

DESCRIPTION

Sylvania 3BGP1 is a compact, rectangular direct view oscilloscope tube designed for portable oscilloscope and radar applications. It features a high efficiency 1.5 v, 140 ma heater for battery economy and lightweight design. This low heater power design requires only $\frac{1}{16}$ of the power necessary to operate a conventional 6.3 v, 600 ma heater.

CHARACTERISTICS

GENERAL DATA

Focusing Method	Electrostatic		
Deflection Method	Electrostatic		
Types*	Fluorescence	Phosphorescence	Persistence
3BGP1	Green	—	Medium
3BGP2	Blue-Green	Green	Long
3BGP7	Blue-White	Yellow	Long
3BGP11	Blue	—	Short
Faceplate	Flat, Clear		

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

ELECTRICAL DATA

Heater Voltage	1.5 Volts
Heater Current	$0.140 \pm 10\%$ Ampere
Direct Interelectrode Capacitances (approx.)	
Grid No. 1 to All Other Electrodes	4.5 μf
Between Deflection Plates 1-2	2.0 μf
Between Deflection Plates 3-4	2.5 μf
Deflection Plate 1 to All Other Electrodes	6.5 μf
Deflection Plate 2 to All Other Electrodes	6.0 μf
Deflection Plate 3 to All Other Electrodes	5.5 μf
Deflection Plate 4 to All Other Electrodes	5.5 μf

MECHANICAL DATA

Minimum Useful Screen Dimensions	
Horizontal	2 $\frac{3}{4}$ Inches
Vertical	1 $\frac{1}{8}$ Inches
Bulb	LEA 448 or Equiv.
Base	B8-181
Basing	8KF
Anode No. 2 Contact	J1-22
Base Alignment	

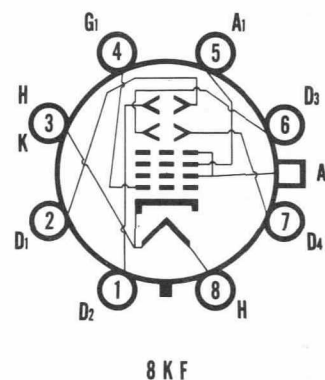
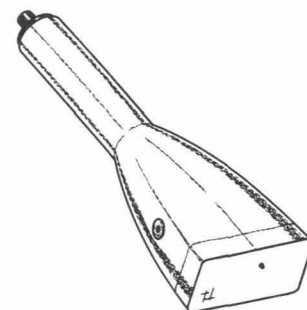
Pin #3 aligns with major axis of tube face within 10°, and is on same side as anode contact (J1-22).

Trace Alignment

Positive Voltage on D1 (Pin #2) with respect to D2, (Pin #1) deflects spot approximately toward Pin #3.
Positive Voltage on D3 (Pin #6) with respect to D4, (Pin #7) deflects spot approximately toward Pin #5.

QUICK REFERENCE DATA

1 $\frac{1}{2}$ " x 3" Direct Viewed
Rectangular Glass Type
Clear, Pressed Faceplate
Electrostatic Deflection
Electrostatic Focus
High Deflection Sensitivity
Very Low Heater Power



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

JULY, 1960

PAGE 1 OF 3

File Under
SPECIAL AND GENERAL PURPOSE
CATHODE RAY TUBES

MECHANICAL DATA (Continued)

Angle between D1-D2 and D3-D4 traces	90 ± 1 Degree
Angle between D1-D2 trace and major axis of tube face	0 ± 1½ Degrees
Deflection Plates	
D1 and D2 are nearer to the tube face	
D3 and D4 are nearer the base	

RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode No. 2 Voltage	2750 Volts dc
Anode No. 2 Input	6.0 Watts
Anode No. 1 Voltage (Focusing Electrode)	1100 Volts dc
Grid No. 1 Voltage	
Negative Bias Value	200 Volts dc
Positive Bias Value	0 Volts dc
Positive Peak Value	2 Volts
Peak Voltage between Anode No. 2 and Any Deflection Plate	550 Volts
Altitude	35,000 Feet

TYPICAL OPERATING CONDITIONS

Anode No. 2 Voltage	2000 Volts dc
Anode No. 1 Voltage for Focus	400 to 700 Volts dc
Grid No. 1 Voltage Required for Cutoff ¹	-38 to -67½ Volts dc
Deflection Factors	
Deflection Plates 1-2	68 to 92 Volts dc/Inch
Deflection Plates 3-4	28 to 38 Volts dc/Inch
Spot Position (Undelected, Focused) ²	Within a 15 mm Square
P1 Light Output ⁴	20 Ft. L. Min.
Modulation ⁵	38 Volts dc Max.
Line Width A ⁶	0.65 mm Max.

CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Megohms Max.
Deflection Circuit Resistance ³	1.0 Megohms Max.

NOTES:

1. Visual extinction of undeflected focused spot.
2. With the tube shielded and with the deflection plates connected to Anode No. 2. The square shall be centered on the tube face with its sides parallel to the deflection axes.
3. It is recommended that the deflecting electrode circuit resistances be approximately equal.
4. Raster size 1½" x 1-9/16".
5. Measured at 20 Ft. L. on a raster 1½" x 1-9/16".
6. Measured by compressed raster method starting with conditions of Note 5.

OUTLINE

