



CRT DATA

T5201

4-19-68

CRT Engineering

DESCRIPTION

The T5201 is a 5-inch, flat-faced cathode-ray tube designed for oscilloscope use. The T5201 has electrostatic focus and deflection, and a lighted internal graticule.

ELECTRICAL DATA

Focusing method	Electrostatic
Deflecting method	Electrostatic
Direct interelectrode capacitance, approximate:	
Cathode to all other electrodes	4.0 pF
Grid No. 1 to all other electrodes	7.7 pF
D1 to D2	2.7 pF
D3 to D4	1.2 pF
D1 to all other electrodes	5.6 pF
D2 to all other electrodes	5.6 pF
D3 to all other electrodes	3.5 pF
D4 to all other electrodes	2.5 pF

MECHANICAL DATA

Overall length	16.768 ± .075 inches
Greatest bulb diameter	5.090 ± .060 inches
Minimum useful screen diameter	4.500 inches
Bulb number	LEA-304
Base	Special
Basing	Special
Base alignment:	
Pin no. 5 aligns with D3-D4 trace	± 10°
Positive voltage on D1 deflects beam approximately toward pin no. 1	
Positive voltage on D3 deflects beam approximately toward pin no. 11	
Angle between D1-D2 and D3-D4 trace	90 ± 1°

RATINGS (absolute maximum values)¹

Heater voltage	6.3 V AC
Heater current at 6.3 volts	0.6 ± 10% A
Screen voltage	5000 V DC max
Isolation shield voltage	5000 V DC max
Average deflection plate voltage	5000 V DC max
Astigmatism electrode voltage	5000 V DC max
Focusing electrode voltage	1500 V DC max
Accelerator voltage	5000 V DC max
B2 blanking plate voltage	5000 V DC max
Accelerator input	8 watts max

RATINGS (continued)

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

TYPICAL OPERATING CONDITIONS¹

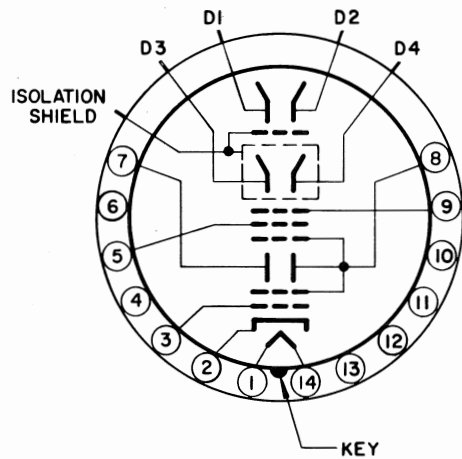
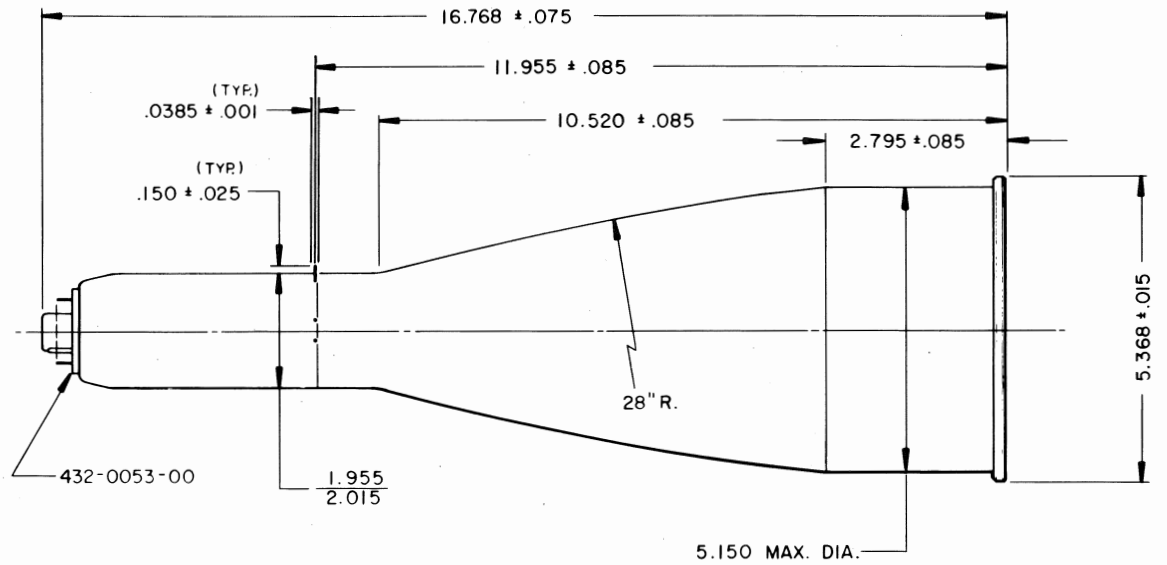
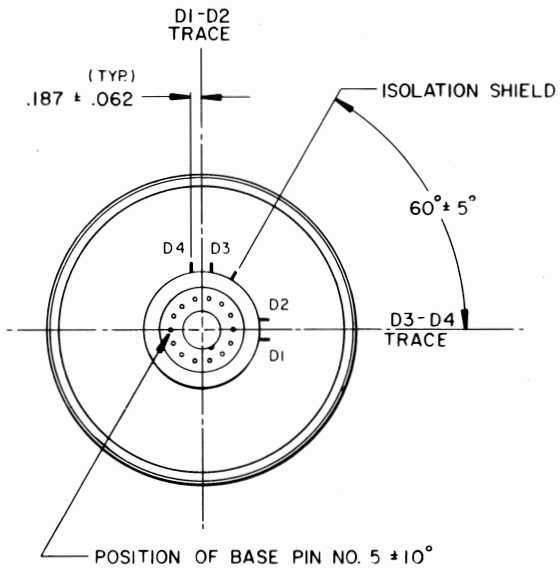
Screen voltage ²	3875 to 4150 V DC
Isolation shield voltage ²	3875 to 4150 V DC
D3-D4 shield voltage ²	3875 to 4150 V DC
Average deflection plate voltage	4030 V DC
Astigmatism electrode voltage ³	3875 to 4150 V DC
Focusing electrode voltage ³	540 to 890 V DC
Accelerator and B1 blanking plate voltage	4015 V DC
Grid no. 1 voltage ⁴	-60 to -100 V DC
Deflection factors:	
D1 and D2	20.0 to 23.5 V DC/cm
D3 and D4	20.0 to 23.0 V DC/cm
Useful scan D1-D2 ⁵	11 cm
Useful scan D3-D4 ⁵	11 cm
Blanking plate voltage (B1-B2) for visual cutoff	
at $I_k = 200 \mu\text{A}$	± 100 V DC max
Focusing electrode current for any operating condition	- 10 μA to + 10 μA
Spot position (undeflected) ⁶	5 mm from geometric center
Pattern distortion at 100% useful scan ⁷	1.5% max

MAXIMUM CIRCUIT VALUES

Grid no. 1 circuit resistance	1.5 M Ω max
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NOTES

1. All voltages taken with respect to cathode.
2. The isolation shield, conductive wall coating and the D3-D4 shields are connected internally. Pattern distortion is minimized by proper alignment of the potential.
3. Recommended range. Adjust for best overall focus.
4. Visual extinction of undeflected spot.
5. The deflection plates intercept part of the electron beam near the edge of scan; therefore, a low-impedance deflection drive is desirable.
6. Connect free deflection electrodes to accelerator.
7. With a 11 x 11 cm rectangular raster center on the face of the tube, the raster edges will not deviate from straight parallel lines by more than 1.0 mm total on the left and right edges, nor by more than 1.0 mm total at the top and bottom.



TUBE SCHEMATIC

BASE CONNECTIONS

- 1,14 HEATER
- 2 CATHODE
- 3 GRID NO. I.
- 4,6,10, 11,12,13 N.C.
- 5 FOCUSING ELECTRODE
- 7 B2 BLANKING PLATE
- 8 ACCELERATOR
B1 BLANKING PLATE RETURN
- 9 ASTIGMATISM ELECTRODE

	DISPLAY DEVICES DEVELOPMENT TEKTRONIX, INC. BEAVERTON ORE., U. S. A. 97005	
	TUBE TYPE: <h1 style="margin: 0;">T5201</h1>	DATE: <hr/> MOD.: <hr/>