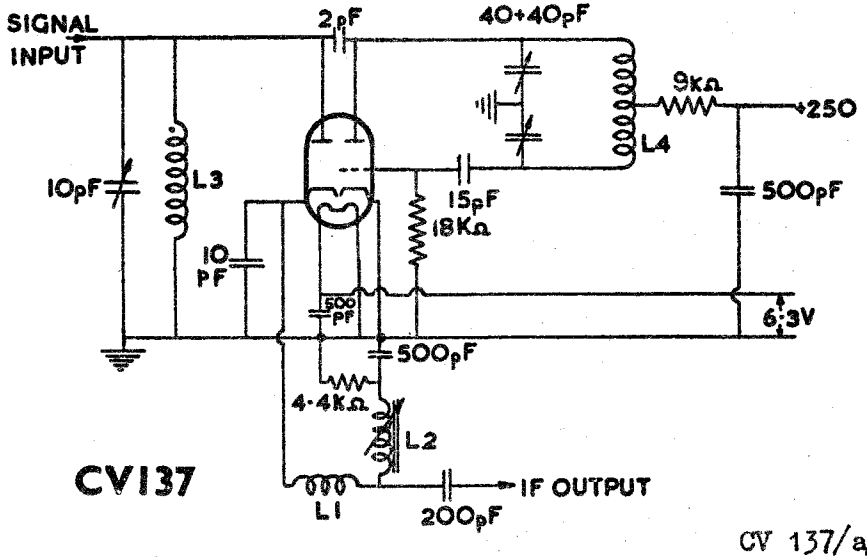

CV137
Ia (mA)
20
15
10
5
0
-5
-10
Vg (V)
Va =250V
200V


CV137
Ia (mA)
20
15
10
5
0
100
200
300
Va (V)
Vg = 0V
-1V
-2V
-3V
-4V
-5V
-6V



UHF FREQUENCY CHANGER CIRCUIT FOR USE UP TO 300Mc/s.

INTERMEDIATE FREQUENCY 12 TO 45 Mc/s.



CV 137/a/3.