

INCH-POUND

MIL-PRF-1/148E  
29 May 2013  
SUPERSEDING  
MIL-PRF-1/148D  
23 January 2007

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, THYRATRON

TYPE C6A

Inactive for new design  
after 7 March 1997.

This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

The requirements for acquiring the electron tube described  
herein shall consist of this specification sheet and MIL-PRF-1.

DESCRIPTION: Triode, xenon gas.

See figure 1.

Mounting position: Base down.

Weight: 6 ounces nominal (170.1 grams).

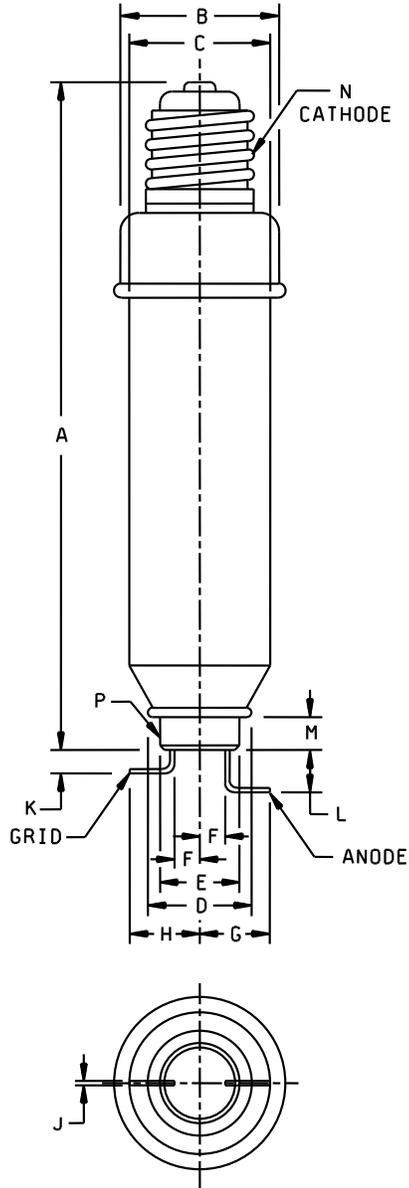
ABSOLUTE RATINGS:

Parameter: Unit:	Ef V ac	Ep V ac	epx v	epy v	Ib A dc	ib a	t Minutes	tk sec	TA °C	F Hz
Maximum:	2.75	---	600	300	6.4	77	---	40	70	380
Minimum:	2.25	---	---	---	---	---	---	---	-55	54
Test conditions:	2.5	110	---	---	6.4	---	3	---	---	60 (Note 1)

GENERAL:

Qualification - Not required.

This specification sheet uses accept on zero defect sampling in accordance with MIL-PRF-1, table III.



Letter	Dimensions			
	Minimum		Maximum	
	Inches	mm	Inches	mm
Conformance inspection, part 2				
A	10.56	268.22	11.57	293.88
B	2.12	53.85	2.38	60.45
Conformance inspection, part 3 (see note)				
C	1.90	48.26	2.10	53.34
D	---	---	1.63	41.40
E	1.10	27.94	1.14	28.96
F	.26	6.60	.30	7.62
G	1.00	25.40	1.07	27.18
H	.93	23.62	1.00	25.40
J	.09	2.29	.13	3.30
K	.21	5.33	.29	7.37
L	.40	10.16	.47	11.94
M	.37	9.40	.40	10.16
N	Base: Mogul screw, G2-3 (EIA)			
P	Cap: Porcelain with anode prong marked "a" and grid prong "g".			

FIGURE 1. Outline drawing of electron tube type C6A.

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TABLE I. Testing and inspection.

Requirement or test	MIL-STD-1311 method	Notes	Conditions	Symbol	Limits		Unit
					Min	Max	
<u>Conformance inspection, part 1</u>							
Operation	3206	---	Rg = 10,000 ohms	Ecc	1.35	-2.75	V dc
Heater current	3241	---		If	16	20	A ac
AC starting voltage	---	4	Ecc = 3 V dc; Rg = 1,000 ohms	Ep	---	43	V ac
Average arc drop	---	5	Ecc = 3 V dc; Rg = 1,000 ohms	Etd	---	10.5	V dc
Peak forward voltage	---	6	Rg = 1,000 ohms	Ecc	---	-5.3	V dc
Grid current	3216	---	Rg = 1 MegΩ	Ic	---	5.0	μA dc
Peak emission by voltage drop	1231	---	Grid connected to anode through 10,000 ohms; ib = 77 a	etd	---	45	v
<u>Conformance inspection, part 2</u>							
No-load operation	---	7, 8	Ep = 0; t = 100 hours	---	---	---	---
<u>Conformance inspection, part 3</u>							
Life-test	---	---	Group D; operation; t = 500 hours	---	---	---	---
Life-test end points:	---						
Peak emission by voltage drop	1231	---		etd	---	67	v
Operation	3206	---		Ecc	+1.35	-2.75	V dc
Grid current	3216	---		Ic	---	5	μA dc
Low-frequency vibration	1031	2, 9		---	---	---	---
Shock	1041	9	Hammer angle = 24°; Ef = 2.5 ± 10%	---	---	---	---
Cold starting	---	2, 3, 9		---	---	---	---

See notes at top of next page.

NOTES:

1. The following circuit conditions shall apply for all tests:
  - a. Anode and grid circuit returns to center tap of secondary of filament transformer.
  - b. Filament transformer terminals phased so that tip of mogul base is positive relative to shell and when anode is positive.
2. Characteristics shall be within specified limits.
3. Apply rated filament and anode voltage simultaneously for a 3-minute period with the load at 1.0 ampere dc and then allow the tube to cool for 15 minutes. This application shall be repeated 500 times.
4. The anode voltage shall be lowered until the tube cuts off. The anode voltage at the instant after the tube cuts off shall be within the limit specified.
5. Measure power loss in the tube with a wattmeter. The power loss divided by the anode current (in amperes, as measured on a dc meter) shall be within the limit specified.
6. The anode voltage shall be increased to 210 V ac, with the anode current held at a value not greater than 6.4 A dc. The grid bias shall be increased in a negative direction until the tube cuts off, and shall be within the limit specified.
7. After no-load operation, tubes shall be within specification limits for operation and grid current. In the operation test, the time of operation shall be a minimum of 30 seconds and a maximum of 120 seconds.
8. The maximum peak forward voltage shall not shift more than 120 volts.
9. This test shall be performed according to the life testing schedule given in MIL-PRF-1 paragraph 4.3.8.

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Referenced documents. In addition to MIL-PRF-1, this document references the following: MIL-STD-1311.

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Custodians:

Army - CR  
Navy - EC  
Air Force - 85  
DLA - CC

Preparing activity:

DLA - CC

(Project 5960-2013-010)

Review activities:

Army - AR  
Navy - AS, CG, MC, OS, SH  
Air Force - 99

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