GC9981 – GC9989

Schottky Barrier Diodes
Ultra High Drive Monolithic

RoHS Compliant e4 RoHS

DESCRIPTION

Microsemi's Schottky Barrier devices are currently available in the eight junction ring quad configuration. Devices are available in monolithic form for hybrid applications as well as in hermetic or non-hermetic packages. Monolithic devices are recommended for highest frequency, broadband designs. The beamlead design eliminates the problems associated with wire bonding very small junction devices thus improving reliability and performance in MIC applications. Our in house epitaxy process capability insures repeatability for lowest conversion loss through Ku Band. A broad range of unique metallization schemes produce Microsemi's complete line of barrier heights. Diodes are available with barrier heights ranging from 600 mV to 1300 mV per leg. By optimizing epitaxy and metallization, these devices achieve lowest Rs-Cj products resulting in exceptional conversion loss performance. "High Rel" screening is available on packaged devices per your requirements.

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

APPLICATIONS

Schottky Barrier diodes are suitable for a variety of circuit applications ranging from double balanced RF mixers to high speed switching and modulation. The monolithic beamlead design minimizes parasitic inductance and capacitance insuring repeatable performance through Ka band. With junction capacitances as low as 0.06 pF. Monolithic 8 junction quads are ideally suited for broad band high drive mixers through 26.5 GHz.

Ultra-High barrier diodes, (GC9980 Series) are designed for applications where high drive levels are available, such as, Doppler mixers or motion detection. Microsemi also has Schottky diodes available in Ultra-Low, Medium and High Drive levels to fit virtually any circuit requirement.

ABSOLUTE MAXIMUM RATINGS AT 25º C (UNLESS OTHERWISE SPECIFIED)

Rating	Symbol	Value	Unit
Maximum Power Handling	P	100	mW
Storage Temperature	T_{STG}	-65 to +175	ºC
Operating Temperature	T_{OP}	-65 to +150	ºC

IMPORTANT:
For the most current data, consult our web site: ***www.microsemi.com***
Specifications are subject to change, consult the factory for further information.

These devices are ESD sensitive and must be handled use using ESD precautions.

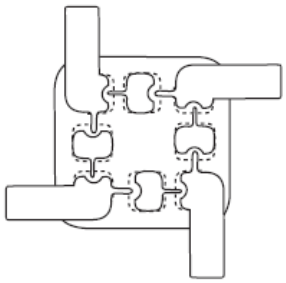
KEY FEATURES

- Monolithic Design for Lowest Parasitics and Matched Junction Characteristics
- Low Noise Figure
- Suitable for Applications to 26.5 GHz
- Excellent Conversion Loss
- Available High and Ultra-High Barrier Heights
- Can be Supplied as Monolithic Devices for Hybrid Applications or as Packaged Devices
- RoHS Compliant[1]

[1] These devices are supplied with Gold plated terminations. Consult factory for details.

APPLICATIONS/BENEFITS

- RF Mixers
- Double Balanced Mixers
- High Speed Switching
- Motion Detection
- Phase Detectors



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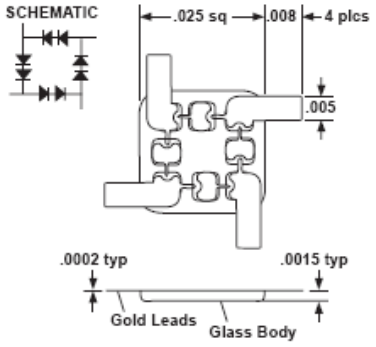
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CHIP ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)

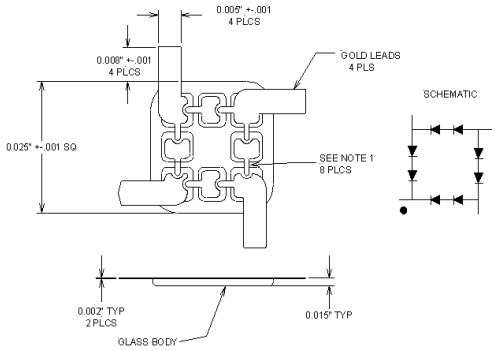
Model[1] Number	Barrier Height	Freq Range	V_B(V)[2] I_R=10µA (Min)	C_J(pF)[3] @0V (Max)	V_F(mV) @1 mA (Max)	R_D(Ω) @10 mA (Max)	NF_{SSB} (db)[4] (Typ)
GC9981	VERY HIGH	Ku-Ka	4.0	0.08	800	25	7
GC9982		X		0.12	780	20	6.5
GC9983		C		0.15	750	15	6.5
GC9984	EXTRA HIGH	Ku-Ka	5.0	0.08	1050	25	7
GC9985		X		0.12	1000	20	6.5
GC9986		C		0.15	950	15	6.5
GC9987	ULTRA HIGH	Ku-Ka	6.0	0.08	1300	25	7
GC9988		X		0.12	1250	20	6.5
GC9989		C		0.15	1200	15	6.5

Notes
1. When ordering, specify appropriate package style.
   IE: Order GC9981-8JR for Monolithic 8 Junction Ring Quad.
2. V_B measured at 10µA on a sample basis only for ring quads.
3. 0 Volts, F=1 MHz (diagonal leads on quads).
4. L.O. = 0 dBm, N_{if} = 1.5 dB, F = 10 GHz or 3 GHz

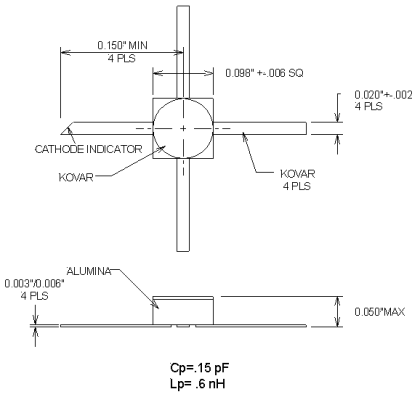
PACKAGE STYLE 8JR



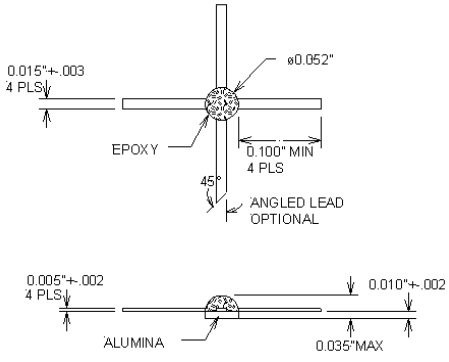
PACKAGE STYLE 8JB



PACKAGE STYLE 129C



PACKAGE STYLE 174C



MORE PACKAGE STYLE AVAILABLE ON REQUEST

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