



Thomas

ENGINEERING DATA

23CWPh
Phototron
Picture
Tube

from JEDEC release #3491, Dec. 4, 1961

CHARACTERISTICS

GENERAL DATA

Focusing Method..... Tri Potential
Deflecting Method..... Magnetic
Deflecting Angle-Diagonal (Approx.) 110 Degrees
 Horizontal..... 99 Degrees
 Vertical..... 82 Degrees
Phosphor P4 Aluminized
Fluorescence White
Persistence..... Medium
Faceplate Grey Filter Glass
Light Transmission 76% (Approx.)

ELECTRICAL DATA

Heater Voltage 6.3 Volts
Heater Current 6 Ampere $\pm$ 5%
Direct Inter-electrode 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.) 282 Sq. In.
Bulb Contact (Recessed Small Cavity Cap) J1-21
Base (Small Wafer Eighter 7 Pin) B7-208
Basing 8 JR
 J1-21 Contact Aligns with Pin Position No. 4 $\pm$ 30 Degrees
Bulb Weight 25 Lbs.

RATINGS

MAXIMUM RATINGS (Design Maximum Values)

Anode Voltage Note 1 22,000 Volts dc
Grid No. 3 Voltage (Focusing electrode) 4700 Volts dc
Grid No. 2 Voltage 600 Volts dc
Grid No. 1 Voltage
 Negative Bias Value 155 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. 3 Voltage (Note 3) 0 to + 400 Volts dc
Grid No. 2 Voltage 500 Volts dc
Grid No. 1 Voltage (Note 4) -43 to -78 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 23CWPh 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 110°
- . A grey tinted face.
- . Rectangular Glass Type.
- . Flat compound face.
- . Tri Potential E.S. Focus
- . Metal Backed Screen

NOTES

1. Grid No. 4 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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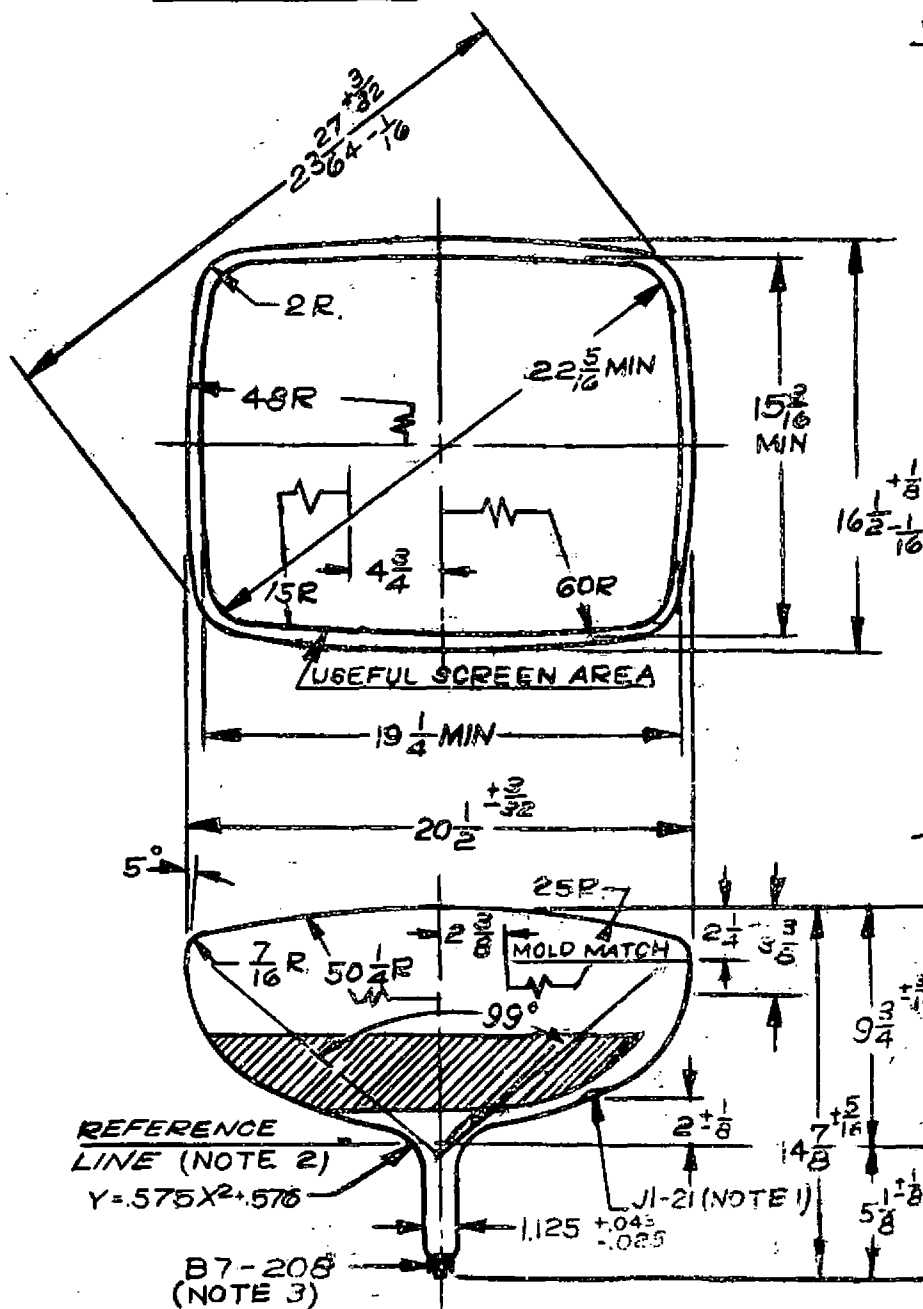
118 9th STREET

PASSAIC, NEW JERSEY

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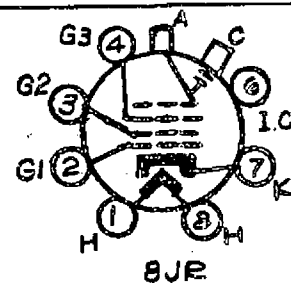
BULB: J187E1

23"-110° H/W



SOCKET CONNECTIONS

BOTTOM VIEW



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

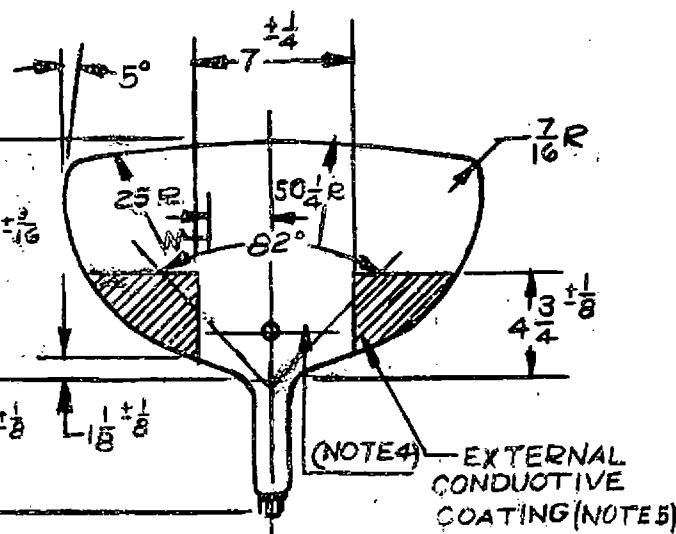


DIAGRAM NOTES:

1. Base Pin No. 1 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 G-G' 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 shall still fall within a circle concentric with bulb axis and having a diameter of $19\frac{1}{4}$.
4. Anti-corona coating around anode.
5. External conductive coating must be ground.