SYLVANIA

engineering data service

SYLVANIA
3BEP1
3BEP-*

DESCRIPTION

Sylvania 3BEP- is a compact, rectangular direct-view oscilloscope tube designed primarily for use in airborne equipment. It features a high quality, nearly flat pressed faceplate, and employs electrostatic focus and deflection. Its encapsulated leads permit operation at high altitude and it will withstand a wide range of temperatures.

CHARACTERISTICS

GENERAL DATA

Focusing Method	Electrostatic
Deflecting Method	Electrostatic

Types*	Fluorescence	Phosphorescence	Persistence
P1	Green	———	Medium

Faceplate	Clear, Pressed Glass

* In addition to the type shown, the 3BEP- can be supplied with several other screen phosphors.

ELECTRICAL DATA

Heater Voltage	6.3 Volts
Heater Current	0.6 ± 10% Ampere
Direct Interelectrode Capacitances (Approx.)	
Cathode to All Other Electrodes	5 μμf
Grid No. 1 to All Other Electrodes	8 μμf
Between Deflecting Plates 1-2	7 μμf
Between Deflecting Plates 3-4	6 μμf
Deflecting Plate 1 to All	9 μμf
Deflecting Plate 2 to All	8 μμf
Deflecting Plate 3 to All	7 μμf
Deflecting Plate 4 to All	8 μμf

MECHANICAL DATA

Minimum Useful Screen Dimensions (Maximum Assured)	
Horizontal	2 ¾ Inches
Vertical	1 ⅛ Inches
Bulb	LEA 417 or Equivalent
Base	Encapsulated, Color Coded Leads
Trace Alignment with Bulb (See Diagram)	
D1-D2 Trace aligns with long axis of tube face[1]	± 1.5 Degrees
Angle between D1-D2 trace and D3-D4 trace	90 ± 1 Degrees
Weight (Approx.)	¾ Pounds

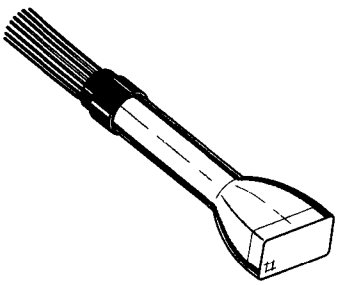
RATINGS

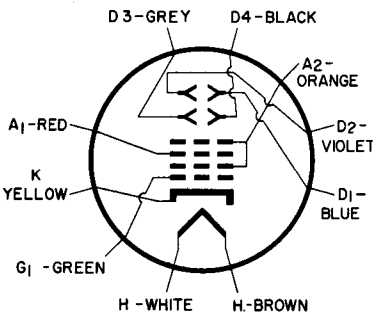
MAXIMUM RATINGS (Absolute Maximum Values)

Anode No. 2 Voltage	3000 Volts	dc
Anode No. 1 Voltage (Focusing Electrode)	1200 Volts	dc
Grid No. 1 Voltage		
Negative Bias Value	140 Volts	dc
Positive Bias Value	0 Volts	dc
Positive Peak Value	2 Volts	
Peak Heater-Cathode Voltage		
Heater Negative with Respect to Cathode.	140 Volts	
Heater Positive with Respect to Cathode.	140 Volts	
Altitude	70,000 Feet	
Operating Temperature Range	−65 to +85 °C	

QUICK REFERENCE DATA

Oscilloscope Tube
1½" x 3" Direct Viewed
Rectangular Glass Type
Electrostatic Deflection
Electrostatic Focus
High Quality, Clear, Pressed Faceplate
Encapsulated Base with color coded leads.





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SYLVANIA
ELECTRONIC TUBES
A Division of
Sylvania Electric Products Inc.
PICTURE TUBE OPERATIONS
SENECA FALLS, NEW YORK

Prepared and Released By The
TECHNICAL PUBLICATIONS SECTION
EMPORIUM, PENNSYLVANIA
APRIL, 1960

File Under
SPECIAL AND GENERAL PURPOSE
CATHODE RAY TUBES

TYPICAL OPERATING CONDITIONS

Anode No. 2 Voltage	1500 Volts	dc
Anode No. 1 Voltage for Focus	247 to 465 Volts	dc
Grid No. 1 Voltage Required for Cutoff[2]	−43.5 to −101 Volts	dc
Deflection Factors		
Deflecting Plates 1-2[3]	109 to 149 Volts	dc/Inch
Deflecting Plates 3-4[4]	78 to 105 Volts	dc/Inch
Spot Position (Focused, Undeflected)[5]	Within a 7.5 mm Square	

CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Megohms Max.
Resistance in Any Deflecting Electrode Circuit[6]	1.0 Megohms Max.

NOTES:

1. *The D1-D2 trace scanning through the geometric center of the tube face will be parallel to the long axis of the tube faces within the limits specified.*
2. *Visual extinction of undeflected focused spot.*
3. *Deflecting Plates 1 and 2 are nearer the screen and scan the major dimension of the screen.*
4. *Deflecting Plates 3 and 4 are nearer the base and scan the minor dimension of the screen.*
5. *With deflecting plates connected to Anode No. 2 and with tube shielded, the sides of the limit square will be parallel to the deflection axes.*
6. *It is recommended that the deflecting electrode circuit resistances be approximately equal.*

OUTLINE