

INCH-POUND

MIL-PRF-1/1069H
16 June 2020
SUPERSEDING
MIL-PRF-1/1069G
6 June 2006

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, RECEIVING

TYPE 5702WB

Inactive for new design
after 18 June 2001.

This specification is approved for use by all Departments and
Agencies of the Department of Defense.

The requirements for acquiring the product described
herein shall consist of this document and [MIL-PRF-1](#).

DESCRIPTION: Pentode, subminiature, sharp cutoff.

Outline --- 3-6 (EIA).
Base --- Pinch press (7 leads).
Envelope --- T3.
Cathode --- Coated unipotential.

Base connections:

Pin No. --- 1 2 3 4 5 6 7
Element --- a g2 h h g3 k g1

ABSOLUTE-MAXIMUM RATINGS:

Parameter:	Ef	Eb	Ec1	Ec2	Ec3	Ehk	Rk	Rg1	Ik	Pp	Pg2	TE	Alt
Unit:	V	V dc	V dc	V dc	V dc	v	Ohms	Meg Ω	mA dc	W	W	°C	ft
Maximum:	6.9	165	---	155	0	200	---	1.2	16.5	1.3	0.5	220	(see note 4)
Minimum:	5.7	---	-55	---	---	---	---	---	---	---	---	---	---
Test conditions:	6.3	120	0	120	0	0	200	0	---	---	---	---	---

GENERAL:

Qualification : Not required.

Reliable tube.

This specification sheet uses accept on zero defect sampling plan in accordance with [MIL-PRF-1](#), table III.

AMSC N/A

FSC 5960



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TABLE I. Testing and inspection.

MIL-STD-1311 Method	Requirement or test	Notes	Conditions	Symbol	Limits		Unit
					Min	Max	
	<u>Conformance inspection, part 1</u>						
1256	Electrode current (1) (anode)			Ib	5.5	9.5	mA dc
1256	Electrode current (2) (anode)		Ec1 = -9.0 V dc; Rk = 0	Ib	---	50	μA dc
1256	Electrode current (screen grid)			Ic2	1.7	3.5	mA dc
1266	Total grid current	1	Rg1 = 1.0 MegΩ	Ic1	0	-0.1	μA dc
1301	Heater current			If	190	210	mA
1306	Transconductance (1)			Sm	4,200	5,800	μmhos
1336	Heater-cathode leakage			Ihk	---	5.0	μA dc
1201	Short and discontinuity detection			---	---	---	---
	<u>Conformance inspection, part 2</u>						
1211	Insulation of electrodes			R	250	---	MegΩ
1031	High-frequency vibration		Rp = 10,000 ohms	Ep	---	50	mV ac
1246	Audio frequency noise		Esig = 70 mV ac; Ec2 = 25 V dc; Rg1 = 0.1 MegΩ; Rg2 = 1,000 ohms; Rp = 0.2 MegΩ; Rk = 4,000 ohms	EB	---	17	vu
1266	Grid emission	3	Ef = 7.5 V; Rg1 = 1.0 MegΩ; Ec1 = -10 V dc	Ic1	0	-0.5	μA dc
1306	Transconductance (2)		Ef = 5.7 V	$\frac{\Delta S_m}{E_f}$	---	5.0	%
1311	Anode resistance			rp	0.15	---	MegΩ
1331	Direct-interelectrode capacitance		0.405-inch diameter shield	Cg1p Cin Cout	---	0.03 5.5 4.1	pF pF pF
1256	Electrode current (1) (anode) (tube operation time)		t - 20 seconds	Ib	90	110	%

See notes at end of table.

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TABLE I. Testing and inspection. Continued

MIL-STD-1311 Method	Requirement or test	Notes	Conditions	Symbol	Limits		Unit
					Min	Max	
	<u>Conformance inspection, part 2 - Continued</u>						
1031	Sweep-frequency vibration		Rp = 10,000 ohms; F = 30 to 1,000 Hz; 15 G; t = 3 minutes; positions X and Y only	Ep	---	240	mv p to p
1116	Lead fatigue			---	---	---	---
2126	Envelope strain			---	---	---	---
1041	Shock	5	450 G; Ehk = 100 V dc	---	---	---	---
1031	Vibration fatigue (1)			---	---	---	---
1031	Vibration fatigue (2)		10 G; t = 6 hours	---	---	---	---
---	Shock and vibration-fatigue (1) and (2), test end points:						
1031	High-frequency vibration			Ep	---	75	mV ac
1336	Heater-cathode leakage			lhk	---	10	μA dc
1306	Change in trans-conductance (1) of individual tubes			$\frac{\Delta S_m}{t}$	---	15	%
1266	Total grid current			Ic1	0	-1.0	μA dc
1119	Glass-to-lead seal strain			---	---	---	---
1105	Permanence of marking			---	---	---	---

See notes at end of table.

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TABLE I. Testing and inspection. Continued

MIL-STD-1311 Method	Requirement or test	Notes	Conditions	Symbol	Limits		Unit
					Min	Max	
	<u>Conformance inspection, part 3</u>						
1506	Heater-cycling life		Ef = 7.5 V; Ehk = 140 V ac; Eb = Ec1 = Ec2 = Ec3 = 0	---	---	---	---
---	Heater-cycling life-test end point:						
1336	Heater-cathode leakage			Ihk	---	20	μA dc
1516	Stability life		Ehk = 200 Vdc; Rg1 = 1.0 MegΩ; TA = room	---	---	---	---
---	Stability life-test end point:						
1306	Change in transconductance (1) of individual tubes			$\frac{\Delta S_m}{t}$	---	10	%
1501	Intermittent life	6, 8	Ehk = 200 V dc; Rg1 = 1.0 MegΩ; TE = 200°C(min)	---	---	---	---
---	Intermittent life-test end point (500 hours):						
1266	Total grid current			Ic1	0	-0.5	μA dc
1301	Heater current			If	187	217	mA
1306	Change in transconductance (1) of individual tubes			$\frac{\Delta S_m}{t}$	---	20	%
1306	Transconductance (2)			$\frac{\Delta S_m}{E_f}$	---	15	%
1336	Heater-cathode leakage			Ihk	---	10	μA dc
1211	Insulation of electrodes			R	50	---	MΩ
1306	Transconductance (1), average change			Avg $\frac{\Delta S_m}{t}$	---	15	%
---	Intermittent life-test end points (1,000 hours):						
1266	Total grid current			Ic1	0	-1.0	μA dc
1301	Heater current			If	177	223	mA
1306	Change in transconductance (1) of individual tubes			$\frac{\Delta S_m}{t}$	---	30	%
1336	Heater-cathode leakage			Ihk	---	15	μA dc

See notes at top of next page.

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NOTES:

1. This test shall be performed at the conclusion of the holding period.
2. This test shall be conducted on the initial lot and thereafter on a lot approximately every 12 months. When one lot has passed, the 12-month rule shall apply. In the event of lot failure, the lot shall be rejected and the succeeding lots shall be subjected to this test until a lot has passed.
3. Prior to this test, tubes shall be preheated 5 minutes at the conditions indicated below. The 3-minute test shall not be permitted. Test at specified conditions within 3 seconds after preheating. Grid emission shall be the last test performed on the sample selected for the grid emission test.

Ef	Eb	Ec1	Ec2	Ec3	Rk	Rg1
V	V dc	V dc	V dc	V dc	ohms	MegΩ
7.5	120	0	120	0	200	1.0

4. See "Reduced pressure (altitude) rating", and altitude, maximum peak voltage in the basic document.
5. A grid resistor of 0.1 MegΩ shall be added; however, this resistor shall not be used when a thyratron-type short indicator is used.
6. Envelope temperature (TE) requirements, when measured in accordance with the temperature by conduction-band measurement (method 1226), will be satisfied if a TUT having bogey Ib (±5 percent) under normal test conditions, is determined to operate at or above minimum specified temperature at any position in the life-test rack.
7. Revision letters are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.
8. The life-test sample shall consist of 10 tubes per lot and no tube failure shall be permitted. In the event of rejection of the first sample, due to failure of 1 tube, a second sample of 20 tubes shall be selected from the lot. Acceptance shall then be based on the second sample, which shall be tested with no failures.

Referenced documents: In addition to [MIL-PRF-1](#), this document references the following:
[MIL-STD-1311](#).

Changes from previous issue. The margins of this specification sheet are marked with vertical line 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 - 85
 DLA - CC

Preparing activity:

DLA - CC

(Project 5960-2020-007)

Review activities:

Army - AR
 Navy - AS, CG, MC, OS

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 <https://assist.dla.mil>.