

INCH-POUND

MIL-PRF-1/911E
6 August 2004
SUPERSEDING
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PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, POWER
TYPE 719A

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: Clipper diode, high vacuum.

See figure 1.

Mounting position: Vertical, base up or down.

Weight: 6 ounces (170.1 grams) nominal.

ABSOLUTE RATINGS:

Parameter:	Ef	epx	ib	Pp	tk	Pulsing service
Unit:	V	kv	a	W	sec	---
Maximum:	7.7	25	10	75	---	1/
Minimum:	6.3	---	---	---	120	---
Test conditions:	7.0	25	---	---	120	---

See footnotes at end of table I.

GENERAL:

Qualification: Required.

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TABLE I. Testing and inspection.

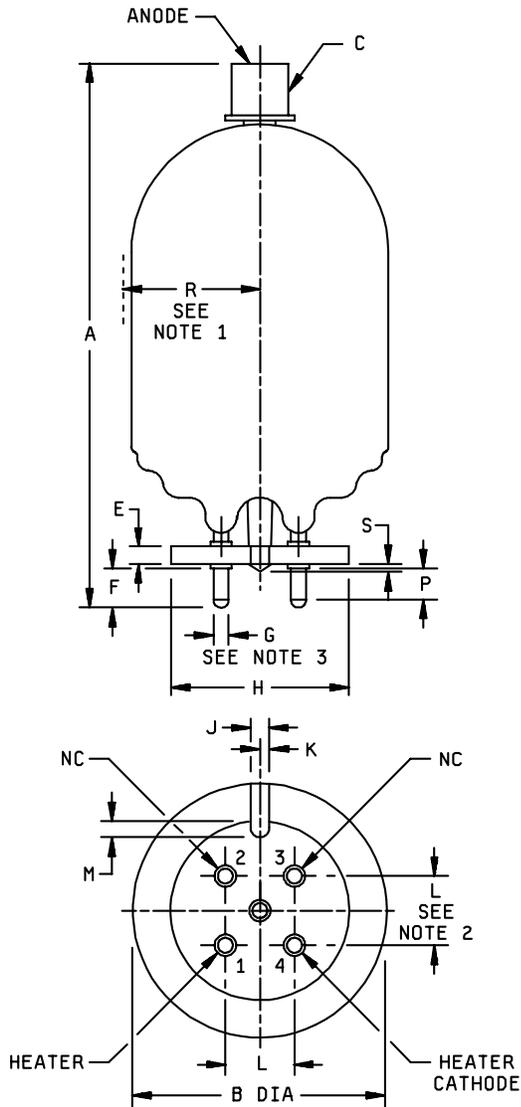
Inspection	Method MIL-STD- 1311	Notes	Conditions	Acceptance Level Z/	Symbol	Limits		Unit
						Min	Max	
<u>Conformance inspection, part 1</u>								
Heater current	1301	---		0.65	If	6.5	7.5	A
Operation	---	<u>2/ 5/</u>	t = 300 seconds; ib = 10a; prr = 2,000 (min); tp = 5 μ s (min)	0.65	---	---	---	---
Electrode current (anode)	1256	---	Eb = 175 V dc	---	lb	500	---	mA dc
Gas	---	<u>3/</u>	Pp = 75 W (min); t = 30 seconds	0.65	Δ ib	---	15	mA dc
Peak emission	1231	---	eb = 2,000 v	0.65	is	16.0	---	a
<u>Conformance inspection, part 2</u>								
Low-frequency vibration	1031	---	No voltages applied	---	---	---	---	---
Bump	1036	---	Hammer angle = 20°	---	--	---	---	---
Torque	---	<u>4/</u>		---	---	---	---	---
<u>Conformance inspection, part 3</u>								
Life test	---	---	Group C; operation; t = 500 hours	---	---	---	---	---
Life-test end point:	---							
Peak emission	1231	---		---	is	12.5	---	a
Direct-interelectrode capacitance	1331	<u>6/</u>		---	Cpk	6.0	8.0	pF

See footnotes at top of next page.

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TABLE I. Testing and inspection - Continued.

- 1/ Maximum forward pulse duration 5 μ s; maximum inverse pulse duration 10 μ s; pulse repetition rate 2,000 maximum. This tube is not recommended for power rectifier applications, but is intended primarily for clipper diode use in hard tube modulator circuits only where the inverse duration is not to exceed 10 μ s.
- 2/ The tube shall be operated in a pulsing circuit. The inverse pulse shall be of not less than 1 μ s nor more than 5 μ s duration. There shall be no evidence of sustained arc back or sputtering during this test.
- 3/ The anode current shall not vary from the initial value at any time during the test by more than the specified amount.
- 4/ The base shall be subjected to a gradually applied torque of 12.0-pound inches. This test shall not cause broken leads, broken welds, broken solder-joints, broken or cracked glass.
- 5/ This test is to be the first test performed at the conclusion of the holding period.
- 6/ This test shall be performed during the initial production and once each succeeding 12-calendar months in which there is production. An accept on zero defect sampling plan shall be used, with sample of three tubes with 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 7/). The "12-calendar month" sampling plan shall be reinstated after three consecutive samples have been accepted.
- 7/ This specification sheet uses accept on zero defect sampling in accordance with MIL-PRF-1, table III.



Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
Conformance inspection, part 2				
A	5.625	5.875	142.88	149.23
B	---	2.563	---	65.10
H	1.787	1.813	45.39	46.05
S	---	.125	---	3.18
Conformance inspection, part 3 (see note 4)				
C	Cap: C1-5 (EIA)			
G	.183	.191	4.65	4.85
J	.171	.203	4.34	5.16
K	.078	.110	1.98	2.79
M	.171	.203	4.34	5.16
P	.328	---	8.33	---
R	---	1.406	---	35.71
Reference dimensions				
E	.188		4.78	
F	.406		10.31	
L	.688		17.48	

NOTES:

1. Eccentricity with respect to centerline of base.
2. The base shall be capable of entering a gauge .25 inch (6.4 mm) thick having 4 holes of .214 inch (5.44 mm) diameter located on .69 inch (17.5 mm) centers.
3. Solder should not extend laterally beyond cylindrical surface of studs.
4. Dimensions shall be checked during the initial production and once each succeeding 12-calendar months in which there is production. An accept on zero defect sampling plan shall be used, with sample of three tubes with 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 7/). The "12-calendar month" sampling plan shall be reinstated after three consecutive samples have been accepted.

FIGURE 1. Outline drawing of electron tube type 719A.

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

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Review activities:

Navy - AS, CG, MC, OS
Air Force - 19, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at www.dodssp.daps.mil.