

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION MOSA/CV2231 ISSUE 4 DATED 21.7.1959.

AMENDMENT NO. 1.

1.

- (i) Amend "MINISTRY OF SUPPLY D.L.R.D., R.A.E." to read "MINISTRY OF AVIATION - DLRD/RAE"
- (ii) Amend "Specification MOSA/CV2131" to read "Specification MOA/CV2131"

2.

Delete existing Note 1 and substitute new Note 1 as follows:-

Valve to be driven with a 2μ Sec. pulse at p.r.f. 1000 c.p.s. so that the grid voltage rises to 50V positive (max.) during pulse. RL. = $2.2k\Omega \pm 5\%$.

The load circuit shall include some source inductance which together with the circuit damping shall be chosen so that the peak pulse E.H.T. overshoot is equal to half the load pulse voltage. The E.H.T. storage capacitance, fed from a high impedance supply shall be $0.5\mu F$. Duration of test shall be 2 minutes. During the second minute the valve shall be sensibly free from flashing as shown by disturbance of the current waveform displayed on an oscilloscope.

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

January, 1965.

NJ.253618

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

Specification MOSA/CV2231 Issue 4 Dated 21.7.1959 To be read in conjunction with B.S.448, B.S.1409 and K.1001		SECURITY Specification UNCLASSIFIED Valve UNCLASSIFIED	
→ Indicates a change			
TYPE OF VALVE - Pulse Modulator Pentode CATHODE - Indirectly Heated ENVELOPE - Glass, unmetallised PROTOTYPE - E.2266		<u>MARKING</u> See K.1001/4	
<u>RATINGS</u> (All limiting values are absolute)		<u>BASE</u> B.S.448/B9A	
		<u>CONNECTIONS</u>	
		Note	
		Pin Electrode	
Heater Voltage (V)	6.3	1	IC
Heater Current (A)	1.2	2	g1
Max. Anode Operating Voltage (D.C.) (V)	600	3	k
Max. Anode Voltage (pulse) (kV)	10.0	4	h
Max. Screen Voltage (D.C.) (V)	600	5	h
Max. Anode Dissipation (W)	12.0	6	IC
Max. Screen Dissipation (W)	3.0	7	IC
Max. Cathode Current (D.C.) (mA)	120	8	g2
Max. Cathode Current (peak) (A)	2.5	9	g3
Max. h.k. R.M.S. Voltage (V)	230	T.C.	a
Mutual Conductance (mA/V)	8.5		
Inner μ	8.5		
<u>CAPACITANCES (pF)</u>		<u>DIMENSIONS</u>	
C in	13.5	C	See B.S.448/B9A/2.2 Size Ref. No.4
C out	12.0	C	
Ca, g1	0.40	C	
		Dimensions (mm)	
		Min Max	
		A seated height	66.5 76
		B diameter	19.0 22.2
		C overall length	- 83
		<u>TOP CAP</u> BS.448/CT1	
<u>NOTES</u>			
A. Maximum pulse duration of 15% of one cycle with a maximum of 15 μ secs.			
B. Measured at $V_a = 150$; $V_{g2} = 150$; $I_a = 50$ mA.			
C. Measured without a metal screen in a fully shielded socket.			

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TESTS

To be performed in addition to those applicable in K1001.

Test Conditions- Unless otherwise stated.								
Vh (V)	Va (V)	Vg2 (V)	Vg3 (V)	Vg1 (V)	Ia (mA)			
6.3	150	150	0	Adjust	50			
K1001 Ref.	TEST	TEST CONDITIONS	AQL %	INSP. LEVEL	Sym- bol	LIMITS		UNITS
						MIN.	MAX.	
	Group A							
	Reverse Grid Current		-	100%	-I _{g1}	-	2.5	μA
	Negative Grid volts		-	100%	-V _{g1}	9.5	15.5	V
	Screen Current		-	100%	I _{g2}	-	8.0	mA
	Mutual Conductance	Peak Grid swing ±0.5V	-	100%	gm	6.5	10.5	mA/V
	Anode Current Tail	V _{g1} = -30V	-	100%	I _{tail}	-	400	μA
	Anode Current	V _{g1} = -2V	-	100%	I _a	75	-	mA
	Emission (1)	V _a =V _{g2} =V _{g3} =V _{g1} =30V	-	100%	I _k	250	-	mA
	High Voltage	V _a =7kV. V _{g2} =150V	-	100%	I _a	-	60	μA
	Tail Test	V _{g3} =0. V _{g1} =-80V						
	Peak Anode Current	V _a =7kV. V _{g2} =600V V _{g3} =0. V _{g1} =-160 Note 1.	-	100%	I _{apk}	2.0	-	A
	Emission 2	V _a =V _{g2} =V _{g3} =V _{g1} = 250V peak. Note 2.	-	100%	I _{apk}	2.5	-	A
	Group B							
	Heater Current		1.5	II	I _h	1.08	1.32	A
	Group C							
	Inner Amplification Factor	Adjust V _{g1} for I _a =50mA. Reduce V _{g1} by 2V, increase V _{g2} to maintain I _a =50mA.	6.5	I _c	μg _{1, g2}	7	10	-
	g ₃ Negative Cut-off Voltage.	V _a =100V, V _{g2} =50V V _{g1} =0. Adjust V _{g3} for I _a =50 μA	6.5	I _c	-V _{g3}	65	110	V
AIII	Capacitances	Measured on 1 Mc/s bridge with valve mounted in a fully shielded socket. Note 3.	6.5	I _c	C _{in} C _{out} C _{g1}	10.0 8.0 0.2	17.0 16.0 0.6	pF pF pF

Notes

- Anode load = 2.2kΩ in series with a 1.6 mH choke. The valve to be driven with 2μsec. pulses at a p.r.f. = 1000 cps. so that the grid voltage rises to +50V max.
- Valve to be strapped as a diode and a pulse of 250V peak applied from an approved pulse emission test unit.
- The capacitance connections shall be:-

Test	Pin connections		
	HP	LP	E
C in	2	1,3,4,5,6,7,8,9,C	TC
C out	TC	1,3,4,5,6,7,8,9,C	2
C _{g1}	TC	2	1,3,4,5,6,7,8,9,C