MINISTRY OF AVIATION - DLRD/RRE

VALVE ELECTRONIC CV4117

Specification MOA/CV4117

Issue 1 dated June 1962

To be read in conjunction with K1001, BS448, & BS1409

SECURITY	
Specification	Valve
Unclassified	Unclassified

indicates a change

TYPE OF VALVE - Reliable High Voltage, Half Wave Rectifier with flexible leads.

CATHODE - Indirectly heated

ENVELOPE - Glass

PROTOTYPE - VX3542

MARKING

See K1001/4

BASE

None

RATING

All limiting values absolute

			Note
Filament Voltage	(V)	6.3	
Filament Current	(A)	0.225	
Max. Peak Inverse Voltage	(kV)	17	
Max. Peak Anode Current	(mA)	5	
Max. Shock (short duration)	(g)	500	
Max. Acceleration (Continuous operation)	(g)	5	

TYPICAL OPERATING DATA

Sinusoidal Input

r.m.s. Input Voltage	(kV)	5
Rectified Voltage	(kV)	6.5
Rectified Current	(μA)	200
Reservoir Capacitor (2kc/s wkg)	μF	0.001

CAPACITANCE (pF)

$C_{a-k(nom)}$	1.6

CONNECTIONS

Lead	Electrode
Top Lead	Anode
Bottom leads	Heaters

DIMENSIONS

See drawing on Page 4

Dimension (mm)	Min.	Max.
Overall Length	-	53
Diameter (over pvc)	-	21
Lead length	30	

MOUNTING POSITION

Any

NOTES

A. The valve may be operated up to a frequency of 2500 c/s.

B. Joint Services Catalogue Number 5960-99-037-3183

TEST CONDITIONS - unless otherwise specified

V_h = 6.3v V_a = 100v

K1001	TEST	TEST CONDITIONS	AQL %	Insp. Level	Sym-bol	Limits Min.	Limits Max.	Units
7.1	Glass Strain	No voltages	6.5	I				
	GROUP A							
	Voltage Breakdown	Notes 1 and 2		100%				
	GROUP B							
	Heater Current	V_a = 0	1.5	I	I_h	200	250	mA
	Anode Current (1)		1.5	I	I_a	3.8	6.2	mA
	Anode Current (2)	V_h = 5.7v	1.5	I	I_a	3.4		mA
	GROUP C							
5.12	Lead fragility	No voltages	6.5	IA				
5.9	Capacitance	Measured on a 1 Mc/s bridge	6.5	IC	C_{a-k}		2.0	pf
	GROUP D							
11.3	Fatigue	Combined AQL V_h = 6.3v Switched 1 min on; 3 mins. off; V_a = 0 Frequency = 170c/s Min peak accel = 5g Duration: 30 + 30 + 39 HRS	6.5					
	Post Fatigue Tests							
	Voltage Breakdown	Notes 1 and 2	2.5					
	Heater Current		2.5		I_h	200	250	mA
	Anode Current		2.5		I_a	3.4		mA
11.4	Shock	No voltages Hammer angle = 30°		IA				
11.4	Post Shock Tests							
	Voltage breakdown	Notes 1 and 2	2.5					
	Heater Current		2.5		I_h	200	250	mA
	Anode Current (1)		2.5		I_a	2.5		mA

K1001	TEST	TEST CONDITIONS	AQL %	Insp. Level	Symbol	Limits Min.	Limits Max.	Units
	GROUP E							
A/VI/5	Life							
A/VI/5.1	Stability Life Test	Note 1						
	Change in Anode Current		1.0	I	I_a		10	%
A/VI/5.3	Intermittent Life Test							
	End Point 500 hrs.							
A/VI/5.6	Inoperatives		2.5					
	Heater Current		2.5		I_h	200	250	mA
	Anode Current (1)		2.5		I_a	2.5		mA
	GROUP F							
A/IX/2.5	Re-test after 28 days holding period			100%				
A/VI/5.6	Inoperatives		0.5					

NOTES

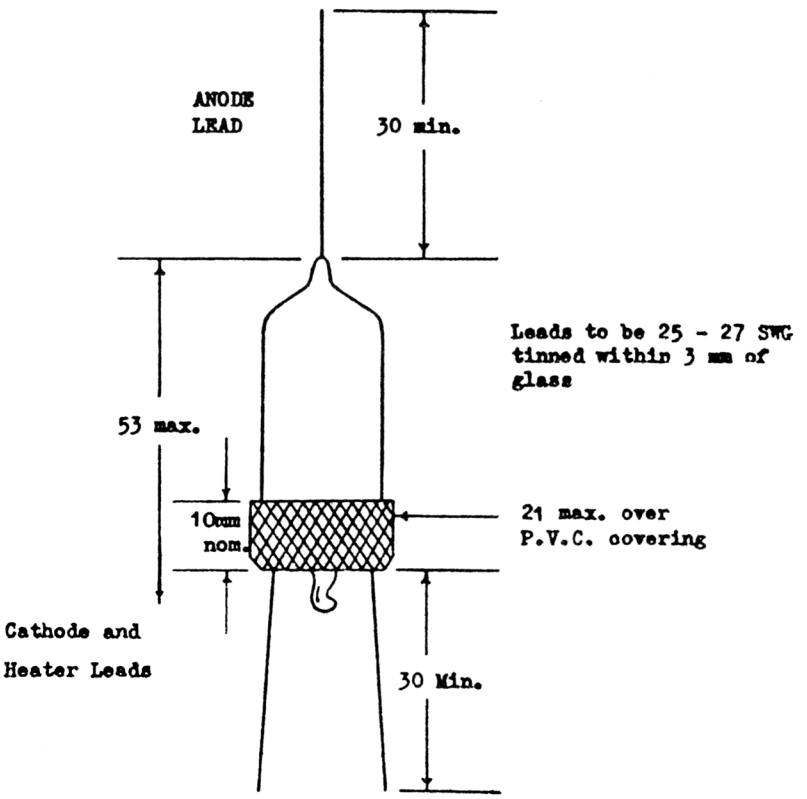
1. Valves shall be operated in a half-wave rectifier circuit under the following conditions:-

f input	1600 c.p.s.	approximately
I_{DC} out	200 µA	minimum
I_a pk	5 mA	nominal
P.I.V.	17 kV	nominal
C_{res}	0.002 µF	nominal

2. Valves shall be run for at least one minute under the conditions in Note 1.

Valves will be rejected for persistent flashing or any signs of softness.

OUTLINE DRAWING



Dimensions in m.m.