GC4921-112 & GC4922-112

CONTROL DEVICES –
DUAL SERIES BEAMLEAD DIODE
RoHS Compliant

GENERAL DESCRIPTION

Semiconductor mesa beam lead PIN diodes are designed for very low inductance, low resistance and moderately low capacitance with ultra-fast switching characteristics. The structural details include thermal oxide junction passivation thus providing reliable operation with stable junction parameters along with ceramic glass, which provides mechanical strength to the diode. These devices are designed with a narrow base width, a high quality intrinsic 'I' layer that provides low loss, high isolation and ultra-high speed switching characteristics.

This series of diodes meets RoHS requirements per EU Directive 2002/95/EC.

The standard terminal finish is gold unless otherwise specified. Consult the factory if you have special requirements.

APPLICATIONS

These high speed beam lead PIN diodes are designed for stripline and microstrip circuits and are primarily used in shunt/series and conventional series multi-throw configurations as switching, attenuating and phase shifting elements with frequencies extending up to Ka band.

KEY FEATURES

- Dual Series PIN Diodes
- Wide Bandwidth / High Switching Speed
- Up to 3 dB Isolation improvement over conventional designs
- 5 Gram Typical Pull Strength
- Very Low RS/CJ (Loss/Isolation)
- High Quality, High Resistivity Epitaxy
- Stable Low Leakage Passivation with Rugged Glass Body
- RoHS Compliant [1]

1- These devices are supplied with gold terminations. Consult factory for details.

APPLICATION/BENEFITS

- High Speed Switching
- Broadband Performance
- Suitable for Applications through 40GHz

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ABSOLUTE MAXIMUM RATINGS @ 25°C

Rating	Symbol	Value	Unit
Maximum Leakage Current @80% of minimum Rated V_B	I_R	0.5	uA
Operating Temperature	T_{OP}	-65 to +150	ºC
Storage Temperature	T_{STG}	-65 to +200	ºC
CW RF Operating Power	P_{CW}	1	W
Power Dissipation (derate linearly to 0 @ 175 C	Pdiss	250	mW
Forward DC Current	I_F	100	mA
Reverse DC Voltage	V_R	100	V
ESD HMB Class 1			

DEVICE ELECTRICAL PARAMETERS AT 25°C

Model Number	V_B (V) I_R=10µA (Min)	C_T(pF) @0V (Typ)	C_T(pF) @10V (Typ)	C_T(pF) @10V (Max)	R_S(Ω) @10mA F= 1.0 GHz (Typ)	R_S(Ω) @10mA F= 1.0 GHz (Max)
GC4921-112	100	0.025	0.018	0.020	5.0	6.5
GC4922-112	100	0.030	0.020	0.022	3.5	5.0

Model Number	T_L(ns) (50%) (Typ)	V_F (V) I_F=10 mA (Typ)	Ins. Loss @10mA f=10GHz	Isolation @10V f=10GHz
GC4921-112	50	2.1	0.40	19.0
GC4922-112	60	2.0	0.30	17.0

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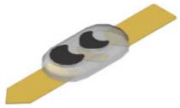
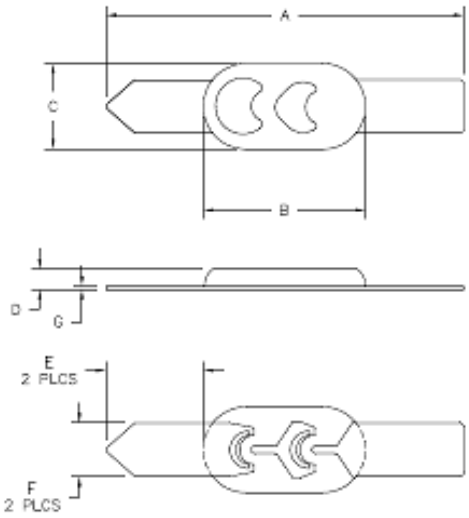
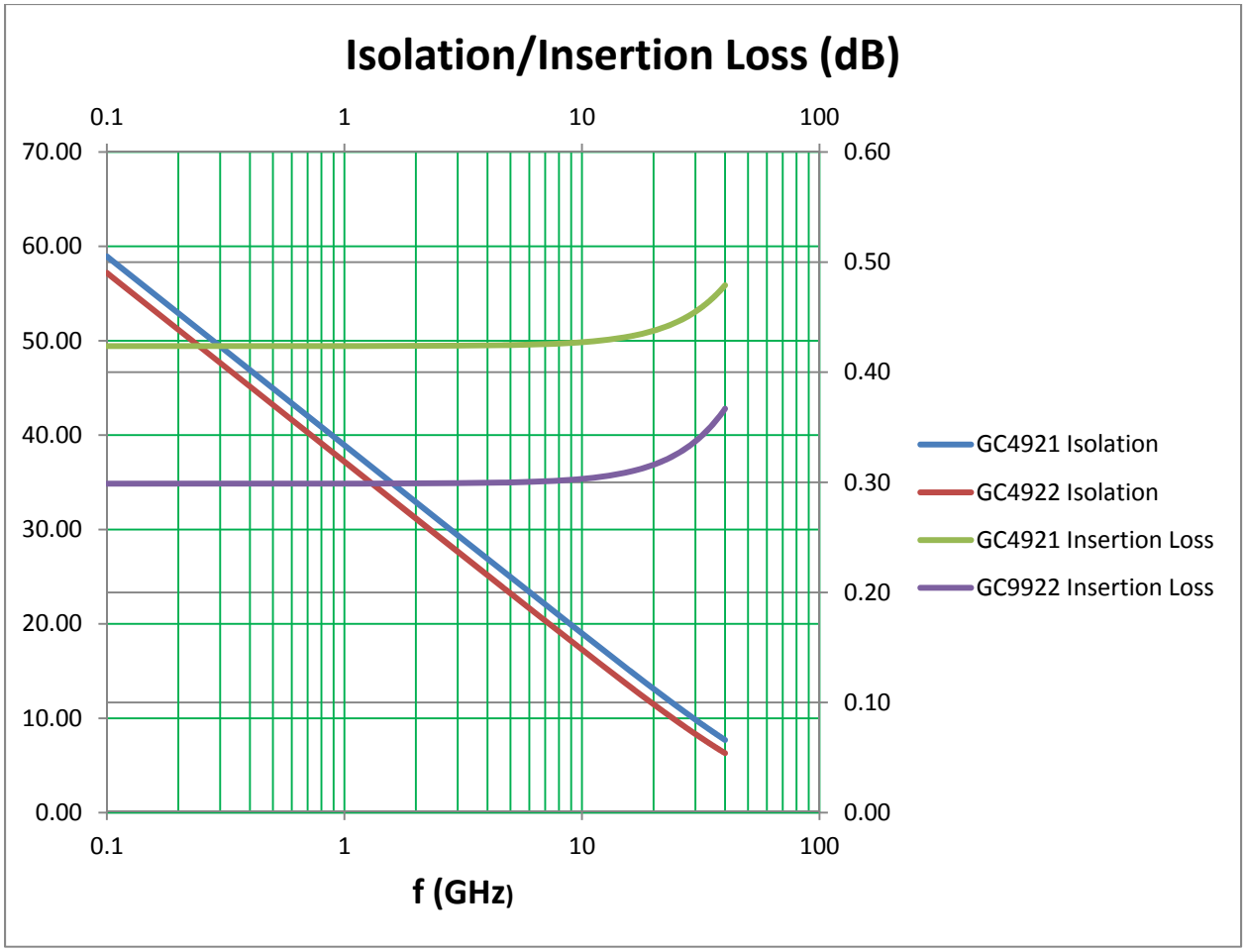


PACKAGE STYLE 112



SCHEMATIC

DIM	INCHES			MM		
	MIN	TYP	MAX	MIN	TYP	MAX
A	0.0430	0.0440	0.0450	1.0922	1.1176	1.1430
B	0.0190	0.0200	0.0210	0.4826	0.5080	0.5334
C	0.0100	0.0110	0.0120	0.2540	0.2794	0.3048
D	0.0015	0.0025	0.0035	0.0381	0.0635	0.0889
E	0.0100	0.0110	0.0120	0.2540	0.2794	0.3048
F	0.0060	0.0070	0.0080	0.1524	0.1778	0.2032
G	0.00020	0.00025	0.00030	0.00508	0.00635	0.00762



Revision History

Revision Level / Date	Para. Affected	Description
PRELIMINARY PRELIMINARY UPDATE 1 / 30 June 2015		 ADDED GC4922-112 ADDED ISOLATION/INSERTION LOSS CHART