Thomas

ENGINEERING DATA

23HP4
Phototron
Picture
Tube

CHARACTERISTICS

GENERAL DATA

Focusing Method	Electrostatic
Deflecting Method	Magnetic
Deflecting Angle-Diagonal (Approx.)	110 Degrees
Horizontal	99 Degrees
Vertical	82 Degrees
Phosphor	P4 Aluminized
Fluorescence	White
Persistence	Medium
Faceplate	Gray Filter Glass
Light Transmission (including twin panel)	40% (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 5/6" x 15 1/4 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 or B7-183
Basing	8 HR
J1-21 Contact Aligns with Pin Position No. 4	± 30 Degrees

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 23HP4 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.
- Integral implosion panel.
- A diagonal deflection angle of 110°
- A gray tinted face
- Rectangular Glass Type.
- Spherical 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 5/16" x 15 1/4" 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, N. J.

from JEDEC release #2563, Aug. 24, 1959

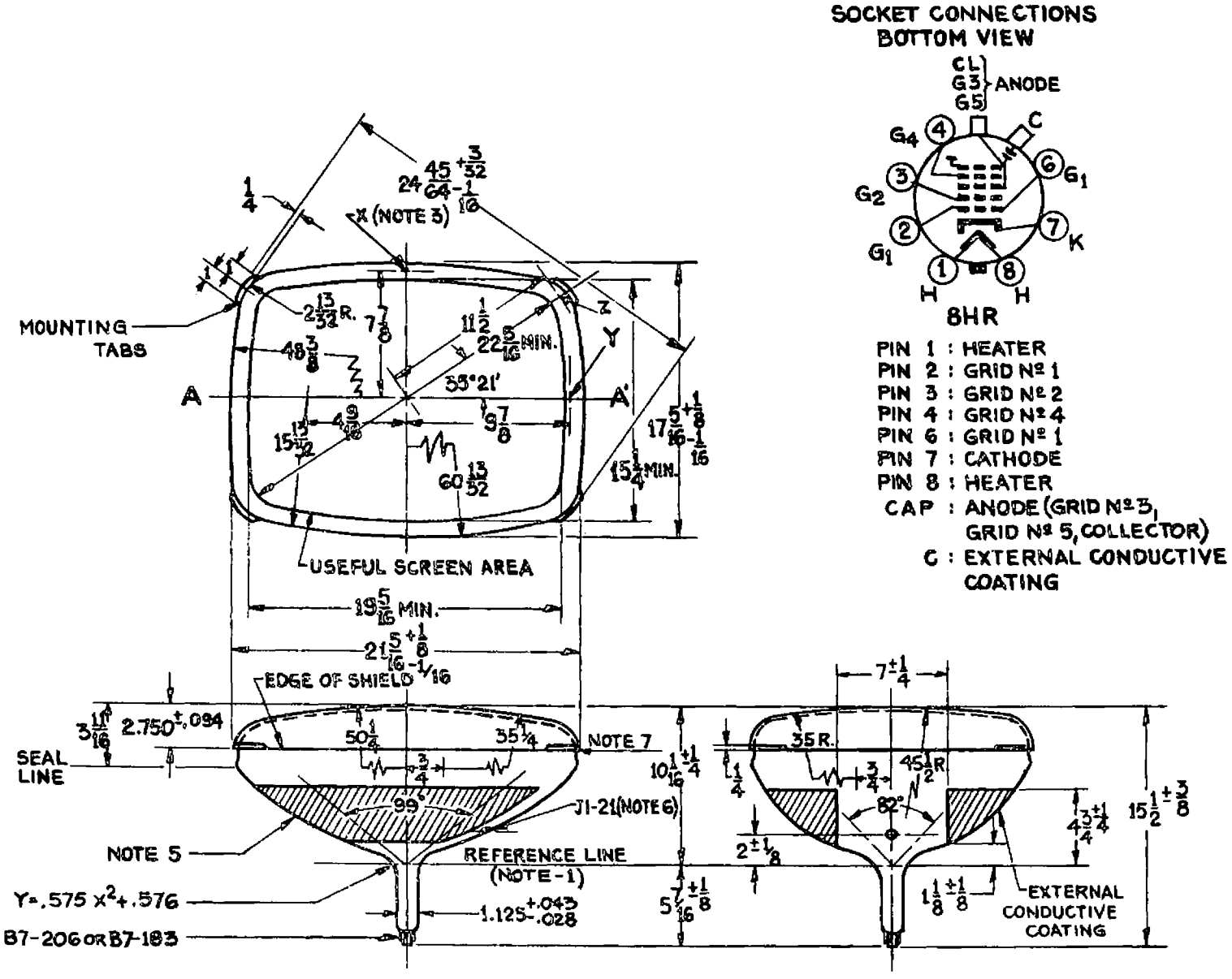

DIAGRAM NOTES:

1. Reference line is determined by plane C-C' of JEDEC No. 126 Reference Line Gauge, when the gauge is seated against the bulb.
2. Base Pin No. 4 aligns with horizontal centerline (A-A') within 30° and is on same side as anode contact, J1-21.
3. Planes perpendicular to tube axis and passing through points X, Y, and Z are located as follows:

   Plane tangent to crown of face to plane of X = .758" Nom.
   Plane of X to plane of Y = .463" ± .030"
   Plane of X to plane of Z = .970" ± .030"
   Plane of X to the bottom of ear = 1.960"

4. Dimensions are in inches.
5. External Conductive Coating must be grounded.
6. Anti-corona coating around connector.
7. Panel edge flatness: .075" maximum out of plane.