



TECHNICAL  
INFORMATION  
SERVICE

# Technical Information

## CK1359P-A

CATHODE RAY TUBE

The type CK1359P-A 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 CK1359P-A employs a high resolution electron gun. The faceplate is of gray filter glass.

The final A designates a metallized screen for greater light output, improved contrast, and minimizing screen charging effects.

### GENERAL DATA

	<u>CK1359P2A</u>	<u>CK1359P7A</u>	<u>CK1359P25A</u>
Phosphor	#2	#7	#25
Fluorescence	Blue-Green	Blue	Orange
Phosphorescence	Green	Yellow	Orange
Persistence	Long	Long	Long
Focusing Method	Electrostatic	Electrostatic	Electrostatic
Deflecting Method	Magnetic	Magnetic	Magnetic
Deflection Angle (Approx.)	52°	52°	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: (μfids.) (approx.)

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

#### DESIGN CENTER MAXIMUM RATINGS:

Collector Voltage ▲	16,500 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

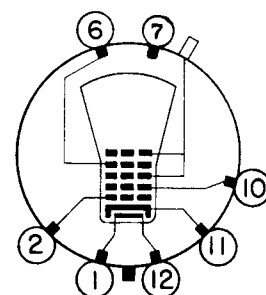
#### CHARACTERISTICS AND TYPICAL OPERATION:

Collector Voltage ▲	12,000 volts DC
Grid #4 Voltage (Focusing Electrode) ●	0 to 300 volts DC
Grid #4 Current	-15 to +15 μAdc

### 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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## CATHODE RAY TUBE

### ELECTRICAL DATA (Cont'd.)

#### CHARACTERISTICS AND TYPICAL OPERATION (Cont'd.)

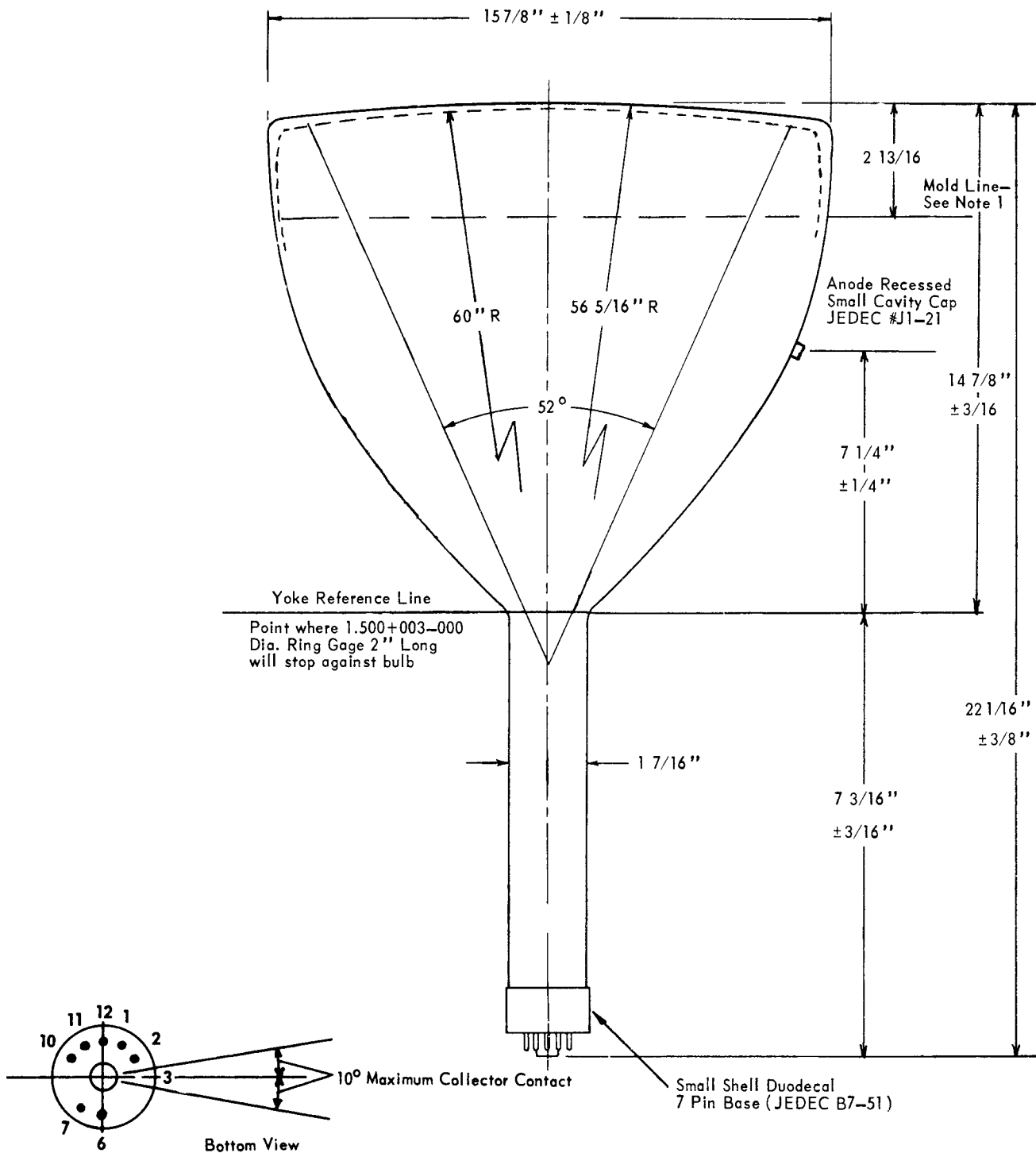
Grid #2 Voltage	300 volts DC
Grid #1 Voltage ⊕	-28 to -72 volts DC
Line Width ■	0.025 inch max.
Spot Position (undeflected) □	5/8 inch

#### 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. The screen of the P25 can be permanently damaged should the current density be permitted to rise too high. To prevent burning, minimum beam current densities should be employed.*
- ▲ *Collector grids #3 and #5 are connected internally and are referred to as collector. 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 100 μA, with the pattern adjusted for best overall focus. Measured with a 525-line interlaced and synchronized 13 1/4 X 13 1/4 inch pattern, with interlaced line blanking (current measured before applying blanking).*
- ⊕ *Visual extinction of 13 1/4 X 13 1/4 inch 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 μA, 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).*
- *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.*

## CATHODE RAY TUBE



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