



from JEDEC release
#3069, Dec. 12, 1960

Thomas

23AQF₄
Phototron
Picture
Tube

ENGINEERING DATA

CHARACTERISTICS

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 11½°
- 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,
PASSAIC, NEW JERSEY

11/17/60

THOMAS ELECTRONICS, INC., PASSAIC, NEW JERSEY

GENERAL DATA

Focusing Method Electrostatic
 Deflecting Method Magnetic
 Deflecting Angle-Diagonal (Approx.) 11½ Degrees
 Horizontal 102 Degrees
 Vertical 8½ Degrees
 Phosphor P₄ Aluminized
 Fluorescence White
 Persistence Medium
 Faceplate Gray Filter Glass
 Light Transmission 76% (Approx.)

ELECTRICAL DATA

Heater Voltage 6.3 Volts
 Heater Current3 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
 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 ± 30 Degrees
 Bulb Weight 2½ 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 15½ 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) -4½ to -9½ Volts dc.

CIRCUIT VALUES

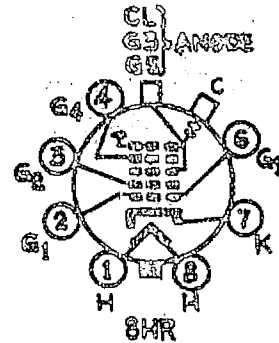
Grid No. 1 Circuit Resistance 1.5 Max. Megohm
 External Conductive Coating to Anode
 Capacitance 2500 uuf. Max.

BULB: J187

23"-114

SOCKET CONNECTIONS

BOTTOM VIEW



- PIN 1 : HEATER
- PIN 2 : GRID N°1
- PIN 3 : GRID N°2
- PIN 4 : GRID N°4
- PIN 6 : GRID N°1
- PIN 7 : CATHODE
- PIN 8 : HEATER
- CAP : ULTOR (GRID N°3, GRID N°5, COLLECTOR)
- C : EXTERNAL CONDUCTIVE COATING

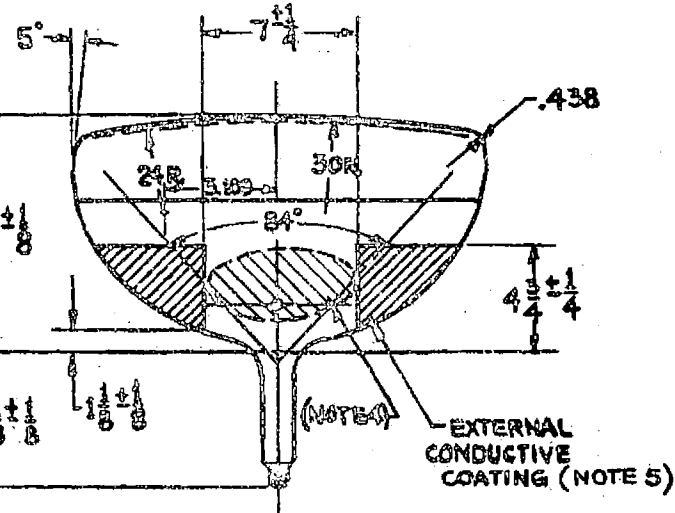
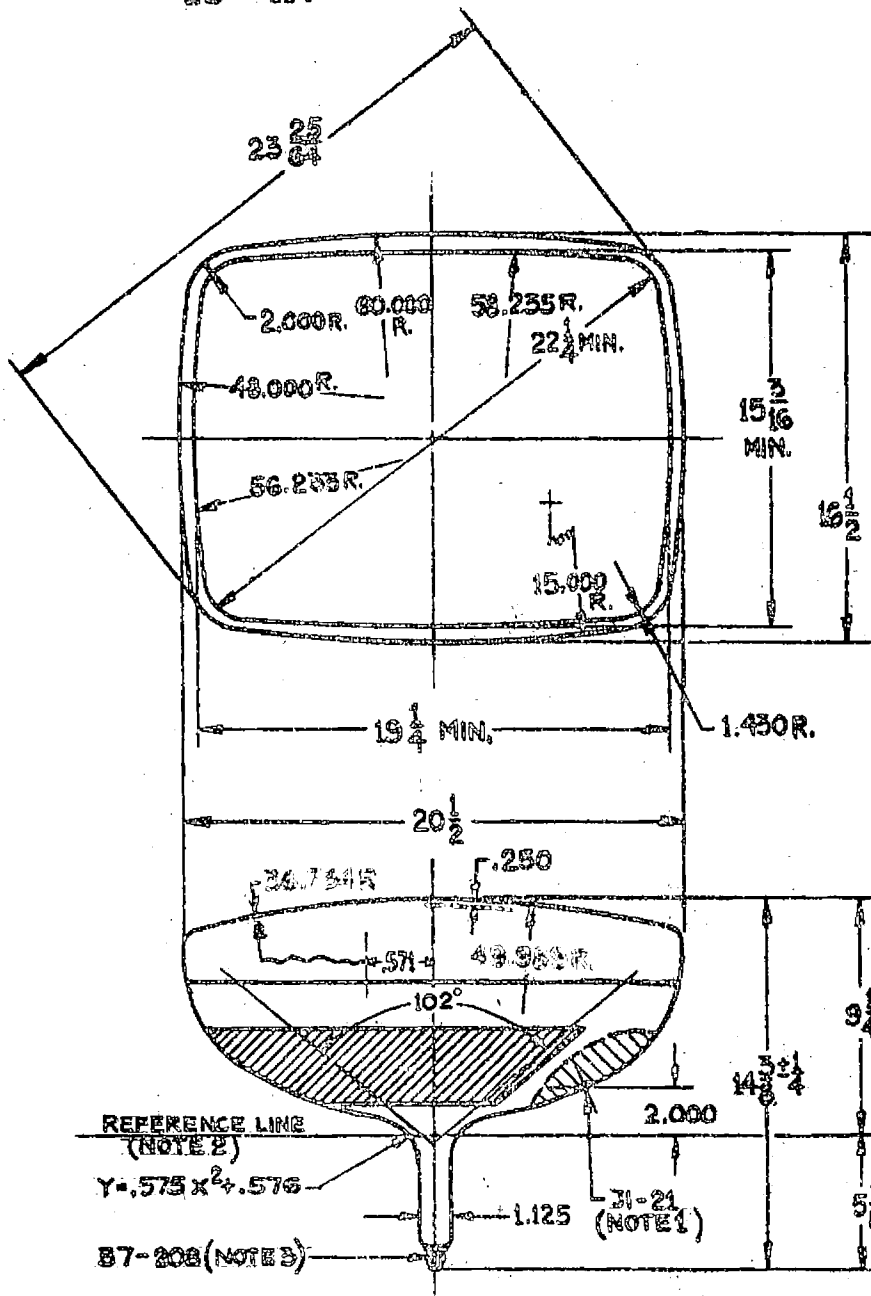


DIAGRAM NOTES:

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.