

MILITARY SPECIFICATION SHEET
 ELECTRON TUBE, RECEIVING
 TYPE 6AU6WC 1/

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

The complete requirements for procuring the electron tube described herein shall consist of this document and the latest issue of Specification MIL-E-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	ad				

ABSOLUTE-MAXIMUM 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	---	---	---	---	---	---
<u>TEST CONDITIONS:</u>	6.3	250	0	150	(see note 2)	---	68

ABSOLUTE-MAXIMUM RATINGS:

Parameter:	Rg1	Ic1	Pp	Pg2	TE	Alt
Unit:	Meg	mAdc	W	W	°C	ft
Maximum:	0.5	1.0	3.3	0.72	165	(See note 1)
Minimum:	---	---	---	---	---	---
<u>TEST CONDITIONS:</u>	---	---	---	---	---	---

GENERAL:

Qualification - Required.

Reliable tube

1/ Formerly tube type 6AU6WB

6AU6WC

FSC 5960

MIL-E-1/952G

METHOD	REQUIREMENT OR TEST	CONDITIONS	AQL (PERCENT DEFEC- TIVE	INSPECTION LEVEL OR CODE	SYMBOL	LIMITS		UNIT
						MIN	MAX	
	<u>Quality conformance inspection, part 1</u>							
1301	Heater current		0.4	II	I _f	275	325	mA
1336	Heater-cathode leakage		0.4	II	I _{hk}	---	10	uAdc
1266	Total grid current	E _{c1} = 1.0 Vdc; R _{g1} = 0.25 Meg (see note 3)	0.4	II	I _{c1}	0	-1.0	uAdc
1256	Electrode current (1) (anode)	See note 3	0.4	II	I _b	8.0	13.5	mA
1256	Electrode current (2) (anode)	E _{c1} = -9 Vdc; R _p = 0.1 Meg	0.4	II	I _b	---	35	uAdc
1256	Electrode current (screen-grid)		0.4	II	I _{c2}	2.6	6.0	mA
1306	Transconductance (1)		0.4	II	S _w	4,150	6,250	umhos
1201	Short and discontinuity detection		0.4	II	---	---	---	---
	<u>Quality conformance inspection, part 2</u>							
1211	Insulation of electrodes		2.5	I	R	---	---	Meg
1256	Electrode current (3) (anode)	E _{c1} = -6 Vdc R _p = 0.5 Meg	2.5	I	I _b	5	---	uAdc
1306	Transconductance (2)	E _f = 5.7 V	2.5	I	*S _m E _f	---	15	I
1266	Grid emission	E _f = 7.5 V; E _{c1} = -10 Vdc; R _{g1} = 0.25 Meg (See note 4)	2.5	I	I _{c1}	0	-2.0	uAdc
2201	Noise and microphonics	E _f = 6.3 Vdc; E _{bb} = 300 Vdc; E _{cc2} = 300 Vdc; E _{ca1} = 500 mVac; R _k = 1,000 ohms; R _p = 0.22 Meg; R _{g2} = 0.5 Meg; C _{g2} = 2 uF	2.5	I	---	---	---	---
1331	Direct-interelectrode capacitance	No shield	6.5	Code E	C _{g1p} C _{in} C _{out}	---	0.0035	pF
						4.8	7.2	pF
						3.9	5.9	pF
1031	High-frequency vibration	R _p = 2,000 ohms	6.5	Code E	E _p	---	300	mVac
1041	Shock	450 G; E _{hk} = +100 Vdc (see note 5)	---	See note 6	---	---	---	---

METHOD	REQUIREMENT OR TEST	CONDITIONS	AQL (PERCENT DEFEC- TIVE)	INSPECTION LEVEL OR CODE	SYMBOL	LIMITS		UNIT
						MIN	MAX	
	<u>Quality conformance inspection, part 2</u> <u>-Continued</u>							
1031	Vibration-fatigue		6.5	See note 6	---	---	---	---
---	Post-shock and vibration fatigue test end points:							
1031	Low-frequency vibration		---	---	E _b	---	450	uVdc
1336	Heater-cathode leakage		---	---	I _{hk}	---	30	uAdc
1306	Transconductance (1)		---	---	S _m	3,600	---	uAohs
1266	Total grid current		---	---	I _{c1}	0	-2.0	uAdc
1121	base strain	See note 7	---	---	---	---	---	---
2126	Envelope strain		2.5	I	---	---	---	---
1105	Permanence of marking		---	---	---	---	---	---
	<u>Quality conformance inspection, part 3</u>							
1506	Heater-cycling life	E _t = 7.5 V; E _{hk} = +135 Vdc; E _{c1} = E _{c2} = E _b = 0	---	---	---	---	---	---
---	Heater-cycling life-test end point:							
1336	Heater-cathode leakage		---	---	I _{hk}	---	20	uAdc
1516	Stability life	E _b = 300 Vdc; E _{hk} = +135 Vdc; R _{g1} = 0.5 Meg; R _k = 80 ohms; T _A = room	---	---	---	---	---	---
---	Stability life-test end point (2 and 20 hours):							
1306	Change in transconductance (1) of individual tubes		---	---	ΔS _m	---	10	%
1501	Intermittent life	E _b = 300 Vdc; E _{hk} = 135 Vdc; R _{g1} = 0.5 Meg; R _k = 80 ohms; T _A = room T _E = 165°C (min) (see note 8) Group E	---	---	---	---	---	---

METHOD	REQUIREMENT OR TEST	CONDITIONS	AQL (PERCENT DEFEC- TIVE)	INSPECTION LEVEL OR CODE	SYMBOL	LIMITS		UNIT
						MIN	MAX	
	<u>Quality conformance</u> <u>inspection, part 3</u> <u>-Continued</u>							
---	Intermittent life-test end points (1,000 hours):							
---	Inoperatives		---	---	---	---	---	---
1266	Total grid current		---	---	Ic1	0	-1.0	uAde
1301	Heater current		---	---	If	275	333	mA
1306	Change in transcon- ductance (1) of individual tubes		---	---	ISm c	---	25	%
1306	Transconductance (2)		---	---	ISm Ef	---	20	%
	Heater-cathode leakage		---	---	Ihk	---	20	uAde
	Insulation of electrodes		---	---	R	50	---	MΩ
1511	Cathode interface life	Ef = 6.9 V	---	---	Ri	---	50	Ohms

NOTES:

1. See "Reduced pressure (altitude) rating" and altitude, maximum peak voltage.
2. Tie grid 3 to negative terminal of cathode resistor.
3. This test shall be performed at the conclusion of the holding period.
4. 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	Rk	Rg1
V	Vdc	Vdc	Vdc	Vdc	Ohms	Meg
7.5	0	150	0	300	80	0.5

5. A grid resistor of 0.1 megohm shall be added; however, this resistor shall not be used when a thyratron-type short indicator is employed.

6. 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 passes. MIL-STD-105, sample size code letter E, shall apply.
7. 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:
 - (a) Accepted if not more than one defective for class "A", "B", or "C" defects, respectively (see method 1121), or if not more than a total of two defectives are found in the sample.
 - (b) Rejected if two or more defectives for class "A", "B", or "C" defects, respectively, or if a total of three or more defectives are found in the sample.
8. 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 (+5 percent) under normal test conditions, is determined to operate at or above minimum specified temperature at any position in the life-test rack.
9. Revision letters are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians:

Army - ER
Navy - EC
Air Force - 85

Review activities:

Air Force - 99
DLA - ES

User activities:

Army - AR, ME
Navy - AS, OS, MC, CG
Air Force - 11

Preparing activities:

Navy - EC

Agent:

DLA - ES

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