MILITARY SPECIFICATION SHEET

ELECTRON TUBE, RECEIVING

TYPE 6005W 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, beam power amplifier

Outline	---	5-3 (EIA)
Base	---	E7-1
Envelope	---	T5-1/2
Cathode	---	Coated unipotential

Base connections:

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

ABSOLUTE-MAXIMUM RATINGS:

Parameter:	Ef	Eb	Ec1	Ec2	Ehk	Rg1	Ik	Ic	Pp	Pg2	TE	Alt
Unit:	V	Vdc	Vdc	Vdc	v	Meg	mAdc	mAdc	W	W	°C	ft
Maximum:	6.9	275	0,-55	275	100	0.1 (see note 1)	65	3.0	11.0	2.2	225	(See note 2)
Minimum:	5.7	---	---	---	---	---	---	---	---	---	---	---
TEST CONDITIONS:	6.3	250	-12.5	250	0	---	---	---	---	---	---	---

GENERAL:

Qualification - Required

Reliable tube

1/ Formerly tube type 6005

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FSC 5960

METHOD	REQUIREMENT OR TEST	CONDITIONS	AQL (PERCENT DEFECTIVE)	INSPECTION LEVEL OR CODE	SYMBOL	LIMITS MIN	LIMITS MAX	UNIT
	Quality conformance inspection, part 1							
1301	Heater current		0.4	II	If	420	480	mA
1336	Heater-cathode leakage		0.4	II	Ihk	---	20	µAdc
1266	Total grid current	Rgl = 0.5 Meg (see note 3)	0.4	II	Ic	0	-1.0	µAdc
1256	Eletrode current (1) (anode)	See note 3	0.4	II	Ib	33	57	mAdc
1256	Electrode current (screen)		---	---	Ic2	---	---	mAdc
1256	Electrode current (screen)		0.4	II	Ic2	0	7.5	mAdc
1341	Power output (1)	Esig = 8.8 Vac; RL = 5,000 ohms	0.4	II	Po	3.6	---	W
1201	Short and discontinuity detection		0.4	II	---	---	---	---
	Quality conformance inspection, part 2							
1256	Electrode current (2) (anode)	Ecl = -60 Vdc	2.5	I	Ib	---	200	µAdc
1211	Insulation of electrodes		2.5	I	R	150	---	Meg
1306	Transconductance		2.5	I	Sm	3,000	5,200	µmhos
1341	Power output (2)	Ef = 5.7 V; Esig = 8.8 Vac; RL = 5,000 ohms	2.5	I	ΔPo Ef	---	15	%
1266	Grid emission	Ef = 7.5 V; Ecl = -50 Vdc; Rgl = 0.5 Meg; Rk = 250 ohms (see note 4)	2.5	I	Ic1	0	4.0	µAdc
2201	Noise and microphonics	Ef = 6.3 Vac; Ecal = 140 mVac, Rp = 2,000 ohms; Rgl = 0.1 Meg	2.5	I	---	---	---	---
1266	Primary grid emission	Eg2 = 135 Vac, 60 Hz; Eb = 0 (see note 5)	6.5	S3	Ic2	---	750	µAdc
1331	Direct-interelectrode capacitance	No shield	6.5	Code E	Cg1p Cin Cout	--- 6.4 6.0	0.8 9.6 11.0	pF pF pF
1031	High-frequency vibration	Ecl = -25 Vdc, Rp = 2,000 ohms	6.5	Code E	Ep	---	300	mVac
1041	Shock	450 G; Ehk = 300 Vdc, Ecl = 0, Rk = 250 ohms (see note 6)	6.5	See note 7	---	---	---	---
1031	Vibration fatigue		6.5	See note 7	---	---	---	---
---	Shock and vibration-fatigue test end points:							
1031	High-frequency vibration		---	---	Ep	---	500	mVac
1336	Heater-cathode leakage		---	---	Ihk	---	50	µAdc
1341	Power output (1)		---	---	Po	3.0	---	W
1266	Total grid current		---	---	Ic1	0	-4.0	µAdc
1121	Base strain	See note 8	---	---	---	---	---	---

METHOD	REQUIREMENT OR TEST	CONDITIONS	AQL (PERCENT DEFECTIVE)	INSPECTION LEVEL OR CODE	SYMBOL	LIMITS MIN	LIMITS MAX	UNIT
	Quality conformance inspection, part 2 -Continued							
2126	Envelope strain		2.5	I	---	---	---	---
1105	Permanence of marking		---	---	---	---	---	---

METHOD	REQUIREMENT OR TEST	CONDITIONS	SYMBOL	LIMITS MIN	LIMITS MAX	UNIT
	Quality conformance inspection, part 3					
1506	Heater-cycling	Ef = 7.5 V; Ehk = 135 Vdc; Ec1 = Ec2 = Eb = 0	---	---	---	---
---	Heater-cycling life-test end point:					
1336	Heater-cathode leakage		Ihk	---	40	µAdc
1516	Stability life	Ec1 = 0; Ehk = 135 Vdc; Rg1 = 0.5 Meg; Rk = 250 ohms; TA = room	---	---	---	---
---	Stability life-test end point:					
1341	Change in power output (1) of individual tubes		ΔPo	---	10	%
1501	Intermittent life	Ec1 = 0; Ehk = 135 Vdc; Rg1 = 0.5 Meg; Rk = 250 ohms; TA = room TE = 225°C (min) (see note 9) Group E	---	---	---	---
---	Intermittent life-test end points (1,000 hours):					
---	Inoperatives		---	---	---	---
1266	Total grid current		Ic1	0	-1.0	µAdc
1301	Heater current		If	420	490	mA
1341	Change in power output (1) of individual tubes		ΔPo t	---	25	%
1341	Power output (2)		ΔPo Ef	---	20	%
1336	Heater-cathode leakage		Ihk	---	20	µAdc
1211	Insulation of electrodes		R	50	---	Meg

NOTES:

1. This value is for operation under fixed bias conditions. With cathode bias, Rg1 may be 0.5-megohm maximum.
2. See "Reduced pressure (altitude) rating", and altitude, maximum peak voltage.
3. This test shall be performed at the conclusion of the holding period.
4. Prior to this test, tubes shall be preheated a minimum of 5 minutes with all sections operating at the conditions specified 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	Eb	Rk	Rg1
V	Vdc	Vdc	Vdc	Ohms	Meg
7.5	0	250	250	250	0.5

5. Operate the TUT for 5 minutes at test conditions prior to the primary screen-grid emission test. Adjust Ec1 to provide Ic2 = 13.4 mAdc on the positive half cycles.
6. 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.
7. This test shall be conducted on the initial lot and thereafter on a lot approximately every 12 months. 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. When one lot has passed, the 12-month rule shall apply. MIL-STD-105, sample size code letter E, shall apply.

NOTES: -Continued.

8. 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.

9. 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.

10. 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:
Army - MI
Air Force - 99
DLA - ES

User activities:
Navy - AS, OS, MC, CG
Air Force - 11

Preparing activity:
Navy - EC

Agent:
DLA - ES

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