

Technical Information

CK1381 P-

CATHODE RAY TUBE

The type CK1381P- is a 16-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 CK1381P- employs a high resolution electron gun. The faceplate is of gray filter glass.

This type has a metallized hi-efficiency screen for greater light output, improved contrast, and minimizing screen charging effects.

GENERAL DATA

Phosphor	#2	#7	#25
Fluorescence	Blue-Green	Blue	Orange
Phosphorescence	Green	Yellow	Orange
Persistence	Medium	Long	Long
Focusing Method	Electrostatic		
Deflecting Method	Magnetic		
Deflection Angle (Approx.)	52°		

ELECTRICAL DATA

HEATER CHARACTERISTICS:

Heater Voltage	6.3 ± 10% volts
Heater Current	0.6 amps.
Peak Heater-Cathode Voltage: (Max.):♦	
Heater Negative with Respect to Cathode	180 volts DC
Heater Positive with Respect to Cathode	180 volts DC

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

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

DESIGN CENTER MAXIMUM RATINGS:

Collector Voltage ▲.	18,000 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

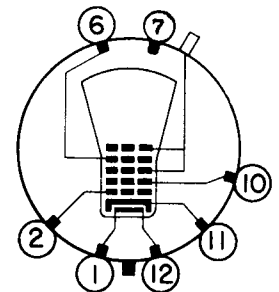
CHARACTERISTICS AND TYPICAL OPERATION:

Collector Voltage ▲.	14,000 volts DC
Grid #4 Voltage (Focusing Electrode) ●.	0 to 350 volts DC
Grid #4 Current	
Grid #2 Voltage	350 volts DC
Grid #1 Voltage ⊕	-40 to -70 volts DC

MECHANICAL DATA

BASE. . . Small Shell Duodecal 7-Pin
CAP Recessed Small Cavity
MOUNTING POSITION. Any

BASING



BOTTOM VIEW

TERMINAL CONNECTIONS

Pin 1	Heater
Pin 2	Grid #1
Pin 6	Grid #4
Pin 7	No Connection
Pin 10	Grid #2
Pin 11	Cathode
Pin 12	Heater
Cap	Grids #3 and #5 Collector



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CHARACTERISTICS AND TYPICAL OPERATION (Cont'd.):

Line Width ■	.015 inch max.
Light Output ★	75 F.L. (P2 only)
Spot Position (undeflected) □	5/8 inch

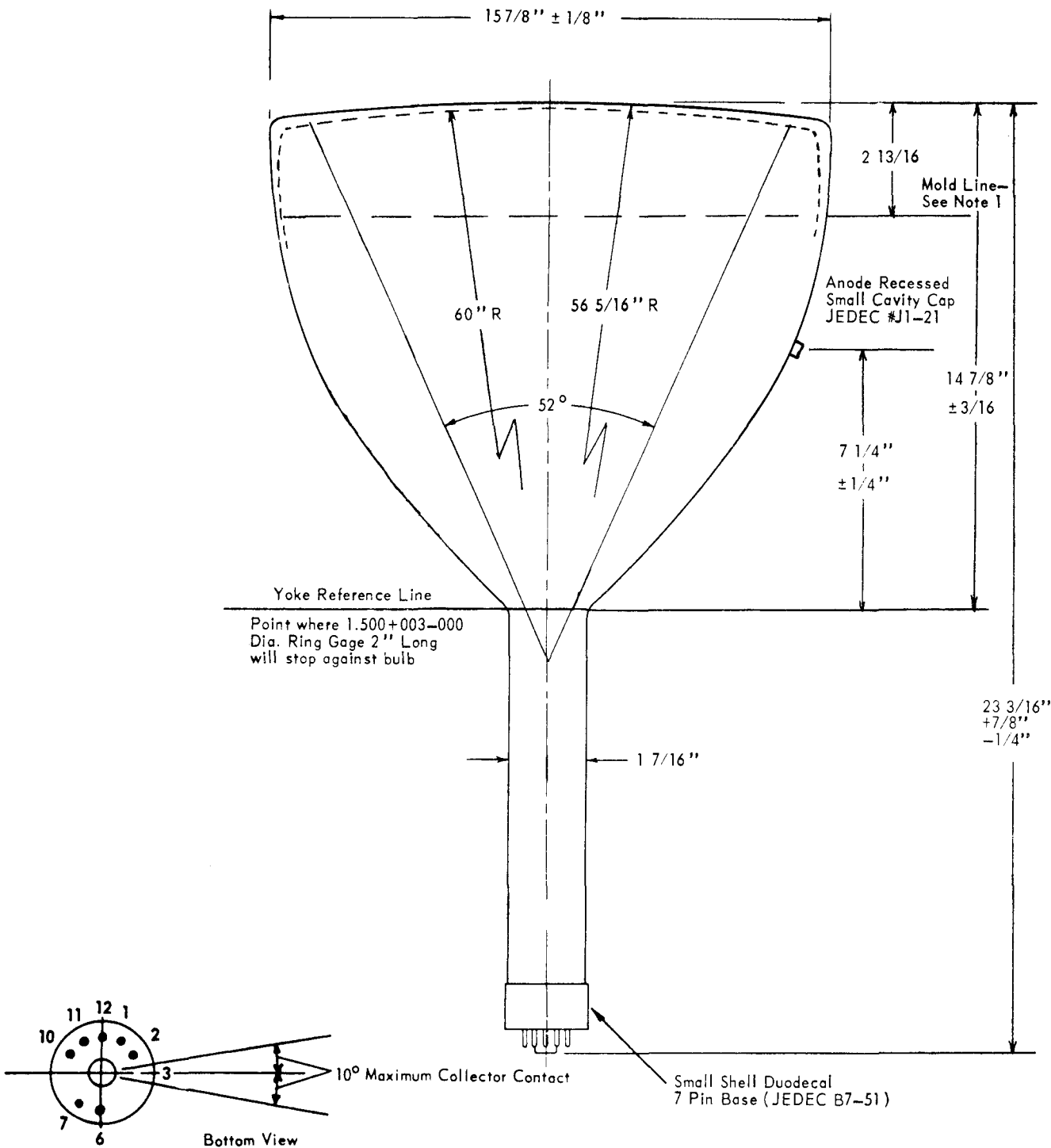
MAXIMUM CIRCUIT VALUES:

Grid #1 Circuit Resistance	1.5 max. megohms
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- * 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 are referred to as collectors. Brilliance and definition decrease with decreasing collector voltages. In general, collector voltage should not be less than 7000 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 250 μ A, with the pattern adjusted for best overall focus. Measured with a 525-line interlaced and synchronized 14 X 14 inch pattern.
- ⊕ Spot cutoff (undeflected focused spot).
- 525 line raster 14" wide $IA_2 = 250 \mu A$.
- The center of the undeflected, focused spot will fall within a circle of 5/8 inch radius concentric with the center of the tube face, with tube shielded.
- ★ 525 line raster, retrace blanked, 14" square IA_2 will be no more than 250 μ A to reach 75 F.L. at screen.

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NOTE 1: It is recommended that the tube mounting clamps not be positioned on the mold line.