

**INCH-POUND**  
MIL-PRF-1/952H  
18 June 2008  
SUPERSEDING  
MIL-E-1/952G  
17 February 1981

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, RECEIVING

TYPE 6AU6WC 1/

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

Inactive for new design after 30 April 1997
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The requirements for acquiring the electron tube described herein shall consist of this document and MIL-PRF-1.

DESCRIPTION: Pentode, miniature, RF sharp cutoff.  
Outline --- 5-2 (EIA).  
Base --- E7-1.  
Envelope --- T5-1/2.  
Cathode --- Coated unipotential.

Base connections:

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

ABSOLUTE- RATINGS:

Parameter:	Ef	Eb	Ec1	Ec2	Ec3	Ehk	Rk
Unit:	V	Vdc	Vdc	Vdc	Vdc	v	Ohms
Maximum:	6.9	330	0,-50	165	0	100	---
Minimum:	5.7	---	---	---	---	---	---
Test conditions:	6.3	250	0	150	(see note 2)	---	68

ABSOLUTE- RATINGS:

Parameter:	Rg1	Icl	Pp	Pg2	TE	Alt
Unit:	Neg	mA	W	W	°C	ft
Maximum:	0.5	1.0	3.3	0.72	165	(See note 1)
Minimum:	---	---	---	---	---	---
Test conditions:	---	---	---	---	---	---

GENERAL:

Qualification: Not Required  
Reliable tube  
1/ Formerly tube type 6AU6WB

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TABLE I. Testing and Inspection

Requirement or Test	Method MIL-STD-1311	Conditions	Acceptance level note 9	Symbol	Limits		Unit
					Min	Max	
<u>Conformance inspection, part 1</u>							
Heater current	1301		0.4	If	275	325	mA
Heater-cathode leakage	1334		0.4	lhk	---	10	uA dc
Total grid current	1266	Ec1 = 1.0 V dc; Rg1 = 0.25 MegΩ (see note 3)	0.4	lc1	0	-1.0	uA dc
Electrode current (1) (anode)	1256	See note 3	0.4	lb	8.0	13.5	mA dc
Electrode current (2) (anode)	1256	Ec1 = -9 V dc; Ep = 0.1 MegΩ	0.4	lb	---	35	uA dc
Electrode current (screen-grid)	1256		0.4	lc2	2.6	6.0	mA dc
Transconductance (1)	1304		0.4	Sm	4,150	6,250	umhos
Short and discontinuity detection	1201		0.4	---	---	---	---
<u>Conformance inspection, part 2</u>							
Insulation of electrodes	1211		2.5	R	---	---	MegΩ
Electrode current (3) (anode)	1256	Ec1 = -6 V dc Rp = 0.5 MegΩ	2.5	lb	5	---	uA dc
Transconductance (2)	1306	Ef = 5.7 V	2.5	*Sm Ef	---	15	%
Grid emission	1266	Et = 7.5 V; Ec1 = -10 V dc; Rg1 = 0.25 MegΩ (See note 4)	2.5	lc1	0	-2.0	uA dc
Noise and microphonics	2201	Ef = 6.3 V dc; Ebb = 300 V dc; Ecc2 = 300 V dc; Ecal = 500 mV ac; Rk = 1,000 ohms; Rp = 0.22 MegΩ; Rg2 = 0.5 MegΩ; Cg2 = 2 μF	2.5	---	---	---	---
Direct-interelectrode capacitance	1331	No shield	6.5	Cgip Cin Cout	---	0.0035 7.2 5.9	pF pF pF
High-frequency vibration	1031	Rp = 2,000 ohms	6.5	Ep	---	300	mV ac
Shock	1041	450 G; Ehk = +100 V dc (see note 5)	---	---	---	---	---
Vibration-fatigue	1031		6.5	---	---	---	---

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TABLE I. Testing and Inspection - Continued

Requirement or Test	Method MIL-STD-1311	Conditions	Acceptance level note 9	Symbol	Limits		Unit
					Min	Max	
<u>Conformance inspection, part 2 – Continued</u>							
Post-shock and vibration fatigue test end points:	---						
Low-frequency vibration	1031		---	Ep	---	450	mV ac
Master-cathode leakage	1336		---	lhk	---	30	uA dc
Transconductance (1)	1306		---	Sm	3,600	---	umhos
Total grid current	1266		---	lc1	0	-2.0	uA dc
Base strain	1121	See note 7	---	---	---	---	---
Envelope strain	2126		2.5	---	---	---	---
Permanence of marking	1105		---	---	---	---	---
<u>Conformance inspection Part 3</u>							
Heater-cycling life		Ef = 7.5 V; Ehk = +135 V dc; Ec1 = Ec2 = Eb = 0	---	---	---	---	---
Heater-cycling life-test end point:	---						
Heater-cathode leakage	1336		---	lhK	---	20	mA dc
Stability life	1516	Eb = 300 V dc; Ehk = +135 V dc; Rg1 = 0.5 MegΩ; Rk = 80 ohms; TA = room	---	---	---	---	---
Stability life-test end point (2 and 20 hours):	---						
Change in transconductance (1) of individual tubes	1306		---	Δsm	---	10	%
Intermittent life	1501	Eb = 300 V dc; Ehk = +135 V dc; Rg1 = 0.5 MegΩ; Rk = 80 ohms; TE = 165° C (min) See notes 8 and 10	---	---	---	---	---
Intermittent life-test end points (1,000 hours):	---						
Inoperatives	---		---	---	---	---	---

TABLE I. Testing and Inspection - Continued

Requirement or Test	Method	Conditions	Acceptance level note 9	Symbol	Limits		Unit
					Min	Max	
<u>Conformance inspection, part 3 – Continued</u>							
Total grid current	1266		---	Ic1	0	-1.0	uA dc
Heater current	1301		---	If	275	333	mA
Change in transconductance (1) of individual tubes	1306		---	%Sm t	---	25	%
Transconductance (2)	1306		---	%Sm Ef	---	20	%
Heater-cathode leakage			---	Ihk	---	20	uA dc
Insulation of electrodes			---	R	50	---	MegΩ
Cathode interface life	1511	Ef = 6.9 V See note 10	---	Ri	---	50	ohms

## NOTES:

- See "Reduced pressure (altitude) rating" and altitude, maximum peak voltage.
- Tie grid 3 to negative terminal of cathode resistor.
- This test shall be performed at the conclusion of the holding period.
- Prior to this test, tubes shall be preheated for a minimum of 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	Ec1	Ec2	Ec3	Eb	Rh	Rg1
V	V dc	V dc	V dc	V dc	Ohms	MegΩ
7.5	0	150	0	300	80	0.5

- A grid resistor of 0.1 MegΩ shall be added; however, this resistor shall not be used when a thyratron-type short indicator is employed.
- This test shall be performed yearly. An accept on zero defect sampling plan be used with sample of three tubes with an acceptance number of zero. In the event of failure, the test will be made as a part of conformance inspection, part 2, acceptance level 6.5 (see 10/). The yearly sampling plan may be reinstated after three consecutive samples have been accepted.
- Acceptance sampling procedure shall be in accordance with "base-strain test, miniature sampling" (method 1121), except that data covered in "Acceptance and rejection criteria" shall be modified as follows:
  - Accepted if no defectives for class 'A', 'B', or 'C' defects, respectively (see method 1121), or if no defectives are found in the sample.
  - Rejected if any defectives for class 'A', 'B', or 'C' defects, respectively, or if any defectives are found in the sample..
- Envelope temperature (TE) requirements, when measured in accordance with the temperature by conduction-band measurement (method 1226), will be satisfied if a tube having bogey Ib ( $\pm 5$  percent) under normal test conditions, is determined to operate at or above minimum specified temperature at any position in the life-test rack.
- This specification sheet utilizes an accept on zero defect sampling plan in accordance with MIL-PRF-1, table III.
- The life-test sample shall consist of the lesser of 20 tubes or 10% of lot size and no failures shall be permitted. In the event of failure of the first sample, a second sample of the lesser of 20 tubes or 10% of lot size shall be selected from the lot. Acceptance shall then be based on the second samples, and no failures shall be permitted.

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Referenced documents: In addition to MIL-PRF-1, this specification sheet references the following:  
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 5960-2008-058)

Review activities:

Navy – AS, CG, MC  
Air Force – 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 <http://assist.daps.dla.mil/>