

RAYTHEON

TECHNICAL
INFORMATION
SERVICE

Technical Information

CK1359P-A

CATHODE RAY TUBE

MECHANICAL DATA

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

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

	CK1359P2A	CK1359P7A	CK1359P25A
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.): †	180 volts DC
Heater Negative with Respect to Cathode	180 volts DC
Heater Positive with Respect to Cathode	

DIRECT INTERELECTRODE CAPACITANCES: (μfids.) (approx.)

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

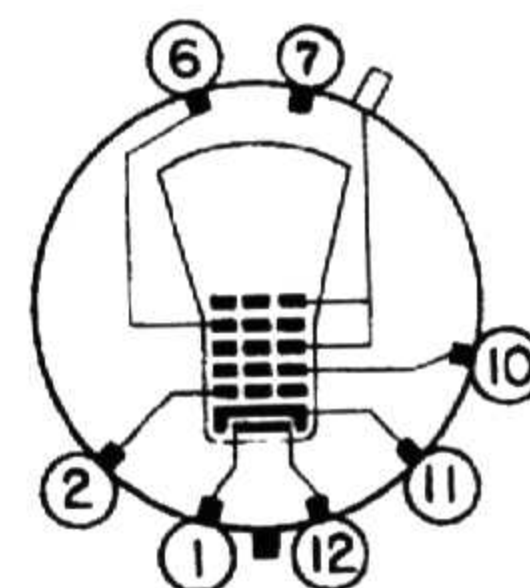
DESIGN CENTER MAXIMUM RATINGS:

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

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)



CK1359P-A

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:

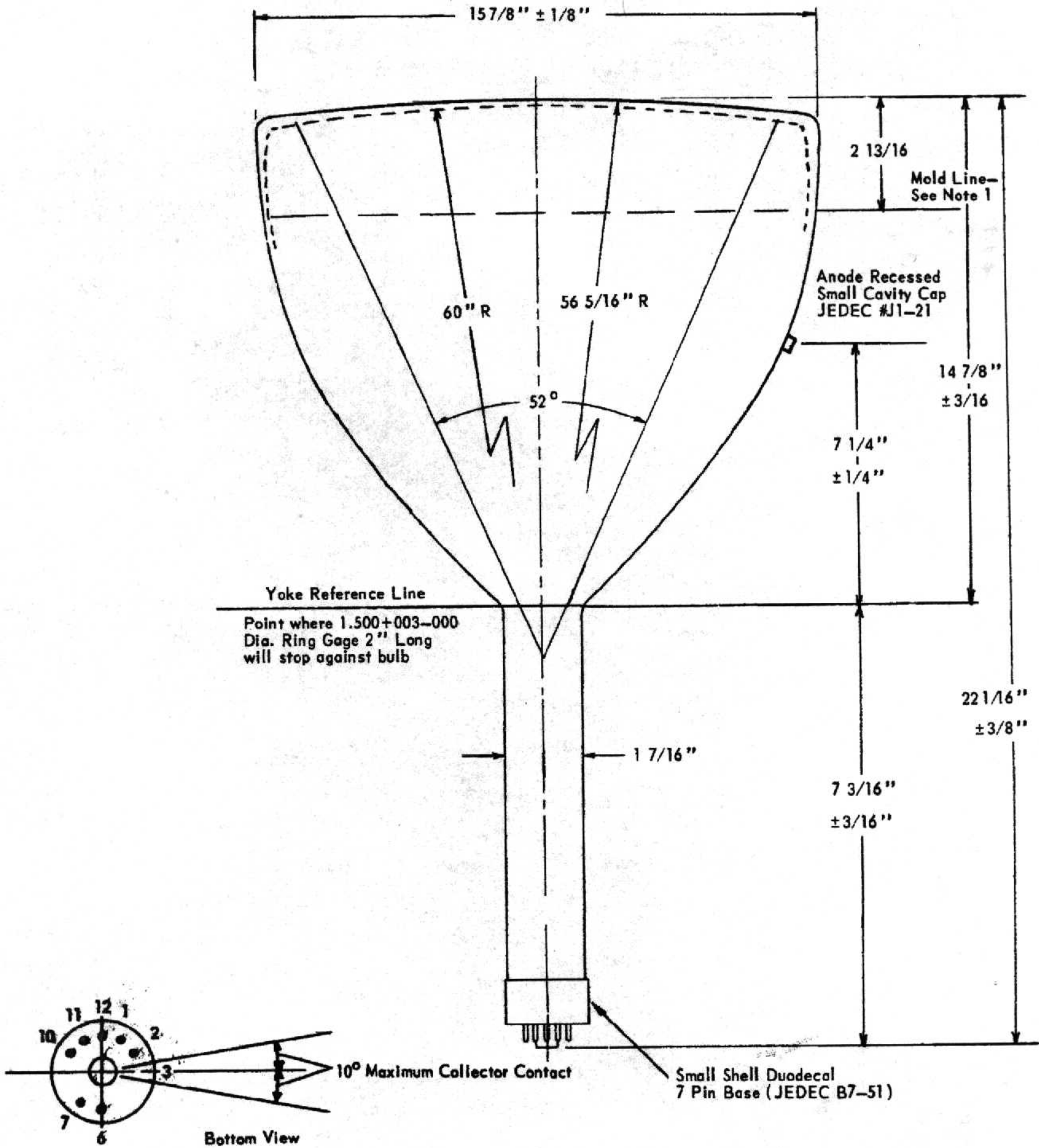
Grid #1 Circuit Resistance	1.5 max. megohms
----------------------------	------------------

- *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 μ A, 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 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).*
- *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.*



CK1359P-A

CATHODE RAY TUBE



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