

INCH-POUND

MIL-PRF-1/878F
7 January 2000
SUPERSEDING
MIL-PRF-1/878E
7 July 1999

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, POWER
TYPE 250TH *

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 document and the latest issue of MIL-PRF-1.

DESCRIPTION: Triode.

See figure 1.

Weight: 10 ounces nominal (283.5 grams).

Mounting position: Vertical.

ABSOLUTE RATINGS: C Telegraphy.

Parameter:	F	E _f	E _b	E _c	I _b	I _c	P _p
Unit:	MHz	V	kV dc	V dc	mA dc	mA dc	W
Maximum:	40	5.25	3.0	-210	330	75.0	250
Minimum:	---	4.75	---	---	---	---	---
Test conditions:	---	5.0 V ac	2.5	Adjust	100	---	---

See footnotes at end of table I.

GENERAL:

Qualification: Not required.

Holding period: (MIL-STD-1311): 1/

* Tube type 250TL has been deleted from this tube specification sheet. Use EIA Type 250TL.

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TABLE I. Testing and inspection.

Inspection	Method	Conditions	Acceptance level <u>3/</u>	Symbol	Limits		Unit	
					Min	Max		
<u>Conformance inspection, part 1</u>								
Filament current	1301		0.65	If	9.7	11.2	A ac	
Total grid current	1266		0.65	Ic	---	-15	μA dc	
Electrode voltage (grid)	1261		0.65	Ec	-27.0	-39.0	V dc	
Primary grid emission	1266	Ef = 5.5 V ac; Ic = 175 mA dc; t = 15	0.65	Isg	---	-500	μA dc	
Peak emission	1231	eb = ec = 2,500 v	0.65	is	5.0	---	a	
<u>Conformance inspection, part 2</u>								
Amplification factor	1316		---	Mu	31.0	41.0	---	
Power oscillation	1236	Eb = 3,000 V dc; Ib = 300 mA dc; F = 8 MHz	---	Po	540	---	W	
Direct-interelectrode capacitance	1331		}	}	Cgp	2.2	3.0	pF
					Cin	3.7	5.1	pF
					Cout	---	0.6	pF

See footnotes at end of table.

TABLE I. Testing and inspection - Continued.

Inspection	Method	Conditions	Acceptance level <u>3/</u>	Symbol	Limits		Unit
					Min	Max	
<u>Conformance inspection, part 3</u>							
Life test	---	Group C; power oscillation; t = 500 hours	---	---	---	---	---
Life-test end points:	---						
Peak emission	1231		---	is	3.5	---	a
Primary grid emission	1266		---	Isg	---	-500	μ A dc
Low-frequency vibration	1031	No voltages <u>2/</u>	---	---	---	---	---
Bump	1036	Angle = 20° <u>2/</u>	---	---	---	---	---
Low-frequency vibration and bump end points:	---						
Total grid current	1266		---	Ic	---	-15	μ A dc
Electrode voltage (grid)	1261		---	Ec	-27.0	-39.0	V dc

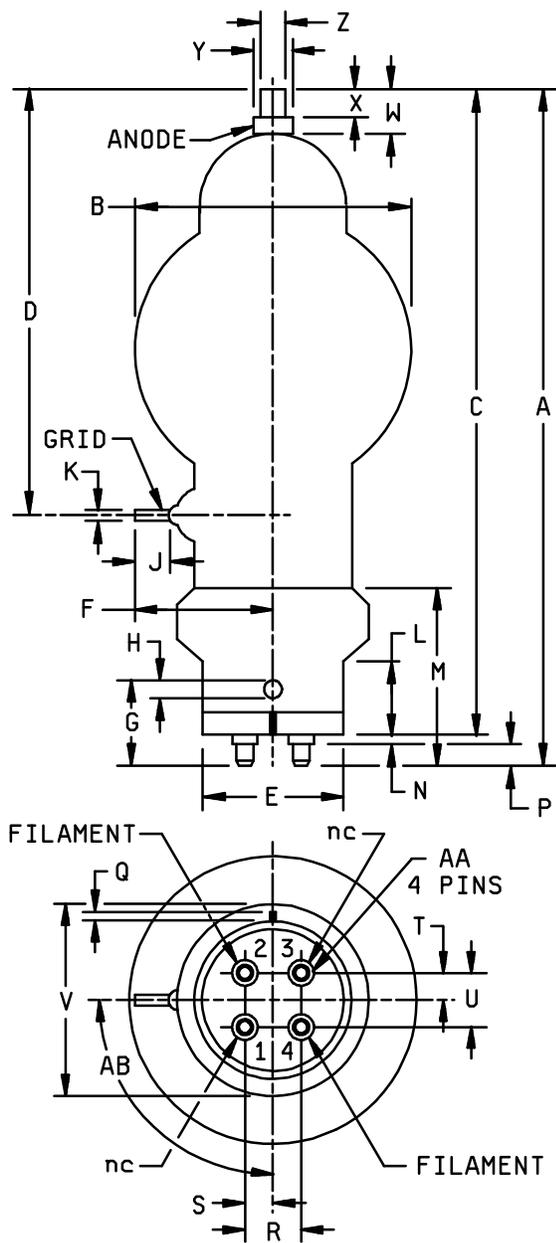
1/ In addition to the 24-hour holding period, 10 percent of the tubes in any production lot shall be held for a period of 72 hours. If more than 2 percent of the tubes fail to meet the total grid current test, the tubes represented by this sample shall be subject to recall and all tubes shall be held for a period of 72 hours.

2/ This test shall be performed yearly, with sampling as follows:

n1 = 4 c1 = 0 where c2 represents the total failures for the first
n2 = 4 c2 = 0; and second samples combined.

In case of failure, the test shall become a conformance inspection, part 2 test for three successive successful submissions, at which time the test may revert to the yearly basis.

3/ This specification uses accept on zero (c=0) sample plan in accordance with MIL-PRF-1, Table III.



Ltr	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
Conformance inspection, part 2					
A	9.625	10.125	244.48	257.18	
B	---	3.813	---	96.85	
D	5.688	6.188	144.48	157.18	
F	1.563	1.938	39.70	49.23	
J	.312	---	7.92	---	
Conformance inspection (periodic check) part 3					
C	9.375	9.875	238.13	250.83	1
E	---	1.867	---	47.42	
H	---	.082	---	2.08	
K	.065	.071	1.65	1.80	
P	.250	.320	6.35	8.13	2
Q	---	.109	---	2.77	
V	---	2.500	---	63.50	
X	.328	---	8.33	---	
Z	.350	.365	8.89	9.27	
AA	.185	.189	4.70	4.80	
AB	80°		100°		
Reference dimensions					
G	1.225		31.12		2
L	1.938		49.23		
M	2.719		69.06		2
N	.031		0.79		
R	.688		17.48		
S	.344		8.74		
T	.344		8.74		
U	.688		17.48		
W	.563		14.30		
Y	.500		12.70		

NOTES: 1. This test shall be performed yearly, with sampling as follows:

n1 = 4 c1 = 0 where c2 represents the total failures for the first
n2 = 4 c2 = 0; and second samples combined.

In case of failure, the test shall become a conformance inspection, part 2 test for three successive successful submissions, at which time the test may revert to the yearly basis.

2. On finished tube, add .060 inch (1.52 mm) maximum for solder.

FIGURE 1. Outline drawing of electron tube type 250TH.

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Custodians:

Army - CR
Navy - EC
Air Force - 11
DLA - CC

Review activities:

Army - AR
Navy - AS, CG, MC, OS, SH
Air Force - 19, 99

Preparing activity:

DLA - CC

(Project 5960-3563)