INCH-POUND

MIL-PRF-1/292F
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SUPERSEDING
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14 June 2007

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, RECEIVING

TYPE 5829WA

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: Double diode, subminiature, 400 MHz.

Outline - - - 2-5 (EIA).
Base - - - Pinch press (7 leads in line).
Envelope - - - T2X3.
Cathode - - - Coated unipotential.
Base connections:

Pin No.	- - -	1	2	3	4	5	6	7
Element	- - -	2a	2k	h	sd	h	1a	1k

ABSOLUTE RATINGS:

Parameter:	Ef	Epp/a	epx	Ehk	R1	C1	Io/a	ib/a	isurge/a	TE	Alt
Unit:	V	V ac	v	v	Ohms	μF	mA dc	mA	mA	°C	ft
Maximum:	6.6	130	360 (see note 1)	360	- - -	- - -	5.5	33	175	220	See note 8
Minimum:	6.0	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Test conditions:	6.3	117	- - -	0	14,000	8	- - -	- - -	- - -	- - -	- - -

GENERAL:

Qualification: Not required.

Reliable tube.

This specification sheet utilizes an accept on zero defect sampling plan in accordance with MIL-PRF-1, table III.

TABLE I. Requirement or test.

Requirement or test	MIL-STD-1311 method	Notes	Conditions	Symbol	Limits		Unit
					Min	Max	
First article inspection							
Resonant frequency	2220			Length	13.5	- - -	cm
Conformance inspection, part 1							
Short and discontinuity detection	1201			- - -	- - -	- - -	- - -
Heater current	1301			If	138	162	mA
Emission	1231	2	Es = 6.5 V dc	Is	15	- - -	mA dc
Operation of rectifiers	1353	3, 4		Io	9.0	- - -	mA dc
Heater-cathode leakage	1336	2		Ihk	- - -	10	μA dc
Conformance inspection, part 2							
Insulation of electrodes	1211	2		R	- - -	- - -	- - -
Electrode current (anode)	1256	2	Ebb = 0; Rp = 40,000 ohms	Ib	2	20	μA dc
Electrode current (anode) (difference between sections)	1256			Ib	- - -	5	μA dc
Direct-interelectrode capacitance	1331		No shield				
			1a to 2a	C	0.06	0.12	pF
			1a to h+1k+sd		1.9	3.5	pF
			2a to h+2K+sd		1.7	3.3	pF
			1k to h+1a+sd		2.4	4.2	pF
			2k to h+2a+sd		2.8	4.6	pF
			1k to h		1.1	2.2	pF
			2k to h		1.3	2.5	pF
Lead fatigue	1116			- - -	- - -	- - -	- - -
Envelope strain	2126			- - -	- - -	- - -	- - -
Shock	1041		450 G	- - -	- - -	- - -	- - -
Variable-frequency vibration	1031	5	No voltages	- - -	- - -	- - -	- - -
Vibration-fatigue	1031	5		- - -	- - -	- - -	- - -
Shock, variable-frequency vibration, and vibration-fatigue test end points:	- - -						
Heater-cathode leakage	1336			Ihk	- - -	15	μA dc
Operation of rectifiers	1353			Io	7.0	- - -	mA dc
Permanence of marking	1105			- - -	- - -	- - -	- - -

See notes at end of table.

TABLE I. Requirement or test - Continued.

Requirement or test	MIL-STD-1311 method	Notes	Conditions	Symbol	Limits		Unit
					Min	Max	
Conformance inspection, part 3							
Heater-cycling life-test	1506		Ef = 7.5 V; Ehk = 140 V ac; Eb = 0; 1 min on, 4 min off	- - -	- - -	- - -	- - -
Heater-cycling life-test end point:	- - -						
Heater-cathode leakage	1336			Ihk	- - -	20	μA dc
Intermittent life	1501	6 ,7,9	TE = 220°C (min); Ehk = 117 V ac; Group E	- - -	- - -	- - -	- - -
Intermittent life-test end points (500 hours):	- - -						
Heater current	1301			If	135	165	mA
Operation of rectifiers	1353			Io	7.5	- - -	mA dc
Change in operation of rectifiers of individual tubes	1353			ΔIo t	- - -	15	%
Heater-cathode leakage	1336			Ihk	- - -	20	μA dc
Insulation of electrodes	1211			R	50	- - -	MegΩ
Intermittent life-test end points (1,000 hours):	- - -						
Heater current	1301			If	135	165	mA
Operation of rectifiers	1353			Io	7.5	- - -	mA dc
Change in operation of rectifiers of individual tubes	1353			ΔIo t	- - -	15	%
Heater-cathode leakage	1336			Ihk	- - -	20	μA dc
Insulation of electrodes	1211			R	25	- - -	MegΩ

See notes at end of table.

TABLE I. Requirement or test - Continued.

NOTES:

1. The maximum voltage appearing between any pair of pins shall be no greater than the peak inverse anode voltage rating.

2. Test each unit separately.

3. In a full-wave circuit, adjust Zp/a so that Io = 10 mA dc with a TUT having an Etd of 5.5 V dc at 15 mA dc per anode. The minimum peak anode current shall be 25 mA per anode. Tap and reject for recurring arcs or sputters.

4. This test shall be performed at the conclusion of the holding period.

5. 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 has passed. When one lot has passed, the 12-month rule shall apply.

6. Envelope temperature (TE) requirements, when measured in accordance with the temperature by conduction-band measurement (MIL-STD-1311, 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. In a full-wave life-test circuit, the values of R1 and C1 shall be considered as approximate and shall be adjusted initially so that Io is equal to or greater than 10 mA dc with ib equal to or greater than 25 mA.

8. See "Reduced pressure (altitude) rating", and altitude, maximum peak voltage in the basic document.

9. The life test sample shall consist of 20 tubes per lot and not one tube failure shall be permitted. In the event of rejection of the first sample, a second sample of 40 tubes shall be selected from the lot. Acceptance shall be based on the second sample and shall not permit any tube failures.

Referenced documents: In addition to MIL-PRF-1, this document 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 5960-2014-014)

Review activities:
Army - AR, MI
Navy - AS, CG, MC, OS
Air Force - 99

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