



*Excellence in Electronics*

**TYPE  
CK6659 /  
CK1042**

The CK6659/CK1042 is an instant starting, cold-cathode, gas-filled diode of subminiature construction designed for use as a half-wave rectifier with vibrator power supplies having high transient voltages. Several tubes may be operated in cascade to generate very high voltages. The flexible terminal leads may be soldered or welded directly to the terminals of circuit components without the use of sockets. Standard inline subminiature sockets may be used by cutting the leads to a suitable length.

**MECHANICAL DATA**

ENVELOPE: T-3 Glass

BASE: None (0.016" tinned flexible leads. Length: 1.5" min.  
Spacing: 0.20" center-to-center)

TERMINAL CONNECTIONS: (Red dot is adjacent to lead 1)

Lead 1 Anode  
Lead 5 Cathode

MOUNTING POSITION: Any

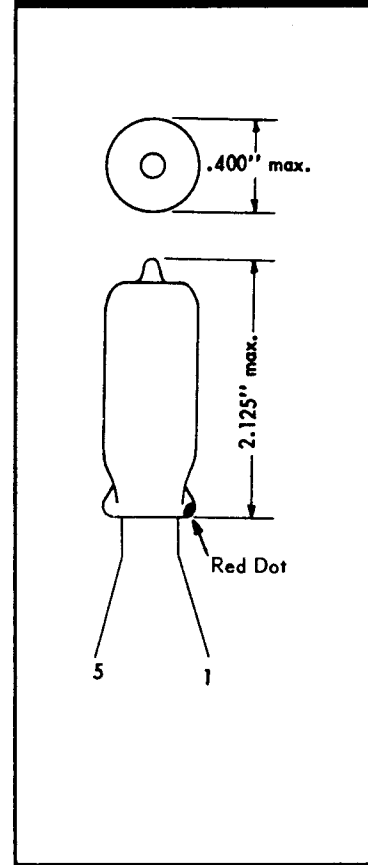
**ELECTRICAL DATA**

DESIGN CENTER MAXIMUM RATINGS:

Peak Inverse Voltage	2800 volts
Peak Cathode Current (steady state) ▲	40 ma.
Peak Cathode Current (surge) ▲	300 ma.
Average Cathode Current	8 ma.
Minimum Anode Supply Voltage (peak)	700 volts
Ambient Temperature Range	-65 to + 250 °F

CHARACTERISTICS AND TYPICAL OPERATION - HALF-WAVE RECTIFIER: ♦

AC Anode Supply Voltage (RMS)	1400 volts
Series Anode Resistance	30000 ohms
Load Current	8 ma.
Tube Drop at 8 ma. (approx.)	120 volts
Load Resistor	0.1 meg.
Load Condenser	2 μf.
Life Expectancy (minimum)	100 hours



♦ The above 60 cycle sine wave, half-wave rectifier operating conditions are used to control the quality of tube lots. Life in vibrator type circuits may be expected to be much greater due to the non-sinusoidal wave form.

▲ To avoid damage to the equipment or tube, it is recommended that the anode supply impedance be adjusted to limit forward currents and intermittent reverse peak currents to stated values. Typical resistance is 5000 ohms minus the effective equivalent transformer loss, but never less than 2000 ohms dc resistance. For voltage multiplier circuits, a separate limiting resistor should be connected in series with the anode or the cathode of each tube. In the event of a reverse arc, the absence of a surge limiting resistor causes all of the energy of the filter condenser to be dissipated in the tube.

Tentative Data

**RAYTHEON MANUFACTURING COMPANY**  
RECEIVING AND CATHODE RAY TUBE OPERATIONS