

Specification MOS(A)/CV3523 incorporating MIL-E-1/380B Issue 2 dated 26th February 1957 To be read in conjunction with K1006.	<u>SECURITY</u>	
	<u>Specification</u> UNCLASSIFIED	<u>Valve</u> UNCLASSIFIED

→ indicates a change

TYPE OF VALVE - VHF Beam Power Amplifier CATHODE - Indirectly-heated ENVELOPE - Glass PROTOTYPE - 6146	<u>MARKING</u> K1001/4 Add: 6146																															
<u>BASE</u> Octal ES.448 : B8-0 (Large Wafer Octal 8-pin Phenolic with Sleeve)																																
<u>CONNECTIONS</u>																																
<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 10%;">Pin</th> <th style="width: 60%;">Electrode</th> <th style="width: 30%;"></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Cathode (Note C)</td> <td>k, s, g3</td> </tr> <tr> <td>2</td> <td>Heater</td> <td>h</td> </tr> <tr> <td>3</td> <td>Screen Grid</td> <td>g2</td> </tr> <tr> <td>4</td> <td>Cathode (Note C)</td> <td>k, s, g3</td> </tr> <tr> <td>5</td> <td>Control Grid</td> <td>g1</td> </tr> <tr> <td>6</td> <td>Cathode (Note C)</td> <td>k, s, g3</td> </tr> <tr> <td>7</td> <td>Heater</td> <td>h</td> </tr> <tr> <td>8</td> <td>Base Sleeve</td> <td>-</td> </tr> <tr> <td>TC</td> <td>Anode</td> <td>a</td> </tr> </tbody> </table>			Pin	Electrode		1	Cathode (Note C)	k, s, g3	2	Heater	h	3	Screen Grid	g2	4	Cathode (Note C)	k, s, g3	5	Control Grid	g1	6	Cathode (Note C)	k, s, g3	7	Heater	h	8	Base Sleeve	-	TC	Anode	a
Pin	Electrode																															
1	Cathode (Note C)	k, s, g3																														
2	Heater	h																														
3	Screen Grid	g2																														
4	Cathode (Note C)	k, s, g3																														
5	Control Grid	g1																														
6	Cathode (Note C)	k, s, g3																														
7	Heater	h																														
8	Base Sleeve	-																														
TC	Anode	a																														
<u>TOP CAP</u> CT2 ES.448 : 6/1.2 (American Small, C1-1)																																
<u>DIMENSIONS</u>																																
<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 60%;">Dimension (ins)</th> <th style="width: 20%;">Min.</th> <th style="width: 20%;">Max.</th> </tr> </thead> <tbody> <tr> <td>Overall length</td> <td>39/16</td> <td>3¹³/16</td> </tr> <tr> <td>Diameter</td> <td>-</td> <td>123/32</td> </tr> <tr> <td>Seated height</td> <td>3</td> <td>3¹/4</td> </tr> </tbody> </table>			Dimension (ins)	Min.	Max.	Overall length	39/16	3 ¹³ /16	Diameter	-	123/32	Seated height	3	3 ¹ /4																		
Dimension (ins)	Min.	Max.																														
Overall length	39/16	3 ¹³ /16																														
Diameter	-	123/32																														
Seated height	3	3 ¹ /4																														
<u>MOUNTING POSITION</u> Any																																
<u>RATING</u>																																
Note																																
Heater Voltage (V) 6.3±10% Heater Current (A) 1.25 Max Anode Voltage (V) 600 Max Anode Current (mA) 140 Max Grid Voltage (V) -150 Max Grid Current (mA) 3.5 Max Screen Grid Voltage (V) 250 Max Anode Dissipation (W) 20 Max Screen Grid Dissipation (W) 3.0 Max Peak Heater-cathode Voltage (V) ±135 Max Cathode Current (mA) 160 Max Grid-cathode Resistance (ohms) 30,000	B																															

NOTES

- A. All limiting values are absolute
- B. At reduced input Rg_{1,k} = 100k max.
- C. Pins 1, 4 and 6 are also connected to an internal shield and suppressor.

INDIVIDUAL MILITARY SPECIFICATION SHEET ELECTRON TUBE, RECEIVING, BEAMPOWER AMPLIFIER, TYPE

JAN-6146

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

F1 = 60Mc (Note 1)
F2 = 175Mc (Note 1)

Description: VHF Beam Power Amplifier

Ratings:	Ef	Eb	Ec1	Ec2	ib	Ic1	Pp	Pg2	Pi	Ehk	Modula-	Alt
Absolute	V	Vdc	Vdc	Vdc	mAdc	mAdc	W	W	W	V	tion	ft
Maximum:												
AB1 AF	6.3/10%	600	---	250	125	---	20	3	60	135	---	10,000
AB2 AF	6.3/10%	600	---	250	125	---	20	3	62.5	135	---	10,000
C Teleg.	6.3/10%	480	-150	250	117	3.5	13.3	2	45	135	Plate	10,000
C Teleg.	6.3/10%	600	-150	250	140	3.5	20	3	67.5	135	---	10,000

Test Cond.: 6.3 300 --- 200 --- --- --- --- --- --- ---

*Height: 3-9/16 in. min.; 3-13/16 in. max.
**Base: Large Wafer Octal 8 Pin, Phenolic with Sleeve

**Diameter: 1-23/32 in. max.
**Cap: Small C1-1

**Pin No.:	1	2	3	4	5	6	7	8	Cap	**Cathode:	Coated Unipotential
Element:	k	h	g2	k	gl	k	h	Base	p	**Envelope:	T-12 as per outline
	int sd			int sd		int sd		Sleeve			
	g3			g3		g3					

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

Ref.	Test	Conditions	Min.	Max.
3.1	Qualification Approval:	Required for JAN Marking		
4.9.18.1.1	Carton Drop:	(d) Package Group 1; Carton Size E		
4.9.19.1	*Vibration:	Eb=250Vdc; Ec1/Ib=10mAdc; NL=2000	Ep: ---	750 mVac
4.10.8	*Heater Current:		If: 1.175	1.325 A
4.10.15	*Heater-Cathode Leakage:		Ihk: ---	100 uAdc ←
4.10.6.1	Grid Current:	Ec1/Ib=67mAdc; t=120	Ic: ---	-5 uAdc
4.10.4.1	Plate Current(1):	Ec1=-33Vdc	Ib: 46	94 mAdc
4.10.4.1	*Plate Current(2):	Ec1=-70Vdc	Ib: 0	2 mAdc
4.10.4.3	Screen Current:	Ec1=-33Vdc	Ic2: 0	5.5 mAdc
4.10.9	*Transconductance:	Eb=200Vdc; Ec1/Ib=100mAdc	Sm: 5600	8400 umhos
4.10.2.2	*Power Oscillation:	Eb=600Vdc; Ec2=180Vdc; Ib=112mAdc max.; Rgl=30,000; Ic1=2.0-2.5mAdc; F=15Mc; Note 2	Po: 47	--- W
4.10.1.1	Emission:	Eb=Ec1=Ec2=20Vdc	Is: 110	--- mAdc ←

CV 3523

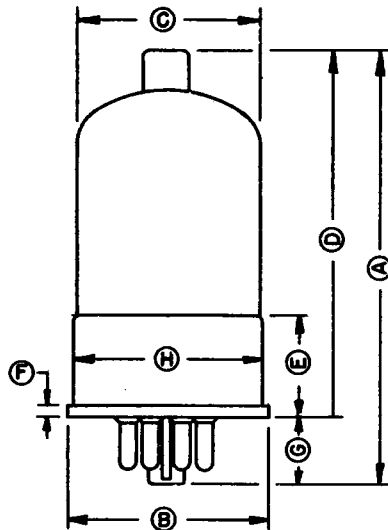
Ref.	Test	Conditions		Min.	Max.	
4.10.14	*Capacitance:	No Shield, Base sleeve tied to cathode	Cgp:	---	0.22	uuf
		No Shield, Base sleeve tied to cathode	Cin:	11.5	16.5	uuf
		No Shield, Base sleeve tied to cathode	Cout:	7.0	11.0	uuf
4.11	Life Test(1):	Group C; Eb=500Vdc; Ecl/Ib=4.0mAdc	t:	500	---	hrs
4.11	Life Test(2):	Group D; Eb=400Vdc, Ib=260mAdc; Icl=4.0-5.0mAdc; F=125Mc; Rgl=15,000; Note 3	t:	500	---	hrs
4.11.4	Life Test End Points(1) and (2):	Emission	Is:	90	---	mAdc
		Power Oscillation	Po:	42	---	W

Note 1: See Plate Voltage and Input Chart.

Note 2: Po shall be useful power output.

Note 3: Test in a self-excited push-pull oscillator circuit. Current and Grid Resistance Values specified are for two tubes.

Note 4: Reference specification shall be of the issue in effect on the date of invitation for bid.



REF	DIMENSION
A	3 ⁹ / ₁₆ MIN 3 ⁵ / ₁₆ MAX
B	1 ²³ / ₃₂ MAX
C	1 ⁹ / ₁₆ MAX
D	3 MIN 3 ¹ / ₄ MAX
E	.770
F	.100
G	.560 MAX
H	1.600 MIN 1.650 MAX

PLATE VOLTAGE AND PLATE INPUT VS FREQUENCY
FOR TYPE 6146

