

Semiconductor Control Devices

PLANAR BEAM LEAD PIN DIODES

- Low Series Resistance
- Low Capacitance
- Fast Switching
- Electrically Stable Performance
- Sound Device and Lead Construction

DESCRIPTION

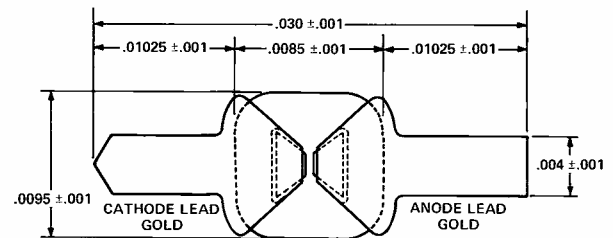
Hybrid microwave integrated circuit applications utilizing stripline or microstrip substrates generally require that the active components be of appropriate size and integrity so that the physical constraints imposed by handling and bonding and electrical performance demands can be met. The GC4800 series planar PIN diodes are offered to meet the above MIC demands as well as conform to established industry norms on minimum expected performance and geometric format and convention.

The device structure consists of two plated co-planar leads (commonly referred to as “beams”) extending from the “P” and “N” type contacts selectively located on the semiconductor substrate. Our application notes offer an explanation of the device’s operational characteristics and how they may be useful in specific circuit designs.

Thermal oxide junction passivation is incorporated into the structural design for electrical permanence (low conductive leakage, stable capacitance and reverse breakdown voltage). Beam pull test minimum requirement is 4 grams; however, typical measurements are much greater.

APPLICATIONS

The GC4800 series beam lead PIN diodes, with their characteristically low series resistance, low junction capacitance and low parasitic reactance, are ideally suited for low power series or shunt switching, limiting, phase shifting, attenuating and demodulating applications in stripline or microstrip format through Ku band. The GC4801, with its low series resistance and junction capacitance, would be a better choice for applications requiring high isolation in a series mode switch. Please contact factory for our application notes for device and circuit design information as well as helpful hints on handling and bonding.



ELECTRICAL SPECIFICATIONS at 25°C

MODEL NUMBER	BREAKDOWN VOLTAGE (MIN) If = 10 uA	CAPACITANCE (pF) (MAX) Vr = 50V	SERIES RESISTANCE (Ohms) (MAX) If = 50 mA	CARRIER LIFETIME (nS) (TYP) If = 10 mA; IR = 6 mA	TS (MAX) (nS)	FORWARD VOLTAGE (Volts) (TYP) If = 50mA
GC4801	100	.020	4.0	200	30	.90-1.05

RATINGS

Operating Temperature: -55°C to +150°C

Storage Temperature: -65°C to +200°C