

Technical Information

CK1366 CK1367

**PRINTER - TYPE
CATHODE RAY TUBES**

The CK1366 and CK1367 are 3" Printer-Type Cathode Ray tubes that can deposit an electrostatic charge on paper. The major application is in high-speed label printing equipment.

They employ a high-resolution, high-current gun. The small wire size and spacing, together with the thinness of the element contribute to the excellent printing quality. Equipment designs using these types are capable of printing many thousands of characters per second.

GENERAL DATA

PRINTING ELEMENT CHARACTERISTICS:

CK1366 (single row)

Effective length - 2.75"

Number of wires per inch - 250

Thickness of element - .040"

CK1367 (multi-row)

Effective length - 2.75"

Number of wires per inch - 250

Thickness of element - .040"

Spacing of wire centers between rows - .004"

Number of rows - 40

Phosphor (see application Note 1) P1

Fluorescence Green

Persistence Medium

Focusing Method Magnetic

Deflecting Method Magnetic

Deflection Angle 40°

ELECTRICAL DATA

DIRECT INTERELECTORDE CAPACITANCES: (approx.)

Grid #1 to all other electrodes	8 μ f
Cathode to all other electrodes	5 μ f

DESIGN MAXIMUM RATINGS:

Peak Heater-Cathode Voltage: ♦

Heater Negative with Respect to Cathode 180 volts DC

Heater Positive with Respect to Cathode 180 volts DC

Anode (Collector) Voltage ▲ 25,000 volts DC

Grid #2 Voltage 700 volts DC

Grid #1 Voltage

Negative - Bias Value 200 volts DC

Positive - Bias Value 0 volts DC

Positive - Peak Value 0 volts DC

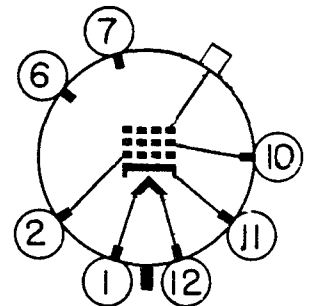
CHARACTERISTICS AND TYPICAL OPERATION:

Heater Voltage	6.3 volts $\pm$ 10%
Heater Current	0.6 amps
Collector Voltage ▲	20,000 volts DC
Focus Coil Current *	656 ampere turns approx.
Grid #2 Voltage	450 volts DC
Grid #1 Voltage ⊕ (for cut-off)	-60 to -115 volts DC

MECHANICAL DATA

BASE Small Shell Duodecal
7-Pin

MOUNTING POSITION Any



BOTTOM VIEW

TERMINAL CONNECTIONS:

Pin 1	Heater
Pin 2	Grid #1
Pin 6	NC
Pin 7	NC
Pin 10	Grid #2
Pin 11	Cathode
Pin 12	Heater
Metal Face Plate	Anode (Collector)



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ELECTRICAL DATA (Cont'd.)

CHARACTERISTICS AND TYPICAL OPERATION: (Cont'd.)

Spot Position (undeflected) ☐

1/4 " radius

MAXIMUM CIRCUIT VALUES:

Grid #1 Circuit Resistance

1.5 Megohm max.

▲ *At or near this rating the effective resistance of the collector supply should be adequate to limit the collector input to 6 watts.*

◆ *Cathode should be returned to one side or to the mid-tap of the heater transformer winding.*

⊕ *Undeflected focused spot.*

□ *The center of the undeflected, focused spot will fall within a circle of 1/4 inch radius concentric with the geometric center of the tube face, with tube shielded.*

* *Ampere turns using "typical operating" voltages and a distance of 7.0 inches from center of focus coil airgap to the face of the tube. The focus current for 656 A.T. is approximately 145 mdc on a JEDEC 106 coil.*

PRINCIPLES OF OPERATION:

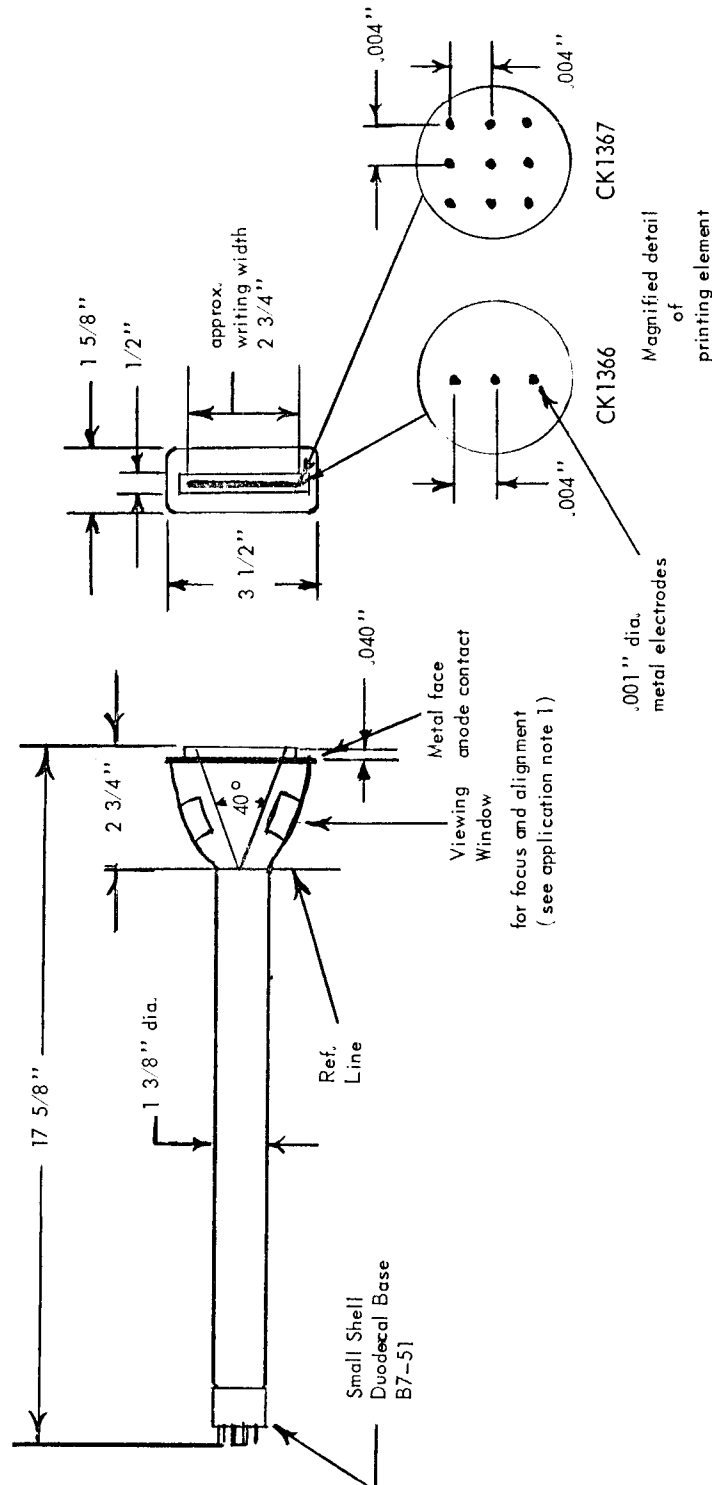
The printing element is made of fine wires imbedded in glass that permit electrons from the cathode ray beam to pass through the wires to the outside surface. Deflection and amplitude modulation of the electron beam striking the wires causes electron charges to be established on paper which acts as a dielectric. As the paper moves across the printing-element face plate, the electron charges actually form the characters that are desired. The characters can be made visible by developing the paper in a positively charged ink and fixing. Since the electron charge on the paper is proportional to the cathode ray beam current, it should be possible to obtain half tones.

APPLICATION NOTES:

1. Proper focus and sweep-scan alignment are accomplished by observing the electron beam as it strikes the phosphor. Side-viewing windows are provided for this purpose. The phosphor is on an area adjacent to the printing element. After initial adjustment are made, the scanning beam is moved to the printing element and final adjustments are made by actual printing process tests.
2. The beam spot size at optimum focus is approximately .003" for beam currents up to 200 μ A. Nominal resolution is approximately 100 TV lines per inch.

These data identify a particular developmental tube design and the type designation or the descriptive data may be subject to change or abandonment.

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* All dimensions are approximate and there may be variations in samples supplied.