

## Picture Tube

### PAN-O-PLY — INTEGRAL IMPLOSION PROTECTION

(Provided by Formed Rim and Welded Tension Bands around Periphery of Tube Panel—No Separate Safety-Glass or Integral Protective Window Required)

**RECTANGULAR GLASS TYPE** **ALUMINIZED SCREEN**  
**LOW-VOLTAGE ELECTROSTATIC FOCUS** **110° MAGNETIC DEFLECTION**  
**NO ION-TRAP MAGNET REQUIRED**

#### Electrical:

Direct Interelectrode Capacitances:

Cathode to all other electrodes. . . . .	5	pf
Grid No.1 to all other electrodes. . . . .	6	pf
External conductive coating to anode <sup>a</sup> . . . . .	{ 2500 max. 1700 min.	pf pf
Heater Current at 6.3 volts. . . . .	600 ± 30	ma
Heater Warm-Up Time (Average). . . . .	11	seconds
Electron Gun . . . . .	Type Requiring No Ion-Trap Magnet	

#### Optical:

Phosphor (For curves, see front of this section). P4—Sulfide Type, Aluminized  
 Faceplate. . . . . Filterglass  
 Light Transmission at center (Approx.) . . . . . 42%

#### Mechanical:

Weight (Approx.) . . . . . 28 lbs  
 Overall length . . . . . 14.875" ± .281"  
 Neck length. . . . . 5.125" ± .125"  
 Projected Area of Screen . . . . . 282 sq. in.  
 External Conductive Coating:

Type . . . . . Regular-Band  
 Contact area for grounding . . . . . Near Reference Line

For Additional Information on Coatings and Dimensions:

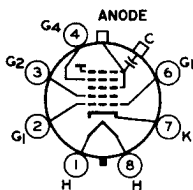
See *Picture-Tube Dimensional-Outlines* and *Bulb J187 K* sheets at front of this section

Cap. . . . . Recessed Small Cavity (JEDEC No.J1-21)

Base . . . . . Small-Button Noveightar 7-Pin, Arrangement 1, (JEDEC No.B7-208)

Basing Designation for BOTTOM VIEW . . . . . 8HR

- Pin 1—Heater
- Pin 2—Grid No.1
- Pin 3—Grid No.2
- Pin 4—Grid No.4
- Pin 6—Grid No.1
- Pin 7—Cathode
- Pin 8—Heater
- Cap—Anode (Grid No.3, Grid No.5, Screen, Collector)
- C—External conductive Coating



# 23ETP4

## Maximum and Minimum Ratings, Design-Maximum Values:

*Unless otherwise specified, voltage values are positive with respect to cathode*

Anode Voltage. . . . .	{ 23000 max. 11000 min.	volts volts
Grid-No.4 Voltage:		
Positive value . . . . .	1100 max.	volts
Negative value . . . . .	550 max.	volts
Grid-No.2 Voltage. . . . .	{ 550 max. 200 min.	volts volts
Grid-No.1 Voltage:		
Negative peak value. . . . .	220 max.	volts
Negative bias value. . . . .	155 max.	volts
Positive bias value. . . . .	0 max.	volts
Positive peak value. . . . .	2 max.	volts
Heater Voltage . . . . .	{ 6.9 max. 5.7 min.	volts volts
Peak Heater-Cathode Voltage:		
Heater negative with respect to cathode:		
During equipment warm-up period		
not exceeding 15 seconds . . . . .	450 max.	volts
After equipment warm-up period . . . . .	300 max.	volts
Heater positive with respect to cathode:		
Combined AC & DC Voltage . . . . .	200 max.	volts
DC Component . . . . .	100 max.	volts

## Typical Operating Conditions for Cathode-Drive Service:

*Unless otherwise specified, voltage values are positive with respect to grid No.1*

Anode Voltage . . . . .	18000	volts
Grid-No.4 Voltage <sup>b</sup> . . . . .	200	volts
Grid-No.2 Voltage . . . . .	300	volts
Cathode Voltage for visual		
extinction of focused raster. . . . .	28 to 62	volts
Field Strength of required		
adjustable Centering Magnet . . . . .	0 to 12	gauss

## Maximum Circuit Value:

Grid-No.1 Circuit Resistance. . . . .	1.5 max.	megohms
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<sup>a</sup> Includes implosion protection hardware.

<sup>b</sup> The grid-No.4 voltage required for optimum focus of any individual tube will have a value anywhere between 0 and + 400 volts with the combined grid-No.1 voltage and video-signal voltage adjusted to give an anode current of 200 microamperes on a 13-1/2-inch by 18-inch pattern from an RCA-2F21 monoscope, or equivalent.

For X-radiation shielding considerations, see sheet  
*X-RADIATION PRECAUTIONS FOR CATHODE-RAY TUBES*  
at front of this Section

