



PICTURE TUBES

(MONOCHROME WITH MAGNETIC DEFLECTION)

JEDEC REGISTRATION DATA

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TUBE TYPE 23EFP4

DESCRIPTION

The 23EFP4 is a 23 inch electrostatic focus and magnetic deflection rectangular glass picture tube employing integral implosion protection consisting of a face rim band, tension strap and funnel coating. Other outstanding features include a non-ion trap gun designed for operation at low grid 2 voltage for use in cathode drive circuits and an aluminized screen for increased light output and reduced undesirable screen charging. An external conductive coating is provided to serve as a filter capacitor when grounded.

ELECTRICAL DATA

Focusing Method	Electrostatic
Deflection Method	Magnetic
Deflection Angles (Approximate)	
Diagonal	110 degrees
Horizontal	99 degrees
Vertical	82 degrees
Direct Interelectrode Capacitance	
Cathode to All Other Electrodes (Approximate)	5 uuf
Grid No. 1 to All Other Electrodes (Approximate)	6 uuf
External conductive coating to anode	2500 max. uuf
	1700 min. uuf
Heater Current at 6.3 volts	600 ± 30 ma
Heater Warm-up Time	11 seconds
Electron Gun	
Ion Trap	None
Focus Lens	Unipotential

OPTICAL DATA

Phosphor Number	P4 Aluminized
Light Transmittance at Center (Approximate)	42 per cent
Antireflection Treatment	None

MECHANICAL DATA

Overall Length	14 7/8 ± 5/16 inches
Neck Length	5 1/8 ± 1/8 inches
Greatest Dimensions of Tube (At mold seam)	
Diagonal	23 1/2 ± 1/8 inches
Width	20 5/8 ± 1/8 inches
Height	16 5/8 ± 1/8 inches
Minimum Useful Screen Dimensions (projected)	
Diagonal	22 5/16 inches
Horizontal Axis	19 1/4 inches
Vertical Axis	15 1/8 inches
Area	282 sq. inches
Implosion Protection	Banded with coated funnel
Bulb	J187K1
Bulb Contact	J1-21
Base	B7-208
Basing	8HR
Bulb Contact Alignment	
Anode contact aligns with Pin Position No. 4	± 30 degrees

RATINGS (Design Maximum System)

Unless otherwise specified, voltage values are positive and measured with respect to Grid No. 1.

Maximum Anode Voltage	22,000	volts
Minimum Anode Voltage	11,000	volts
Maximum Grid No. 4 (Focusing Electrode) Voltage	+1250,-400	volts
Maximum Grid No. 2 Voltage	70	volts
Minimum Grid No. 2 Voltage	40	volts
Cathode Voltage		
Maximum negative value	0	volts dc
Maximum negative peak value	2	volts
Maximum positive value	154	volts dc
Maximum positive peak value	220	volts
Maximum Heater Voltage	6.9	volts
Minimum Heater Voltage	5.7	volts
Maximum Heater - Cathode Voltage		
Heater negative with respect to cathode		
During warm-up period not to exceed 15 seconds	450	volts
After equipment warm-up period	200	volts
Heater positive with respect to cathode	200	volts

TYPICAL OPERATING CONDITIONSCATHODE DRIVE SERVICE

Unless otherwise specified, all voltage values are positive with respect to Grid No. 1.

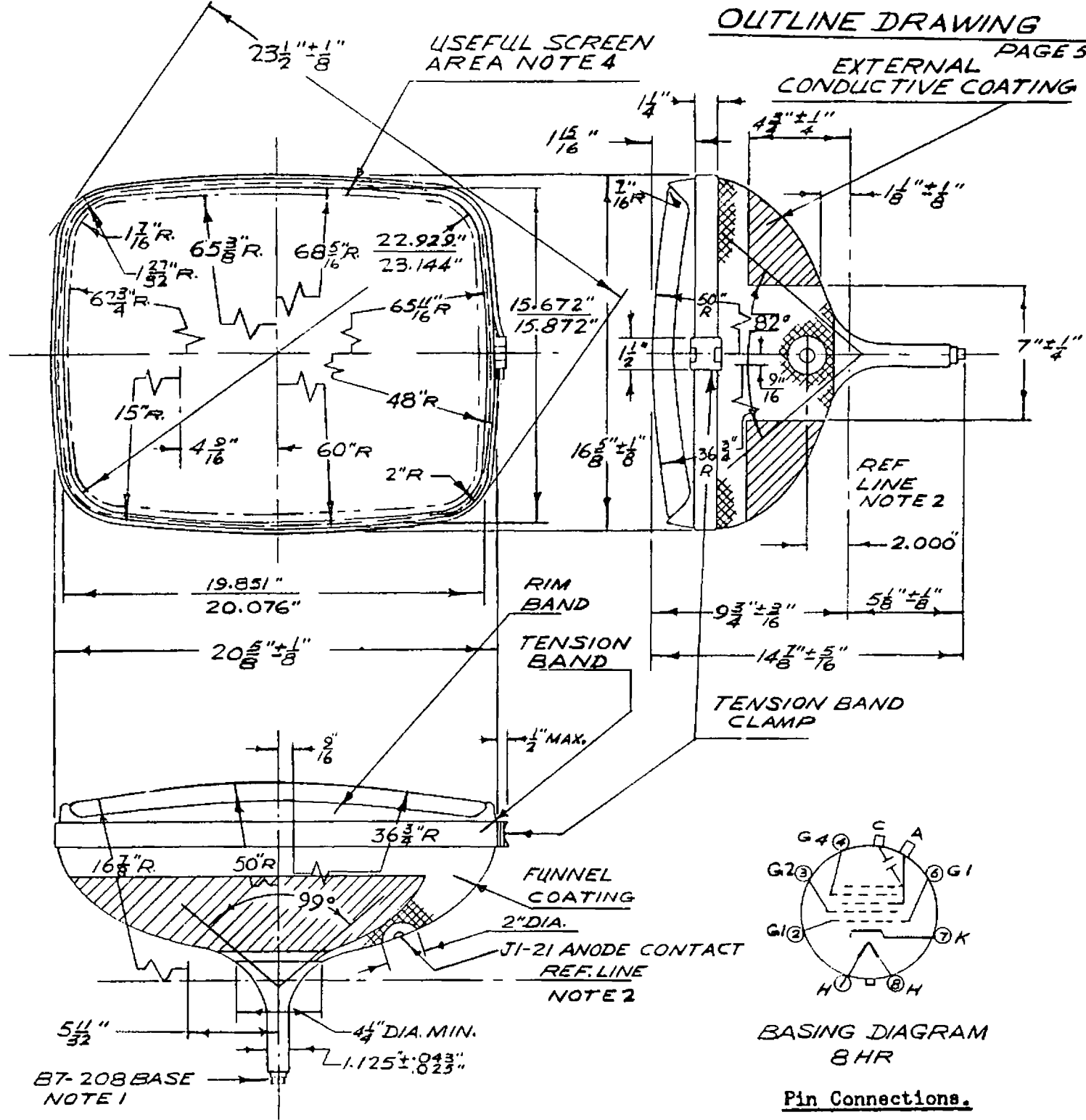
Anode Voltage	18,000	volts dc
Grid No. 4 Voltage (Focusing Electrode) (Notes 2 and 3)	200	volts dc
Grid No. 2 Voltage	50	volts dc
Cathode Voltage (Note 1)	34 to 49	volts dc

MAXIMUM CIRCUIT VALUES

Maximum Grid No. 1 Circuit Resistance	1.5	megohms
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NOTES

1. Visual extinction of focused raster.
2. With the combined Grid No. 1 bias voltage and video-signal voltage adjusted to give an anode current of 150 microamperes on a 19 1/4" by 15 1/8" pattern from RCA 2F21 monoscope or equivalent.
3. Individual tubes will have satisfactory focus at same value between 0 and 400 volts.



NOTES:

- 1: The plane through the tube axis and pin #4 may vary from the plane through the tube axis and anode contact by an angular tolerance (Measured about the tube axis) of $\pm 30^\circ$. The anode contact is on the same side as Pin 4.
- 2: Reference line is determined by reference line Gauge No. G126.
- 3: Deflection angle on the diagonal is 110° .
- 4: Minimum useful screen dimensions projected:
 Diagonal----- 22 5/16"
 Horizontal Axis---- 19 1/4"
 Vertical Axis----- 15 1/8"

BASING DIAGRAM 8 HR

Pin Connections.

- Pin No. 1 Heater
- Pin No. 2 Grid No. 1
- Pin No. 3 Grid No. 2
- Pin No. 4 Grid No. 4
- Pin No. 6 Grid No. 1
- Pin No. 7 Cathode
- Pin No. 8 Heater
- Bulb contact: Anode.