



from JEDEC release
#3069, Dec. 12, 1960

Thomas

23AQF4
Phototron
Picture
Tube

ENGINEERING DATA

CHARACTERISTICS

GENERAL DATA

Focusing Method Electrostatic
Deflecting Method Magnetic
Deflecting Angle-Diagonal (Approx.) 11 1/2 Degrees
Horizontal 102 Degrees
Vertical 8 1/2 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 3 Ampere $\pm$ 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
Heater Warm-up 18 Seconds

MECHANICAL DATA

Minimum Useful Screen Dimensions 19 1/4 x 15 3/16 Inches
Minimum Useful Screen Area (Approx.) 282 Sq. In.
Bulb Contact (Recessed Small Cavity Cap) J1-21
Base (Small Wafer Eightar 7 Pin B7-208
Basing 8 HR
J1-21 Contact Aligns with Pin Position No. 4 $\pm$ 30 Degrees
Bulb Weight 2 1/4 Lbs

RATINGS

MAXIMUM RATINGS (Design Maximum Values)

Anode Voltage (Note 1) 19,800 Volts dc
Grid No. 4 Voltage (Focusing electrode) ... -500 to + 1000 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 180 Volts dc.

Heater Positive with Respect to Cathode 180 Volts dc.

RECOMMENDED OPERATING CONDITIONS

Anode Voltage 18,000 Volts dc.
Grid No. 4 Voltage (Note 3) 0 to +400 Volts dc.
Grid No. 2 Voltage 400 Volts dc.
Grid No. 1 Voltage (Note 4) -44 to -94 Volts dc.

CIRCUIT VALUES

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

THOMAS ELECTRONICS, INC., PASSAIC, NEW JERSEY

The 23AQF4 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 11 1/2°
- A gray tinted face.
- Rectangular Glass Type.
- Flat compound face.
- Electrostatic Focus.
- Metal Backed Screen.
- Heater Warm-up 18 Sec.

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 ma. 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.

THOMAS ELECTRONICS, INC.
118 9TH STREET,
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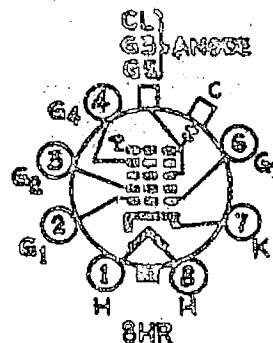
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BULB: J187

23"-114

SOCKET CONNECTIONS

BOTTOM VIEW



- PIN 1: HEATER
- PIN 2: GRID No 1
- PIN 3: GRID No 2
- PIN 4: GRID No 4
- PIN 6: GRID No 1
- PIN 7: CATHODE
- PIN 8: HEATER
- CAP: ULTOR (GRID No 3, GRID No 5, COLLECTOR)
- C: EXTERNAL CONDUCTIVE COATING

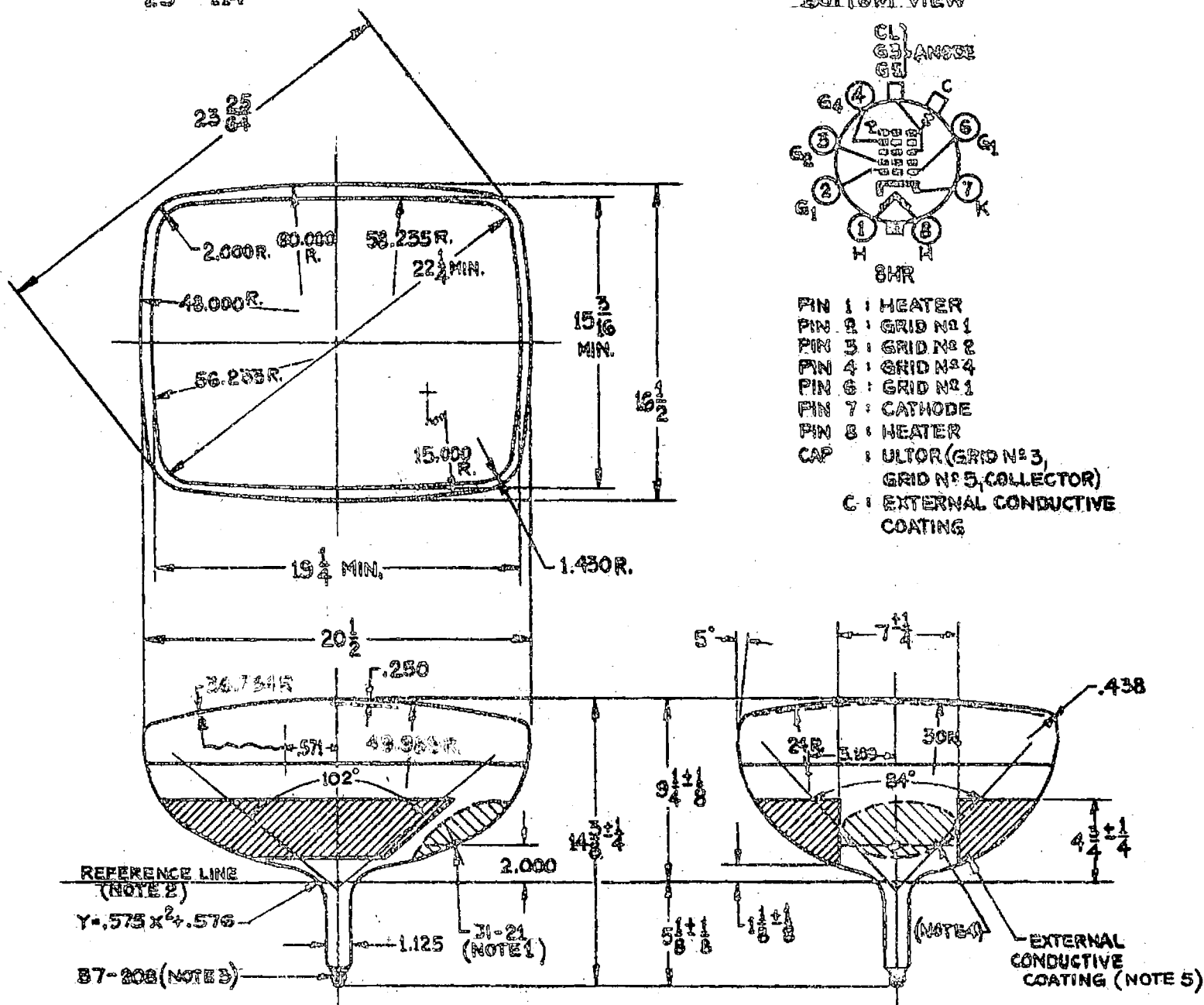


DIAGRAM NOTES:

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 connector.
5. External Conductive Coating must be grounded.