INCH-POUND

MIL-PRF-1/876G
27 March 2000
SUPERSEDING
MIL-PRF-1/876F
21 September 1999

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, POWER
TYPE 8165

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: Tetrode.

See figure 1.

Mounting position: Vertical, base down or up.

Weight: 3-ounces (85 grams) nominal.

ABSOLUTE RATINGS: C Telegraphy

Parameter:	F1	Ef	Eb	Ec1	Ec2	Ib	Pp	Pg1	Pg2	T(seal)	TE
Unit:	MHz	V ac	V dc	V dc	V dc	mA dc	W	W	W	°C	°C
Maximum:	150	6.3	3,000	-500	400	150	65	5	10	200	225
Minimum:	---	5.7	---	---	---	---	---	---	---	---	---
Test conditions:	---	6.0	1,000	Adj	400	65	---	---	---	2/	---

See footnotes at end of table I.

GENERAL:

Qualification: Required.

TABLE I. Testing and inspection.

Inspection	Method	Notes	Conditions	Symbol	Limits		Unit
					Min	Max	
Conformance inspection, part 1		3/					
Filament current	1301			If	3.2	3.8	A ac
Peak emission	1231	---	eb = ec1 = ec2 = 2,500 v	is	2.0	---	a
Electrode current (screen)	1256	---		Ic2	-1.0	+1.0	mA dc
Electrode voltage (grid)	1261	---		Ec1	-38.0	-58.0	V dc
Total grid current	1266	1/		Ic1	---	-5	µA dc
Primary grid emission (control)	1266	---	Ef = 6.6 V ac; Pg1 = 6 W or Ic1 = 28 mA dc; t = 15; anode and screen-grid floating	Isg1	---	-250	µA dc
Primary grid emission (screen)	1266	---	Ef = 6.6 Vac; Pg2 = 12 W or Ic2 = 27 mA dc; Ec1 = 0; t = 15; anode floating	Isg2	---	-250	µA dc
Conformance inspection, part 2							
Low-frequency vibration	1031	---	No voltages	---	---	---	---
Bump	1036	---	Angle = 20°	---	---	---	---
Bump and short	1036	---	Angle = 15°	---	---	---	---
Amplification factor	1316	---	g1 to g2; Ec2 = 250 V dc; Ic2 = 40 mA dc; Eb = 0	Mu	5.0	7.0	---
Direct-interelectrode capacitance	1331	---		Cgp	---	0.12	pF
				Cin	6.0	8.3	pF
				Cout	1.9	2.6	pF
Power oscillation	1236	---	Eb = 1,500 V dc; Ib = 150 mA dc; Ec2 = 250 V dc; F = 150 MHz	Po	110	---	W

See footnotes at end of table.

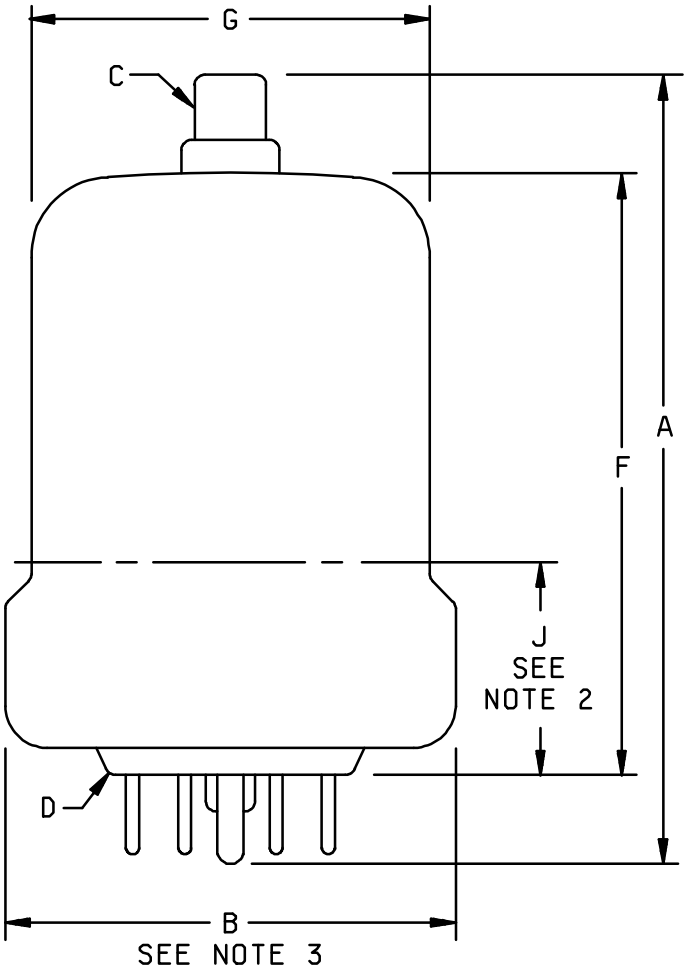
TABLE I. Testing and inspection - Continued.

Inspection	Method	Notes	Conditions	Symbol	Limits		Unit
					Min	Max	
Conformance inspection, part 3							
Life test	---	---	Group C; power oscillation; t = 500 hours	---	---	---	---
Life-test end points:	---	---					
Peak emission	1231	---		is	1.6	---	a
Primary grid emission (control)	1266	---		Isg1	---	-250	µA dc
Primary grid emission (screen)	1266	---		Isg2	---	-250	µA dc

1/ This test is to be the first test performed at the conclusion of the holding period.

2/ During all electrical tests involving application of filament power, a heat-dissipating connector (Eimac HR-6, or equivalent) may be used on the anode terminal.

3/ This specification uses accept on zero (c = 0) sampling plan, in accordance with MIL-PRF-1, Table III. For conformance inspection, part 1, the accept on zero sampling plan from MIL-PRF-1, Table III shall be that for Category X.



Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
Conformance inspection, part 2				
A	4.000	4.375	101.60	111.13
B	---	2.375	---	60.33
G	---	2.060	---	52.32
J	.844	1.219	21.44	30.96
Conformance inspection, part 3 (see note 4)				
C	Cap: C1-22 (EIA) (See note 5)			
D	Base: E5-59 (See note 2) (EIA)			
F	2.938	3.313	74.63	84.15

Pin connections	
Pin No.	Element
1	f
2	g2
4	g1
6	g2
7	f
Cap	a

NOTES:

1. For pin alignment, use JEDEC gauge GE7-6. A molded glass flare base with pin configuration identical with that of base E5-59 may be used.

2. With base pins inserted into gauge GE7-6, a flat plate gauge with a 2.063 ± .003 inches (52.40 ± 0.08 mm) diameter hole is passed over diameter G until it stops at position defined by dimension J. Dimension J shall then be gauged between bottom surface of flat-plate gauge and top surface of gauge GE7-6 with surfaces of both gauges parallel. The 2.063 inches (52.40 mm) diameter hole of the flat-plate gauge and .500 inch (12.70 mm) diameter hole of gauge GE7-6 shall be concentric within .150 inch (3.81 mm).

3. A ring gauge .125 ± .010 inch (3.18 ± 0.26 mm) thick and 2.125 inches (53.98 mm) minimum and 2.128 inches (54.05 mm) maximum inside diameter shall not pass over diameter B when tried at an angle.

4. Dimensions shall be checked yearly. An accept on zero defect sampling plan shall be used on a sample of three tubes. In the event of failure, the test will be made as a part of conformance inspection, part 2, in accordance with the accept on zero (c=0) sampling plan of MIL-PRF-1, Table III, for category XV. The regular yearly sampling plan may be reinstated after three consecutive samples have been accepted.

5. In the referenced EIA standard Cap C1-22, the dimension .656” MIN should be .328” MIN.

FIGURE 1. Outline drawing of electron tube type 8165.

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

Review activities:
Army - CR4, MI
Navy - AS, CG, MC, OS
Air Force - 19, 99

Preparing activity:
DLA - CC

(Project 5960-3567)