VALVE ELECTRONIC

CV2219

MINISTRY OF SUPPLY - DLRD(A)/RRE

Specification MOS(A)/CV2219 Issue 3 Dated 8.10.53 To be read in conjunction with K1001, excluding clauses 5.2 & 5.8.	SECURITY	
	Specification	Valve
	UNCLASSIFIED	UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Transmitting tetrode

CATHODE - Directly-heated thoriated tungsten

ENVELOPE - Metal-glass construction

PROTOTYPE - Modified CV1114

MARKING

See K1001/4

BASE

See Drawing on Page 3

RATING

			Note
Filament Voltage	(V)	10.0	A
Filament Current	(A)	70.0	A,C
Max. Anode Dissipation	(W)	200	B
Max. Operating Frequency	(Mc/s)	60	
Max. Seal Temperature	(°C)	140	

CONNECTIONS & DIMENSIONS

See Drawing on Page 3

CAPACITANCES (pF)

Anode to all other electrodes	20
Grid to all other electrodes	35
Anode to grid (max.)	2

NOTES

A. Adequate cooling of the filament leads and adjacent re-entrant portion of the envelope shall be provided by at least 10 cu. ft. of air per minute with a pressure drop in the order of 2 ins. of water.

B. For this dissipation forced air cooling must be provided by at least 85 cu. ft. of air per minute with a pressure drop across the valve in the order of 2 ins. of water.

C. The valve should be operated at a constant current of 70 amperes to ensure maximum life. Under these conditions the range of filament voltage will be 9.3 to 10.7 volts.

Z.5328.R.

TESTS

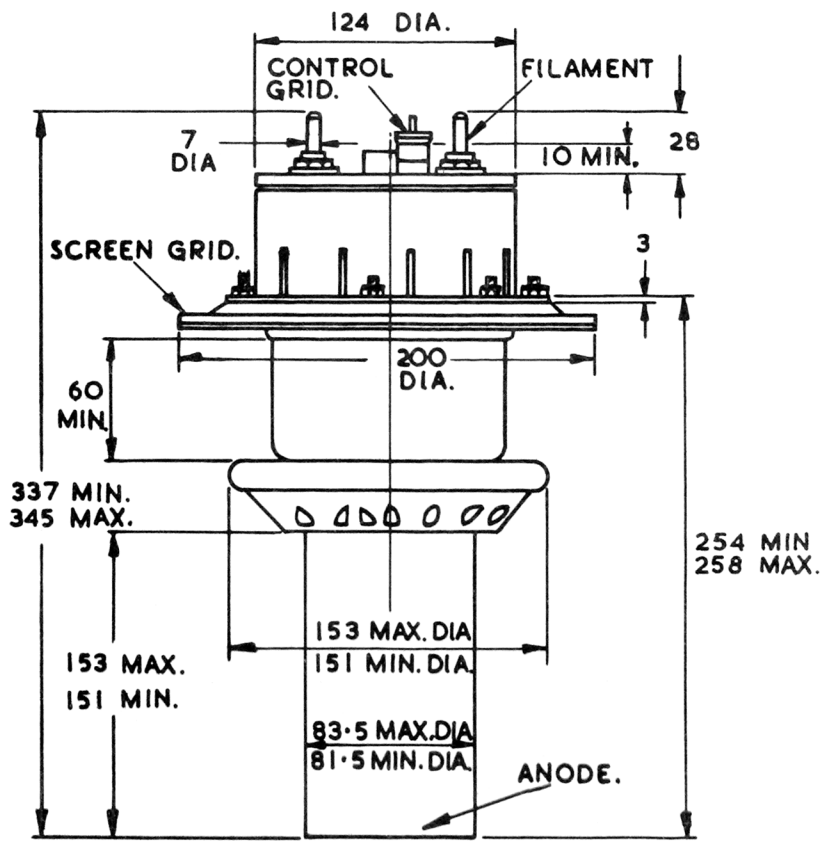
To be performed in addition to those applicable in K1001

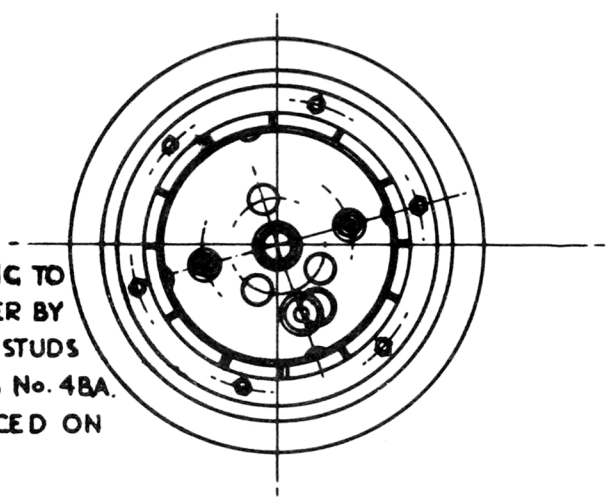
	Test Conditions					Test	Limits Min.	Limits Max.	No. Tested	Note
	Forced air cooling for the filament leads and the anode shall be provided by not more than 10 cu. ft. and 85 cu. ft. of air per min. respectively with a pressure drop across the valve in the order of 2 ins. of water.									
	Vf (V)	Va (V)	Vg2 (V)	Vg1 (V)	Ia (mA)					
a	10.0	Raised slowly to 35 kV and maintained until flashing ceases.	Strapped & connected to a negative supply.		A trace	Hot Flash Process Anode voltage to be maintained at 35 kV for a period of 5 minutes without further flashing.	-	-		1,2
b	0	7.5 kV RF at 22 Mc/s applied between screen and control grids. Anode connected to earth; filament not connected. Tp = 5 μsecs; prf = 300.				Conditions to be maintained for 1 minute without breakdown.	-	-	100%	2
c	10.0	0	0	0	0	If (A)	66.5	73.5	100%	
d	10.0	1.0 kV	1.0kV	Set	200	Reverse Ig (mA)	-	1.0	100%	
e	10.0	1.0 kV	1.0kV	Read	200	Vg1 (V)	-85	-120	100%	
f	10.0	1.0 kV reduced to 700V	1.0kV reduced to 700V	Read	Maintained at 200	Vg1 change (V)	48	64	100%	
g	10.0	Strapped. Pulse of peak value 6 kV, half sine waveform. Tp = 2 μsecs; prf = 50.				Ic (A)	70	-	100%	
h	See K1001/A3.					Capacitances (pF) Ca - all Cg - all Cag	 16.0 26.3 -	 24.0 43.7 2.0	 2% (1)	
j	Life Test A minimum life of 500 hours is to be expected. Life failure shall be considered to have occurred when the emission of the valve has fallen below 0.5A at Vf = 6.6V with Va, Vg2 and Vg1 = 300V.									

NOTES

1. For this hot flash process there shall be a 300 ohm resistor in series with the applied volts and a capacitance of 0.25 μF in parallel with the supply volts on the supply side of the resistor.
2. Once the conditions specified have been met the test conditions need not be repeated for acceptance testing.

CV 2219





SCREEN GRID RING TO BE SECURED EITHER BY 6 No. 4 BA. $\frac{1}{2}$ INS STUDS AND NUTS OR 6 No. 4BA. BOLTS EQUI-SPACED ON 140 P.C.D.

ALL DIMENSIONS IN MILLIMETRES.