



# engineering data service

SYLVANIA  
12ABP7 12ABP7A  
12ABP14  
12ABP14A  
12ABP19  
12ABP19A

## CHARACTERISTICS

### GENERAL DATA

|                            |                   |             |        |
|----------------------------|-------------------|-------------|--------|
| Focusing Method            | Electrostatic     |             |        |
| Deflection Method          | Magnetic          |             |        |
| Deflection Angle (approx.) | 55 Degrees        |             |        |
| Phosphor                   | P7                | P14         | P19    |
| Fluorescence               | Blue              | Purple      | Orange |
| Phosphorescence            | Yellow            | Yellow      | Orange |
| Persistence                | Long              | Medium-Long | Long   |
| Faceplate                  | Gray Filter Glass |             |        |
| Light Transmittance        | 74 Percent        |             |        |

### ELECTRICAL DATA

|                                              |                       |
|----------------------------------------------|-----------------------|
| Heater Voltage                               | 6.3 Volts             |
| Heater Current                               | $0.6 \pm 10\%$ Ampere |
| Direct Interelectrode Capacitances (approx.) |                       |
| Cathode to All Other Electrodes              | $5 \mu\text{f}$       |
| Grid No. 1 to All Other Electrodes           | $6 \mu\text{f}$       |

### MECHANICAL DATA

|                                          |                  |
|------------------------------------------|------------------|
| Minimum Useful Screen Diameter           | 11 Inches        |
| Bulb Contact (Recessed Small Cavity Cap) | J1-21            |
| Base (Small Shell Duodecal 6-Pin)        | B6-63            |
| Basing                                   | 12M              |
| Bulb Contact Aligns with Vacant Pin      |                  |
| Position No. 3                           | $\pm 10$ Degrees |

## RATINGS

### MAXIMUM RATINGS (Absolute Maximum Values)

|                                         |                       |
|-----------------------------------------|-----------------------|
| Anode Voltage                           | 13,200 Volts dc       |
| Grid No. 4 Voltage                      |                       |
| (Focusing Electrode)                    | -550 to 1100 Volts dc |
| Grid No. 2 Voltage                      | 770 Volts dc          |
| Grid No. 1 Voltage                      |                       |
| Negative Bias Value                     | 200 Volts dc          |
| Positive Bias Value <sup>1</sup>        | 0 Volts dc            |
| Positive Peak Value                     | 0 Volts               |
| Peak Heater-Cathode Voltage             |                       |
| Heater Negative with Respect to Cathode | 200 Volts dc          |
| Heater Positive with Respect to Cathode | 200 Volts dc          |

### TYPICAL OPERATING CONDITIONS

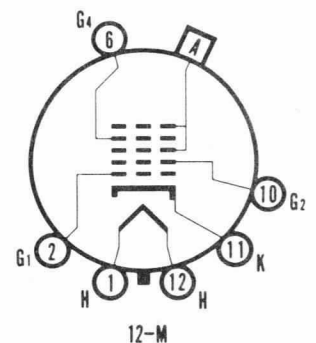
|                                              |                     |
|----------------------------------------------|---------------------|
| Anode Voltage <sup>2</sup>                   | 10,000 Volts dc     |
| Grid No. 4 Voltage for Focus <sup>3</sup>    | 0 to 300 Volts dc   |
| Grid No. 2 Voltage                           | 300 Volts dc        |
| Grid No. 1 Voltage for Cutoff <sup>4</sup>   | -28 to -72 Volts dc |
| Alignment Magnet Field Strength <sup>5</sup> | 0 to 4 Gauss        |

### MAXIMUM CIRCUIT VALUES

|                               |                  |
|-------------------------------|------------------|
| Grid No. 1 Circuit Resistance | 1.5 Megohms Max. |
|-------------------------------|------------------|

## QUICK REFERENCE DATA

Special Purpose Tube  
12" Direct Viewed  
Round Glass Type  
Spherical Faceplate  
Gray Filter Glass  
Magnetic Deflection  
Electrostatic Focus



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

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NOTES:

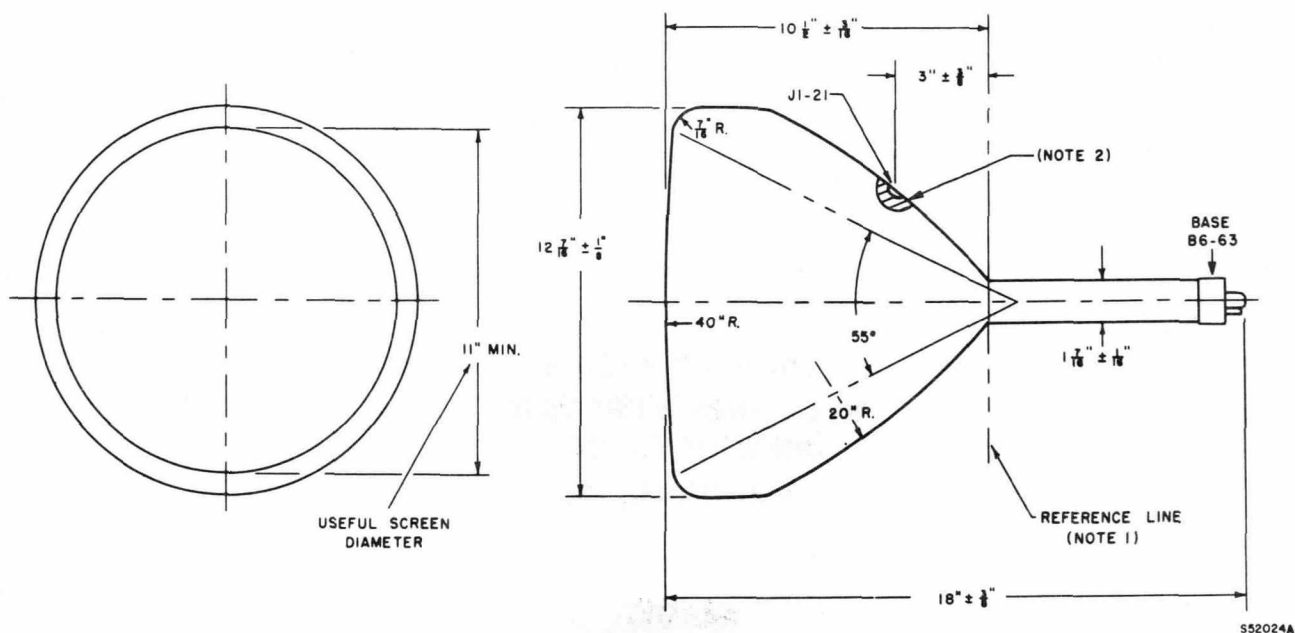
1. *At or near this rating, the effective resistance of the anode supply should be adequate to limit the anode input power to 6 watts. The screen of the 12ABP19 can be permanently damaged should the current density be permitted to rise too high. To prevent burning, minimum beam current densities should be employed.*
2. *Brilliance and definition decrease with decreasing anode voltage. In general, anode voltage should not be less than 8,000 volts.*
3. *With  $E_{g1}$  adjusted for  $I_b = 100$  microamperes,  $E_{g4}$  is adjusted for best overall focus of a  $7\frac{1}{2}'' \times 10''$  raster pattern.*
4. *Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.*
5. *For optimum quality of the focused spot, use of a beam alignment magnet is recommended. It should be an adjustable magnet of the specified strength, located approximately  $5\frac{3}{16}''$  from the reference line.*

**12ABP7A, 12ABP14A, 12ABP19A**

These types are identical to the 12ABP7, 12ABP14, 12ABP19 respectively, except that they employ aluminized screens.

WARNING:

*X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the Manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.*



# DIAGRAM NOTES:

1. Reference line is the point where a 1.500  $\begin{smallmatrix} +.003 \\ -.000 \end{smallmatrix}$  diameter ring gauge 2 inches long, will stop.
2. Anti-corona Coating 1-1/2" minimum radius concentric with contact. Do not handle tube by the part of the bulb having the anti-corona coating.