# 7BP- CATHODE-RAY TUBES

The Types 7BP- Cathode-ray Tubes are 7-inch magnetically focussed and deflected cathode-ray tubes primarily designed for radar indicator and other applications requiring a relatively large, flat screen area and a long persistence screen. The Type 7BP- is very similar to the Type 7MP-, the chief difference being in bulb shape. Other typical radar tubes include the Types 5FP-, 10KP- and 12SP-.

## GENERAL CHARACTERISTICS

### Electrical

| | |
|---|---|
| Heater Voltage | 6.3 Volts |
| Heater Current | 0.6 ± 10% Ampere |
| Focusing Method | Magnetic |
| Deflecting Method | Magnetic |
| Deflecting Angle (Approx.) | 53 Degrees |
| Phosphor | No. 7 |
| Fluorescence | Blue |
| Phosphorescence | Yellow |
| Persistence | Long |
| Direct Interelectrode Capacitances, Approx. | |
| Cathode to all other electrodes | 5 $\mu\mu$f. |
| Grid No. 1 to all other electrodes | 3.5 $\mu\mu$f. |
| Grid No. 2 to all other electrodes | 7 $\mu\mu$f. |

### Mechanical

| | |
|---|---|
| Overall Length | 13¼ ± ⅜ Inches |
| Greatest Diameter of Bulb | 7 ± ⅛ Inches |
| Minimum Useful Screen Diameter | 6 Inches |
| Bulb Contact (Recessed Small Ball Cap) | J1-22 |
| Base (Medium-Shell Octal 8-Pin) | B8-65 |
| Basing | 5AN |
| Bulb Contact Alignment J1-22 Contact aligns with pin No. 5 | ± 10 Degrees |

## MAXIMUM RATINGS—(Design Center Values)

| | |
|---|---|
| Anode Voltage | 8,000 Max. Volts D-C |
| Grid No. 2 Voltage | 700 Max. Volts D-C |
| Grid No. 1 Voltage | |
| Negative Bias Value | 125 Max. Volts D-C |
| Positive Bias Value[1] | 0 Max. Volts D-C |
| Positive Peak Value | 2 Max. Volts |
| Peak Grid No. 1 Drive from Cut-off | 65 Max. Volts |
| Peak Heater-Cathode Voltage | |
| Heater Negative with respect to cathode | 125 Max. Volts D-C |
| Heater Positive with respect to cathode | 125 Max. Volts D-C |

## TYPICAL OPERATING CONDITIONS

| | | | |
|---|---|---|---|
| Anode Voltage | 4,000 | 7,000 | Volts D-C |
| Grid No. 2 Voltage | 250 | 250 | Volts D-C |
| Grid No. 1 Voltage[2] | −25 to −70 | −25 to −70 | Volts D-C |
| Focusing Coil Current[3] | 75 to 102 | 99 to 135 | Ma. D-C |
| Spot Position[4] | 12 | — | mm. |

## MAXIMUM CIRCUIT VALUES

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

## MINIMUM CIRCUIT VALUES

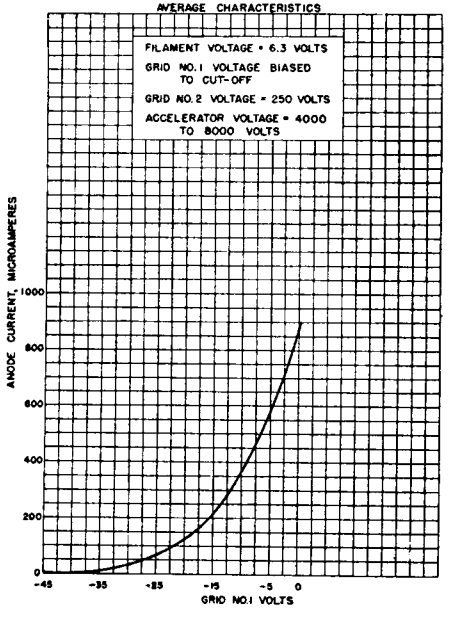
When the output capacitor of the power supply is capable of storing more than 250 microcoulombs, and when the inherent regulation of the power supply permits the instantaneous short-circuit current to exceed 1 ampere, the effective resistance in the circuit between the indicated electrode and the output capacitor should be as follows:

Grid No. 1 Circuit Resistance ..... 150 Min. Ohms
Grid No. 2 Circuit Resistance ..... 820 Min. Ohms
Anode Circuit Resistance ..... 9,100 Min. Ohms

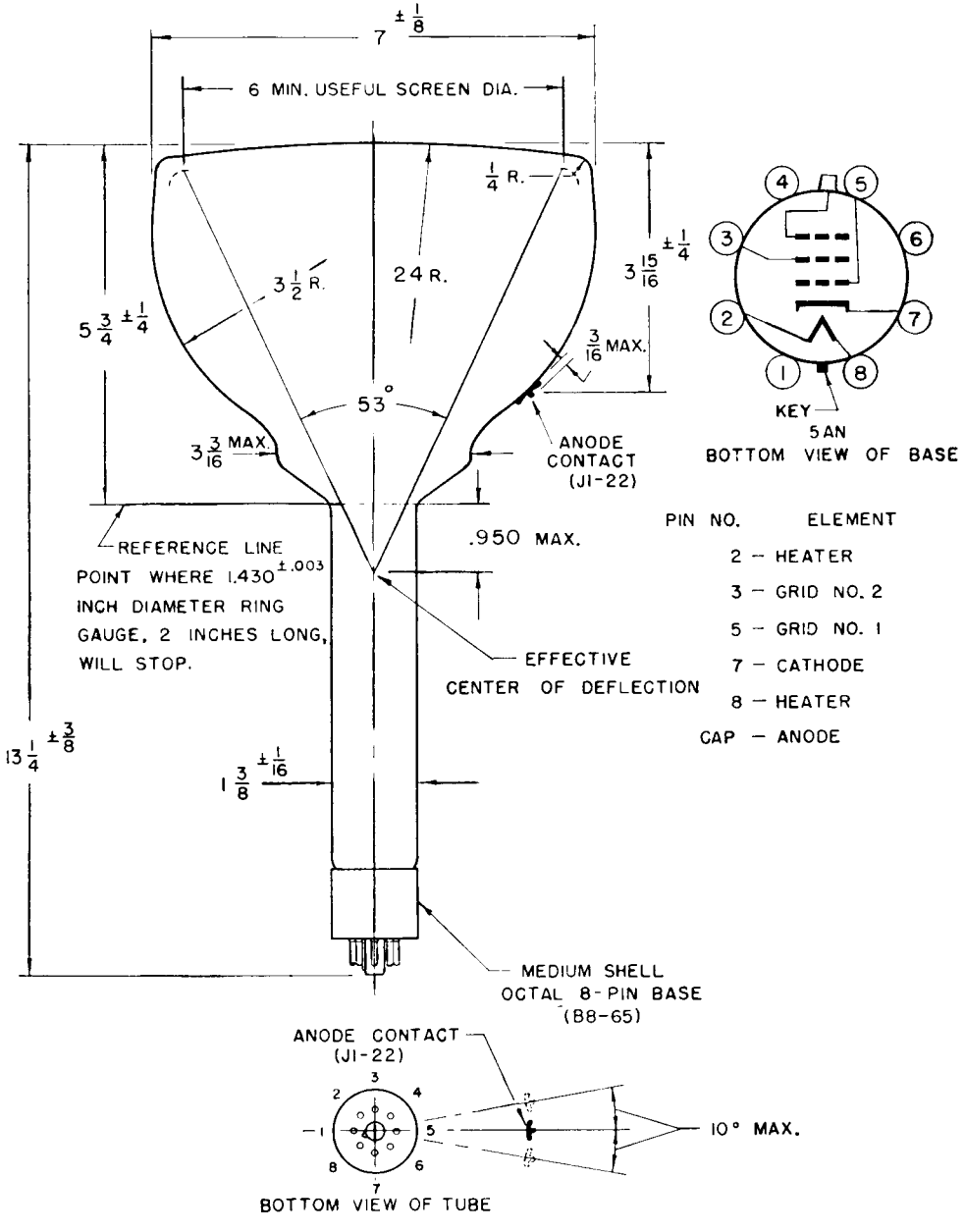
## NOTES

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.
2. Visual extinction of undeflected focused spot.
3. For JETEC standard focus coil No. 106, or equivalent, with the grid No. 1 voltage adjusted to produce an anode current of 200 microamperes and with distance (D) from reference line to center of air gap equal to 2.75 inches.
4. The center of the undeflected, unfocused spot will fall within a circle of 12 mm. radius concentric with the center of the tube face.

7BP-



# TYPE 7BP-




| PIN NO. | ELEMENT |
|---|---|
| 2 | HEATER |
| 3 | GRID NO. 2 |
| 5 | GRID NO. 1 |
| 7 | CATHODE |
| 8 | HEATER |
| CAP | ANODE |