

# DU MONT

## CATHODE-RAY TUBE

1 of 4

### TYPE 3BFP-

The Du Mont Type 3BFP- is a 3-inch, flat face, electrostatic focus and deflection cathode-ray tube with very high deflection sensitivities and full scan.

This tube features a linear post accelerator for maximum deflection uniformity and minimum pattern distortion. The extremely low deflection factors permit use of this tube in compact transistorized equipment.

### GENERAL CHARACTERISTICS

#### Electrical Data

|                                             |               |     |
|---------------------------------------------|---------------|-----|
| Focusing Method                             | Electrostatic |     |
| Deflecting Method                           | Electrostatic |     |
| Direct Interelectrode Capacitances, Approx. |               |     |
| Cathode to all other electrodes             | 3.5           | μμf |
| Grid No. 1 to all other electrodes          | 7.2           | μμf |
| D1 to D2                                    | 3.6           | μμf |
| D3 to D4                                    | 2.6           | μμf |
| D1 to all other electrodes                  | 7.0           | μμf |
| D2 to all other electrodes                  | 7.0           | μμf |
| D3 to all other electrodes                  | 5.7           | μμf |
| D4 to all other electrodes                  | 5.7           | μμf |

#### Optical Data

|                      |        |            |            |       |
|----------------------|--------|------------|------------|-------|
| Phosphor             | P1     | P2         | P7         | P11   |
| Fluorescent Color    | Green  | Blue-Green | Blue-White | Blue  |
| Phosphorescent Color | -----  | Green      | Yellow     | ----  |
| Persistence          | Medium | Long       | Long       | Short |

|           |             |
|-----------|-------------|
| Faceplate | Flat, Clear |
|-----------|-------------|

#### Mechanical Data

|                                    |                                  |        |
|------------------------------------|----------------------------------|--------|
| Overall Length                     | $13 \frac{3}{4} \pm \frac{3}{8}$ | Inches |
| Greatest Diameter of Bulb          | $3 \pm \frac{1}{16}$             | Inches |
| Minimum Useful Screen Diameter     | $2 \frac{3}{4}$                  | Inches |
| Base (Small Shell 12-pin Duodecal) | B12-43                           |        |

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2/8/60

Allen B. Du Mont Laboratories, Inc.

Clifton, New Jersey

from JEDEC release #2738, Feb. 22, 1960

FORM 609 M1 3-59 9M

TYPE 3BFP-

GENERAL CHARACTERISTICS (MECHANICAL DATA) (Continued)

|                                                                      |            |         |
|----------------------------------------------------------------------|------------|---------|
| Basing                                                               | 12BE       |         |
| Base Alignment:                                                      |            |         |
| D1 D2 trace aligns with Pin No. 3 and tube axis                      | $\pm 10$   | Degrees |
| Positive voltage on D1 deflects beam approximately toward Pin No. 3  |            |         |
| Positive voltage on D3 deflects beam approximately toward Pin No. 12 |            |         |
| Angle between D3D4 and D1 D2 traces                                  | $90 \pm 1$ | Degrees |
| Bulb Contact Alignment:                                              |            |         |
| J1-22 contact aligns with D3D4                                       | $\pm 10$   | Degrees |
| J1-22 contact on same side as Pin No. 6                              |            |         |

RATINGS (ABSOLUTE MAXIMUM VALUES)

|                                                               |                |               |
|---------------------------------------------------------------|----------------|---------------|
| Heater Voltage                                                | 6.3            | Volts         |
| Heater Current at 6.3 Volts                                   | $0.6 \pm 10\%$ | Ampere        |
| Post Accelerator Voltage                                      | 3,500          | Max. Volts DC |
| Post Accelerator Resistance                                   | 100            | Min. Megohms  |
| Accelerator Voltage                                           | 1,250          | Max. Volts DC |
| Ratio Post Accelerator Voltage to Accelerator Voltage         | 3              | Max.          |
| Accelerator Input                                             | 6              | Max. Watts    |
| Focusing Voltage                                              | 450            | Max. Volts DC |
| Grid No. 1 Voltage                                            |                |               |
| Negative Bias Value                                           | 200            | Max. Volts DC |
| Positive Bias Value                                           | 0              | Max. Volts DC |
| Positive Peak Value                                           | 0              | Max. Volts    |
| Peak Heater-Cathode Voltage                                   |                |               |
| Heater Negative with respect to Cathode                       | 180            | Max. Volts    |
| Heater Positive with respect to Cathode                       | 180            | Max. Volts    |
| Peak Voltage between Accelerator and any Deflection Electrode | 200            | Max. Volts    |

TYPICAL OPERATING CONDITIONS

|                          |           |                   |
|--------------------------|-----------|-------------------|
| Post Accelerator Voltage | 1,500     | Volts             |
| Accelerator Voltage      | 500       | Volts             |
| Post Accelerator Current | 10        | Microamperes Max. |
| Focusing Voltage         | 25 to 125 | Volts             |

# DUMONT

## CATHODE-RAY TUBE

### TYPE 3BFP-

#### TYPICAL OPERATING CONDITIONS (Continued)

|                                              |                                  |               |
|----------------------------------------------|----------------------------------|---------------|
| Grid No. 1 Voltage <sup>2</sup>              | -30 to -60                       | Volts         |
| Modulation <sup>3</sup>                      | 35                               | Volts Max.    |
| Line Width "A" <sup>3</sup>                  | .030                             | Inch Max.     |
| P1 Light Output <sup>3</sup>                 | 3.0                              | FT. L. Min.   |
| Deflection Factors:                          |                                  |               |
| D1D2                                         | 12 to 15                         | Volts DC/Inch |
| D3D4                                         | 9 to 12                          | Volts DC/Inch |
| Focusing Current for any operating condition | -15 to +15                       | Microamperes  |
| Spot Position (Undelected) <sup>4</sup>      | Within a 3/16-inch radius circle |               |

#### MAXIMUM CIRCUIT VALUES

|                                                             |     |              |
|-------------------------------------------------------------|-----|--------------|
| Grid No. 1 Circuit Resistance                               | 1.5 | Max. Megohms |
| Resistance in any Deflecting-Electrode Circuit <sup>5</sup> | 5   | Max. Megohms |

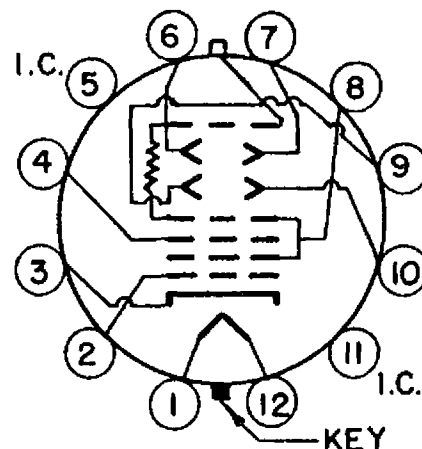
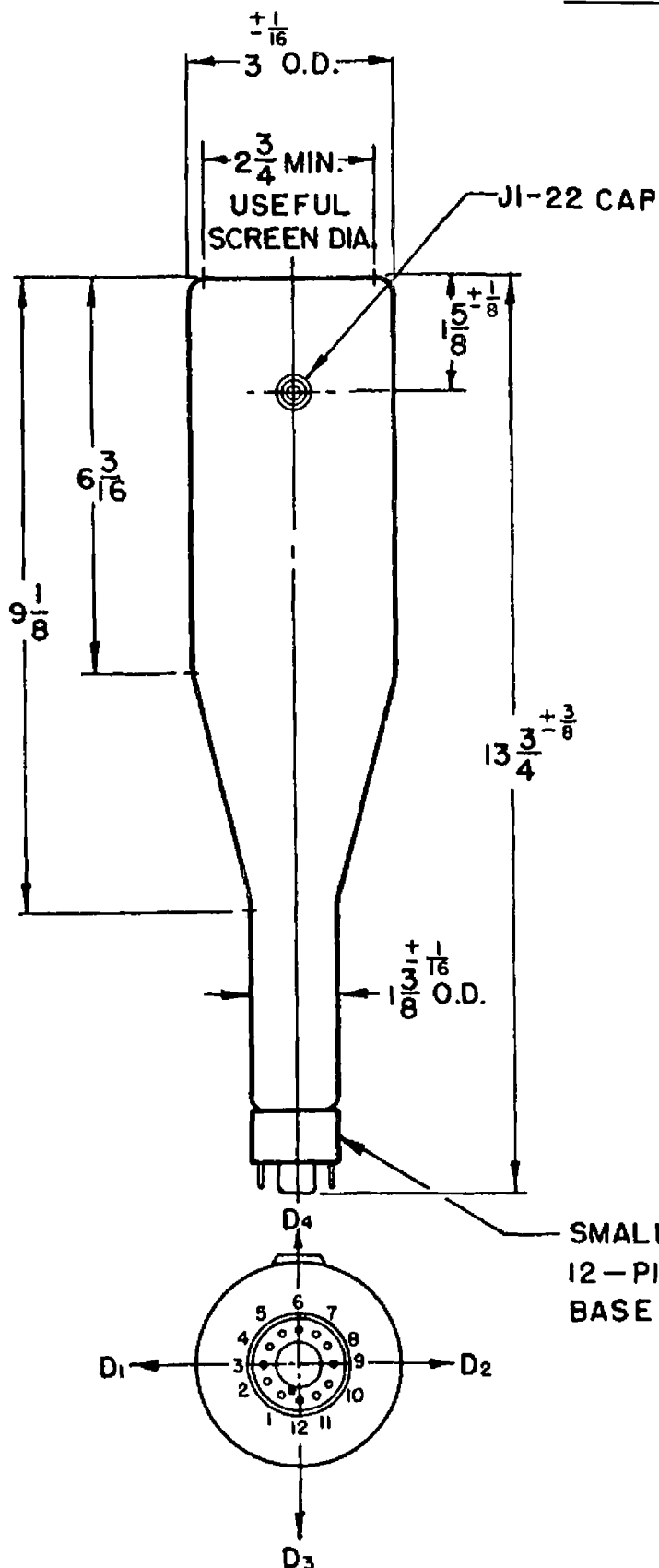
### NOTES

1. Measured with the beam cut-off. All readings of beam current shall be in addition to the reading obtained for post accelerator current.
2. Visual extinction of the undeflected, focused spot.
3. Measured in accordance with MIL-E-1 specifications with a beam current of 15  $\mu$ ADC.
4. When the tube is operated at typical operating conditions,  $E_{c1}$  adjusted to avoid damage to the screen, with each of the deflecting electrodes connected to the accelerator, and with the tube shielded against external influences; the spot will fall within a 3/16-inch radius circle centered on the tube face.
5. It is recommended that the deflecting-electrode circuit resistances be approximately equal.

# DU MONT

## CATHODE-RAY TUBE

### 3 BFP-



### BOTTOM VIEW

| PIN NO. | ELEMENT                             |
|---------|-------------------------------------|
| 1       | HEATER                              |
| 2       | GRID NO.1                           |
| 3       | CATHODE                             |
| 4       | FOCUS ELECTRODE                     |
| 5       | INTERNAL CONNECTION                 |
| 6       | DEFLECTING ELECTRODE D <sub>1</sub> |
| 7       | DEFLECTING ELECTRODE D <sub>2</sub> |
| 8       | ACCELERATOR                         |
| 9       | DEFLECTING ELECTRODE D <sub>4</sub> |
| 10      | DEFLECTING ELECTRODE D <sub>3</sub> |
| 11      | INTERNAL CONNECTION                 |
| 12      | HEATER                              |
| CAP     | POST ACCELERATOR                    |