MINISTRY OF ~~SUPPLY~~ TECHNOLOGY - DLRD/RRE ~~(South)~~

VALVE ELECTRONIC **CV 3523**

Amdt 2

Specification ~~MOS(A)~~ Min Tech/CV3523
incorporating MIL-E-1/380B
Issue 2 dated 26th February 1957
To be read in conjunction with K1006.

Amdt 2

SECURITY	
Specification	Valve
UNCLASSIFIED	UNCLASSIFIED

→ indicates a change

TYPE OF VALVE - VHF Beam Power Amplifier
CATHODE - Indirectly-heated
ENVELOPE - Glass
PROTOTYPE - 6146

RATING

		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

MARKING

K1001/4
Add: 6146

BASE

See K1001/A1/D2 M Dimension (vi) applies 1.720"

Amdt 2

Octal
BS.448 : B8-0
(Large Wafer Octal 8-pin Phenolic with Sleeve)

CONNECTIONS

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

TOP CAP

CT2
BS.448 : 6/1.2
(American Small, C1-1)

DIMENSIONS

Dimension (ins)	Min.	Max.
Overall length	$3\frac{9}{16}$	$3\frac{13}{16}$
Diameter	-	$1\frac{23}{32}$
Seated height	3	$3\frac{1}{4}$

MOUNTING POSITION

Any

NOTES

A. All limiting values are absolute

B. At reduced input Rg1,k = 100k max.

C. Pins 1, 4 and 6 are also connected to an internal shield and suppressor.

Z.13837.R.

CV3523

MIL-E-1/380B
23 December 1955
SUPERSEDING
MIL-E-1/380A
3 May 1954

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: Absolute Maximum:	Ef V	Eb Vdc	Ec1 Vdc	Ec2 Vdc	ib mAdc	Ic1 mAdc	Pp W	Pg2 W	Pi W	Ehk V	Modulation	Alt ft
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 Telep.	6.3±10%	480 Note 1	-150	250	117	3.5	13.3	2	45 Note 1	±135	Plate	10,000
C Teleg.	6.3±10%	600 Note 1	-150	250	140	3.5	20	3	67.5 Note 1	±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
Element:	k int sd g3	h	g2	k int sd g3	g1	k int sd g3	h	Base Sleeve	p

**Cathode: Coated Unipotential
**Envelope: T-12 as per outline

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;Ecl/Ib=10mAdc; RL=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:	Ecl/Ib=67mAdc;t=120	Ic:	---	-5	uAdc
4.10.4.1	Plate Current(1):	Ecl=-33Vdc	Ib:	46	94	mAdc
4.10.4.1	*Plate Current(2):	Ecl=-70Vdc	Ib:	0	2	mAdc
4.10.4.3	Screen Current:	Ecl=-33Vdc	Ic2:	0	5.5	mAdc
4.10.9	*Transconductance:	Eb=200Vdc;Ecl/Ib=100mAdc	Sm:	5600	8400	umhos
4.10.2.2	*Power Oscillation:	Eb=600Vdc;Ec2=180Vdc; Ib=112mAdc max.;Rgl=30,000; Icl=2.0-2.5mAdc;F=15Mc; Note 2	Po:	47	---	W
4.10.1.1	Emission:	Eb=Ecl=Ec2=20Vdc	Is:	110	---	mAdc

CV3523

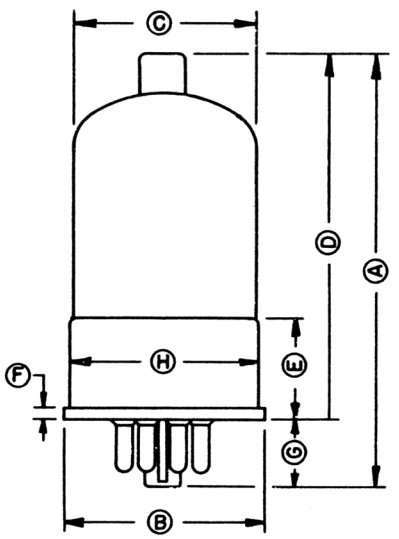
Ref.	Test	Conditions		Min.	Max.	
4.10.14	*Capacitance:	No Shield, Base sleeve tied to cathode	Cgp:	---	0.22	uuf
		No Shield, Base sleeve tied to cathode	Cin:	11.5	16.5	uuf
		No Shield, Base sleeve tied to cathode	Cout:	7.0	11.0	uuf
4.11	Life Test(1):	Group C; Eb=500Vdc; Ecl/Ib=40mAdc	t:	500	---	hrs
4.11	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.

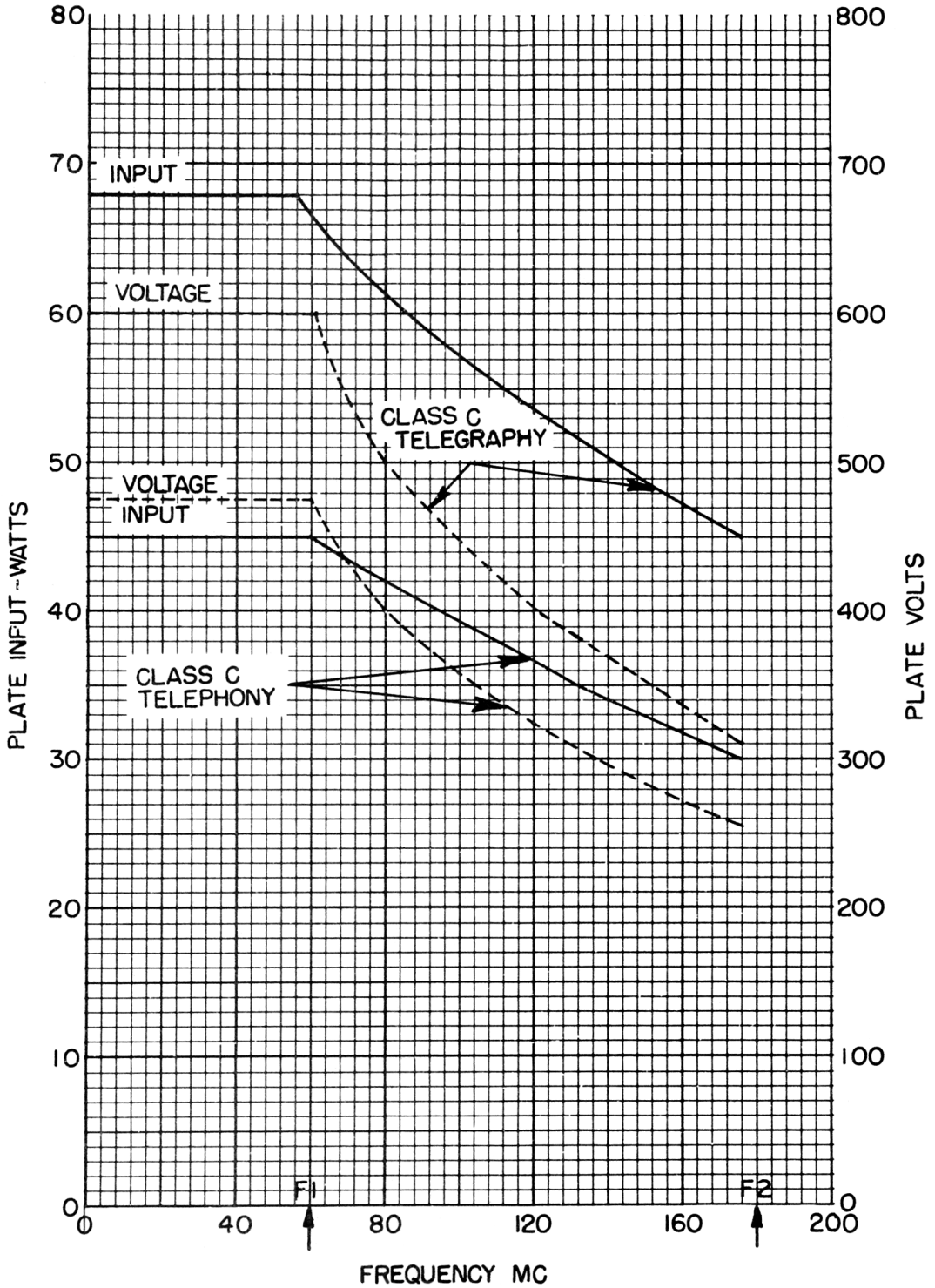
Note 3: Test in a self-excited push-pull oscillator circuit. Current and Grid Resistance Values specified are for two tubes.

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 13/16 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



ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION MOS(A)/CV3523,

ISSUE 2 DATED 26th FEBRUARY 1957

AMENDMENT NO.1

Page A

(i) Specification Authority (top left hand side of page)

Amend "MINISTRY OF SUPPLY - RRE(South)" to read "MINISTRY OF TECHNOLOGY - DLRD/RRE".

(ii) Specification Title (top left hand box)

Amend "Specification MOS(A)/CV3523".to read "Specification Mintech./CV3523".

(iii) Box headed "BASE"

Insert "See K1001/App.IV/Drg. No. 2, 'M' dimension (vi) (1.720"), applies.

August 1967 T.V.C. for R.R.E.