

MIL-E-1/1159C
 23 March 1957
SUPERSEDING
 MIL-E-1/1159B
 7 September 1961
 (see note 7)

MILITARY SPECIFICATION SHEET
 ELECTRON TUBE, POWER
 TYPE 705WA

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: Diode, high-vacuum
 See figure 1
 Mounting position: Any
 Weight: 3.25-ounce nominal

ABSOLUTE RATINGS:

Parameter: Unit:	Ei Vac	epx kv	epy kv	ib ma	I _o mAdc	P _p W	tk sec
<u>Rectifier, half-wave</u>							
(A) Maximum:	5.25	30	---	400	100	60	---
Minimum:	4.75	---	---	---	---	--	20
(B) Maximum:	5.25	15	---	600	150	60	---
Minimum:	4.75	---	---	---	---	--	20
<u>Diode, surge limiting</u>							
Maximum:	5.5	30	10	---	---	75	---
Minimum:	---	---	---	---	---	--	20
<u>TEST CONDITIONS:</u>	5.0	30	---	400	---	--	20

(see note 1)

REQUIREMENT OR TEST:

GENERAL

3.2	Qualification - Required	E-50.3	Preheating
E-50.2	Holding period (t = 72 hours)	5.	Preparation for delivery

METHOD OR PARAGRAPH	REQUIREMENT OR TEST	CONDITIONS	AQL (PERCENT DEFECTIVE)	INSPECTION LEVEL OR CODE	SYMBOL	LIMITS		UNIT
						MIN	MAX	
	<u>Quality conformance inspection, part 1</u>							
Appendix D, 20(a), 30, 50	Visual and mechanical inspection criteria		---	---	---	---	---	---
1231	Peak emission	eb = 1,000 v (max)	0.65	II	is	750	---	ma
1256	Anode current	Eb = 300 Vdc	0.65	II	Db	290	440	mAdc
1301	Filament current	See note 4	0.65	II	If	4.5	5.25	A
1353	Operation of rectifiers	t = 60 (see notes 5 and 8)	0.65	II	Io	100	---	mAdc
	<u>Quality conformance inspection, part 2</u>							
Appendix D, 20(b)	Dimensions	See figure 1	6.5	L6	---	---	---	---
1101	Secureness of base, base insert, and cap	20 in. /lb torque	6.5	L6	---	---	---	---
1031	High frequency vibration	No voltages	6.5	L6	---	---	---	---
1041	Shock	300 G (see note 6)	6.5	L6	---	---	---	---
---	Post-shock end point	See note 3	6.5	L6	---	---	---	---
	<u>Quality conformance inspection, part 3</u>							
4.7	Life-test provisions	Group D; operation of rectifiers; T = 125° C; t = 500 hours (see note 2)	---	---	---	---	---	---
4.7.3	Life-test end points	Peak emission and failure to rectify	---	---	is Io	500 100	---	ma mAdc
	<u>Periodic-check tests (see 4.1.1.2)</u>							
Appendix D, 20(b)	Dimensions	See figure 1	---	---	---	---	---	---
1031	Vibration fatigue test	Ef = 5.0 Vac	---	---	---	---	---	---
---	Post-vibration fatigue test end point	See note 3	---	---	---	---	---	---

NOTES:

1. Apply 25 kv epv, then raise epv to 30 kv.
2. Use of heat-dissipating connectors are not permitted during life testing.

NOTES: -Continued

3. The end point for vibration fatigue and shock shall be the anode current test. (See method 1256.)
4. With 2.5 Vac applied to each half of the filament, each If value shall be within the limits specified herein.
5. No sparking or other irregular operation shall occur during the last 30 seconds of the 1-minute test.
6. Shock-test mounting fixture, as specified on Drawing 288-JAN, or equivalent, shall be used for clamping tube base.
7. Changes from previous issue. The extent of changes (deletions, additions, etc.) precludes the annotation of the individual changes from the previous issue of this document.
8. This test to be performed at the conclusion of the holding period.

Custodians:

Army - EL
Navy - SH
Air Force - 11

Preparing activity:

Navy - SH

(Project 5960-2200-25)

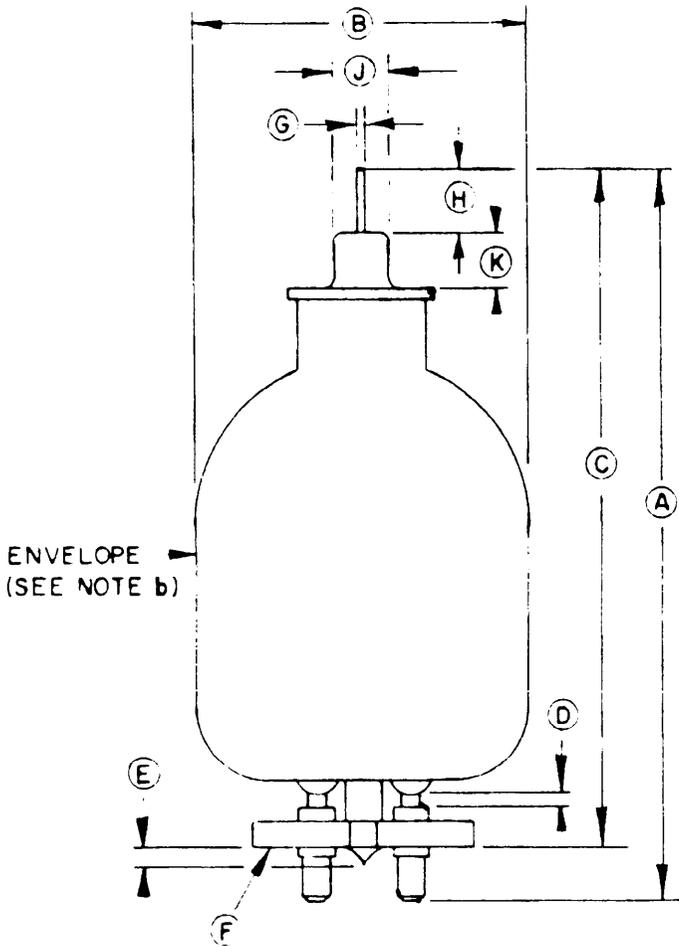
Review activities:

Army - EL
Navy - SH
Air Force - 11, 17, 85

Code "C"

User activities:

Army - ME
Navy - AS, OS, MC, CG
Air Force - 14, 19



PIN CONNECTIONS	
Pin No.	Element
1	Filament
2	Filament center tap
3	Filament
4	No connection
Cap	Anode

Ltr	Dimensions in inches with metric equivalents (mm) in parentheses (see note a)	
	Minimum	Maximum
Quality conformance inspection, part 2		
A	4.813 (122.25)	5.062 (128.57)
B	---	2.313 (58.75)
C	4.300 (109.22)	4.703 (119.46)
Quality conformance inspection, part 3 (periodic check)		
D	.015 (.38)	.094 (2.39)
E	---	.125 (3.18)
F	Base: A4-52 (see note c)	
G	.055 (1.40)	.060 (1.52)
H	.305 (7.75)	.445 (11.30)
J	.368 (9.35)	.382 (9.70)
K	.375 (9.53)	---

NOTES:

- Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.
- Allowable eccentricity of envelope with respect to centerline through base shall be .126 (3.20 mm) maximum. Quality conformance inspection, part 3 (periodic check) shall apply.
- For pin alignment use gage GA4-6.

FIGURE 1. Outline drawing of electron tube type 705WA.