

MILITARY SPECIFICATION SHEET

ELECTRON TUBE, THYRATRON

TYPE C6A

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

The complete requirements for procuring the electron tube described herein shall consist of this document and the latest issue of Specification MIL-E-1.

DESCRIPTION: Triode, xenon gas

See figure 1

Mounting position: Base down

Weight: 6-ounces nominal (170.1 grams)

ABSOLUTE RATINGS:

Parameter:	Ef	Ep	epx	epy	Ib	ib	t	tk	TA	F
Unit:	Vac	Vac	v	v	Adc	a	Minutes	sec	°C	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 - Required

Ⓒ denotes changes

METHOD	REQUIREMENT OR TEST	NOTES	CONDITIONS	AQL (PERCENT DEFECTIVE)	INSPECTION LEVEL OR CODE	SYMBOL	LIMITS		UNIT
							MIN	MAX	
<u>Quality conformance inspection, part 1</u>									
3206	Operation	-	Rg = 10,000 ohms	0.65	II	Ecc	1.35	-2.75	Vdc
3241	Heater current	-		0.65	II	If	16	20	Aac
---	AC starting voltage	4	Ecc = 3 Vdc; Rg = 1,000 ohms	0.65	II	Ep	---	43	Vac
---	Average arc drop	5	Ecc = 3 Vdc; Rg = 1,000 ohms	0.65	II	Etd	---	10.5	Vdc
---	Peak forward voltage	6	Rg = 1,000 ohms	0.65	II	Ecc	---	-5.3	Vdc
3216	Grid current	-	Rg = 1 Meg	0.65	II	Ic	---	5.0	Adc
1231	Peak emission by voltage drop	-	Grid connected to anode thru 10,000 ohms; Ib = 77 a	0.65	II	etd	---	45	v
<u>Quality conformance inspection, part 2</u>									
---	No-load operation	7, 8	Ep = 0; t = 100 hours	---	---	---	---	---	---
<u>Quality conformance inspection, part 3</u>									
---	Life test	-	Group D, operation; t = 500 hours	---	---	---	---	---	---
---	Life-test end points:								
1231	Peak emission by voltage drop	-		---	---	etd	---	67	v
3206	Operation	-		---	---	Ecc	+1.35	-2.75	Vdc
3216	Grid current	-		---	---	Ic	---	5	Adc
1031	Low-frequency vibration	7, 9		---	---	---	---	---	---
1041	Shock	9	Hammer angle = 24°; Ef = 2.5 · 10 ³	---	---	---	---	---	---
---	Cold starting	2, 3, 9		---	---	---	---	---	---

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 modul 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 Vac, with the anode current held at a value not greater than 6.4 Adc. The grid bias shall be increased in a negative direction until the tube cuts off, and shall be within the limit specified.

NOTES: -Continued

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 and a maximum of 120 seconds.
8. The maximum peak forward voltage shall not shift more than 120 volts.
- ⑨ 9. This test shall be performed annually. A sample size of three tubes shall be used, with no failures allowed. In case of a sample failure, the test shall become a quality conformance inspection (QCI), part 2 test, for three successful consecutive submissions, at which time the test may revert to the QCI, part 3 test.

Custodians:

Army - EL
 Navy - EC
 Air Force - 85

Preparing activity:

Navy - EC

Agent:

DSA - ES

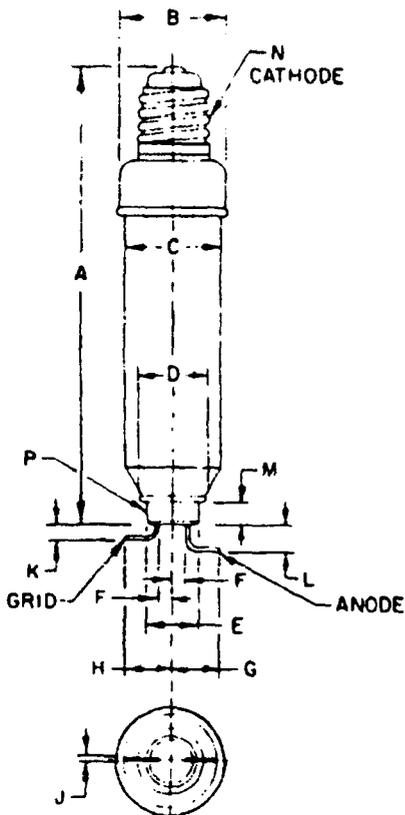
Review activities:

Air Force - 11, 17, 80
 DSA - ES

(Project 5960-2827)

User activities:

Army - MU
 Navy - AS, OS, MC, CG, SH



©

Ltr	Dimensions in inches with metric equivalents (mm) in parentheses	
	Minimum	Maximum
Quality conformance inspection, part 2		
A	10.56 (268.22)	11.57 (293.88)
B	2.12 (53.85)	2.38 (60.45)
Quality 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'	

NOTE:

A sample size of three tubes shall be checked annually, with no failures allowed. In case of a sample failure, the test shall become a quality conformance inspection (QCI), part 2 test, for three successful consecutive submissions at which time the test may revert to the QCI, part 3 test.

FIGURE 1. Outline drawing of electron tube type C6A.