

CHARACTERISTICS

GENERAL DATA

Focusing	Electrostatic
Deflection Method	Magnetic
Deflection Angles (Approx.)	
Horizontal	80 Degrees
Diagonal	92 Degrees
Vertical	65 Degrees
Phosphor	Aluminized P4
Fluorescence	White
Persistence	Medium Short
Faceplate	Gray Filter Glass
Light Transmittance at Center (Approx.)	42 Percent

Type 23DTP4 is similar to Type 23CZP4 except that it employs the banded tube with coated funnel construction for integral implosion protection and has reduced faceplate transmittance.

ELECTRICAL DATA

Heater Voltage	6.3 Volts	
Heater Current	0.60 ± 5 % Ampere	
Heater Warm-up Time ¹	11 Seconds	
Direct Interelectrode Capacitances (Approx.)		
Cathode to All Other Electrodes	5 pf	
Grid No. 1 to All Other Electrodes	6 pf	
External Conductive Coating and Rim Band to Anode ²	2500 pf	Max.
	1700 pf	Min.

MECHANICAL DATA

Minimum Useful Screen Dimensions (Maximum Assured)	
Height	15 1/8 Inches
Width	19 1/4 Inches
Diagonal	22 5/16 Inches
Area	282 Sq. Inches
Neck Length	6 ± 3/16 Inches
Overall Length	18 1/2 ± 3/8 Inches
Bulb	J187J
Bulb Contact (Recessed Small Cavity Cap)	J1-21
Base	B6-203
Basing	12L
Weight (Approx.)	29 Pounds

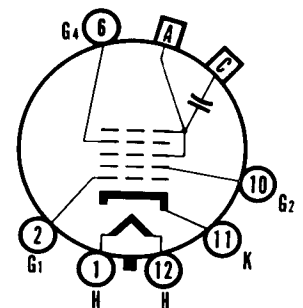
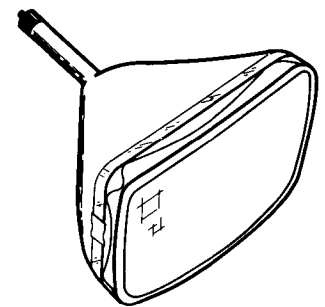
RATINGS

MAXIMUM RATINGS (Design Maximum Values)

Grid Drive Service³		
Maximum Anode Voltage	25,000 Volts	dc
Minimum Anode Voltage	12,000 Volts	dc
Grid No. 4 (Focusing Electrode) Voltage	-550 to +1100 Volts	dc
Grid No. 2 Voltage	550 Volts	dc
Grid No. 1 Voltage		
Negative Bias Value	155 Volts	dc
Negative Peak Value	220 Volts	
Positive Bias Value	0 Volt	dc
Positive Peak Value	2 Volts	
Peak 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	

QUICK REFERENCE DATA

Television Picture Tube
 23" Direct Viewed
 Rectangular Glass Type
 Gray Filter Glass
 Aluminized Screen
 Electrostatic Focus
 92° Magnetic Deflection
 No Ion Trap
 External Conductive Coating
 Banded Tube, Coated Funnel



12-1

SYLVANIA ELECTRONIC TUBES

A Division of
 Sylvania Electric Products Inc.

PICTURE TUBE OPERATIONS

SENECA FALLS, NEW YORK

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PAGE 1 OF 3

File Under

TELEVISION PICTURE TUBES

MAXIMUM RATINGS (Design Maximum Values) (Cont'd)

Cathode Drive Service⁴		
Maximum Anode Voltage	25,000 Volts	dc
Minimum Anode Voltage	12,000 Volts	dc
Grid No. 4 (Focusing Electrode) Voltage	-400 to +1250 Volts	dc
Grid No. 2 Voltage	700 Volts	dc
Cathode Voltage		
Positive Bias Value	155 Volts	dc
Positive Peak Value	220 Volts	
Negative Bias Value	0 Volt	dc
Negative Peak Value	2 Volts	
Peak 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 CONDITIONS

Grid Drive Service³		
Anode Voltage	20,000 Volts	dc
Grid No. 4 Voltage for Focus	0 to +400 Volts	dc
Grid No. 2 Voltage	300 Volts	dc
Grid No. 1 Voltage Required for Cutoff ⁵	-40 to -76 Volts	dc
Cathode Drive Service⁴		
Anode Voltage	20,000 Volts	dc
Grid No. 4 Voltage for Focus	0 to +400 Volts	dc
Grid No. 2 Voltage	300 Volts	dc
Cathode Voltage Required for Cutoff ⁵	+37 to +64 Volts	dc

CIRCUIT VALUES

Grid No. 1 Circuit Resistance 1.5 Megohms Max.

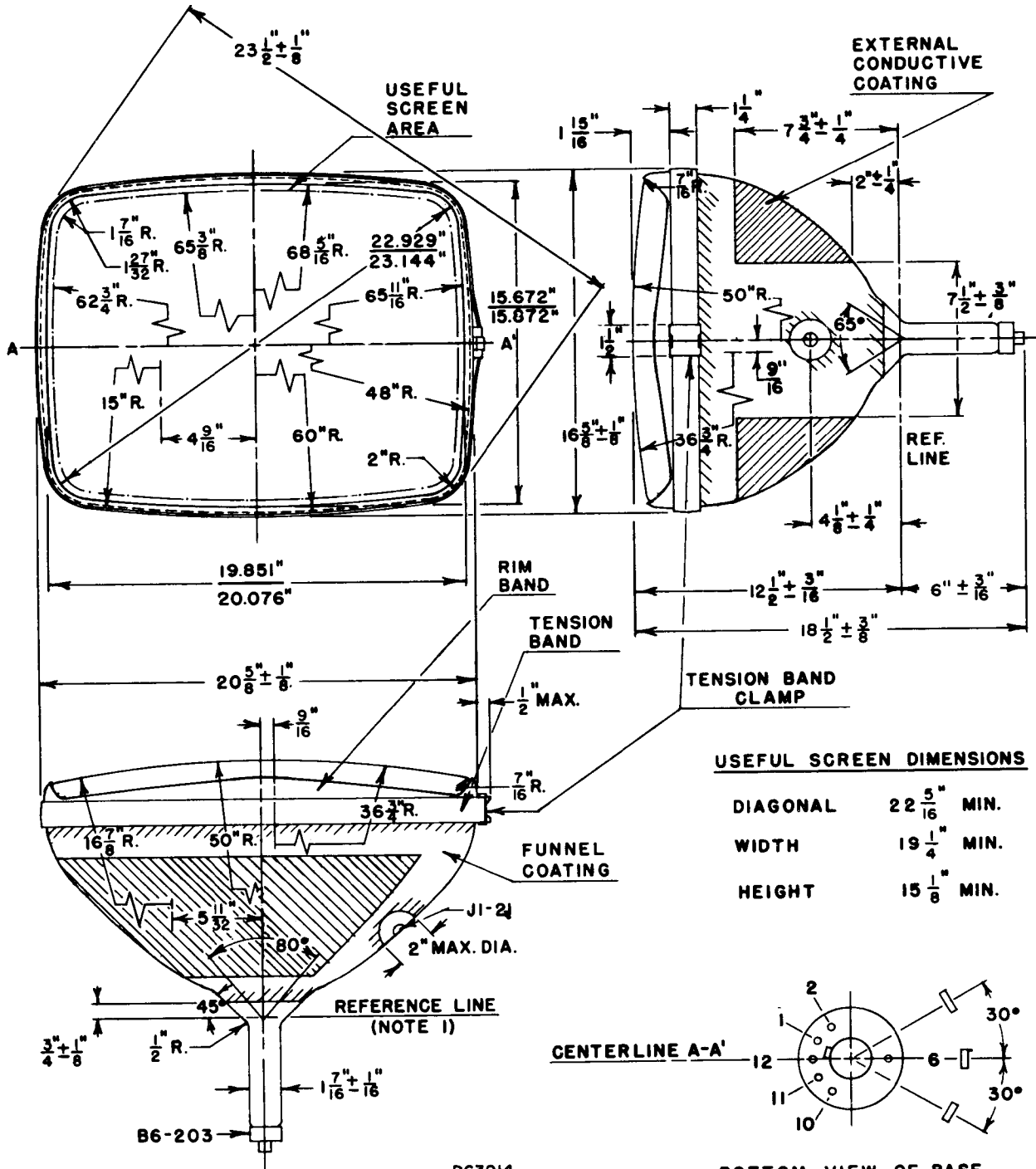
NOTES:

1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80 % of the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.
2. External conductive coating and rim band must be grounded.
3. Voltages are positive with respect to cathode unless otherwise indicated.
4. Voltages are positive with respect to Grid No. 1 unless otherwise indicated.
5. Visual extinction of focused raster. Extinction of stationary focused spot will require that the absolute value of the bias between cathode and grid No. 1 be increased by about 5 volts.

WARNING:

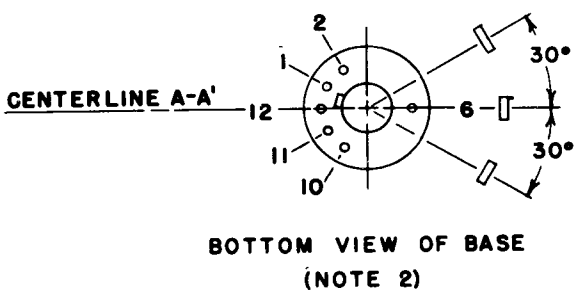
X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

OUTLINE



USEFUL SCREEN DIMENSIONS

DIAGONAL	22 5/16 MIN.
WIDTH	19 1/4 MIN.
HEIGHT	15 1/8 MIN.



D63014

DIAGRAM NOTES:

1. Reference line is determined by plane C-C' of JEDEC No. 116 Reference Line Gauge, when the gauge is seated against the bulb.
2. Base Pin No. 6 aligns with horizontal centerline (A-A') within 30° and is on same side as anode contact, J1-21.