MINISTRY OF SUPPLY R.R.E.

VALVE ELECTRONIC **CV2230**

Specification MOS/CV2230 Issue 4 Dated April 1955 To be read in conjunction with K1001	SECURITY Specification: Unclassified Valve: Unclassified

← Indicates a change

TYPE OF VALVE:-	Cathode Ray Tube
TYPE OF DEFLECTION:-	Magnetic
TYPE OF FOCUS:-	Electrostatic
BULB:-	Glass. Internally coated with conductive coating
→ SCREEN:-	BB1 Aluminium backed.
PROTOTYPE:-	VCRX361

RATING			Note
→ Heater Voltage	(V)	6.3	
→ Heater Current	(A)	0.6	
Max. First Anode Voltage	(kV)	1.45	
Max. Third Anode Voltage	(kV)	8.0	
TYPICAL OPERATING CONDITIONS			
Third Anode Voltage	(kV)	7.0	
Second Anode Voltage	(kV)	1.0	
First Anode Voltage	(kV)	1.25	A

MARKING

See K1001/4

BASE

I.O.

CONNECTIONS

Pin	Electrode
1	No connection
2	a1
3	a2
4	No connection
5	g
6	k
7	h
8	h
S.C.	a3

SIDE CONTACT

B.S.448 CT7

DIMENSIONS

See drawing page 5 ←

PACKAGING

See K1005

NOTES

A. The first anode must always be at least 50V positive to the second anode.

To be performed in addition to those applicable In K1001

Clause	Test Conditions	Tests	Limits Min.	Limits Max.	No. Tested
a	See K1001/5A.13	Capacitances (pF)			
		1. Grid to all other electrodes		20	5%
		2. Cathode to all other electrodes		15	(5)
	FOR ALL TESTS GIVEN BELOW V_h = 6.3V				
b		Ih (A)	0.28	0.66	100%
	FOR ALL TESTS GIVEN BELOW Va1 = 1.25 kV, Va3 = 7.0kV				
c	Vg adjusted for cut-off and Va2 adjusted for optimum focus	-Vg (V) Value to be noted	40	80	100%
d	Vg adjusted to give a light output of 0.04 "orthochromatic candela" from a raster of convenient size. Va2 adjusted for optimum focus. See K1001/5A.9.	1. -Vg (V)	1		100%
		2. Change in Vg from that in test "c" (V)		20	100%
		3. Beam current (uA)	1.5	12	5%(5)
		4. The beam current shall increase continuously from zero to that required for 0.04 "orthochromatic candela."			100%
→ e	With a sine or linear line scan of nominal writing speed 3 mm/uS in X and Y directions successively. Va2 adjusted for simultaneous compromise focus in both axes. The grid to be pulsed positively from cut off by the voltage found in test d2. at a nominal pulse duration and recurrence frequency of 100 uS and 100 c/s respectively.	1. Line width at the centre of the trace (mm)		0.3	100%
		2. Va2 (V)	900	1200	100%

TESTS (Contd)

CV2230

Clause	Test Conditions	Tests	Limits Min.	Limits Max.	No. Tested
f	See K1001/5A.3.2. (a) Vg -80V. (b) Alternative method Resistor 10 Megohms	Grid Insulation Leakage current (uA) Increase in voltmeter reading	- -	8 100%	100%
g	Va2 as in "d" Vg any convenient value No deflecting field	Deviation of spot from centre of screen (mm)	-	5	100%
→ h	Adjust Vg for cut off. With no deflecting field grid to be pulsed positively by the drive value found in test "d.2" at a pulse length of 10 uS and repetition frequency of 10 kc/s. Va2 adjusted for a defocussed spot not smaller than 5 mm. diameter.	Afterglow (usec) Decay time to 30% of the excitation level. To be measured by an approved method.		4	5% (5)
k	Defocussed raster scan to cover an area of at least 80 x 18 mm. centred on the geometric centre of the screen and on any diameter of the screen. Vg any convenient value. (See Notes 1 and 2)	Screen Blemishes in the stated area. Bubbles and Dead Spots 0.15 to 0.3 mm 0.3 to 0.6 mm 0.6 to 1.0 mm Bright and Colour Spots	 - - - None noticeable at the normal reading distance of the observer	 10 5 2	 100% 100%
→ l	Va2 350V Increase Vg positively from cut-off until the beam fills a sharp edged aperture.	Diameter of beam on the screen (mm)		25	5%(5)

Clause	Test Conditions	Tests	Limits Min.	Limits Max.	No. Tested
→ m	Using an approved deflection coil, tube to be scanned with a suitable sweep. Adjust Vg for any convenient light intensity and Va2 for optimum focus.	Useful Screen Area There shall be no neck shadowing over the area stated in clause "k"			100%
→ n	The external surface of the screen to lie between parallel planes whose separation does not exceed 0.25 mm. over a circle of diameter 80 mm centred on the geometric centre of the screen.				100%

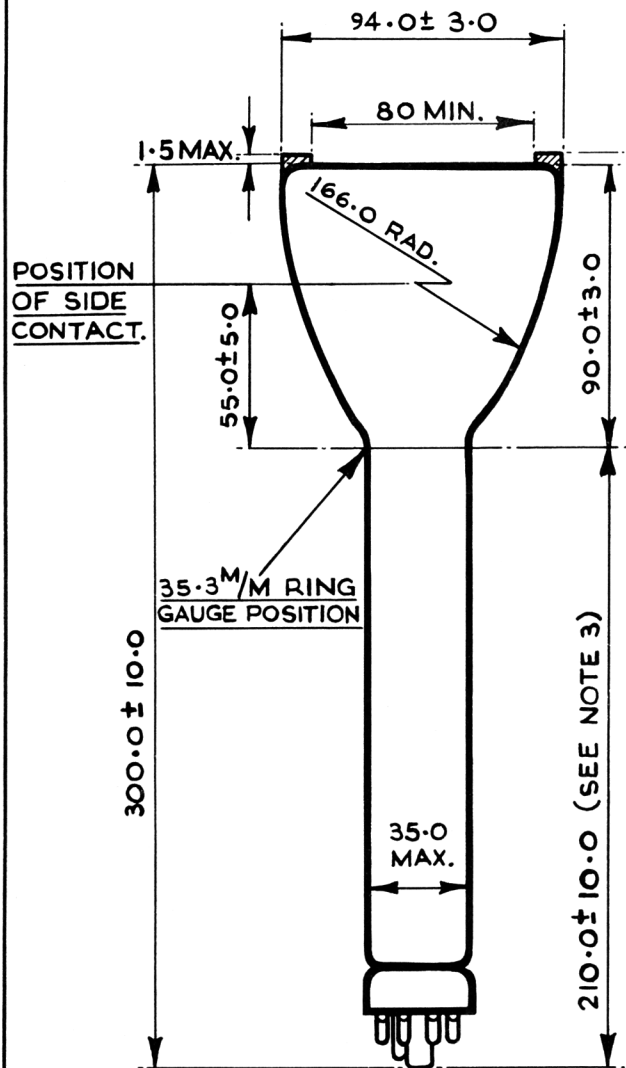
NOTES

Notes

1. If a specific area on one diameter only satisfies the specification then that diameter shall be indelibly marked at the centre of each end of the major axis of the raster on the tube face outside the useful screen area.

2. If two or more blemishes are separated by a distance not greater than the maximum dimension of the largest blemish in the group then the group of blemishes shall be considered as one blemish of dimension equal to the maximum overall dimension of the group.

C.V. 2230



NOTES

1. ANY DEVIATION FROM THE SPECIFIED FLATNESS OF THE TUBE FACE SHALL BE LIMITED TO THE SHADED AREA
2. ANGLE OF PLANE THROUGH ANODE AND AXIS OF TUBE AND PLANE THROUGH BASE SPIGOT KEY AND AXIS OF TUBE TO BE WITHIN ± 15°.
3. OVER THIS LENGTH STRAIGHTNESS SHALL BE SUFFICIENTLY GOOD FOR A GAUGE 35·3 mm. MAX. INTERNAL DIA. AND 100mm. LENGTH TO SLIDE FREELY OVER NECK AND BASE.
4. THE BULB TO BE PREFABRICATED, THE FACE MADE FROM A FLAT GLASS PLATE TO LIE BETWEEN PLANES 3·0 ± 0·56mm TESTED CENTRALLY IN "GO, NO GO" GAUGES 80mm LONG.

ALL DIMENSIONS IN MILLIMETRES.