## CHARACTERISTICS

### GENERAL DATA[1]

| | |
|---|---|
| Focusing Method | Electrostatic |
| Deflection Method | Electrostatic |

| Types* | Fluorescence | Phosphorescence | Persistence |
|---|---|---|---|
| 6DP1 | Green | ..... | Medium |
| 6DP2 | Blue-Green | Green | Long |
| 6DP7 | Blue | Yellow | Long |
| 6DP11 | Blue | ..... | Short |
| 6DP14 | Purple | Orange | Medium-Long |
| 6DP19 | Orange | Orange | Long |
| 6DP25 | Orange | Orange | Very Long |
| Faceplate | | | Clear |

**In addition to the types shown, the 6DP- can be supplied with several other screen phosphors.*

### ELECTRICAL DATA

| | |
|---|---|
| Heater Voltage | 6.3 Volts |
| Heater Current (all Sections) | 1.50 to 1.98 Amperes |
| Direct Interelectrode Capacitances (approx.) | |
| Cathode to All Other Electrodes | 6.0 $\mu\mu$f |
| Grid No. 1 to All Other Electrodes | 6.5 $\mu\mu$f |
| D1 to D2 | 3.0 $\mu\mu$f |
| D3 to D4 | 2.0 $\mu\mu$f |
| D1 to All Other Electrodes | 11.0 $\mu\mu$f |
| D2 to All Other Electrodes | 11.0 $\mu\mu$f |
| D3 to All Other Electrodes | 9.0 $\mu\mu$f |
| D4 to All Other Electrodes | 9.0 $\mu\mu$f |

### MECHANICAL DATA

| | |
|---|---|
| Overall Length | 20-1/16 ± 3/8 Inches |
| Minimum Useful Screen Diameter | 5-3/16 Inches |
| Bulb Contact (Recessed Small Ball) | J1-22 |
| Base 25 Pin | B25-139 |
| Basing | See Diagram |
| Base Alignment | |
| Base Key Aligns with Bulb Contact | ± 10 Degrees |
| Positive Voltage on D1 Deflects the Beam Approx. Toward Base Key. | |
| Positive Voltage on D3 Deflects the Beam Approx. Toward Vacant Pin No. 23. | |
| Bulb Contact Alignment | |
| Post-accelerator Contact Aligns with D1-D2 trace of Gun "B" | ± 3 Degrees |
| Bulb Contact on same side as Base Key | |
| Trace Alignment | |
| D1-D2 Trace Aligns with D3-D4 Trace | 90 ± 2 Degrees |
| Corresponding Traces of each Gun align within ±2 Degrees | |

## QUICK REFERENCE DATA

Oscilloscope Tube
6" Direct Viewed
Flat Faceplate
Round Glass Type
Three Independent Guns
Electrostatic Deflection
Electrostatic Focus
Post Deflection Acceleration
High Deflection Sensitivity
High Deflection Accuracy
Aluminized Screen
25 Pin Base

SYLVANIA ELECTRIC PRODUCTS INC.
TELEVISION PICTURE TUBE DIVISION
SENECA FALLS, NEW YORK

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# RATINGS

## MAXIMUM RATINGS (Absolute Maximum Values)

| | | |
|---|---|---|
| Anode No. 3 Voltage | 15,000 Volts | dc |
| Anode No. 2 Voltage | 4,500 Volts | dc |
| Ratio Anode No. 3 Voltage to Anode No. 2 Voltage[2] | 3.3:1 Maximum | |
| Anode No. 1 Voltage for Focus | 1,540 Volts | dc |
| Grid No. 1 Voltage | | |
| Negative Bias Value | 220 Volts | dc |
| Positive Bias Value | 0 Volts | dc |
| Positive Peak Value | 2 Volts | |
| Peak Heater to Cathode Voltage | | |
| Heater Negative with Respect to Cathode | 200 Volts | |
| Heater Positive with Respect to Cathode | 200 Volts | |
| Peak Voltage between Anode No. 2 and Any Deflection Plate | 600 Volts | |

## TYPICAL OPERATING CONDITIONS

| | | |
|---|---|---|
| Anode No. 3 Voltage | 12,000 Volts | dc |
| Anode No. 2 Voltage | 4,000 Volts | dc |
| Anode No. 1 Voltage for Focus[3] | 950 to 1225 Volts | dc |
| Grid No. 1 Voltage[4] | −75 to −124 Volts | dc |
| Modulation[5] | 35 Volts | dc Max. |
| Line Width "A"[6] | .015 Max. | Inches |
| Deflection Factors | | |
| D1-D2 | 112 to 138 Volts | dc/Inch |
| D3-D4 | 105 to 130 Volts | dc/Inch |
| Deflection Factor Uniformity[7] | 5% Maximum | |
| Undeflected Spot Position[8] | Within 15 MM Square | |
| Useful Scan[9] | | |
| D1-D2 | 4 Inches | |
| D3-D4 | 4 Inches | |
| Interaction Factor[10] | 6 x 10$^{-5}$ Max. | In./Volt |
| Pattern Distortion[11 & 12] | | |
| Anode No. 1 Focus Current | | |
| with Ib3 = 50 μadc | −10 to +5 μa | dc |
| with Ec1 = 0 Volts | −50 to +5 μa | dc |

## CIRCUIT VALUES

| | | |
|---|---|---|
| Grid No. 1 Circuit Resistance | 1.5 Meg. | Max. |
| Deflection Circuit Resistance | 1.0 Meg. | Max. |

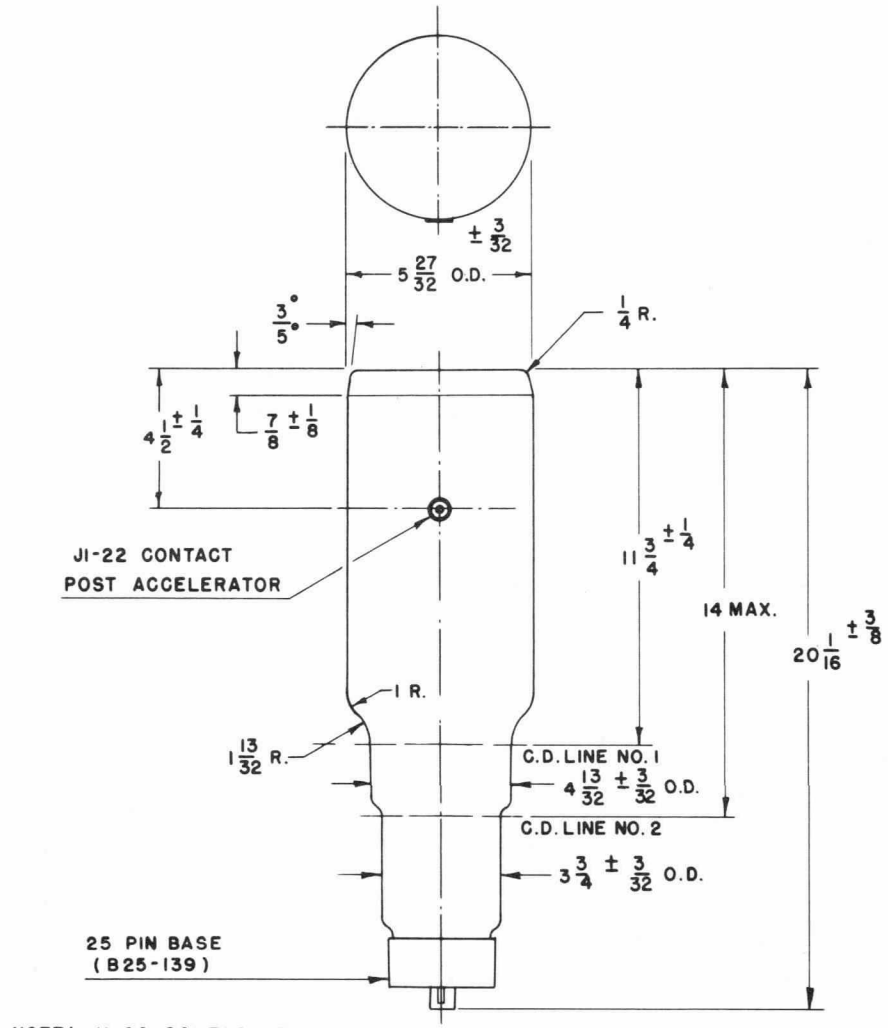
(It is recommended that the deflecting electrode circuit resistances be approximately equal. For low beam current conditions the resistance may be up to 5 megs.)

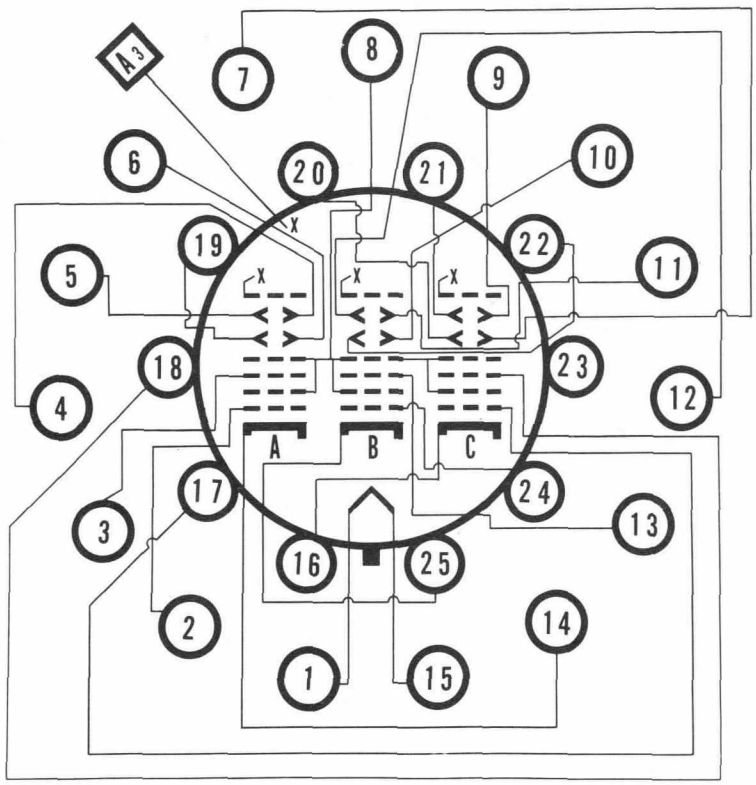
## NOTES:

1. *Values are for each section unless otherwise specified.*
2. *This tube is designed for optimum performance when operating at an Eb3/Eb2 ratio of 3.0. Operation at other ratios may result in changes in deflection uniformity and pattern distortion.*
3. *At the specified operating condition, the focus voltage at Ib3 = 25 μadc shall be between 1000 and 1225 Volts dc and at Ib3 = 50 μadc shall be between 975 and 1225 volts dc. Scanning pattern and focus as per reference 4.12.6.1 of MIL-E-1C.*
4. *Visual extinction of undeflected focused spot.*
5. *For an Ib3 = 25 μadc. The modulation factor at Ib3 = 50 μadc shall be 50 V. Max.*

NOTES: (Cont.)

6. *For an Ib3 = 25 μadc measured in accordance with MIL-E-1C.*
7. *The deflection factor (for both D1-D2 and D3-D4 plate pairs separately) for a deflection of 75% of the minimum useful scan will not differ from the deflection factor at 25% of the minimum useful scan by more than the indicated value.*
8. *Centered with respect to the tube face and with the tube shielded.*
9. *Useful scan shall be ±2 Inches Min. from tube face center.*
10. *The deflection of one beam when balanced dc voltages are applied to the deflection electrodes of another beam will not be greater than the specified value.*
11. *The total horizontal movement on the left or right ends of a 3" horizontal trace (centered with respect to the tube face) deflected vertically 1.5" above and below the center of the tube face shall not exceed 0.075". The D1-D2 trace shall be considered horizontal.*
12. *The total vertical movement of the upper or lower ends of a 3" vertical trace centered on the tube face, deflected horizontally 1.5" to the left and right of the center of the tube face shall not exceed 0.075". The D3-D4 trace shall be considered vertical.*






## ELEMENTS COMMON TO ALL THREE GUNS

*J1-22 (A3) Post Accelerator*

Pin No. 8 Accelerator

Pins No. 1 & 15 Heater

## GUN A

| Pin No. | Element |
|---|---|
| 2 | Grid No. 1 |
| 3 | Focusing Electrode |
| 4 | Deflector D2 |
| 5 | Deflector D1 |
| 6 | Deflector D3 |
| 14 | Cathode |
| 19 | Deflector D4 |

## GUN B

| Pin No. | Element |
|---|---|
| 10 | Deflector D3 |
| 11 | Deflector D2 |
| 12 | Deflector D1 |
| 13 | Focusing Electrode |
| 22 | Deflector D4 |
| 24 | Grid No. 1 |
| 25 | Cathode |

## GUN C

| Pin No. | Element |
|---|---|
| 7 | Deflector D3 |
| 9 | Deflector D2 |
| 16 | Cathode |
| 17 | Grid No. 1 |
| 18 | Focusing Electrode |
| 20 | Deflector D4 |
| 21 | Deflector D1 |