TECHNICAL DATA

TEKTRONIX T517P___

T0541

2/22/61

The Tektronix Type T517P___ is an aluminzed 5" flat-faced cathode ray tube with electrostatic focus and deflection and a helical post accelerator.

MECHANICAL SPECIFICATIONS:

Overall Length	18¼±3/16 inches
Greatest Diameter of Bulb	5 5/16 inches
Bulb Contact	J1-21
Neck Pin Diameter	0.040±.002 inches
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% Amperes RMS
Helix Resistance Range	200 to 600 Megohms
Capacitance, Interelectrode (Typical Values):	
Grid No. 1 to all other electrodes	8.3 μμf
Cathode to all other electrodes	4.6 μμf
DJ_1 to DJ_2	1.8 μμf
DJ_1 to all other electrodes except DJ_2	3.7 μμf
DJ_2 to all other electrodes except DJ_1	3.7 μμf
DJ_3 to DJ_4	1.5 μμf
DJ_3 to all other electrodes except DJ_4	3.2 μμf
DJ_4 to all other electrodes except DJ_3	3.2 μμf

Deflection Polarity:

Positive Voltage on DJ_1 deflects beam toward Pin No. 4

Positive Voltage on DJ_3 deflects beam toward Pin No. 1

Geometry: (Measured under typical operating conditions and PDA Ratio of 6)

Minimum useful scan DJ_1-DJ_2	8 cm
Minimum useful scan DJ_3-DJ_4	4 cm
Trace Orthogonality	90°±1°
Centering of undeflected spot with respect to geometric center (Deflection electrodes connected to Grid No. 5)	5 mm Max.
Raster Distortion	1.5% Max.

MAXIMUM RATINGS: (All measurements taken with respect to cathode)

Post Accelerator Voltage	24,000 Max. Volts
Accelerator and Deflection System	
(1st anode, 2nd anode, deflection plates, deflection plate shields, isolation shield, lower helix)	4200 Max. Volts
Focus Electrode	
Voltage Range	0 to 1200 Volts
Maximum Current to Focus Electrode	$\pm 10\mu a$
Peak Voltage between Electrodes	
Plate to Plate	500 Max. Volts
Plate to all other electrodes in the accelerator and deflection system	500 Max. Volts
Between any two electrodes in the accelerator and deflection system	500 Max. Volts
Grid No. 1 Voltage	
Negative Bias Value	200 Max. Volts
Positive Bias Value	0 Max. Volts
Peak Positive Value	2 Max. Volts
Peak Heater-Cathode Voltage	
Heater Negative with respect to Cathode	125 Max. Volts
Heater Positive with respect to Cathode	125 Max. Volts
Maximum Average Electrode Power Dissipation 1st Anode	6 Max. Volts

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

Electrode Designation	Symbol	
Post Accelerator Voltage	Epa	24,000 Volts DC
Lower Helix Voltage and Isolation Shield Voltage (Note 1)	Elh, Eg6	3750 to 4250 Volts DC
Average of Deflection Plates		4000 Volts DC
DJ_3-DJ_4 Deflection Shield Voltage (Note 2)	Es4	3750 to 4225 Volts DC
Accelerator Voltage (Note 3)	Eg2, Eg4	4000 Volts DC
Grid No. 3 Voltage (Focus)	Eg3	450 to 1050 Volts DC
Grid No. 1 Voltage (Control)	Eg1	—100 to —160 Volts (cutoff)

Deflection Factors (Nominal)

DJ_1-DJ_2	70 Volts/cm
DJ_3-DJ_4	15.5 Volts/cm

Useful Scan (Note 4)

DJ_1-DJ_2	8 cm
DJ_3-DJ_4	4 cm

DESIGN RANGES:

Minimum Scan (PDA Ratio 6)

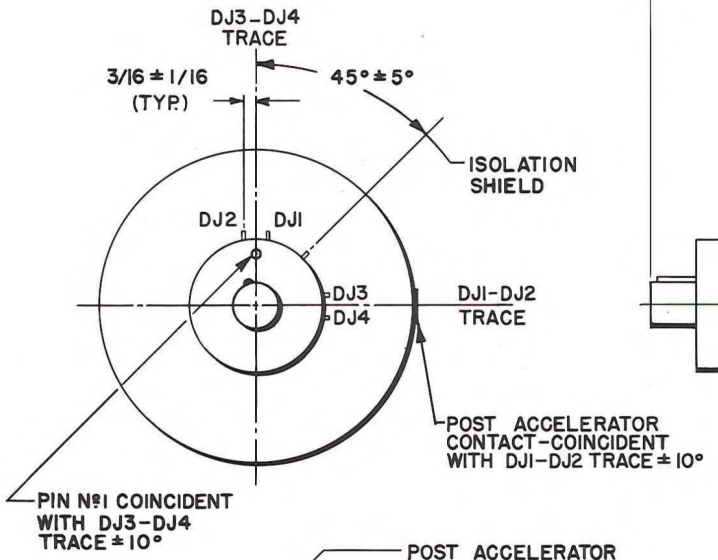
DJ_1-DJ_2	8 cm
DJ_3-DJ_4	4 cm

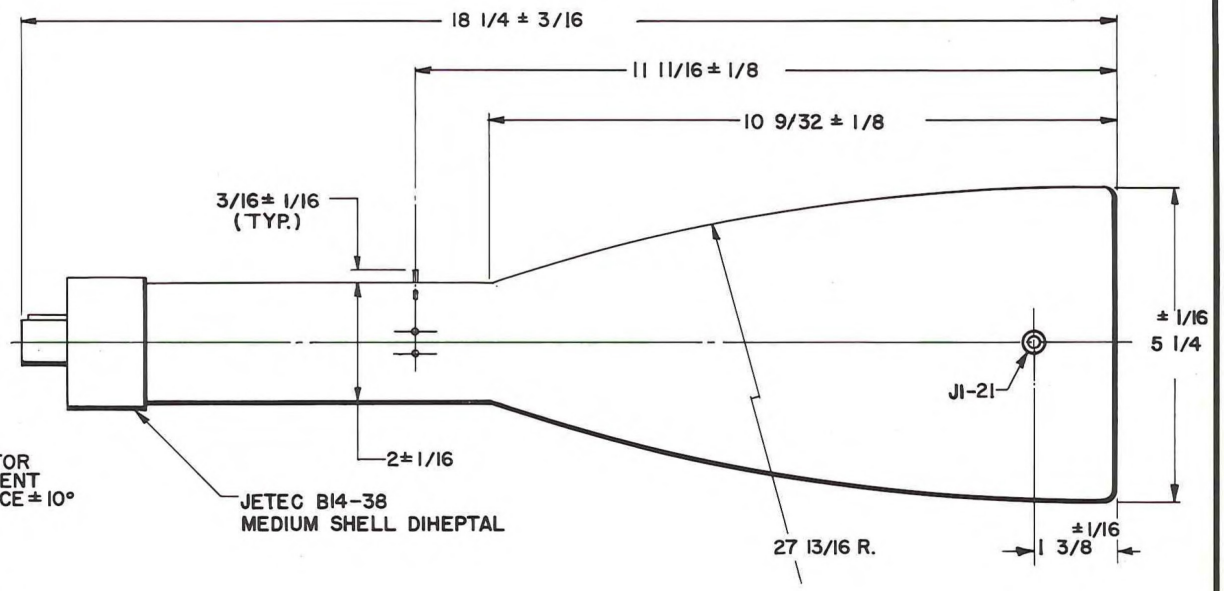
Deflection Factors (PDA Ratio 6)

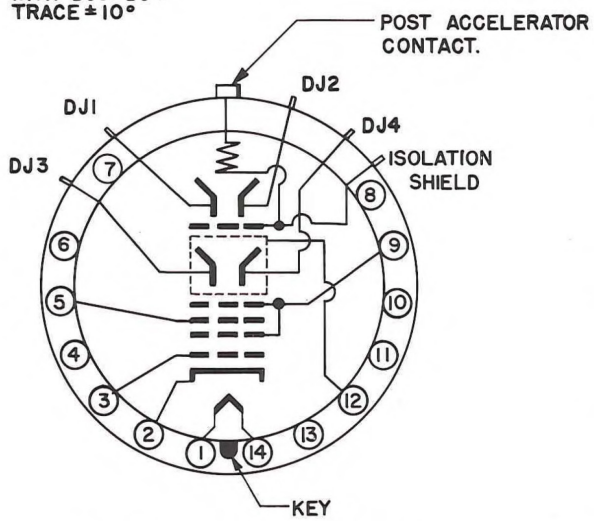
DJ_1-DJ_2	16.2 to 18.8V/cm/KV Vgun
DJ_3-DJ_4	3.5 to 4.25V/cm/KV Vgun
Grid No. 1 Voltage for extinction of undeflected focused spot	4% of Vgun
Focus Electrode Voltage (recommended range)	11% to 27% of Vgun

NOTES:

1. Lower helix and isolation shield are connected internally. Pattern distortion minimal with proper potential.
2. Adjustment of DJ_3-DJ_4 deflection shield voltage improves linearity of DJ_3-DJ_4 deflection by controlling edge effect of DJ_3-DJ_4 plate shield.
3. Grid No. 4 (Astigmatism) and Grid No. 2 (1st anode) are connected internally and the accelerating voltage is variable from 3750 Volts to 4250 Volts to provide for astigmatism control.
4. The deflection plates intercept part of the electron beam near the edge of the scan.







BASE SCHEMATIC

BASE CONNECTIONS

1, 14	HEATER
2	CATHODE
3	GRID Nº 1
4,6,7,8, 10,11,13.	N.C.
5	GRID Nº 3 (FOCUS)
9.	GRID Nº 2 & Nº 4 (ACCELERATOR)
12.	DJ3—DJ4 SHIELD

MARK	DATE	DESCRIPTION	BY	APPR
		CATHODE-RAY TUBE DIVISION TEKTRONIX, INC. PORTLAND, OREGON, U.S.A.		
		TUBE TYPE: T517	DATE: 7-1-60 MOD.	