TECHNICAL DATA

TEKTRONIX T555P__

T5550

9/26/61

The Tektronix T555P__ is a dual-gun aluminized 5-inch flat-faced cathode ray tube with electrostatic focus and deflection and has a helical post-accelerator. The T555P__ was designed for use in the Tektronix Type 555 Oscilloscope.

MECHANICAL SPECIFICATIONS:

Overall length	$18\frac{3}{4} \pm \frac{3}{16}$ inches
Greatest diameter of bulb	$5\frac{5}{16}$ 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:[1]

Heater voltage	6.3 volts RMS
Heater current	0.6 ±10% ampere RMS
Helix resistance	200 megohms Min.
Capacitance, interelectrode (typical values)	
A Grid No. 1 to all other electrodes	6.7 μμf
B Grid No. 1 to all other electrodes	7.1 μμf
A Cathode to all other electrodes	5.7 μμf
B Cathode to all other electrodes	5.1 μμf
DJ_1 to DJ_2	1.7 μμf
DJ_1 to all other electrodes except DJ_2	4.5 μμf
DJ_2 to all other electrodes except DJ_1	4.5 μμf
DJ_3 to DJ_4	1.4 μμf
DJ_3 to all other electrodes except DJ_4	3.3 μμf
DJ_4 to all other electrodes except DJ_3	3.3 μμf

Deflection polarity

Positive voltage on DJ_1 deflects beam approximately toward pin No. 4

Positive voltage on DJ_3 deflects beam approximately toward pin No. 1

Geometry (measured under typical operating conditions and PDA ratio of 6)

Minimum useful scan DJ_1-DJ_2	10 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 [2]
Raster distortion	1.7% Max.

MAXIMUM RATINGS (all measurements taken with respect to cathode): [1]

Post-accelerator voltage	12,000 volts Max.
Accelerator and deflection system	
(screen, 1st anode, 2nd anode, deflection plates, deflection plate shields, isolation shield, lower helix, intergun shield, crosstalk shield)	2,100 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 voltage	
Heater negative with respect to cathode	125 volts Max.
Heater positive with respect to cathode	125 volts Max.
Maximum electrode power dissipation	
1st Anode	6 watts Max.

TYPICAL OPERATING CONDITIONS (all measurements taken with respect to cathode): [1]

Electrode designation	Symbol	
Post-accelerator voltage	Epa	10,000 volts DC
Lower helix voltage	Elh	1575 to 1700 volts DC [3]
Isolation shield voltage	Eg5	
DJ_3-DJ_4 deflection shield voltage	Es1	
Crosstalk shield voltage	Es2	1575 to 1850 volts DC [4]
Intergun shield voltage	Es3	1575 to 1850 volts DC [5]
Average of deflection plates	Edp	1650 volts DC
Accelerator voltage		
Grid No. 4 (astigmatism)	Eg4	1575 to 1850 volts DC
Grid No. 2 (1st anode)	Eg2	1700 volts DC
Grid No. 3 (focus)	Eg3	210 to 550 volts DC
Grid No. 1 voltage (control)	Eg1	—45 to —85 volts DC (cutoff)

Deflection factors (nominal)

DJ_1-DJ_2	32 volts/cm
DJ_3-DJ_4	6.7 volts/cm

Useful scan

DJ_1-DJ_2	10 cm
DJ_3-DJ_4	4 cm [6]

DESIGN RANGES: [1]

Minimum scan (PDA ratio of 6)

DJ_1-DJ_2	10 cm
DJ_3-DJ_4	4 cm [6]

Deflection factors (PDA ratio of 6)

DJ_1-DJ_2	18.2 to 20.6 v/cm/kv of Edp
DJ_3-DJ_4	3.6 to 4.5 v/cm/kv of Edp
Grid No. 1 voltage for extinction of undeflected focused spot	5% of Edp
Focus electrode voltage (recommended range)	13% to 33% of Edp

NOTES:

1. Data applies to both A and B guns separately unless otherwise noted.

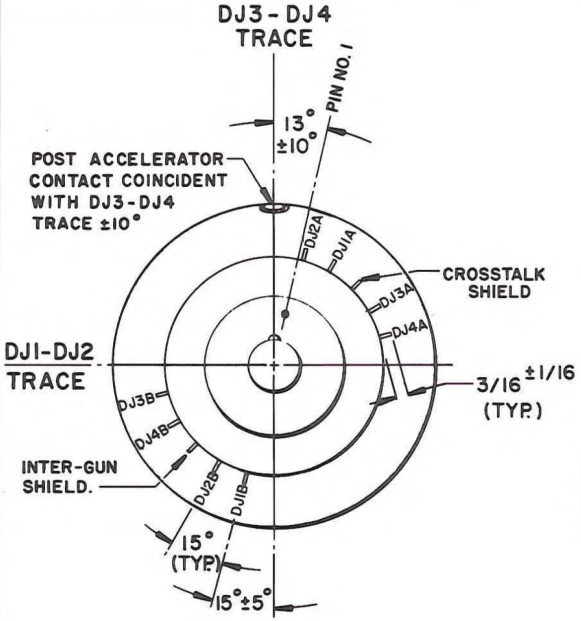
2. DJ_1-DJ_2 center at geometrical center of tube for both A and B guns. DJ_3-DJ_4 offset 1 cm from geometrical center giving 2 cm total separation between A and B guns.

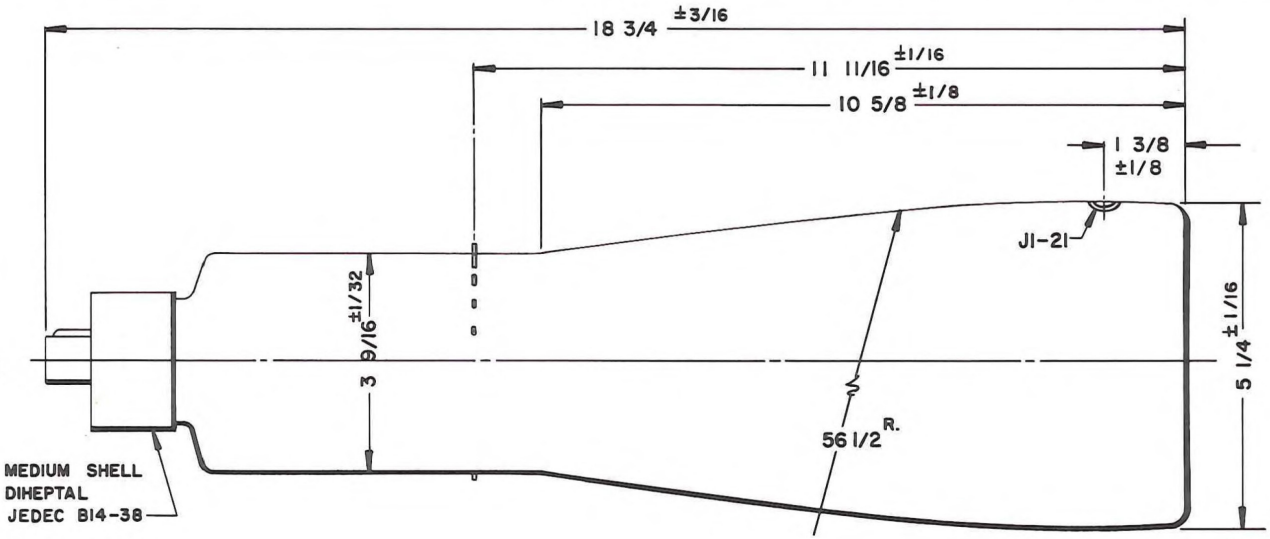
3. Lower helix, isolation shield and DJ_3-DJ_4 shields are connected internally. Pattern distortion minimal with proper potential.

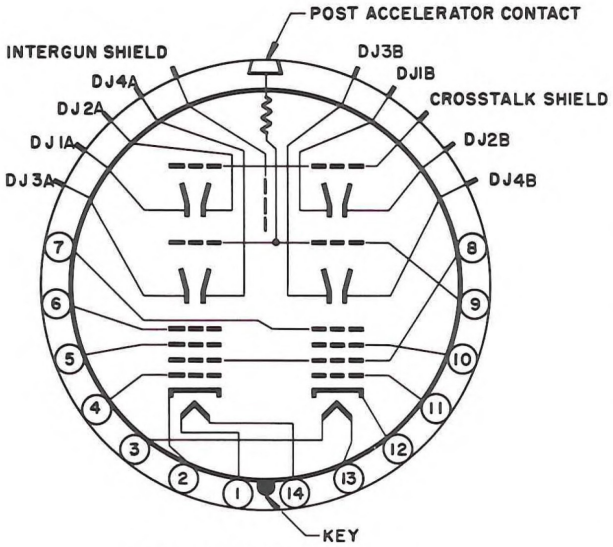
4. The crosstalk shield voltage is variable to provide for geometry control. The crosstalk shield controls the geometry of the display at the outer edge of the tube.

5. The intergun shield voltage is variable to provide for geometry control. The intergun shield controls the geometry of the display at the center of the tube.

6. DJ_3-DJ_4 scans overlap 2 cm.







BASE SCHEMATIC

BASE CONNECTIONS

1, 14	HEATER -"A"
2	CATHODE-"A"
3, 13	HEATER -"B"
4	GRID NO. 1 -"A" (CONTROL)
5	GRID NO. 3 -"A" (FOCUS)
6	GRID NO. 4 -"A" (ASTIGMATISM)
7	GRID NO. 4 -"B" (ASTIGMATISM)
8	GRID NO. 2 (COMMON FIRST ANODE)
9	ISOLATION SHIELD
10	GRID NO. 3 -"B" (FOCUS)
11	GRID NO. 1 -"B" (CONTROL)
12	CATHODE -"B"

MARK	DATE	DESCRIPTION	BY	APPR

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

TUBE TYPE: T 555

DATE: 10/18/61

MOD.