

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
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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

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GENERAL CHARACTERISTICS (MECHANICAL DATA) (Continued)

Basing	12BE	
Base Alignment:		
D1 D2 trace aligns with Pin No. 3 and tube axis	± 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 D1D2 traces	90 ± 1	Degrees
Bulb Contact Alignment:		
J1-22 contact aligns with D3D4	± 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 ¹	10	Microamperes Max.
Focusing Voltage	25 to 125	Volts

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TYPICAL OPERATING CONDITIONS (Continued)

Grid No. 1 Voltage ²	-30 to -60	Volts
Modulation ³	35	Volts Max.
Line Width "A" ³	.030	Inch Max.
P1 Light Output ³	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) ⁴	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 ⁵	5	Max. Megohms

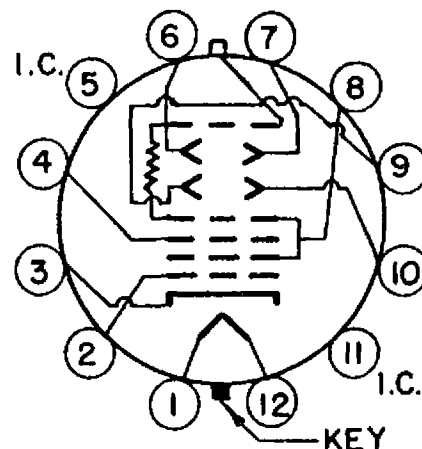
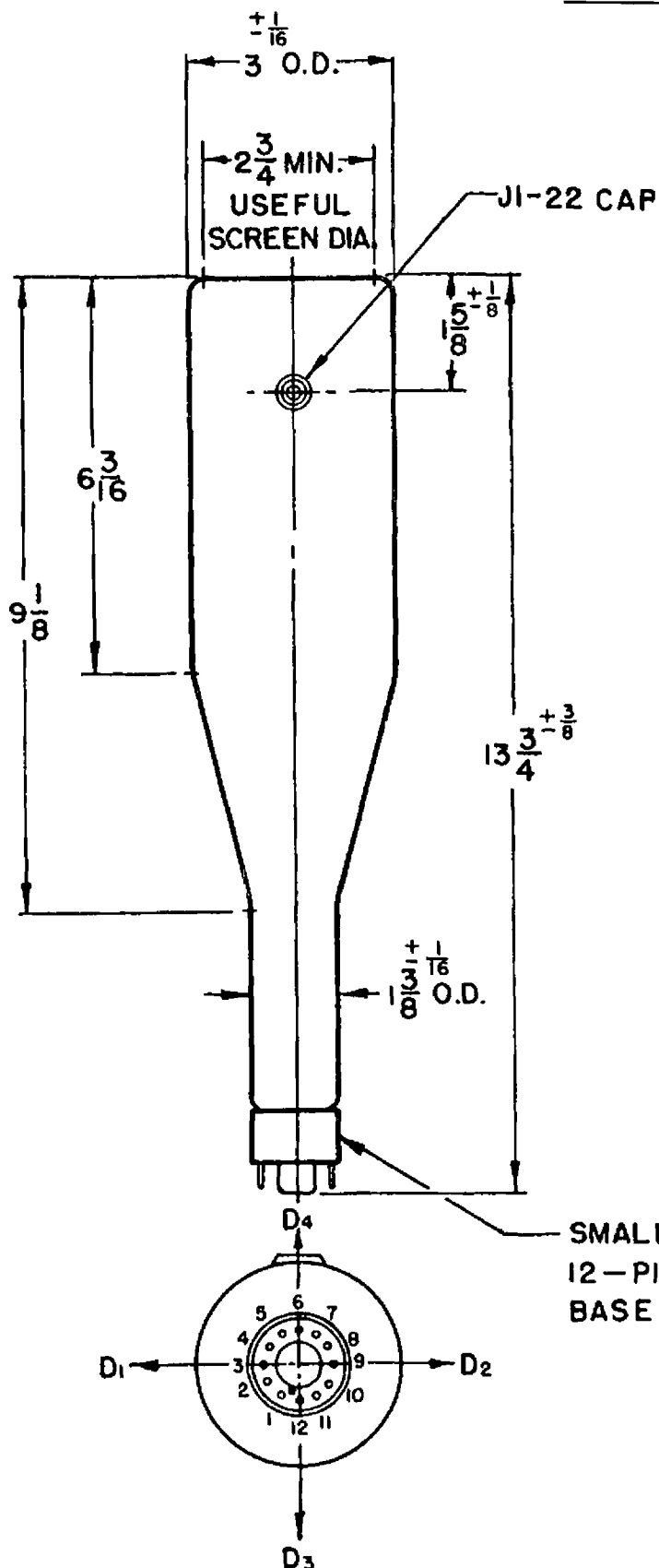
NOTES

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 μ 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.

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BOTTOM VIEW

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