



# TECHNICAL DATA

TEKTRONIX  
T536P

T5360

11/29/61

The Tektronix Type T536P\_\_\_ is a 5-inch flat-faced cathode ray tube with electrostatic focus and deflection and a helical post-accelerator.

## MECHANICAL SPECIFICATIONS:

Overall length .....	17 <sup>1</sup> / <sub>8</sub> ± <sup>3</sup> / <sub>16</sub> inches
Greatest diameter of bulb .....	5 <sup>5</sup> / <sub>16</sub> inches
Bulb contact .....	J1-21
Neck pin diameter .....	0.040 ± .002 inch
Base .....	JEDEC NO. B14-38
Bulb and base alignment .....	See outline drawing

## ELECTRICAL DATA:

Heater voltage .....	6.3 volts RMS
Heater current .....	0.6 ± 10% ampere RMS
Helix resistance .....	200 megohms Min.

### Capacitance, interelectrode (typical values)

Grid No. 1 to all other electrodes .....	11.0 μμf
Cathode to all other electrodes .....	4.8 μμf
DJ <sub>1</sub> to DJ <sub>2</sub> .....	2.4 μμf
DJ <sub>1</sub> to all other electrodes except DJ <sub>2</sub> .....	3.6 μμf
DJ <sub>2</sub> to all other electrodes except DJ <sub>1</sub> .....	3.3 μμf
DJ <sub>3</sub> to DJ <sub>4</sub> .....	1.7 μμf
DJ <sub>3</sub> to all other electrodes except DJ <sub>4</sub> .....	3.5 μμf
DJ <sub>4</sub> to all other electrodes except DJ <sub>3</sub> .....	2.9 μμf

### Deflection polarity

- Positive voltage on DJ<sub>1</sub> deflects beam toward pin No. 4
- Positive voltage on DJ<sub>3</sub> deflects beam toward pin No. 1

### Geometry (measured under typical operating conditions and PDA ratio of 3.8)

Minimum useful scan DJ <sub>1</sub> -DJ <sub>2</sub> .....	8 cm
Minimum useful scan DJ <sub>3</sub> -DJ <sub>4</sub> .....	8 cm
Trace orthogonality .....	90° ± 1°
Centering of undeflected spot with respect to geometric center (deflection electrodes connected to grid No. 5) .....	5 mm
Raster distortion .....	1% Max.

**MAXIMUM RATINGS (all measurements taken with respect to cathode):**

Post-accelerator voltage .....	6,000 volts Max.
Accelerator and deflection system (1st anode, 2nd anode, deflection plates, deflection plate shields, isolation shield, lower helix) .....	3,000 volts Max.
Focus electrode	
Voltage range .....	0 to 800 volts
Maximum current to focus electrode .....	$\pm 10 \mu a$
Peak voltage between electrodes	
Plate to plate .....	500 volts Max.
Plate to all other electrodes in the accelerator and deflection system .....	500 volts Max.
Between any two electrodes in the accelerator and deflection system .....	500 volts Max.
Grid No. 1 voltage	
Negative bias value .....	200 volts Max.
Positive bias value .....	0 volts Max.
Peak positive bias value .....	2 volts Max.
Peak heater-cathode value	
Heater negative with respect to cathode .....	125 volts Max.
Heater positive with respect to cathode .....	125 volts Max.
Maximum average electrode power dissipation	
1st anode .....	6 watts Max.

**TYPICAL OPERATING CONDITIONS (all measurements taken with respect to cathode):**

Electrode designation	Symbol	
Post-accelerator voltage .....	Epa	4,000 volts DC
Lower helix voltage .....	Elh	} 900 to 1150 volts DC <sup>1</sup>
Isolation shield voltage .....	Eg6	
DJ <sub>3</sub> -DJ <sub>4</sub> deflection shield voltage .....	Es1	
Average of deflection plates .....	Edp	1050 volts DC
Accelerator voltage .....	Eg2, Eg4	1050 volts DC <sup>2</sup>
Grid No. 3 voltage (focus) .....	Eg3	110 to 325 volts DC
Grid No. 1 voltage (control) .....	Eg1	-45 to -60 volts (cutoff)
Deflection factors (nominal)		
DJ <sub>1</sub> -DJ <sub>2</sub> .....		12 volts/cm
DJ <sub>3</sub> -DJ <sub>4</sub> .....		12 volts/cm

Useful scan <sup>3</sup>

DJ <sub>1</sub> -DJ <sub>2</sub> .....	8 cm
DJ <sub>3</sub> -DJ <sub>4</sub> .....	8 cm

DESIGN RANGES:

Minimum scan (PDA ratio 3.8)

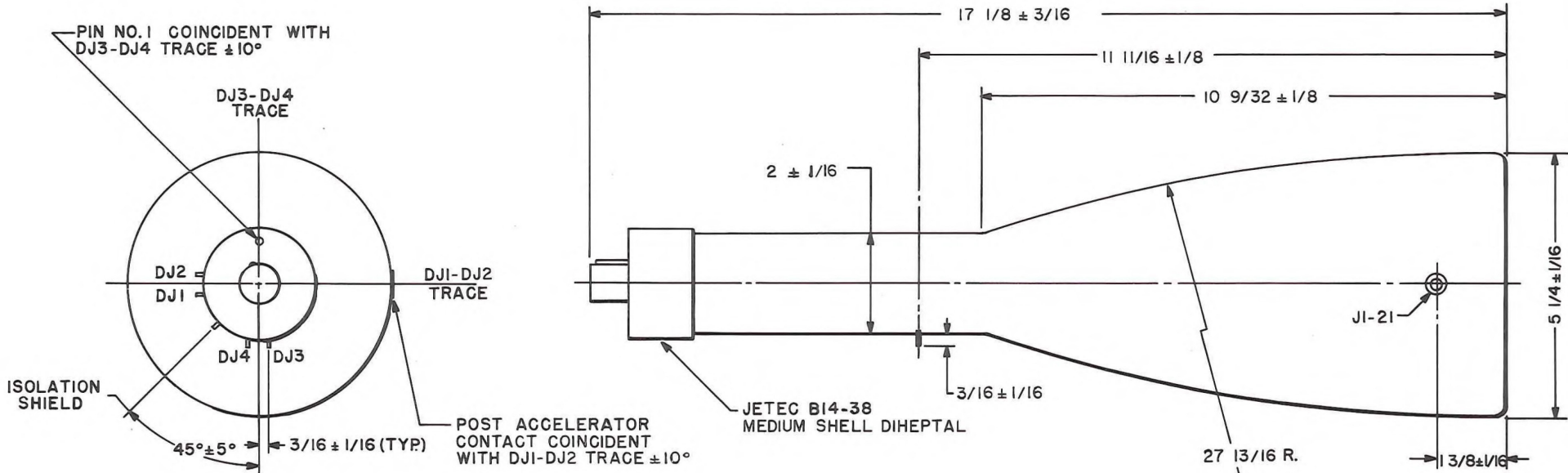
DJ <sub>1</sub> -DJ <sub>2</sub> .....	8 cm
DJ <sub>3</sub> -DJ <sub>4</sub> .....	8 cm

Deflection factors (PDA ratio 3.8)

DJ <sub>1</sub> -DJ <sub>2</sub> .....	10.0 to 12.9 v/cm/kv of Edp
DJ <sub>3</sub> -DJ <sub>4</sub> .....	10.0 to 12.9 v/cm/kv of Edp
Grid No. 1 voltage for extinction of undeflected focused spot .....	5.7% of Edp
Focus electrode voltage (recommended range) .....	10% to 31% of Edp

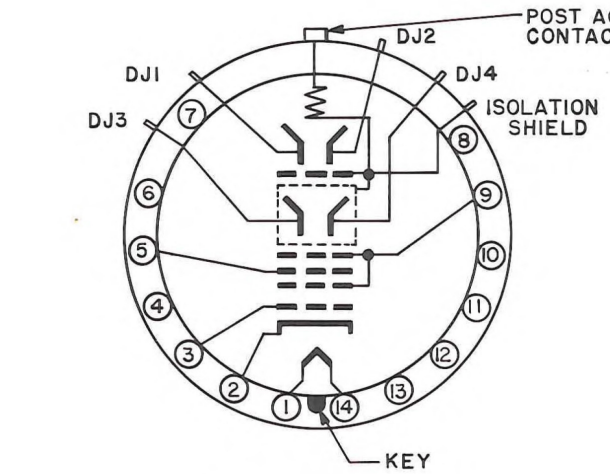
NOTES:

1. Lower helix and isolation shield are connected internally. Pattern distortion minimal with proper potential.
2. Grid No. 4 (astigmatism) and grid No. 2 (1st anode) are connected internally and the accelerating voltage is variable from 900 volts to 1150 volts to provide for astigmatism control.
3. The deflection plates intercept part of the electron beam near the edge of the scan.



JETEC B14-38  
MEDIUM SHELL DIHEPTAL

JI-21



BASE SCHEMATIC

**BASE CONNECTIONS**

- 1, 14 HEATER
- 2 CATHODE
- 3 GRID NO. 1
- 4, 6, 7, 8, 10, N.C.
- 11, 12, 13
- 5 GRID NO. 3 (FOCUS)
- 9 GRID NO. 2 & NO. 4 (ACCELERATOR)

MARK	DATE	DESCRIPTION	BY	APPR
		CATHODE-RAY TUBE DIVISION <b>TEKTRONIX, INC.</b> PORTLAND, OREGON, U.S.A.		
		TUBE TYPE:	<b>T 536</b>	
			DATE:	12 / 8 / 61
			MOD.	