CT 71

Oscilloscope Tube

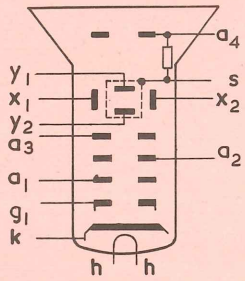
D16-100..

PRELIMINARY DATA

GENERAL

This 10 cm x 10 cm square faced tube with electrostatic focusing and deflection is designed for use as an x-y plotter. The tube incorporates spiral post deflection acceleration.

Heater voltage	V_h	6.3 V
Heater current	I_h	0.3 A



ABSOLUTE RATINGS

		Max	Min	
Fourth anode voltage	V_{a4}	6.0	1.5	kV
Third anode voltage	V_{a3}	2.3	0.7	kV
Second anode voltage	V_{a2}	1.0	0	kV
First anode voltage	V_{a1}	2.2	0.7	kV
Negative grid voltage	$-V_{g1}$	200	1.0	V
Peak x plate to third anode voltage	$v_{x-a3(pk)}$	500	-	V
Peak y plate to third anode voltage	$v_{y-a3(pk)}$	500	-	V
x plate to third anode resistance	R_{x-a3}	5.0	-	MΩ
y plate to third anode resistance	R_{y-a3}	100	-	kΩ
Control grid to cathode resistance	R_{g1-k}	1.5	-	MΩ
Second anode current	I_{a2}	10	-	μA
P.D.A. ratio (V_{a4}/V_{a3})		3.2:1		
Helix resistance		-	50	MΩ

All voltages referred to cathode unless otherwise stated.

PHOSPHOR SCREEN

This type is usually supplied with GH phosphor (D16-100GH) giving a green trace of medium short persistence. Other phosphor screens can be made available to special order.

BRIMAR

INTER-ELECTRODE CAPACITANCES

Grid 1 to all	$C_{g1\text{-all}}$	10.5 pF
Cathode to all	$C_{k\text{-all}}$	3.5 pF
x_1 plate to x_2 plate	$C_{x1\text{-}x2}$	2.3 pF
y_1 plate to y_2 plate	$C_{y1\text{-}y2}$	1.0 pF
x_1 plate to all, less x_2 plate	$C_{x1\text{-all, less x2}}$	6.2 pF
x_2 plate to all, less x_1 plate	$C_{x2\text{-all, less x1}}$	6.4 pF
y_1 plate to all, less y_2 plate	$C_{y1\text{-all, less y2}}$	5.4 pF
y_2 plate to all, less y_1 plate	$C_{y2\text{-all, less y1}}$	5.2 pF
x_1, x_2 plates to y_1, y_2 plates	$C_{x1,x2\text{-}y1,y2}$	1.2 pF
Grid 1 to x_1, x_2 plates	$C_{g1\text{-}x1,x2}$	0.8 pF
Grid 1 to y_1, y_2 plates	$C_{g1\text{-}y1,y2}$	0.8 pF

TYPICAL OPERATION - voltages with respect to cathode.

Fourth anode voltage	V_{a4}	2.5	4.0	4.5	kV
Mean deflector plate potential		1250	2000	1500	V
Third anode voltage for optimum astigmatism correction	V_{a3}	1200 to 1300	1925 to 2075	1425 to 1575	V
Second anode voltage for optimum focus	V_{a2}	250 to 450	400 to 720	280 to 580	V
First anode voltage	V_{a1}	1250	2000	1500	V
Shield voltage for optimum raster shape	V_s	1200 to 1300	1925 to 2075	1425 to 1575	V
Control grid voltage for cut-off	V_{g1}	-45 to -85	-72 to -135	-53 to -105	V
x deflection coefficient	D_x	13.5 to 17	21.6 to 27.2	18.5 to 23.5	V/cm
y deflection coefficient	D_y	13.5 to 17	21.6 to 27.2	18.5 to 23.5	V/cm
Line width at 10 μA beam current					
Shrinking raster measurement at centre		0.50	0.31	0.32	mm
Shrinking raster measurement at corner		0.68	0.58	0.58	mm
Grid drive for 10 μA beam current (approx.)		28	26	27	V

RASTER DISTORTION AND ALIGNMENT

The following data applies for the typical operation conditions.

The undeflected spot will fall in a circle of 6 mm radius about the centre of the tube face.

Raster distortion: the edges of a test raster will fall between two concentric squares 10 cm x 10 cm and 9.7 cm x 9.7 cm at a p.d.a. ratio not greater than 2:1.

Rectangularity of x and y axes is 90° ± 1°.

It is not advisable that the deflector plates be run asymmetrically, or severe raster distortion could result and the focus quality could not be guaranteed. It is preferable that the tube be operated with mean x and y potentials equal, otherwise the raster distortion and focus quality will suffer and the limits for V_{a3} and V_S will differ from specification.

It is recommended that the maximum p.d.a. ratio should not be exceeded as this may reduce scan area.

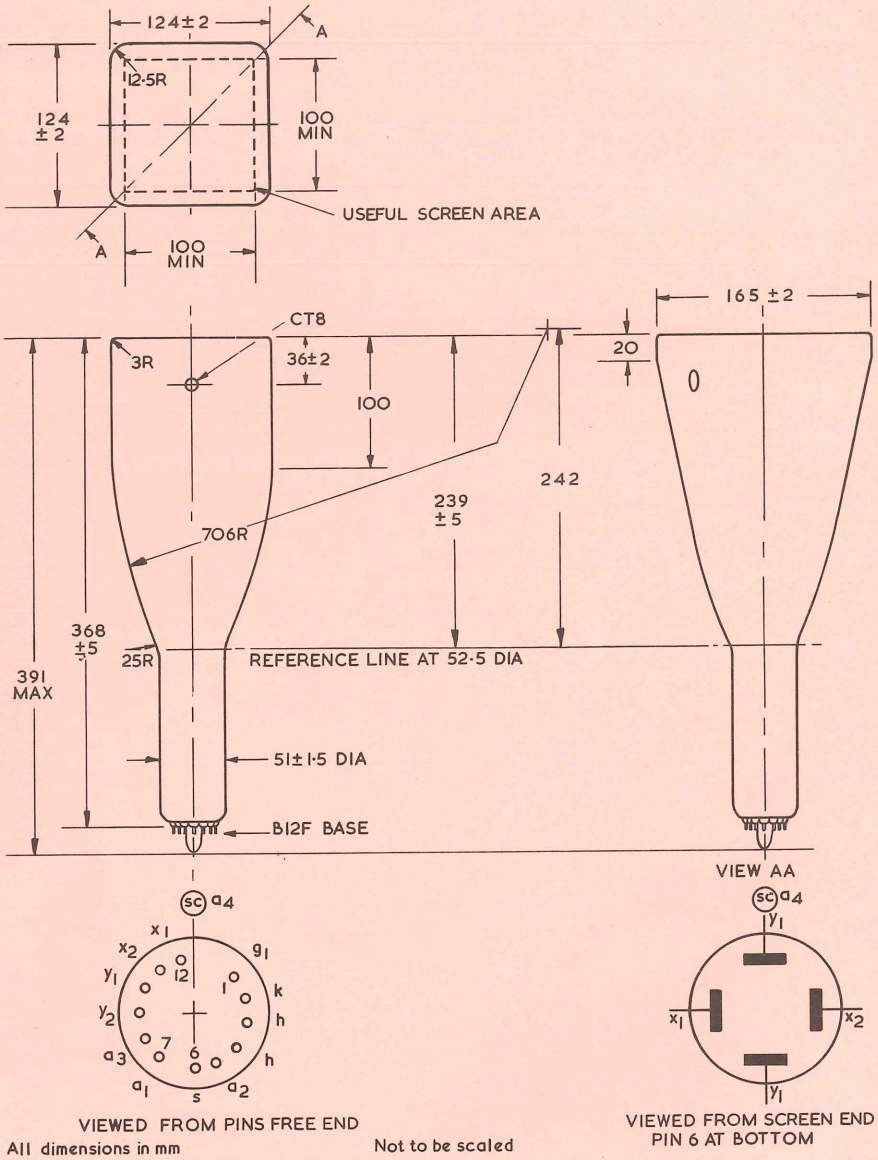
MAGNETIC SHIELDING

Adequate magnetic shielding is required. In addition due attention should be paid to the position of the tube relative to transformers and chokes.

TUBE WEIGHT (approximate) 1.2 kg

MOUNTING POSITION - unrestricted.

It is advisable to support the tube near the screen and at a second point on the parallel neck near the base. The tube should not be subjected to any stress from the use of clamps and should not be suspended by the base.



All dimensions in mm

Not to be scaled