

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, GAS SWITCHING
 TYPE 8919 *

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: Passive TR-limiter, bandpass, frequency range 5,395 to 5,905 MHz.

ABSOLUTE RATINGS: Pulse modulation.

Parameter:	Incident power	Du	tp	TA	Altitude
Unit:	kw	---	μs	°C	feet
Maximum:	300	0.001	1.15	71	10,000
Minimum:	4	---	---	10	---

PHYSICAL CHARACTERISTICS: See figure 1.

Mounting: Mates with UG-406B/U choke flange or equivalent.

Weight: 2 pounds (approximate).

TEST CONDITIONS:

Parameter:	Incident power	tp	pr	F
Unit:	kw	μs	pps	MHz
Tolerance:	±10%	± 0.10	---	±5%
Test condition 1:	40	1.0	1,000	F3
Test condition 2:	70	1.0	1,000	F3
Test condition 3:	300	1.0	1,000	F3

Frequency		
F	MHz	±
1	5,395	0.1%
2	5,450	0.1%
3	5,650	0.1%
4	5,825	0.1%
5	5,905	0.1%

GENERAL:

Qualification - Required.

* See 7/ at end of table I.

TABLE I. Testing and inspection.

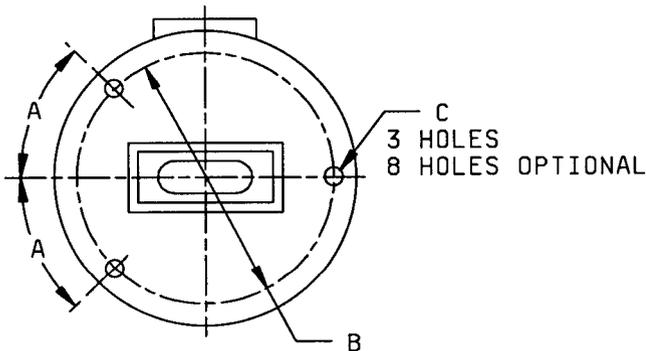
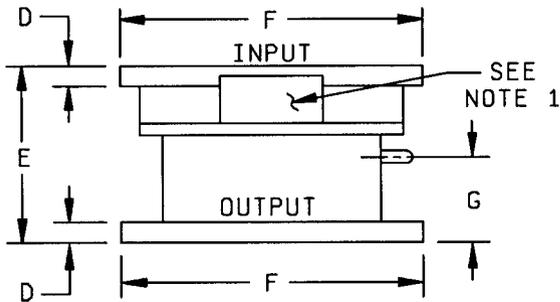
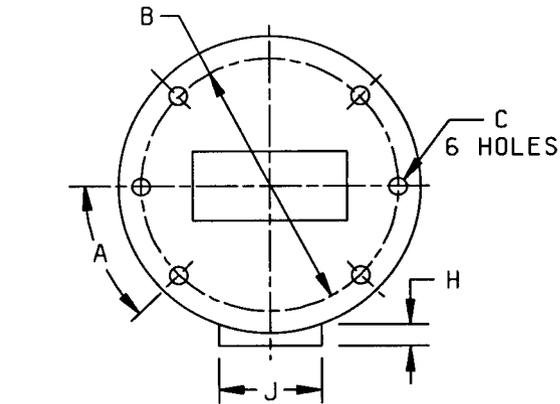
Inspection	Method	Notes	Test	Conditions	Symbol	Limits		Unit
						Min	Max	
<u>Conformance inspection, part 1</u>		1/	---					
Low level VSWR	4473	2/	---	F1 F2 F3 F4 F5 $\sigma' = 1.05$	σ σ σ σ σ	---	1.9 1.4 1.4 1.4 1.9	---
Insertion loss	4416	---	---	F = F3	Li	---	0.5	dB
Flat leakage power, peak (max)	4452	3/	2	Po = 4 kw \pm 10 percent	Pb	---	100	mw
Flat leakage power	4452	---	2		pf	---	50	mw
Spike leakage energy	4452	---	2		Ws	---	0.10	erg
Position of short	4494	4/	2		Distance	---	\pm 0.015	Inch
Arc loss	4488	---	1		Loss	---	0.80	dB
Temperature cycling (nonoperating)	1027	---	---	1 cycle	---	---	---	---
<u>Conformance inspection, part 2</u>								
Dielectric material strain	4101	5/ 6/	---		---	---	---	---
Recovery time	4471	---	3		t	---	5	μ s
<u>Conformance inspection, part 3</u>								
Life test (1)	---	8/	3	Group D	t	4,000	---	hrs
Life test (2)	---	---	3	Group D	t	1,000	---	hrs
Life (1 and 2) test end points:								
Recovery time	4471	---	3		t	---	10	μ s
Flat leakage power	4452	---	2		pf	---	70	mw
Spike leakage energy	4452	---	2		Ws	---	0.1	erg
Insertion loss	4416	---	---	F = F3	Li	---	0.8	dB
Temperature cycling life test	1027	9/	---	10 cycles (min); Group C	---	---	---	---

See footnotes at top of next page.

TABLE I. Testing and inspection - Continued.

- 1/ Unless otherwise specified, the acceptance level for all tests listed under conformance inspection, part 1, shall be 1.0, in accordance with the accept on zero defect (c = 0) sampling plans, Table III of MIL-PRF-1.
- 2/ A swept-frequency method may be used for this test.
- 3/ The maximum peak flat leakage shall not exceed the specified limit when tested from zero to 4 kw peak power.
- 4/ The position of short shall be 0.085 inch (2.16 mm) further from the magnetron within the limits specified.
- 5/ The input flange only of the tube under test (TUT) shall be immersed in water during this test.
- 6/ At the conclusion of this test, the TUT shall satisfy the specified recovery time test.
- 7/ This type physically and functionally replaces types MD-80C17 and VDC-1029 (NSN 5960-00-106-0423), and can replace type 5865 (5960-00-262-0174). This information in no way implies that the manufacturer's types are suitable as substitutes for the military types.

NOTE: When type 5865 is replaced by type 8919, the keep-alive (ignitor) supply shall be disabled and the lead removed or tied securely.
- 8/ This test shall be performed only during qualification inspection.
- 9/ This test (or figure 1 dimensions) shall be performed (or checked) during the initial production and once each succeeding 12-calendar month period in which there is production. A regular double sampling plan shall be used, with the first sample of three tubes having an acceptance number of zero, and a second sample of three tubes having a combined acceptance number of one. In the event of failure, these dimensions shall be made as a part of conformance inspection, part 2, with an acceptance level of 6.5, inspection level S3 (code D for figure 1 dimensions). The regular "12-calendar month" double sampling plan shall be reinstated after three consecutive samples have been accepted.
- 10/ Revision letters are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.



Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
Conformance inspection, part 1				
C	.216	.226	5.49	5.74
E	2.100	2.120	53.34	53.85
G	.900	---	22.86	---
H	----	.130	----	3.30
Conformance inspection, part 2				
B	3.245	3.255	82.42	82.68
J	---	1.500	---	30.10
Periodic inspection <u>g</u> /				
A	44°		46°	
D	.235	.265	5.97	6.73
F	3.610	3.640	91.69	92.46

- NOTES:
1. The reservoir overall dimensions shall not exceed the dimensional requirements and shall be physically and functionally compatible and interchangeable in all applications to the tube types in Z/.
 2. Silver plate 100 msi minimum, semi-bright nickel, or equivalent.

FIGURE 1. Outline drawing of electron tube type 8919.

Custodians:

Army - CR
Navy - EC
Air Force - 11

Preparing activity:

DLA - CC

(Project 5960-3483)

Review activities:

Army - AR
Navy - AS, CG, MC, OS
Air Force - 17, 99