CRT DATA

T3100

Revision A 4-26-65

DESCRIPTION

The T3100 is a 3-inch, flat-faced cathode-ray tube designed for oscilloscope use. The T3100 has electrostatic focus and deflection.

ELECTRICAL DATA

Focusing method	Electrostatic
Deflecting method	Electrostatic
Direct interelectrode capacitance, approximate:	
Cathode to all other electrodes	4.3 pf
Grid no. 1 to all other electrodes	5.5 pf
D1 to D2	2.4 pf
D3 to D4	1.5 pf
D1 to all other electrodes	8.4 pf
D2 to all other electrodes	8.7 pf
D3 to all other electrodes	5.8 pf
D4 to all other electrodes	6.4 pf

MECHANICAL DATA

Overall length	11-7/16 ±1/8 inches
Greatest bulb diameter	3 +1/16 or -1/32 inches
Minimum useful screen diameter	2-3/4 inches
Bulb number	J24ZG1
Base	B12-43
Basing	12T
Base alignment:	
Pin no. 12 aligns with D3-D4 trace	±10°
Positive voltage on D1 deflects beam approximately toward pin no.3	
Positive voltage on D3 deflects beam approximately toward pin no. 12	
Angle between D1-D2 and D3-D4 trace	90° ±1°

RATINGS (absolute maximum values)[1]

Heater voltage	6.3 volts ac
Heater current at 6.4 volts	0.6 ±10% amp
Screen voltage	2500 volts dc max
Isolation shield voltage	2500 volts dc max
Average deflection plate voltage	2500 volts dc max
Astigmatism electrode voltage	2500 volts dc max
Focusing electrode voltage	1000 volts dc max
Accelerator voltage	2500 volts dc max
Accelerator input	5 watts max

Grid no. 1 voltage:	
Negative-bias value	150 volts dc max
Positive-bias value	0 volts dc max
Positive-peak value	2 volts dc max
Peak heater-cathode voltage:	
Heater negative to cathode:	
During warm-up period not to exceed 15 seconds	180 volts dc max
After equipment warm-up period	125 volts dc max
Heater positive to cathode	125 volts dc max
Peak voltage between astigmatism and/or any deflection electrode	500 volts dc max

TYPICAL OPERATING CONDITIONS[1]

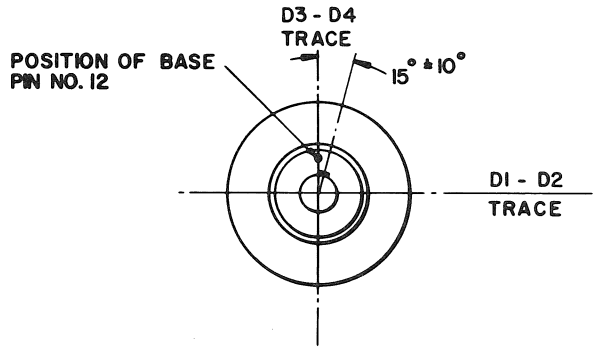
Screen, isolation shield, astigmatism and accelerator voltage[2]	1775 to 1975 volts dc
Average deflection plate voltage	1840 volts dc
Focusing electrode voltage[3]	300 to 700 volts dc
Grid no. 1 voltage[4]	-55 to -95 volts dc
Deflection factors:	
D1 and D2[5]	19.1 to 23.2 volts dc/div
D3 and D4[5]	13.1 to 16.1 volts dc/div
Useful scan D1-D2[6]	10 div
Useful scan D3-D4[6]	8 div
Focusing electrode current for any operating condition	-10 μa to +10μa
Spot position (undeflected)[7]	within ±1/8 in. from geometric center
Pattern distortion at 100% useful scan[8]	1.9% max

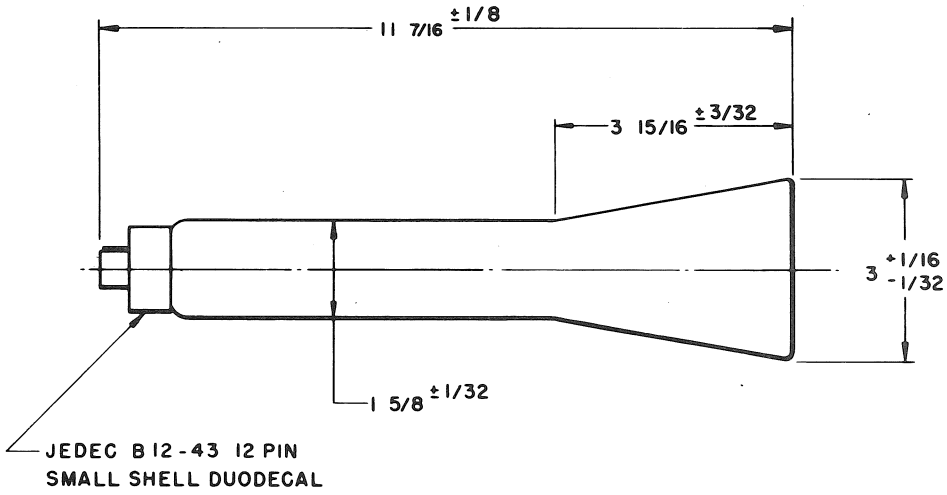
MAXIMUM CIRCUIT VALUES

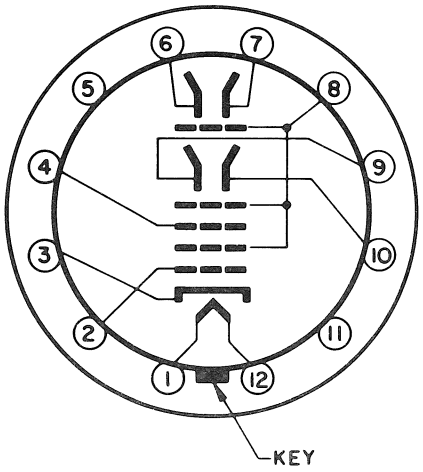
Grid no. 1 circuit resistance	1.5 MΩ max

NOTES

1. All voltages taken with respect to cathode.
2. The conductive wall coating, isolation shield, astigmatism electrode and accelerator are connected internally. With the proper potential, pattern distortion is minimum and focus optimum.
3. Recommended range. Adjust for best overall focus.
4. Visual extinction of undeflected spot.
5. Major graticule divisions are 0.250 inch.
6. The deflection plates intercept part of the electron beam near the edge of scan; therefore, a low-impedance deflection drive is desirable.
7. Connect free deflection electrodes to accelerator.
8. With a 8 x 10 div rectangular raster centered on the face of the tube, the raster edges will not deviate from straight parallel lines by more than 0.5 minor div total on the left and right edges, nor by more than 0.5 minor div total at the top and bottom.







TUBE SCHEMATIC

BASE CONNECTIONS

1, 12	HEATER
2	GRID NO. 1
3	CATHODE
4	FOCUSING ELECTRODE
5, 11	N.C.
6	D1
7	D2
8	ACCELERATOR ASTIGMATISM ELECTRODE ISOLATION SHIELD
9	D4
10	D3

MARK	DATE	DESCRIPTION	BY	APPR

CATHODE-RAY TUBE DIVISION
TEKTRONIX, INC.
PORTLAND, OREGON, U.S.A.

TUBE TYPE: T 3100

DATE: 7-28-64

MOD. C

4-26-65