MINISTRY OF SUPPLY - DLRD(A)/RRE

VALVE ELECTRONIC

CV2263

Specification MOS(A)/CV2263 Issue 4 Dated 23. 6. 54 To be read in conjunction with K1001	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Velocity Modulated Oscillator
CATHODE - Indirectly-heated
ENVELOPE - Copper-glass with waveguide output
PROTOTYPE - VX9040

MARKING

See K1001/4

BASE

International Octal

RATING

			Note
Heater Voltage	(V)	6.3	-
Heater Current	(A)	0.56	
Max. Resonator Voltage	(V)	400	
Max. Resonator Dissipation	(W)	20	
Reflector Voltage Range	(-V)	80 to 170	A
Min. RF Power Output	(mW)	15	
Mechanical Tuning Range	(Mc/s)	9250 to 9500	C
Min. Electronic Tuning Range	(Mc/s)	30	
Nominal Reflector Voltage change to achieve 30 Mc/s electronic tuning	(V)	20	
Max. Total Impedance in reflector to cathode circuit	(megohm)	0.5	

CONNECTIONS

Pin	Electrode
1	No connection
2	Heater
3	Pin omitted
4	Pin omitted
5	Resonator
6	Pin omitted
7	Heater and Cathode
8	No connection
TC	Reflector

TOP CAP

See K1001/A1/D5.2

DIMENSIONS

See Drawing on Page 4

MOUNTING POSITION

Any

NOTES

A. Each valve is marked with the reflector voltage at which the valve will oscillate and give a power output of at least 10 mW over the whole band.

B. The reflector voltage must never become equal to or more positive than the cathode; if under AFC working there is any chance of this happening, a protective diode must be used.

C. Mechanical tuning is effected by means of a suitable plunger fitted externally. See Drawing on Page 4.

TESTS

To be performed in addition to those applicable in K1001

	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Vres (V)	Vref (V)	Frequency (Mc/s)		Min.	Max.		
a	6.3	-	-	-	Heater Current (A)	0.52	0.61	Note 1	
b	6.3	350	Adjust	Random point within band 9250 to 9500.	1. RF Power Output (mW) 2. Reflector Voltage (-V)	10 80	- 170	Note 1	2 3
c	As for Test (b)			9375 ± 20	1. Frequency Drift (Mc/s) 2. Reflector Voltage (-V) 3. Beam Current (mA)	- 80 20	5 170 44	Note 1	3&4 3
d	As for Test (b)			9250	1. Electronic Tuning (Mc/s) 2. RF Power Output (mW) 3. Reflector Voltage (-V)	30 15 80	- - 170	100% 100% 100%	5 3
e	As for Test (b)			9500	1. Electronic Tuning (Mc/s) 2. RF Power Output (mW) 3. Reflector Voltage (-V)	30 15 80	- - 170	100% 100% 100%	5 3
f	As for Test (c)				Frequency Variation (Mc/s)	-	4	Note 1	3&6
g	6.3	350	Adjust to that value marked on valve	9250-9500	RF Power Output (mW)	10	-	100%	7
h	5.7	350	Adjust	9375 ± 20	1. RF Power Output (mW) 2. Decrease in Beam Current from value found in Test (c) (%) 3. Reflector Voltage (-V)	10 - 80	- 30 170	100% 100% 100%	 3
j	As for Test (c)				Thermal Factor Change in frequency (Mc/°C) (2) Direction of change in frequency	-	-0.25	~~100%~~ 100%	~~8&9~~ 8&9

TESTS (Cont'd)

CV2263

NOTES

1. This test shall be performed on 6 valves per day or 10% of the day's production, whichever is the greater. If this sample batch passes the test then all valves will be acceptable. If there are any rejects in the sample batch, then all the valves in the day's production will be tested. The sample batch shall be selected at random from the day's production.

2. Measured within 3 minutes of switching on all supplies.

3. Reflector voltage shall be adjusted to give the maximum RF power output of the reflector mode.

4. With the valve inserted into an approved test mount, the frequency drift shall be measured between 4 mins and 15 mins after switching on all supplies.

5. Measured at 3 db points.

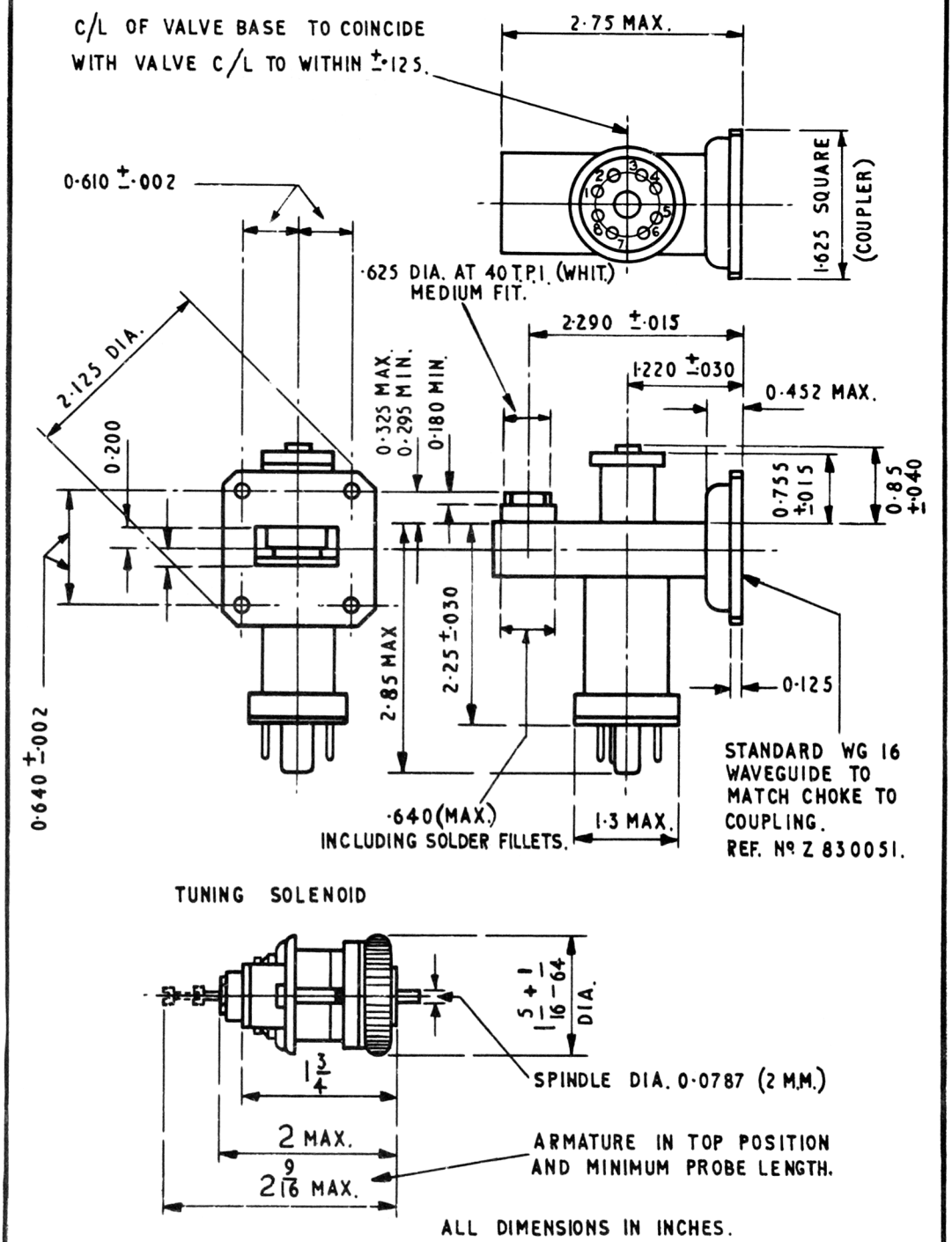
6. When a 2-megohm resistor is inserted in series with the reflector lead.

7. Each valve is marked with a reflector voltage at which it will oscillate and give an output power of at least 10 mW over the entire frequency range.

8. During this test the temperature shall be that of the resonator body.

9. The direction of drift of the Thermal Factor may be checked by operating the valve for 2 minutes under the conditions specified in Test Clause (c). The heater supply is then switched off and the direction of drift of the frequency with anode current is noted, the anode and reflector voltages remaining constant. Valves shall be rejected if $\frac{df}{dIa}$ is negative.

9. The direction of the Thermal Factor shall be observed by operating the valve for a period not less than 5 minutes in the conditions specified in Test Clause (c). The valve shall then be cooled by any suitable external means and the direction of drift of frequency noted. During the test the resonator and reflector voltages shall remain constant. Valves shall be rejected if the frequency decreases while being cooled. Amdt 2


C/L OF VALVE BASE TO COINCIDE WITH VALVE C/L TO WITHIN ±·125.
2·75 MAX.
1·625 SQUARE (COUPLER)
0·610 ±·002
·625 DIA. AT 40 T.P.I. (WHIT.) MEDIUM FIT.
2·290 ±·015
1·220 ±·030
0·452 MAX.
2·125 DIA.
0·200
0·325 MAX. 0·295 MIN.
0·180 MIN.
0·755 ±·015
0·85 ±·040
2·85 MAX
2·25 ±·030
0·125
0·640 ±·002
·640 (MAX.) INCLUDING SOLDER FILLETS.
1·3 MAX.
STANDARD WG 16 WAVEGUIDE TO MATCH CHOKE TO COUPLING. REF. Nº Z 830051.
TUNING SOLENOID
5 + 1 / 16 − 64 DIA.
SPINDLE DIA. 0·0787 (2 M.M.)
1 3/4
2 MAX.
2 9/16 MAX.
ARMATURE IN TOP POSITION AND MINIMUM PROBE LENGTH.
ALL DIMENSIONS IN INCHES.

SPECIFICATION CV.2263 - ISSUE 4 dated 23.6.54

AMENDMENT NO.1

Page 2. Test j.

AMEND to read as follows:

j.	As for Test (c)	Thermal Factor (1) Change in frequency (Mc/s °C)	-	-0.25	T.A.	8
		(2) Direction of change in frequency			100%	8 & 9

21.3.57
N.87774.R

T.V.C. Office
for Director R.R.E.

✓ AMS 25/3/57

ELECTRONIC VALVE SPECIFICATION

CV2263, Issue 4, dated 23rd June, 1954.

Amendment No.2

Page 3 Note 9 Amend to read:

"The direction of the Thermal Factor shall be observed by operating the valve for a period not less than 5 minutes in the conditions specified in Test Clause (c). The valve shall then be cooled by any suitable external means and the direction of drift of frequency noted. During the test the resonator and reflector voltages shall remain constant. Valves shall be rejected if the frequency decreases while being cooled".

Royal Radar Establishment

April, 1962.

N.11835

VAJ
18/6/62