INCH POUND
MIL-PRF-1/26E
16 June 2003
SUPERSEDING
MIL-PRF-1/26D
29 May 1998

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, GAS SWITCHING
TYPE 1B63A

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: TR tube, bandpass, incident power 200 kw, with a frequency range of 8,490 to 9,578 MHz.

ABSOLUTE RATINGS:

Parameter:	Incident power	Ebb	prr	Du	Alt
Unit:	kw	V dc	pps	- - -	ft
Maximum:	200	- - -	1,000	0.001	10,000
Minimum:	4	-650	- - -	- - -	- - -

PHYSICAL CHARACTERISTICS: See figure 1.

TEST CONDITIONS:

Parameter:	Incident power	tp1	prr	Ii	F		FREQUENCY		
Unit:	kw	µs	pps	µA dc	MHz		F	MHz	±%
Tolerance:	± 10%	± 0.10	- - -	- - -	± 2%		1	8,490	0.1
							2	8,760	0.1
Test condition 1:	4	1.0	1,000	- - -	F3		3	9,000	0.1
Test condition 2:	40	1.0	1,000	100	F3		4	9,280	0.1
Test condition 3:	200	1.0	1,000	100	F3		5	9,578	0.1

GENERAL:

Qualification - Required.

Table I. Testing and Inspection.

Inspection	Method	Notes	Test	Conditions	Symbol	Limit Min	Limit Max	Unit
Conformance inspection, part 1		1	-					
Low-level VSWR	4473	2	-	F1 F2 F3 F4 F5	σ σ σ σ σ	- - - - - - - - - - - - - - -	1.9 1.4 1.4 1.4 1.9	- - - - - - - - - - - - - - -
Insertion loss	4416	-	-	F = F3	Li	- - -	0.7	dB
Flat-leakage power	4452	-	2	tp2 = 0.5 ± 0.1µs	pf	- - -	40	mw
Spike-leakage energy	4452	-	2	tp2 = 0.5 ± 0.1µs	Ws	- - -	0.2	erg
Position of short	4494	3	2		Distance	- - -	± 0.007	Inch
Arc loss	4488	-	1		Loss	- - -	0.80	dB
Temperature cycling (nonoperating)	1027	-	-	1 cycle	- - -	- - -	- - -	- - -
Ignitor ignition time	4401	-	-	Ebb = -700 V dc; Ri = 5.5 Megohm	t	- - -	5	sec
Ignitor voltage drop	4406	-	-	Ii = 100 µA dc	Eid	200	375	V dc
Ignitor interaction	4421		-	Ii = 100 µA dc	ΔLi	- - -	0.2	dB
Conformance inspection, part 2								
Recovery time	4471	-	3		t	- - -	10	µs
Conformance inspection, part 3								
Life test	- - -	4	3	Group C	t	500	- - -	hrs
Life-test end points:	- - -	-						
Recovery time	4471	-	3		t	- - -	20	µs
Flat-leakage power	4452	-	2	tp2 = 0.5 ± 0.1 µs	pf	- - -	50	mw
Spike-leakage energy	4452	-	2	tp2 = 0.5 ± 0.1 µs	Ws	- - -	0.25	erg
Insertion loss	4416	-	-	F = F3	Li	- - -	0.7	dB
Temperature cycling life test	1027	-	-	10 cycles (min)	- - -	- - -	- - -	- - -

See notes at end of Table I.

TABLE I. Testing and Inspection. - Continued.

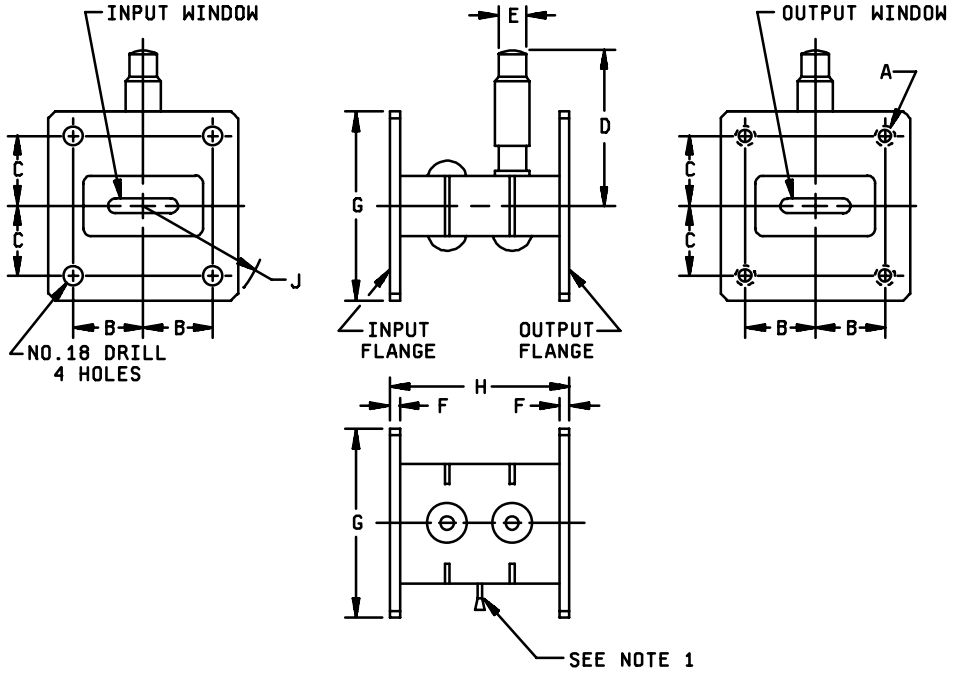
NOTES:

1. Unless otherwise specified, the acceptance level for all tests listed under conformance inspection, part 1, shall be 1.0. (This specification sheet uses accept on zero defect sampling plan in accordance with MIL-PRF-1, table III.)

2. A swept-frequency method may be used for this test.

3. When the metal plate is replaced by the tube, the position of the voltage standing wave minimum of the flat position of the pulse shall be 0.065 inch (1.65 mm) further from the magnetron within the limits specified.

4. This test shall be conducted with the TR tubes mounted in a rat-race duplexer under the conditions specified. There shall be no arcing across the front face of the window during this test.



DIMENSIONS				
	INCHES		MILLIMETERS	
Ltr	Min	Max	Min	Max
Qualification inspection				
E		0.255		6.48
F	0.083	0.103	2.11	2.62
G		1.75		44.45
J		1.063		27.00
Conformance inspection, part 1				
H	1.545	1.565	39.24	39.75
Conformance inspection, part 2				
A	No.8-32 UNC-2B - 4 holes			
B	0.608	0.612	15.44	15.54
C	0.638	0.642	16.21	16.31
D		1.375		34.93

NOTES:

1. Exhaust tube shall not extend beyond flanges more than 0.25 (6.35 mm).

2. Silver plate 100 MSI, or equivalent.

3. End flanges shall be parallel planes flat within 0.006 (0.15 mm) when measured within the area between concentric circles of 1.25 in (31.75 mm) and 1.56 in (39.62 mm) diameter. The area outside of 1.56 in (39.62 mm) diameter may measure less than the minimum measured dimension but shall not measure more than 0.001 in (0.03 mm) above the maximum measured dimension.

FIGURE 1. Outline drawing of electron tube type 1B63A.

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

Review activities:
Navy - AS, CG, MC
Air Force - 99

Preparing activity:
DLA - CC

(Project 5960-3668)