

INCH-POUND

MIL-E-1/197F
17 September 2013
SUPERSEDING
MIL-E-1/197E
14 April 2003

MILITARY SPECIFICATION SHEET
ELECTRON TUBE, RECEIVING
TYPE 6L6WGB

Inactive for new design
after 7 March 1997.

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 MIL-PRF-1.

DESCRIPTION: Pentode, rugged, beam-power amplifier.

Outline	---	11-2 (EIA) except for base
Base	---	B7-59 or B6-84 (phenolic)
Envelope	---	T11
Cathode	---	Coated unipotential
Base connections:		
Pin no.	---	1 2 3 4 5 7 8
Element	---	nc h a g2 g1 h k, beam plates

ABSOLUTE RATINGS:

Parameter:	Ef	Eb	Ec1	Ec2	Ehk	Pp	Pg2	Alt
Unit:	V	V dc	V dc	V dc	v	W	W	ft
Maximum:	6.9	400	---	300	200	26	3.5	1/
Minimum:	5.7	---	---	---	---	---	---	---
Test conditions:	6.3	250	-14	250	---	---	---	---

GENERAL:

Qualification – Not required.

First article test is required and shall consist of all tests in table I with a sample size of 2 for a lot size less than or equal to 150 units and a sample size of 4 for a lot size greater than or equal to 151 units. All samples shall pass conformance inspection part 1 of table I before continuing. Half of the samples shall then be subjected to conformance inspection part 2, and the remaining samples shall be subjected to part 3, with no test failures permitted during any testing.

After first article approval, acceptance testing shall consist of conformance inspection part 1 of table I with sample size in accordance with table III, category XVI (acceptance level 10.0) of MIL-PRF-1.

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TABLE I. Testing and inspection.

Requirement or test	MIL-STD-1311 Method	Conditions	Symbol	Limits		Units
				Min	Max	
<u>First Article inspection</u>						
Base material insulating quality	1216	Zone 5 (min)	---	---	---	---
Variable-frequency vibration	1031	Rp = 2,000 ohms; Ec1 = -27 V dc	Ep	---	1,000	mV ac
<u>Conformance inspection, part 1</u>						
Total grid current	1266	Eb = 400 V dc; Ec2 = 300 V dc; Ec1 = -22 V dc <u>2/</u>	Ic1	0	-3.0	μA dc
Electrode current (anode)	1256	Eb = 400 V dc; Ec2 = 300 V dc; Ec1 = -22 V dc	Ib	50	80	mA dc
Electrode current (screen)	1256	Eb = 400 V dc; Ec2 = 300 V dc; Ec1 = -22 V dc	Ic2	0	5.0	mA dc
Power output	1341	Esig = 9.8 V ac; Rp = 2,500 ohms	Po	5.4	---	W
Emission	1231	Eb = Ec1 = Ec2 = 50 V dc <u>2/</u>	Is	275	---	mA dc
Short and discontinuity detection	1201		---	---	---	---
<u>Conformance inspection, part 2</u>						
Insulation of electrodes	1211		---	---	---	---
Heater current	1301		If	840	960	mA
Heater-cathode leakage	1336		Ihk	---	75	μA dc
Transconductance	1306		Sm	5,200	6,800	μmhos
Audio frequency noise	1246	Ecal = 280 mV ac; Rp = 2,000 ohms	EB	---	17	vu
Low-frequency vibration	1031	Rp = 2,000 ohms; Ec1 = -27 V dc	Ep	---	1,000	mV ac
Shock	1041	450 G; Ehk = 100 V dc <u>3/</u>	---	---	---	---
Vibration-fatigue test	1031	25 G; F = 25 min, 60 max; fixed frequency	---	---	---	---
Post shock and vibration-fatigue test end points	---	Low frequency vibration	Ep	---	1,000	mV ac
		Heater-cathode leakage	Ihk	---	100	μA dc
		Transconductance	Sm	4,500	---	μmhos

See footnotes at end of table.

TABLE I. Testing and inspection - Continued.

Requirement or test	MIL-STD-1311 Method	Conditions	Symbol	Limits		Units
				Min	Max	
<u>Conformance inspection, part 2</u> - Continued						
Secureness of base, cap, or insert	1101		---	---	---	---
Glass envelope strain	1126		---	---	---	---
Base pin solder depth	1111		---	---	---	---
Permanence of marking	1105		---	---	---	---
<u>Conformance inspection, part 3</u>						
Intermittent life	1501	Group B; Ehk = 200 V; Eb = 400 V dc; Ec2 = 300 V dc; Ec1 = -22 V dc	---	---	---	---
Intermittent life-test end points (500 hours)	---	Power output or Transconductance	Po Sm	4.0 4,500	--- ---	W μ mhos

NOTES:

- 1/ See "Reduced pressure (altitude) rating", and altitude, maximum peak voltage in the basic document.
- 2/ The following tests are to be the first tests performed after the holding period in the following sequence:
Total grid current: Emission.
- 3/ A grid resistor of 0.1 Meg Ω shall be added; however, this resistor shall not be used when a thyratron-type short indicator is used.

Referenced documents. In addition to MIL-PRF-1, this specification sheet references MIL-STD-1311.

The margins of this specification are marked with vertical lines 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 last previous issue.

Custodians:

Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:

DLA - CC
(Project 5960-2013-027)

Review activities:

Army - AR
Navy - AS, CG, MC, OS
Air Force - 19, 99

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/>.