MINISTRY OF SUPPLY - R.R.E.(South)

VALVE ELECTRONIC **CV 1949**

Specification MOS(A)/CV1949 Incorporating MIL-E-1/781 A	SECURITY	
	Specification	Valve
Issue 3 Dated 24.6.55	UNCLASSIFIED	UNCLASSIFIED
To be read in conjunction with K1006		

→ Indicates a change

TYPE OF VALVE - Gas Triode Thyratron

CATHODE - Indirectly-heated

ENVELOPE - Glass

PROTOTYPE - 6D4

MARKING

K1001/4

Additional Marking

6D4

RATING

			Note
Heater Voltage	(V)	6.3±10%	
Heater Current	(A)	0.25	
Max DC Supply Anode Voltage	(V)	250	
Peak Forward Anode Voltage	(V)	350	
Peak Inverse Anode Voltage	(V)	350	
Max DC Grid Voltage	(V)	-150	
Peak DC Anode Current	(A)	0.11	
Max DC Anode Current	(mA)	25	
Max Heater-cathode Voltage	(V)	-110	
Max Cathode Heating-time	(secs)	30	
Max Duty Cycle	(%)	0.75	
Max Ambient Operating Temperature Range	(°C)	-55 to +90	

BASE

B7G
BS.448 : B7G/1.1
Miniature Glass
Button 7-pin, E7-1

CONNECTIONS

Pin	Electrode
1	Grid
2	No connection
3	Heater
4	Heater
5	Cathode
6	No connection
7	Anode

DIMENSIONS

BS.448 : B7G/2.1

Dimension (ins)	Min.	Max.
A. Seated height	-	1 7/8
C. Diameter	-	3/4
D. Overall length	-	2.5/32

MOUNTING POSITION

Any

NOTE

A. All limiting values are absolute

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MIL-E-1/781A
17 May 1955
Superseding
MIL-E-1/781
16 July 1954

INDIVIDUAL MILITARY SPECIFICATION SHEET

ELECTRON TUBE, THYRATRON, GAS TRIODE

JAN-6D4

This specification sheet forms a part of the latest issue of Military Specification MIL-E-1.

Ratings:	Ef	Ebb	epx	epy	ib	Ib	tk	Ecl	Alt
Absolute	V	Vdc	v	v	a	mAdc	sec	Vdc	ft
Maximum:	6.3±10%	250	350	350	.110	25	30	-150	10,000
Test Cond.:	6.3	125	---	---	---	---	---	---	---

Ratings:	Rhk	μg	Rp	Rk	Ehk	Pulse Lgth.	Duty Cycle	Ambient Temp.
Absolute	Meg	Meg	ohm	ohm	V	us	%	°C
Maximum:	---	---	---	---	-110	---	.75	-55 to +90
Test Cond.:	1.0	0.5	650	4000	---	---	---	---

*Height: Max. 2-1/8 in. *Diameter: Max. 2-1/4 in.
**Base: Miniature Glass Button 7-Pin, E7-1

**Pin No.:	1	2	3	4	5	6	7
Element:	g	nc	h	h	k	nc	p

**Cathode: Coated Unipotential
**Envelope: T 5-1/2 (6-2)

For miscellaneous requirements, see Paragraph 3.3, Inspection Instructions for Electron Tubes.

Ref.	Test	Conditions		Min.	Max.	
3.1	Qualification Approval:	Required for JAN Marking				
4.9.18.1.6	Carton Drop:	(d) Package Group 1; Carton Size B				
4.9.19.1	**Vibration:	No Voltage				
4.10.8	*Heater Current:		If:	230	270	mA
4.10.15	*Heater-Cathode Leakage:	Ehk=-100Vdc	Ihk:	---	15	uAdc
---	Grid-Cathode Voltage:	Ec=-20Vdc;Rhk=0;Note 1	Egk:	---	2.0	Vdc
4.10.17.1	*Grid Voltage (1):		Ec:	-11.0	-14.0	Vdc
4.10.17.1	*Grid Voltage (2):	Ebb=50Vdc	Ec:	-5.0	-7.0	Vdc
4.10.17.1	*Grid Voltage (3):	Ebb=300Vdc	Ec:	-21	-31	Vdc
4.10.18	Tube Voltage Drop:	Rb/Ib=100mAdc	Etd:	---	18	Vdc
---	*Noise Output (1):	Ebb=300Vdc;Rg=0;Rp=56000;Note 2				
---	*Noise Output (2):	Ebb=250Vdc;Rg=Rk=0; Rp=0.033 Meg; Note 3	Output:	10	---	v
4.11	Life Test:	Group A;Ebb=250Vdc;Ec=-20 Vdc;Rp=5000;Rhk=disconnected; Ehk=110V	t:	500	~~933~~	hrs.
4.11.4	Life Test End Points:	Grid Voltage (1)	Ec:	-9.5	-15.5	Vdc
		Noise Output;Note 3	Output:	9.0	---	v

Note 1: Voltage measured across specified grid resistor.

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Note 2: The tube shall be placed in the circuit of Figure 1, in a constant magnetic field of 375 ± 10% gausses perpendicular to the normal electron path. The direction of the magnetic field shall be such as to deflect the electron beam toward the top of the tube. (North pole of magnet at Pin No. 7) The noise voltage measured at the output of the 1000-cps bandwidth filter shall not be less than the limits specified below for the various specified frequencies: **(Inspection Level IC shall be used.)**

Frequency, Mc	Minimum Noise Voltage, uV, RMS
0.1	10,000
0.2	14,000
0.5	25,000
1.0	22,000
2.0	7,000
5.0	500
10.0	70

Note 3: The tube shall be placed in the circuit shown (Figure 2) in a constant magnetic field of 375 ± 20% gausses which is perpendicular to the normal electron path. The direction of the magnetic field shall be such as to deflect the electron beam toward the top of the tube. The noise voltage measured at the plate of the tube and across the output of the circuit shall not be less than the specified limit in peak to peak volts. The oscilloscope used for noise amplitude measurement shall have a 3 db video bandwidth extending to at least 4 megacycles.

Note 4: Reference specification shall be of the issue in effect on the date of invitation for bid.

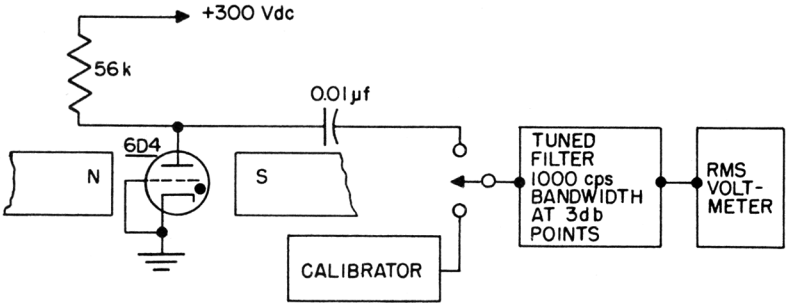

Figure 1.

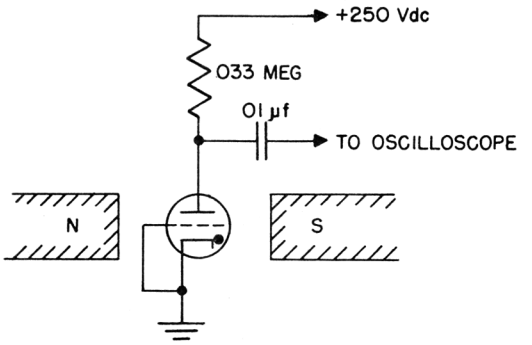

Figure 2