DESCRIPTION
Low voltage cathode ray tube for oscilloscopes

ELECTRICAL DATA
Heating
Heater voltage
Heater current
Focusing method
deflective
Deflection method
electrostatic
double electrostatic
$D_1 D_2$ symmetrical
$D_3 D_4$ symmetrical

Direct interelectrode capacitances
$D_1$ to all other electrodes except $D_2$ $3.7 \mu F$
$D_2$ to all other electrodes except $D_1$ $3.0 \mu F$
$D_3$ to all other electrodes except $D_4$ $2.5 \mu F$
$D_4$ to all other electrodes except $D_3$ $2.5 \mu F$
$D_1$ to $D_2$ $1.7 \mu F$
$D_3$ to $D_4$ $1.0 \mu F$
Grid No. 1 to all other electrodes $7.6 \mu F$
Cathode to all other electrodes $3.2 \mu F$

OPTICAL DATA
Phosphor number $P_1$
Fluorescent color yellowish green
Persistence medium

MECHANICAL DATA
Cathode coated unipotential
Outline see drawing
de plus 12 p
Base duodecal
Mounting position any

LINE WIDTH
Measured on a circle of 2" diameter at
Grid No. 2 and 4 voltage = 500 V
Beam current = 0.5 \mu A

0.02"

MAXIMUM RATINGS (Design Center Values)

Grid No. 2 and 4 voltage $800 \text{ V}$
$400 \text{ V}$

Grid No. 3 voltage max. $200 \text{ V}$

Grid No. 1 voltage \{(negative max. $160 \text{ V}$
\{(positive max. $0 \text{ V}$

Peak voltage between deflection plates $D_1$ and $D_2$ max. $750 \text{ V}$
Peak voltage between deflection plates $D_3$ and $D_4$ max. $450 \text{ V}$
Cathode to heater voltage max. $125 \text{ V}$
Screen dissipation max. $19.4 \text{ mW/sq. inch}$
Grid No. 2 and 4 dissipation max. $0.5 \text{ W}$

MAXIMUM CIRCUIT VALUES

Grid No. 1 circuit resistance max. $0.5 \text{ M}\Omega$
Deflection plate circuit resistance max. $5 \text{ M}\Omega$

from JEDEC release #4044, Dec. 24, 1962
TYPICAL CHARACTERISTICS

Grid No. 2 and 4 voltage 500 V
Grid No. 3 voltage 0 to 120 V\(^1\)
Negative grid No. 1 bias 50 to 100 V\(^2\)
Deflection factor
\[
\begin{pmatrix}
D_1 & D_2 \\
D_3 & D_4
\end{pmatrix}
\]
84.6-105.8 V/inch
47.8-59.1 V/inch

LOCATION OF THE DEFLECTION PLATES WITH RESPECT TO THE BASE

The angle between a plane through the tube axis and perpendicular to the \(D_1 - D_2\) deflection plates and a plane through the tubes axis and base-pin No. 9 is 90 ±10°.

REMARK

A transparent conductive coating connected to \((\phi_2 + \phi_4)\) is present between glass and fluorescent layer. This makes possible application of the tube with \((\phi_2 + \phi_4)\) on high potential with respect to earth without the risk of the picture being distorted by touching the face. Moreover, the contrast will be improved.

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1) For calculation of the grid No. 3 potentiometer a grid No. 3 current of min. -15 \(\mu\)A and max. +10 \(\mu\)A must be taken into account.

2) Negative grid No. 1 voltage for visual extinction of the focused spot.
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Low voltage cathode ray tube for oscilloscopes

TYPICAL CHARACTERISTICS
Grid No. 2 an 4 voltage
Deflection factor
\[ \frac{D_1D_2}{D_3D_4} \]

500 V
84.6-105.8 V/inch
59.1-72.6 V/inch

For further data please refer to 3AMP1A

OCTOBER 1962