from JEDEC release #2757, March 14, 1960

Thomas

# ENGINEERING DATA

**23WP4**
**Phototron Picture Tube**

## CHARACTERISTICS

### GENERAL DATA

| | |
|---|---|
| Focusing Method | Electrostatic |
| Deflecting Method | Magnetic |
| Deflecting Angle-Diagonal (Approx.) | 114 Degrees |
| Horizontal | 102 Degrees |
| Vertical | 84 Degrees |
| Phosphor | P4 Aluminized |
| Fluorescence | White |
| Persistence | Medium |
| Faceplate | Gray Filter Glass |
| Light Transmission | 76% (Approx.) |

### ELECTRICAL DATA

| | |
|---|---|
| Heater Voltage | 6.3 Volts |
| Heater Current | .6 Ampere ± 5% |
| Direct Interelectrode Capacitances (Approx.) | |
| Cathode to All Other Electrodes | 5 uuf |
| Grid No. 1 to All Other Electrodes | 6 uuf |
| Ion Trap Magnet | None |

### MECHANICAL DATA

| | |
|---|---|
| Minimum Useful Screen Dimensions | 19 1/4 x 15 3/16 Inches |
| Minimum Useful Screen Area (Approx.) | 276 Sq. In. |
| Bulb Contact (Recessed Small Cavity Cap) | J1-21 |
| Base (Small Wafer Eightar 7 Pin | B7-183 or B7-208 |
| Basing | 8 HR |
| J1-21 Contact Aligns with Pin Position No. 4 | ± 30 Degrees |
| Bulb Weight | 24 Lbs |

## RATINGS

### MAXIMUM RATINGS (Design Maximum Values)

| | |
|---|---|
| Anode Voltage (Note 1) | 20,000 Volts dc |
| Grid No. 4 Voltage (Focusing electrode) | -500 to + 2000 Volts dc |
| Grid No. 2 Voltage | 550 Volts dc |
| Grid No. 1 Voltage | |
| Negative Bias Value | 154 Volts dc |
| Positive Bias Value | 0 Volts dc |
| Positive Peak Value | 2 Volts |
| Peak Heater-Cathode Voltage (Note 2) | |
| Heater Negative with Respect to Cathode | |
| During Warm-up Period Not to exceed. 15 sec. | 450 Volts dc |
| After Equipment Warm-up Period | 200 Volts dc |
| Heater Positive with Respect to Cathode | 200 Volts dc |

### RECOMMENDED OPERATING CONDITIONS

| | |
|---|---|
| Anode Voltage | 16,000 Volts dc |
| Grid No. 4 Voltage (Note 3) | 0 to + 400 Volts dc |
| Grid No. 2 Voltage | 300 Volts dc |
| Grid No. 1 Voltage (Note 4) | -35 To -72 Volts dc |

### CIRCUIT VALUES

| | |
|---|---|
| Grid No. 1 Circuit Resistance | 1.5 Max. Megohm |
| External Conductive Coating to Anode Capacitance | 2500 uuf. Max. |
| | 2000 uuf. Min. |

THE 23WP4 IS A DIRECT-VIEW PICTURE TUBE FOR USE IN TELEVISION RECEIVERS AND INCLUDES SUCH FEATURES AS:

- A short straight electron gun not requiring an ion trap
- A short neck
- A diagonal deflection angle of 114°
- A gray tinted face.
- Rectangular Glass Type.
- Flat compound face.
- Electrostatic Focus
- Metal Backed Screen

### NOTES

1. Grid No. 5, Grid No. 3, and the collector are connected together within the tube, and referred to herein as anode.

2. Cathode should be returned to one side or to the mid-tap of the heater transformer winding.

3. For focus with anode current of 100 ua and 19 1/4 x 15 3/16" raster.

4. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

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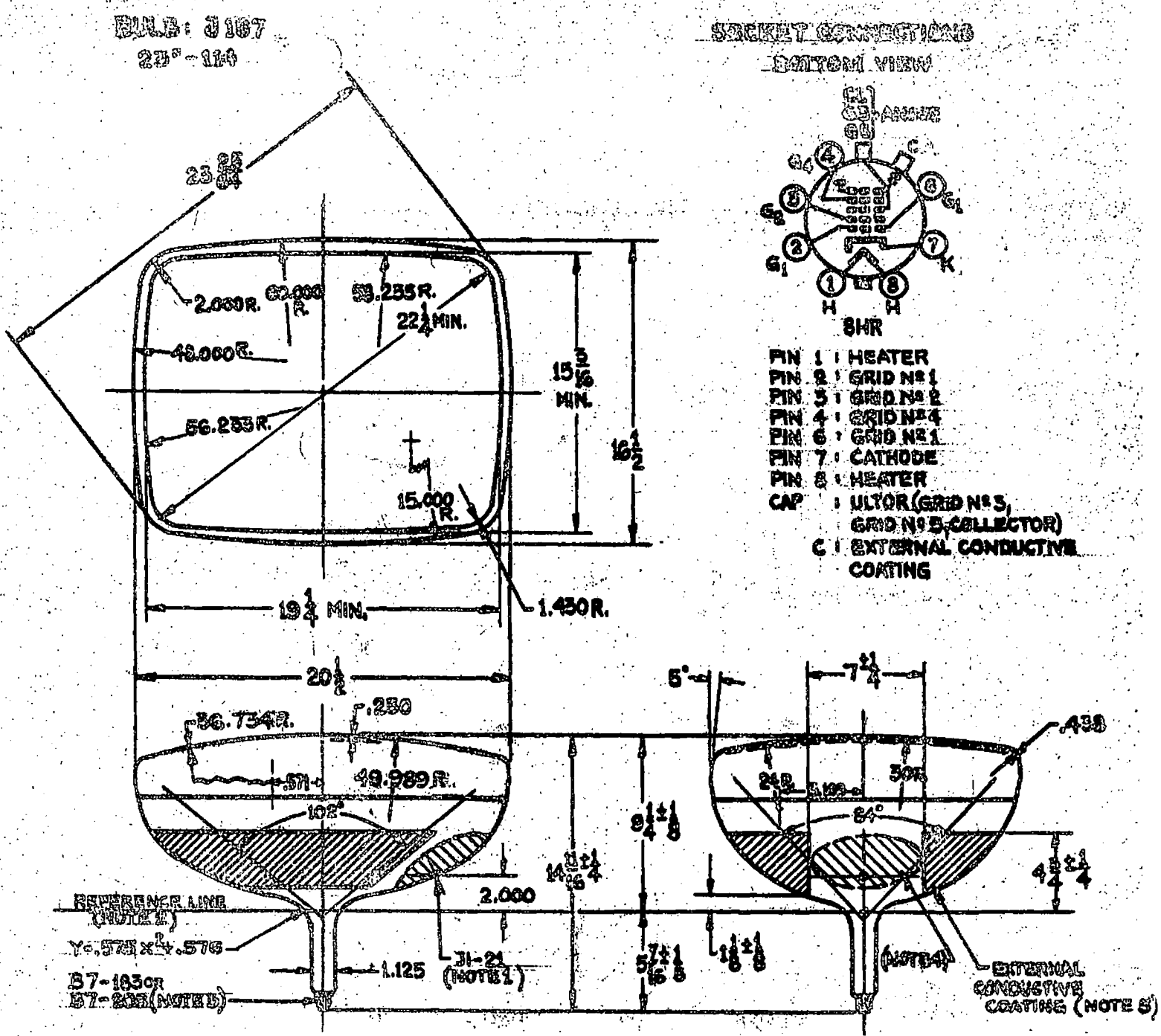


DIAGRAM NOTES:

1. Base Pin No. 4 aligns with horizontal centerline (A-A') within 30° and is on same side as anode contact, J1-21.
2. Reference line is determined by plane C-C' of JEDEC No. 126 Reference Line Gauge, when the gauge is seated against the bulb.
3. Socket for this base should not be rigidly mounted; it should have flexible leads and be allowed to move freely. Bottom circumference of base shell will fall within a circle concentric with bulb axis and having a diameter of 1-3/4".
4. Anti-corona coating around seam.
5. External Conductive Coating must be grounded.