

MINISTRY OF SUPPLY-DLRD(A)/RRE

VALVE ELECTRONIC CV4061

Specification MOS(A)/ CV 4061	<u>SECURITY</u>	
Issue 2 Dated 3rd July, 1958	<u>Specification</u>	<u>Valve</u>
To be read in conjunction with K1001, BS448 and BS1409	UNCLASSIFIED	UNCLASSIFIED

→ indicates a change

TYPE OF VALVE - Reliable High Vacuum Half-wave Rectifier with flexible leads CATHODE - Directly-heated ENVELOPE - Glass PROTOTYPE - VX3159, CV.2289.			<u>MARKING</u> See K1001/4	
<u>RATING</u>			<u>BASE</u> None	
Filament Voltage (V) 1.4 Filament Current (A) 0.15 Max Peak Inverse Voltage (kV) 15 Max Peak Inverse Voltage with direct switching (kV) 10 Max Peak Anode Current (mA) 12 Max Mean Rectified Current (mA) 2.0 Max Shock (short duration) (g) 500 Max Acceleration (continuous operation) (g) 2.5			<u>CONNECTIONS</u>	
			Lead	Electrode
			Top Lead	Anode
			Bottom Leads	Filaments
<u>TYPICAL OPERATING DATA</u>			<u>DIMENSIONS</u> See drawing on page 3	
<u>Sinusoidal Input</u>			Dimension (mm)	Min. Max.
RMS Input Voltage (kV)	5.3		Overall length	- 53
Rectified Voltage (kV)	7.5		Diameter	- 13
Rectified Current (uA)	100		Lead length	30
Reservoir Condenser (50 c/s wkg; 15% ripple) (uF)	0.005		<u>MOUNTING POSITION</u>	
<u>Pulse Input (see Note C)</u>				
Leak Input Voltage (kV)	7.5			
Rectified Output Voltage (kV)	7			
Rectified Output Current (uA)	100			
Optimum Reservoir Condenser (uF)	0.001			
<u>CAPACITANCE (pF)</u>				
Ca-f (nom)	1.5			

NOTES

- A. All limiting values are absolute.
- B. This rating applies to circuits where the anode voltage rises at approximately the same rate as the filament voltage, e.g. in fly-back and RF oscillator circuits. When used in power input circuits with full AC anode voltage applied on switching, the maximum peak inverse voltage is 10 kV.
- C. PRF = 20 kc/s; Tp = 5/u secs.

Test Conditions - unless otherwise specified

Vf Va
(V) (Vdc)
1.4 165 max

K1001	TEST	TEST CONDITIONS	AQL %	INSP. LEVEL	SYM- BOL	LIMITS		UNITS
						MIN.	MAX.	
7.1	Glass Strain	No voltages	6.5	I				
	<u>GROUP A</u> Voltage Breakdown	Notes 1 & 2		100%				
	<u>GROUP B</u> Filament current Anode Current (1)	Combined AQL	1.0 0.65 0.65	II II	If Ia	0.13 6.5	0.17 -	A mA
5.12	<u>GROUP C</u> Lead Fragility Anode Current (2) Capacitances	No voltages Vf=0.8V; Va=165V Measured on 1 Mc/s bridge	6.5 6.5 6.5	IA IA IC	Ia Ca-f	5.0	- 1.75	mA pF
11.3	<u>GROUP D</u> Fatigue	Combined AQL Vh = 1.4V switched 1 min on, 3 mins off; Va=0; Min pk accel = 5g; Frequency = 170 c/s; Duration = 30 + 30 + 39 hrs.	6.5	IA				
	<u>Post Fatigue Tests</u> Voltage Breakdown Filament Current Anode Current (1)	Notes 1 & 2	2.5 2.5 2.5		If Ia	0.13 5.0	0.17 -	A mA
11.4	Shock	No voltages; Hammer angle = 30°		IA				
	<u>Post Shock Tests</u> Voltage Breakdown Filament Current Anode Current (1)	Notes 1 & 2	2.5 2.5 2.5		If Ia	0.13 2.8	0.17 -	A mA
AVI/5 AVI/5.1	<u>GROUP E</u> Life Stability Life Test Change in Anode current (1)	Note 1		I				
AVI/5.3	Intermittent Life Test Life Test End Point (250 hrs)	Note 1 Combined AQL	1.0 6.5	IA	Ia	-	10	%
AVI/5.6	Inoperatives Filament Anode Current (1)		2.5 2.5 2.5		If Ia	0.13 4.0	0.17 -	A mA
AIX/2.5	<u>GROUP F</u> Electrical re test after 28-day holding period.			100%				
AVI/5.6	Inoperatives		0.5					

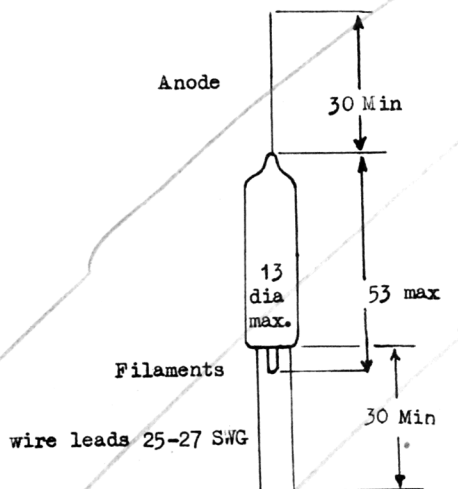
NOTES

1. The valve shall be tested in a half-wave rectifier circuit with a 5.3 kW r.m.s. 50 c/s input voltage applied through a total external impedance of 100,000 ohms including effective transformer impedance. The load resistance shall be adjusted to give 100 μ A nom. Reservoir condenser = 0.1 μ F.

Alternatively, the test may be performed as follows :

$$\begin{aligned}
 F &= 100 \text{ kc/s approx.} \\
 R_s &= 15 \text{ M} \\
 R_L &= 80 \text{ M} \\
 C &= 0.001 \text{ } \mu\text{F.} \\
 \text{P.I.V.} &= 15 \text{ kW (nominal)} \\
 I_{DC} &= 100 \text{ } \mu\text{A.}
 \end{aligned}$$

2. The load conditions shall be maintained for 60 secs. There shall be no persistent sparking, blue glow or distortion of the electrodes.

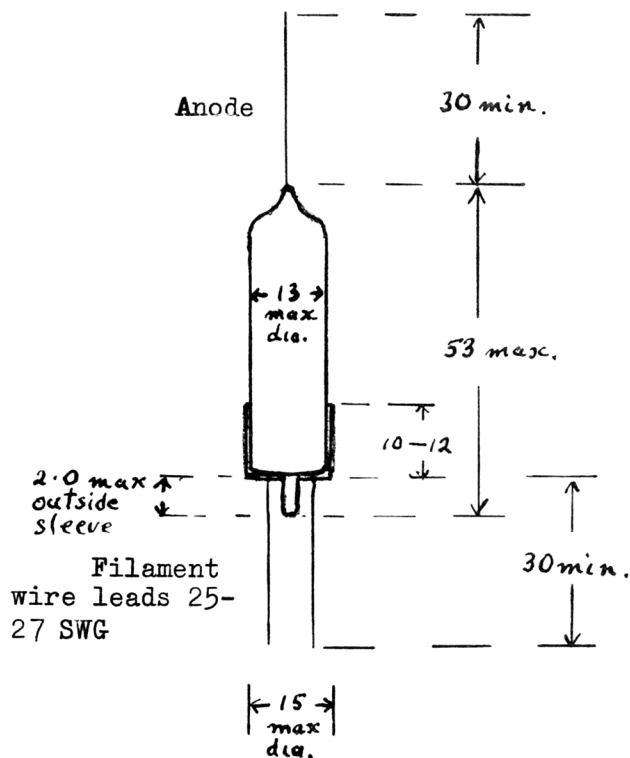
Outline Drawing

All dimensions in millimetres

ELECTRONIC VALVE SPECIFICATION
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AMENDMENT NO.2

PAGE3

Outline drawing. Delete existing drawing and replace with drawing below.



All dimensions in millimetres

for R.R.E. Malvern.

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION MOS(A)/CV4061

ISSUE 2 - DATED 3RD JULY, 1958

AMENDMENT NO.1

Page 2 GROUP E

Intermittent Life Test

In column headed "INSP. LEVEL", Insert "IA"

Life Test End Point (250 hours)

In column headed "AQL %", Insert "6.5"

June 1960
N.17243 D

T.V.C. for R.R.E.

✓RAS 7⁹/₆₀