

MINISTRY OF SUPPLY, D.L.R.D./R.A.E.

SPECIFICATION M.O.S./CV.3990 incorporating MIL-E-1/338B	<u>SECURITY</u>	
ISSUE 1 DATED 5.9.58	<u>SPECIFICATION</u>	<u>VALVE</u>
To be read in conjunction with K1006, K1001, BS.448 and BS.1409	Unclassified	Unclassified

TYPE OF VALVE: Beam Power Amplifier.		<u>MARKING</u> See K1001/4.	
CATHODE: Indirectly heated.		<u>BASE</u> K1006/B8-26. Small wafer octal 8-pin with sleeve, Phenolic.	
ENVELOPE: Glass.			
PROTOTYPE: 2E26.			
<u>RATINGS</u> (All limiting values are absolute)		<u>CONNECTIONS</u>	
Heater Voltage (V)	6.3	1	Cathode and k and Suppressor g3
Heater Current (A)	0.8		
Max. Operating Screen Voltage (V)	200	2	Heater h
Max. Anode Dissipation (W)	10	3	Screen grid g2
Max. Screen Dissipation (W)	2.5	4	Cathode and k and Suppressor g3
Max. Heater-Cathode Voltage (V)	100	5	Control grid g1
<u>Class AB2 Audio</u>		6	Cathode and k and Suppressor g3
Max. Anode Voltage (V)	400	7	Heater h
Max. Cathode Current (mA)	75	8	Base sleeve
Max. Anode Dissipation (W)	10		T.C. Anode a
Max. Screen Dissipation (W)	2.5		
Max. Anode Input (W)	30		
<u>Class C. Telephony (Anode Modulation)</u>			
Max. Anode Voltage (V)	400		
Max. Cathode Current (mA)	60		
Max. Anode Dissipation (W)	6.7		
Max. Screen Dissipation (W)	1.7		
Max. Negative Grid Voltage (V)	175		
Max. Grid Current (mA)	3.5		
Max. Anode Input (W)	20		
<u>Class C. Telegraphy</u>			
Max. Anode Voltage (V)	500		
Max. Cathode Current (mA)	75		
Max. Anode Dissipation (W)	10		
Max. Screen Dissipation (W)	2.5		
Max. Negative Grid Voltage (V)	175		
Max. Grid Current (mA)	3.5		
Max. Anode Input (W)	30		
<u>CAPACITANCES</u> (Without screen)			
C in (nom.) (pF)	13		
C out (nom.) (pF)	7		
C ag (max.) (pF)	7.2		
		<u>DIMENSIONS</u>	
		<u>DIMENSIONS (ins.)</u>	<u>MIN.</u> <u>MAX.</u>
		Overall length	3 ¹¹ / ₃₂ 3 ²¹ / ₃₂
		Diameter	- 15 ¹ / ₁₆
		<u>TOP CAP</u> BS.448/CT1. (C1-1).	

CV 3990

MIL-E-1/338B
14 May 1956
SUPERSEDING
MIL-E-1/338A
3 May 1954

INDIVIDUAL MILITARY SPECIFICATION SHEET

ELECTRON TUBE, TRANSMITTING, BEAM POWER AMPLIFIER

JAN-2E26

This specification sheet forms a part of the latest issue of Military Specification MIL-E-1.

F1=125Mc
F2=175Mc

Ratings	Ef	Eb	Ec1	Ec2	Ib	Ic1	Pp	Pg2	Pi	Ehk	Modu- lation	Alt ft
Absolute Maximum	V	Vdc	Vdc	Vdc	mAdc	mAdc	W	W	W	V		
A. Audio	6.3/10%	300	---	200	---	---	10	2.5	---	100	---	10,000
AB2 Audio	6.3/10%	400	---	200	75	---	10	2.5	30	100	---	10,000
C Teleg	6.3/10%	400	-175	200	60	3.5	6.7	1.7	20	100	Plate	10,000
C Teleg	6.3/10%	500	-175	200	75	3.5	10	2.5	30	100	---	10,000
Test Cond	6.3	---	---	---	---	---	---	---	---	---	---	---

**Cathode	: Coated Unipotential	**Height:	3-11/32 in. min.; 3-21/32 in. max.
**Base	: Small-Wafer Octal 8-Pin with Sleeve, B8-26, Phenolic	**Diameter:	1-5/16 in. maximum
**Pin No.:	1 2 3 4 5 6 7 8 Cap	**Cap:	Small, C1-1
Element:	k, g3 h g2 k, g3 gl k, g3 h Base p	**Envelope:	T-8
	int. sd int. sd int. sd sleeve		

The following tests shall be performed:

For miscellaneous requirements, see Paragraph 3.3, Inspection Instructions for Electron Tubes.

Ref.	Test	Conditions	AQL(%)	Insp. Level or Code	Sym.	LIMITS						Units
						Min.	LAL	Bogie	UAL	Max.	ALD	
<u>Qualification Approval Tests</u>												
3.1	Qualification Approval:	Required for JAN Marking	---	---								
---	Cathode:	Coated Unipotential	---	---								
3.4.3	Base Connections:		---	---								
4.10.2.2	Power Oscillation (2):	Eb=400Vdc; Vary E2; Ec1=50Vdc; Ic1=2mAdc; Ib=75mAdc; F=125Mc; Rg1=25000			Po:	16	---	---	---	---	---	W
<u>Measurements Acceptance Tests, Part 1: Note 1</u>												
4.10.6.1	↑Grid Current:	Eb=500Vdc; Ec2=200Vdc; Ec1/Ib=20mAdc	0.65	II	Ic1:	---	---	---	---	-3.0	---	uAdc
4.10.4.1	Plate Current:	Eb=200Vdc; Ec2=135Vdc; Ec1=-10Vdc	0.65	II	Ib:	23	---	---	---	47	---	mAdc
4.10.4.3	Screen-Grid Current:	Eb=200Vdc; Ec2=135Vdc; Ec1=-10Vdc	0.65	II	Ic2:	---	---	---	---	4	---	mAdc
4.10.1.1	↑Emission:	Eb=Ec1=Ec2=25Vdc	0.65	II	Is:	130	---	---	---	---	---	mAdc
4.9.1	Mechanical:											
<u>Measurements Acceptance Tests, Part 2</u>												
4.9.19.1	Vibration:	Eb=250Vdc; Ec2=200Vdc; Ec1/Ib=10mAdc; Rp=2000	6.5	IA	Ep:	---	---	---	---	500	---	mVac
4.10.8	Heater Current:		6.5	IA	If:	740	---	---	---	860	---	mA
4.10.15	Heater-Cathode Leakage:		6.5	IA	Ihk:	---	---	---	---	50	---	uAdc
4.10.2.2	Power Oscillation(1):	Eb=500Vdc; Ec2=200Vdc; Ib=60mAdc; Ic1=2mAdc; Rg1=15,000; F=15Mc	6.5	IA	Po:	18	---	---	---	---	---	W

CV3990

Ref.	Test	Conditions	AQL(%)	Insp. Level or Code	Sym.	LIMITS						Units
						Min.	LAL	Bogie	UAL	Max.	ALD	
<u>Measurements Acceptance Tests, Part 2</u> (contd)												
4.10.3.4	Transmitting Tube Noise:	Eb=250Vdc;Ec2=125Vdc;Ec1/Ib=2mAdc	---	---	---	---	---	---	---	---	---	---
4.10.14	Capacitance:	No Shield; Note 2 No Shield; Note 2 No Shield; Note 2	6.5	IA	Cgp: --- Cin: 10.8 Cout: 5.4	---	---	---	---	0.2 15.2 8.6	---	uuf uuf uuf
Ref.	Test	Conditions	AQL(%)	Insp. Level or Code	Allowable Defectives per Characteristic		Sym.	LIMITS		Units		
					1st Sample	Combined Samples		Min.	Max.			
<u>Acceptance Life Tests</u>												
4.11	Life Test:	Group C;Eb=500Vdc;Ec2=200Vdc;Ec1/Ib=20mAdc					t:	500	---	hours		
4.11.4	Life Test End Point:	Emission					Is:	100	---	mAdc		
<u>Packaging Requirements</u>												
4.9.18.1.7	Container Drop:	(d) Package Group 1; Container Size E										

- Note 1: The AQL for the combined defectives for attributes in Measurements Acceptance Tests, Part 1, excluding Mechanical, shall be one percent. A tube having one or more defects shall be counted as one defective. MIL-STD-105, Inspection Level II, shall apply.
- Note 2: Base Sleeve tied to cathode.
- Note 3: Reference specification shall be of the issue in effect on the date of invitation for bid.

*Cancelled
to be removed*