

# 12BNP4A

## Picture Tube

**PAN-O-PLY TYPE**  
**NO ION-TRAP MAGNET REQUIRED**

**LOW-VOLTAGE ELECTROSTATIC FOCUS**  
**110° MAGNETIC DEFLECTION**

### 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>	550 min - 850 max	pF
Heater Current at 6.3 V . . . . .	450 ± 20	mA
Heater Warm-up Time (Average) . . . . .	11	s
Electron Gun . . . . .	Type Requiring No Ion-Trap Magnet	

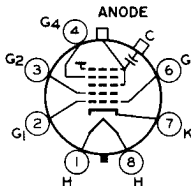
### OPTICAL

Phosphor . . . . .	.P4—Sulfide Type, Aluminized	
For curves, see front of this section		
Faceplate . . . . .	Filterglass	
Light transmission at center (Approx.) . . . . . 49%		

### MECHANICAL

Weight (Approx.) . . . . .	5 lb
Overall Length . . . . .	9.348 ± .250 in
Neck Length . . . . .	4.375 ± .125 in
Projected Area of Screen . . . . .	.74 sq in
<b>External Conductive Coating</b>	
Type (See CRT OUTLINES 1 at front of this section) . . . . . Regular-Band	
Contact area for grounding . . . . . Near Reference Line	
Cap . . . . .	Recessed Small Cavity (JEDEC No. J1-21)
Base . . . . .	Small-Button Neoeightar 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

### MAXIMUM AND MINIMUM RATINGS, DESIGN-MAXIMUM VALUES

*Voltages are positive with respect to cathode*

Anode Voltage . . . . .	9000 min - 15000 max	V
<b>Grid-No.4 Voltage</b>		
Positive value . . . . .	1100 max	V
Negative value . . . . .	550 max	V
<b>Grid-No.2 Voltage</b> . . . . .	125 min - 550 max	V
<b>Grid-No.1 Voltage</b>		
Negative peak value . . . . .	220 max	V
Negative bias value . . . . .	155 max	V
Positive bias value . . . . .	0 max	V
Positive peak value . . . . .	2 max	V



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Heater Voltage. . . . . 5.7 min - 6.9 max V

**Peak Heater-Cathode Voltage**

Heater negative with respect to cathode:

During equipment warm-up period  $\leq 15$  sec. 450 max V

After equipment warm-up period . . . 300 max V

Heater positive with respect to cathode:

Combined AC & DC voltage. . . . . 200 max V

DC component. . . . . 100 max V

**TYPICAL OPERATING CONDITIONS FOR CATHODE-DRIVE SERVICE**

*Voltages are positive with respect to grid No.1*

Anode Voltage . . . . . 13000 V

Grid-No.4 Voltage<sup>b</sup>. . . . . 100 V

Grid-No.2 Voltage . . . . . 140 V

Cathode Voltage . . . . . 22 to 42 V

For visual extinction of focused raster

Field Strength. . . . . 0 to 12 G

Of required adjustable centering magnet

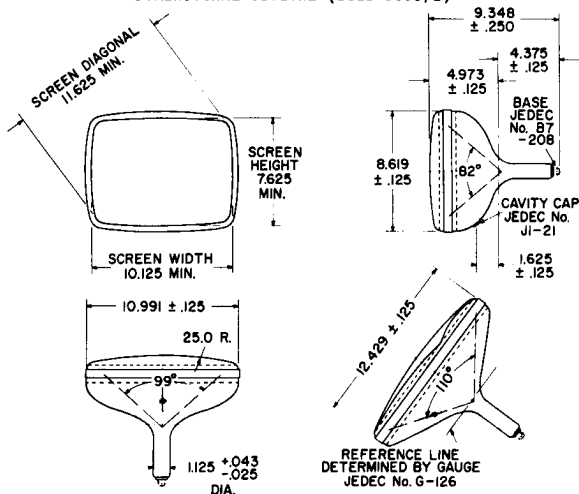
**MAXIMUM CIRCUIT VALUE**

Grid-No.1 Circuit Resistance. . . . . 1.5 max M $\Omega$

<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 -100 and +300 volts with the combined cathode voltage and video-signal voltage adjusted to give an anode current of 75 microamperes on a 6-3/4-inch by 9-inch pattern from an RCA-2F21 monoscope, or equivalent.

**DIMENSIONAL OUTLINE (BULB J99C/E)**



92CL-13275

DIMENSIONS IN INCHES

