



Excellence in Electronics

TYPE
5AHP7
5AHP7A
5AHP14
5AHP14A
5AHP19A

The type 5AHP— is a 5 inch electrostatic focus and magnetic deflection cathode ray tube suitable for radar applications. A low-voltage electrostatic focus lens is employed, designed to operate at or near cathode potential to afford substantially automatic focus, independent of accelerator voltage variations. In addition, the 5AHP— employs a high resolution electron gun. The final A designates a metallized screen, for greater light output, improved contrast, and to minimize screen charging effects.

MECHANICAL DATA

BASE: Medium Shell Octal 8-Pin

CAP: Recessed Small Cavity

TERMINAL CONNECTIONS:

- | | |
|---------------------|------------------------------------|
| Pin 1 No Connection | Pin 5 Grid #1 |
| Pin 2 Heater | Pin 7 Cathode |
| Pin 3 Grid #2 | CAP Grids #3 and #5
(Collector) |
| Pin 4 Grid #4 | Pin 8 Heater |

MOUNTING POSITION: Any

GENERAL DATA

	<u>5AHP7</u> <u>5AHP7A</u>	<u>5AHP14</u> <u>5AHP14A</u>	<u>5AHP19A</u>
Phosphor	#7	#14	#19
Fluorescence	Blue	Blue	Orange
Phosphorescence	Yellow	Orange	Orange
Persistence	Long	Medium-long	Long
Focusing Method	Electrostatic	Electrostatic	Electrostatic
Deflecting Method	Magnetic	Magnetic	Magnetic
Deflection Angle	53°	53°	53°

ELECTRICAL DATA

DIRECT INTERELECTRODE CAPACITANCES: ($\mu\text{tfs.}$) (approx.)

Grid #1 to all other electrodes	6
Cathode to all other electrodes	5

DESIGN CENTER MAXIMUM RATINGS:

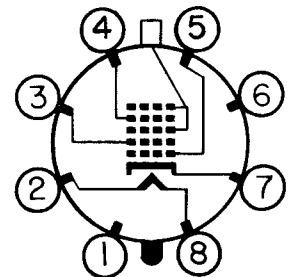
Heater Current	0.6 ± 10 %	volts
Peak Heater-Cathode Voltage: ♦		
Heater-Negative with Respect to Cathode	180	volts DC
Heater-Positive with Respect to Cathode	180	volts DC
Collector Voltage ▲	10,000	volts DC
Grid #4 Voltage (Focusing Electrode)	-500 to +1000	volts DC
Grid #2 Voltage	700	volts DC
Grid #1 Voltage:		
Negative-Bias Value	180	volts DC
Positive-Bias Value *	0	volts DC
Positive-Peak Value	0	volts DC

CHARACTERISTICS AND TYPICAL OPERATION:

Heater Voltage	6.3	6.3	volts
Collector Voltage ▲	5000	7000	volts DC
Grid #4 Voltage (Focusing Electrode) ●	0 to 200	0 to 250	volts DC
Grid #2 Voltage	300	300	volts DC
Grid #1 Voltage ⊕	-28 to -72	-28 to -72	volts DC
Line Width ■	.010	.009	inch max.
Spot Position (undeflected) □	5/16	5/16	inch

MAXIMUM CIRCUIT VALUES:

Grid #1 Circuit Resistance	1.5	max. meg.
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Bottom View

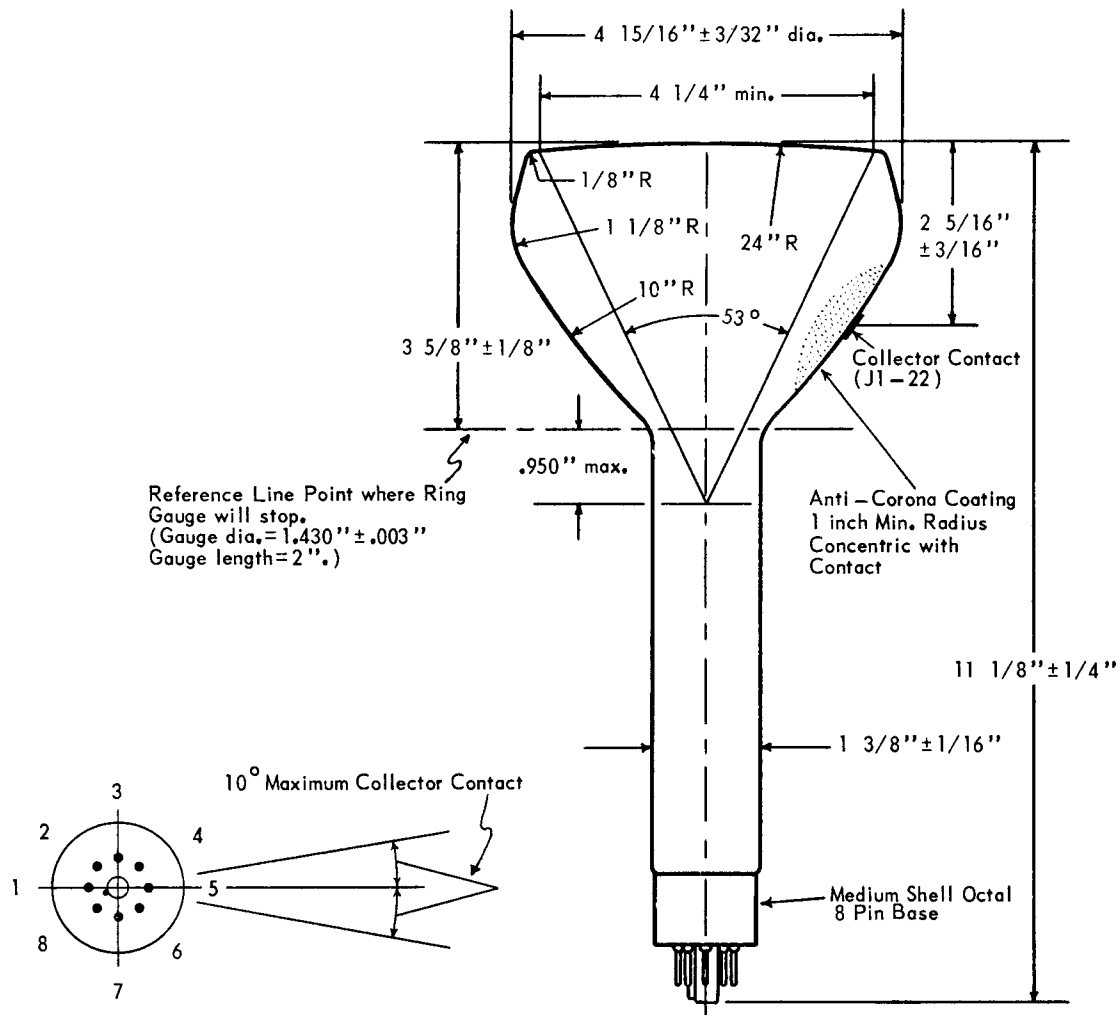
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CATHODE RAY TUBE

- * At or near this rating, the effective resistance of the collector supply should be adequate to limit the collector input power to 6 watts.
- ▲ Collector, Grids #3 and #5 are connected internally and referred to as Collector. Brilliance and definition decrease with decreasing collector voltages. In general, collector voltage should not be less than 5000 volts.
- ◆ Cathode should be returned to one side or to the mid-tap of the heater transformer winding.
- With grid #1 voltage adjusted to produce a collector current of 100 μ A, with the pattern adjusted for best overall focus. Measured with a 525-line interlaced and synchronized 2 1/4" X 3 3/4" pattern, with interlaced line blanking (current measured before applying blanking).
- ⊕ Visual extinction of focused 2 1/4" X 3 3/4" raster pattern.
- Measured with a 525-line interlaced and synchronized pattern with interlaced line blanking. Pattern width adjusted to 90% of minimum useful screen diameter. Ib - 100 μ A., measured before applying blanking. Line width is the merged raster height divided by the number of lines (262.5) (measured in center of tube face). To avoid damage to the screen, it is recommended that the screen currents be not more than 50 μ A. when measuring line width. The line width under this condition will be 0.009 inch maximum (current measured before applying blanking).
- The center of the undeflected, focused spot will fall within a circle of 5/16 inch radius concentric with the center of the tube face, with tube shielded.



RAYTHEON MANUFACTURING COMPANY

RECEIVING TUBE AND SEMICONDUCTOR OPERATIONS