

VALVE ELECTRONICADMIRALTY SURFACE WEAPONS ESTABLISHMENT

CV2851

Specification AD/CV2851 incorporating MIL-E-1/798A Issue 1, Reprint A, Dated 17.8.1960 To be read in conjunction with K1006	<table> <tr> <th colspan="2"><u>SECURITY</u></th></tr> <tr> <th><u>Specification</u></th><th><u>Valve</u></th></tr> <tr> <td>Unclassified</td><td>Unclassified</td></tr> </table>	<u>SECURITY</u>		<u>Specification</u>	<u>Valve</u>	Unclassified	Unclassified
<u>SECURITY</u>							
<u>Specification</u>	<u>Valve</u>						
Unclassified	Unclassified						

<u>TYPE OF VALVE</u> :- Thyatron: Inert gas			<u>MARKING</u>	
<u>CATHODE</u> :- Coated: Indirectly-heated.			K1001/4	
<u>ENVELOPE</u> :- Glass			<u>Additional Marking</u>	
<u>PROTOTYPE</u> :- 3D22A			3D22A	
<u>RATINGS</u>			<u>BASE</u>	
			B.S.448/B7D	
			<u>CONNECTIONS</u>	
			Pin	Electrode
Heater Voltage (V)			1	h
Heater Current (A)			2	g ²
Max. Peak Inverse Anode Voltage (V)			3	k
Max. Peak Forward Anode Voltage (V)			4	g ¹
Max. Peak Grid 1 Voltage (V)			5	g ²
Max. Peak Grid 2 Voltage (V)			6	a
Max. Grid 1 D.C. Current (mA)			7	h
Max. Peak Grid 1 Current (mA)				
Max. Cathode D.C. Current (mA)				
Max. Peak Cathode Current (A)				
Max. Heater-Cathode Voltage (Heater negative to Cathode) (V)				
Max. Heater-Cathode Voltage (Heater positive to Cathode) (V)				
Max. Grid series Resistance (Megohms)				
Min. Cathode Heating Time (Secs)				
Max. Ambient Temperature Range (°C)				
<u>NOTE</u>				
A. All limiting values are absolute				

CV2851

MIL-E-1/798A
14 May 1956
SUPERSEDING
MIL-E-1/798
26 October 1954

INDIVIDUAL MILITARY SPECIFICATION SHEET

ELECTRON TUBE, THYRATRON

JAN-3D22A

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

Ratings:	Ef	epx	epy	eg2	eg1	ik	Ik	ig1	Ig1	-Ehk	∕Ehk	Rg	F1	TA	tk	Alt
Absolute	Vac	v	v	v	v	a	mAdc	ma	mAdc	V	V	Meg	cps	°C	sec(min)	ft
Maximum:	8.3±10%	1300	650	-100	-200	6	750	20	5	100	25	2.0	---	-75to+90	30	10,000
Test Cond.:	6.3	---	---	0	---	---	---	---	---	---	---	---	60	---	60	---

****Cathode:** Coated Unipotential
****Base:** Medium Metal Shell with Ceramic Insert, Giant 7-Pin Bayonet, A7-17
***Height:** 4-5/8 in. maximum
***Diameter:** 2-3/8 in. maximum

****Pin No.:** 1 2 3 4 5 6 7
Element: h g2 k g1 g2 a h
****Envelope:** Per Outline

The following tests shall be performed:

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

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Ref.	Test	Conditions	AQL(%)	Insp. Level or Code	Sym.	LIMITS						Units
						Min.	LAL	Bogie	UAL	Max.	ALD	
<u>Qualification Approval Tests</u>												
3.1	Qualification Approval:	Required for JAN Marking		---	---							
---	Cathode:	Coated Unipotential		---	---							
3.4.3	Base Connections:			---	---							
<u>Measurements Acceptance Tests, Part 1; Note 1</u>												
4.5	Holding Period:	t=72 hours										
4.10.8	Heater Current:		0.65	II	If:	2.35	---	---	---	2.85	---	Aac
4.10.17.2	Anode Voltage:	Ecc=0;Rg=0.1Meg;Rp=2000	0.65	II	Epp:	---	---	---	---	60	---	Vdc
4.10.19	Grid Voltage (1):	Epp=500Vac;Rg=2.0Meg;Rp=2000	0.65	II	Ecc:	-4.4	---	---	---	-9.2	---	Vdc
4.10.1.2	↑Peak Emission:	Ib=12a; Note 2	0.65	II	etd:	---	---	---	---	12.0	---	v
4.9.1	Mechanical:											
<u>Measurements Acceptance Tests, Part 2</u>												
4.9.19.3	Bump:	Angle = 20°	6.5	IA	---	---	---	---	---	---	---	
4.9.19.2	Vibration:	Note 3	6.5	IA	---	---	---	---	---	---	---	
4.10.19	Grid Voltage (2):	Epp=500Vac;Rg=0.1Meg;Rp=2000; Note 4	6.5	IA	Ecc:	---	---	---	---	1.5	---	Vdc
4.10.19	Grid Voltage (3):	Epp=500Vac; Rg=2.0Meg;Rp=2000; Note 5	6.5	IA	Ecc:	-4.4	---	---	---	-9.2	---	Vdc
4.10.19	Grid Voltage (4):	Epp=500Vac; Rg=2.0Meg;Rp=2000; Note 6	6.5	IA	Ecc:	-4.4	---	---	---	-9.2	---	Vdc
---	Grid Voltage Difference:	Note 7	6.5	IA	ΔEcc:	---	---	---	---	1.0	---	Vdc
4.10.13	Operation:	Epp=1000Vac;Rp/Ib=750 mAdc;Ecc=0;Rg=0.1Meg;t=30	6.5	IA	---	---	---	---	---	---	---	

CV2851

Ref.	Test	Conditions	AQL(%)	Insp. Level or Code	Allowable Defectives per Characteristic		Sym.	Limits		Units
					1st Sample	Combined Samples		Min.	Max.	
4.11	<u>Acceptance Life Tests</u> Life Test:	Group C;Epp=480Vac; Ib=750mA;Ipk=4.7 a;Rq=.06Meg;Resistance Load					t:	500	---	hours
4.11.4	Life Test End Point:	Ib=12a; Note 2					etd:	---	20.0	v
4.9.18.1.6	<u>Packaging Requirements</u> Container Drop:	(d) Package Group 1; Container Size M								

Note 1: The AQL for the combined defectives for attributes in Measurements Acceptance Tests, Part 1, excluding Mechanical, shall be one percent. A tube having one or more defects shall be counted as one defective. MIL-STD-105, Inspection Level II, shall apply.

Note 2: Tube shall be operated as a diode rectifier, with g2 and g1 tied to anode.

Note 3: No voltages applied during vibration. Vibrate for 10 minutes. Tube to be vibrated so that the table motion is along the shortest line between anode and cathode.

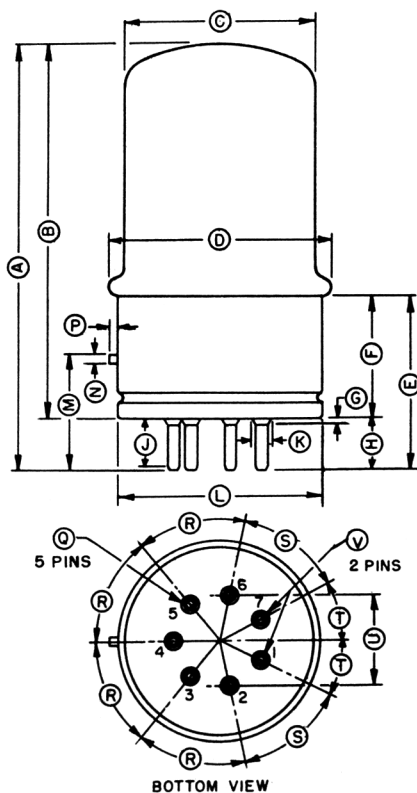
Note 4: The difference in value of Ecc in the first and second grid-voltage tests shall not exceed the specified value.

Note 5: Test to be made after two light taps with a standard No. 8 cork mallet in direction from cathode to anode.

Note 6: Test to be made after two light taps with a standard No. 8 cork mallet in direction from anode to cathode.

Note 7: The difference in value of Ecc in the third and fourth grid-voltage tests shall not exceed the specified value.

Note 8: Reference specification shall be of the issue in effect on the date of invitation for bid.



REF	DIMENSIONS	
	MIN	MAX
*A		4 $\frac{5}{8}$
**B		4
**C		2 $\frac{1}{16}$
*D		2 $\frac{3}{8}$
**E	1.875 NOM	
**F	1.338 NOM	
**G		.065
**H		.562
**J	.450	
**K		.195
**L	2.146	2.188
**M	1.210	1.250
**N		.082
**P	.079	.109
**Q	.122 DIA	.128 DIA
**R	51°	
**S	52°	
**T	26°	
**U	1.000 NOM	
**V	.153 DIA	.159 DIA