

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.

MECHANICAL DATA

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

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: (μFds.) (approx.)

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

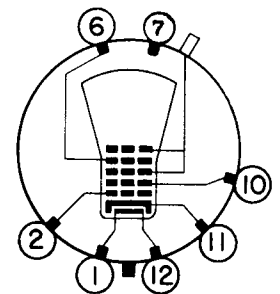
DESIGN CENTER MAXIMUM RATINGS:

| | |
|---|-------------------------|
| 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 |

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 |

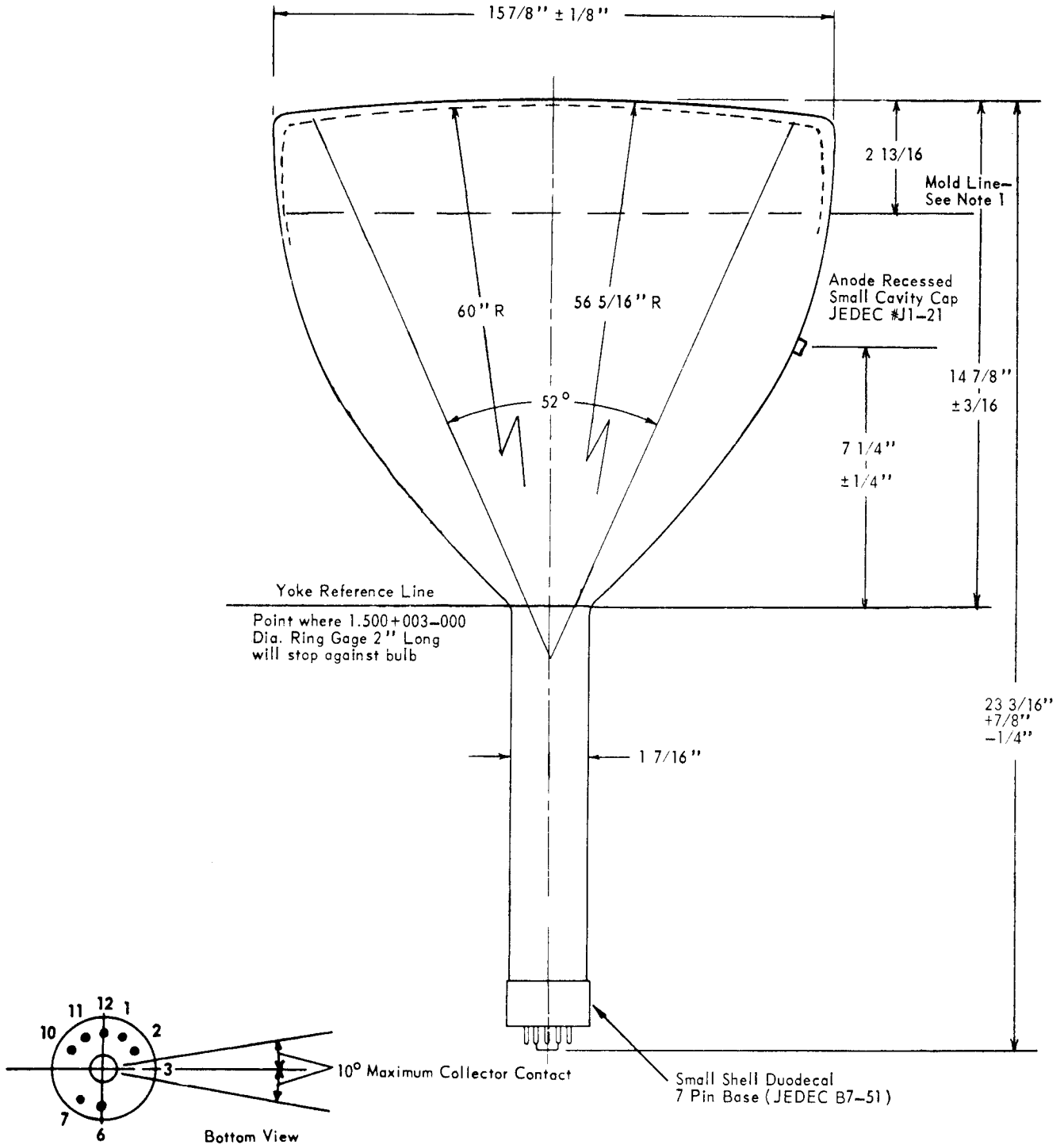
MAXIMUM CIRCUIT VALUES:

| | |
|--------------------------------------|------------------|
| Grid #1 Circuit Resistance | 1.5 max. megohms |
|--------------------------------------|------------------|

- * 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 $I_{A2} = 250 \mu$ 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 I_{A2} 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.