

MIL-E-1/1373C(NAVY)
30 May 1973
SUPERSEDING
MIL-E-1/1373B(NAVY)
1 April 1966

MILITARY SPECIFICATION SHEET

Ⓒ

ELECTRON TUBE, CATHODE RAY
1/ TYPES 7AQP7 AND 7AQP33

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: Magnetic deflection, electrostatic focus

PIN CONNECTIONS AND DIMENSIONS: See figure 1

ABSOLUTE RATINGS:

Parameter:	Ef	Ec1	Ec2	Eb2	Ehk	Rg1	Eb1
Unit:	V	Vdc	Vdc	Vdc	Vdc	Meg	Vdc
Maximum:	6.9	0, -180	770	12, 100	±180	Note 1	1, 100
Minimum:	5.7	---	---	7, 000	---	---	-550
<u>TEST CONDITIONS:</u>	6.3	Adjust	300	10, 000	---	---	Focus

GENERAL:

Qualification - Required

1/ See note 6

Ⓒ denotes changes

7AQP7, 7AQP33

MIL-E-1/1373C(NAVY)

METHOD	REQUIREMENT OR TEST	NOTES	CONDITIONS	SYMBOL	LIMITS		UNIT
					MINIMUM	MAXIMUM	
	<u>Quality conformance inspection, part 1</u>						
5201	Voltage breakdown	-		---	---	---	---
5201	Voltage breakdown (electrostatic types)	-		---	---	---	---
(C) 5206	Gas ratio	4		Gr	---	0.25	---
5106	Bulb, screen, and faceplate quality	-		---	---	---	---
5223	Modulation	-	Ib2 = 100 μ Adc	Δ Ec1	---	32	Vdc
5231	Spot position (magnetic deflection)	-		---	---	0.375	inch
5241	Grid cutoff voltage	-		Ec1	-15	-45	Vdc
5251	Grid No. 1 leakage current	-		---	---	---	---
	<u>Quality conformance inspection, part 2</u>						
(C) 5246	Focusing electrode voltage	-	Ib2 = 100 μ Adc	Eb1	-50	350	Vdc
1301	Heater current	-		If	270	330	mA
5101	Side terminal and base alinement	-	Halfway between pins No. 1 and No. 9	---	---	---	---
5101	Neck and bulb alinement (magnetic types)	5		---	---	---	---
5101	Face tilt	-		---	---	---	---
5101	Neck straightness	2		---	---	---	---
5216	Stray light emission (conventional types)	-	Eb2 = 12,000 Vdc; Ec2 = 770 Vdc; Eb1 = 0	---	---	---	---
5221	Screen (P7)	3		---	---	---	---
5226	Linewidth "A" (magnetic deflection)	-	Ib2 = 100 μ Adc	Width	---	0.38	mm
5221	Heater-cathode leakage current	-		---	---	---	---
5251	Grid No. 2 leakage current	-		---	---	---	---
(C) 1111	Base pin solder depth	-		---	---	---	---
(C) 1101	Secureness of base, cap. or insert	-		---	---	---	---
(C) 1105	Permanence of marking	-		---	---	---	---

METHOD	REQUIREMENT OR TEST	NOTES	CONDITIONS	SYMBOL	LIMITS		UNIT
					MINIMUM	MAXIMUM	
	<u>Quality conformance inspection, part 3</u>						
---	Life test	-	Group C; Eb2 = 12, 100 Vdc; Ec2 = 770 Vdc; Ib2 = 60 μ Adc; Eb1 at focus	t	500	---	hrs
---	Life-test end points:						
5226	Linewidth "A"	-	Ib2 = 100 μ Adc	Width	---	0.38	mm
5223	Modulation	-	Ib2 = 100 μ Adc	Δ Ec1	---	32	Vdc
	<u>Periodic-check tests</u>						
1141	Pressure (implosion)	-		---	---	---	---
5111	Vibration	-		Width	---	2	mm
5201	Electrode current (grid No. 2)	-	Ec1 = 0	Ic2	-15	+15	μ Adc
5216	Cathode illumination	-		---	---	---	---
1331	Direct-interelectrode capacitance	-	Cathode to all Control grid to all	Ck Cg1	---	8 10	pF pF
1216	Base material insulating quality	-		---	---	---	---

NOTES:

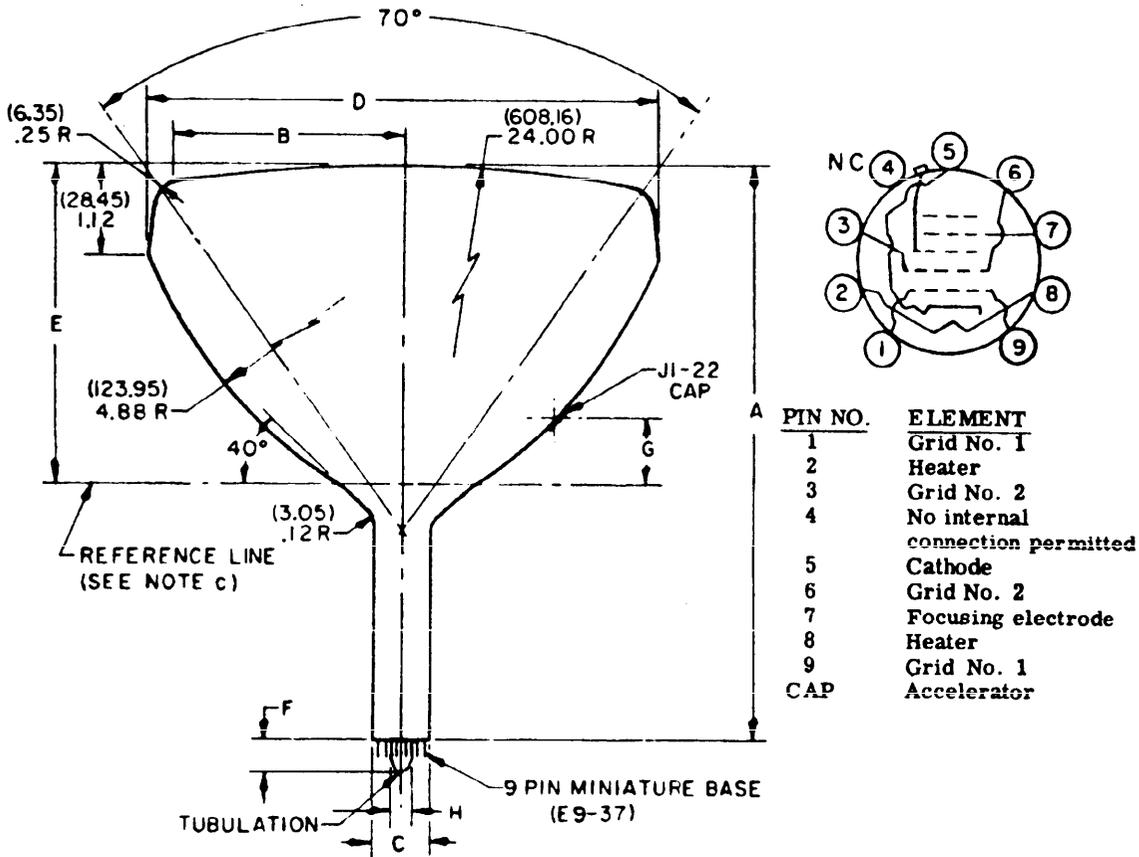
- When Ec2 is greater than 330 Vdc, Rg1 shall not exceed 0.5 Meg. When Ec2 is less than 330 Vdc, Rg1 shall not exceed 1.5 Meg.
- Cylinder shall be 4 inches (101.6 mm) long and 0.901 inch (22.89 mm) maximum inside diameter.
- The screen characteristics shall be measured with a constant beam energy of 0.24 watt defocused to a spot approximately 0.25 cm in diameter.
The test conditions shall be Eb2 = 10,000 Vdc,
Ib2 = 24 μ Adc.
The screen characteristics shall be cB5 - 450 cB minimum,
G5:1 = 4 minimum.
- This test to be performed at the conclusion of the holding period.
- The two sets of neck supports referenced in method 5101 shall be spaced 1.125 inches (28.58 mm) and 3.25 inches (82.55 mm) below reference plane.
- Tube type 7AQP33 has been added to this tube specification sheet.

User activities:
Navy - AS, OS, MC, CG, SH

Preparing activity: Navy - EC

Agent: DSA - ES

(Project 5960-N969)



NOTES:

- Dimensions are in inches.
- Metric equivalents are in parenthesis.
- Reference line is determined by the point where leading edge of JEDEC-G-123 reference line gage will stop.

Ltr	Dimensions in inches with metric equivalents (mm) in parentheses.	
	Minimum	Maximum
Quality conformance inspection, part 2		
A	7.88 (200.15)	8.25 (209.55)
B	3.00 (76.20)	- - - -
C	.81 (20.57)	.90 (22.86)
D	6.94 (176.28)	7.06 (179.32)
E	4.22 (107.19)	4.41 (112.01)
F	- - - -	.44 (11.18)
G	.84 (21.34)	1.09 (27.69)
H	- - - -	.25 (6.35)

FIGURE 1. Outline drawing of electron tube types 7AQ7 and 7AQ33.

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NAVAL ELECTRONIC SYSTEMS COMMAND
WASHINGTON, D. C. 20360

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