

INCH-POUND

MIL-PRF-1/884G  
6 August 2004  
SUPERSEDING  
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7 July 1999

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, POWER  
TYPE 304TH

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.

Mounting position: Vertical, base up or down.

Weight: 9 ounces (255.15 grams) nominal.

ABSOLUTE RATINGS: C Telegraphy.

Parameter:	F1	Ef	Eb	Ec	Ib	Ic	Pg	Pp
Unit:	MHz	V	V dc	V dc	mA dc	mA dc	W	W
Maximum:	8	5.25 or 10.5	2,000	-300	900	140	60	300
Minimum:	---	4.75 or 9.5	---	---	---	---	---	---
Test conditions:	---	5.0 V ac	1,000	Adjust	300	---	---	---

See footnotes at end of table I.

GENERAL:

Qualification: Required.

TABLE I. Testing and inspection.

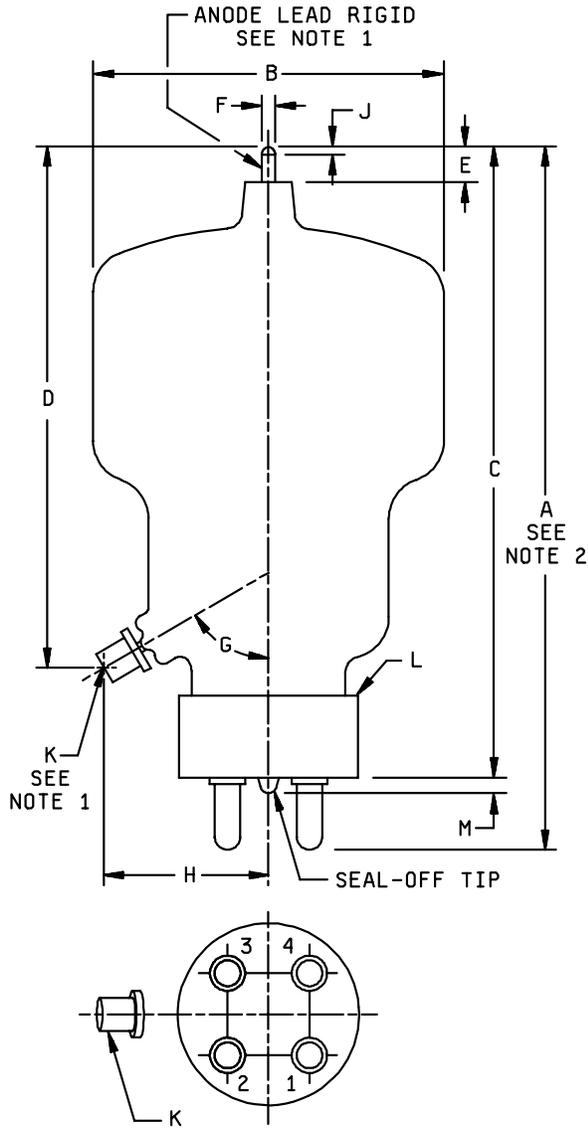
Inspection	Method MIL-STD- 1311	Notes	Conditions	Symbol	Limits		Unit
					Min	Max	
<u>Conformance inspection, part 1</u>							
Total grid current	1266	1/		Ic	---	-25	μA dc
Peak emission	1231	2/	eb = ec = 2,500 v	is	10.0	---	a
Electrode voltage (1) (grid)	1261	---		Ec(1)	-8.0	-18.0	V dc
Electrode voltage (2) (grid)	1261	---	Eb = 14 kV dc; Ib = 1 mA dc	Ec(2)	---	-1,000	V dc
Primary grid emission	1266	---	Ic = 325 mA dc; t = 15 seconds; Ef = 5.5 V ac; anode floating	Isg	---	-500	μA dc
Filament current	1301	---	Connect in parallel	If	24.0	28.0	A ac
<u>Conformance inspection, part 2</u>							
Power oscillation	1236	---	Eb = 3,000 V dc; Ec/Ib = 300 mA dc; F = 8 MHz; Rg = 10,000 ohms	Po	540	---	W (useful)
Amplification factor	1316	---		Mu	19.0	24.0	---
Direct-interelectrode capacitance	1331	---		{ Cgp	8	11	pF
				{ Cin	12	16	pF
				{ Cout	---	1	pF

See footnotes at end of table.

TABLE I. Testing and inspection - Continued.

Inspection	Method MIL-STD- 1311	Notes	Conditions	Symbol	Limits		Unit
					Min	Max	
<u>Conformance inspection, part 3</u>							
Low-frequency vibration	1031	<u>3/</u>	No voltage applied	---	---	---	---
Bump	1036	<u>3/</u>	Angle = 10°	---	---	---	---
Life test	---	---	Group C; power oscillation; t = 500 hours	---	---	---	---
Life-test end points:	---	---					
Peak emission	1231	---	eb = ec = 2,500 v	is	8.0	---	a
Primary grid emission	1266	---	Ic = 325 mA dc; t = 15 seconds; Ef = 5.5 V ac; anode floating	Isg	---	-1.0	mA dc

- 1/ The acceptance level for each test listed under conformance inspection, part 1, shall be 0.65, (see 4/).
- 2/ This test shall be the first test performed at the conclusion of the holding period.
- 3/ This test shall be performed during the initial production and once each succeeding 12-calendar month period in which there is production. An accept on zero defect sampling plan shall be used, with sample of three tubes having an acceptance number of zero. In the event of failure, the test will be made as a part of conformance inspection, part 2, with an acceptance level of 6.5 (see 4/). The "12-calendar month" sampling plan shall be reinstated after three consecutive samples have been accepted.
- 4/ This specification sheet uses accept on zero defect sampling plan in accordance with MIL-PRF-1, table III.



Pin connections	
Pin No.	Element
1	f1
2	f1
3	f2
4	f2
top lead	a
cap	g

Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
Conformance inspection, part 2				
A	7.250	7.625	184.15	193.68
B	---	3.563	---	90.50
C	6.500	6.875	165.10	174.63
D	5.313	5.688	134.95	144.48
E	.438	---	11.13	---
H	1.688	1.813	42.88	46.05
Conformance inspection, part 3 (see note 3)				
F	.120	.126	3.05	3.20
K	Cap: C1-23 (EIA)			
L	Base: A4-62 (EIA)			
M	---	.187	---	4.75
Reference dimensions				
G	60°		60°	
J	.031 x 45° or .005R		0.79 x 45° or 0.13 R	

NOTES:

1. Heat radiating connectors HR-6 (grid) and HR-7 (anode) or equivalent, are recommended for all applications.
2. Dimension A includes .060 inch (1.52 mm) solder tolerance on length of pins.
3. These dimensions shall be checked annually with the following accept on zero defect sampling plan:

$$n1 = 4 \quad c1 = 0$$

In case of failure after sampling, the failing dimension(s) shall become conformance inspection, part 2, for three consecutive successful submissions, at which time the test may revert to the conformance inspection, part 3 basis.

FIGURE 1. Outline drawing of electron tube type 304TH.

NOTES

Referenced documents. In addition to MIL-PRF-1, this specification sheet references MIL-STD-1311.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the previous issue.

Custodians:

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

Preparing activity:  
DLA - CC

(Project 5960-3754)

Review activities:

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

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