GC3202 – GC3208

POWER GENERATION

Harmonics Generator Varactors

RoHS Compliant e4 RoHS

DESCRIPTION

The GC3200 series of harmonic generator varactors uses a single epitaxial silicon die. Strict material and process controls result in high reproducibility. A unique silicon dioxide passivation process assures greater stability, reliability and low leakage currents at high temperatures. This series of diodes is available in a wide selection of capacitance values, breakdown voltages, transition times and cutoff frequencies for optimum circuit design. These devices have the best efficiencies and thermal dissipation available in single chip multiplier varactors.

Unless otherwise specified, capacitance will be within the range shown for each type. A capacitance tolerance of ±10% is available at an additional charge. Diodes can be optimized for custom electrical or mechanical specifications. Custom parameters for capacitance, voltage, transition time, cutoff frequency, etc. are available upon request.

All specifications shown above are based on the style 30 package, except for GC3202 and GC3203, which are based on the style 20 package. These latter two devices are available only in case styles 20 or 55 due to die size. Consult factory for availability.

A complete list of case styles available along with dimensions and package parasitics are available at www.microsemi.com. The cathode is the heat sink end of each package. Diode chips, alone or mounted on carriers with gold wire/ribbon leads are also available.

KEY FEATURES

- X2 Through X20 Harmonics Generation
- Excellent Efficiency
- High Output Power
- RoHS Compliant[1]

[1] The GC3200 Series of products are supplied with a RoHS complaint Gold finish.

APPLICATIONS

The GC3200 series multiplier varactors can be used for all orders of multiplication from X2 through X20. They are used primarily in low harmonic order, high efficiency, high power applications. They are used in narrow and wide bandwidth frequency generator chains for all multiplication stages. Other applications include: voltage controlled oscillators, frequency synthesizers and up converters.

APPLICATIONS/BENEFITS

- Harmonics Generation
- Local Oscillators
- Frequency Synthesizers
- Up Converters

IMPORTANT: For the most current data, consult our website: ***www.MICROSEMI.com***

Specifications are subject to change, consult the factory for further information.

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

Microsemi
Microwave Products
75 Technology Drive, Lowell, MA. 01851, 978-442-5600, Fax: 978-937-3748

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

Model Number	Typ Output Freq. Range (GHz)	Typ Output Power (W)		V_b(V) I_R=10µA (Min)	C_j(pF)[1] @-6V (Typ)	F_C(GHz)[2] @-6V (Min)	T_L(nS)[3] (Min)	T_T(pS) (Min)	θP[1](°C/W)[4] (Max)
		P	MULT						
GC3202	0.15 - 0.5	24	X3	180	18 – 25	20	400	8000	5
GC3203	0.5 - 1.2	20	X3	80	8 – 12	60	200	1000	11
GC3204	1.2 – 2.5	6	X4	80	3 – 6	110	200	650	20
GC3205	2.5 – 5	2.5	X5	45	1.5 - 3	140	70	300	30
GC3206	5 – 8	1.5	X2	40	1 - 2	150	35	150	40
GC3207	8 – 12	1	X2	35	0.5 - 1.0	175	30	120	50
GC3208	12 - 18	0.5	X2	25	0.3 – 0.6	200	15	100	75

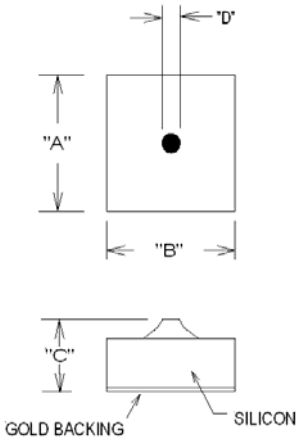
Notes:
1. Junction Capacitance is measured at 1 MHz.
2. Cutoff frequency is calculated from: Fc-6 = 159 / (Cj $_{-6}$ Rs $_{-6}$)
3. Carrier Lifetime is measured @ I_F = 10mA , I_R = 6mA.
4. Thermal resistance is measure using pulsed conditions while measuring forward voltage drop across the diode mounted in an infinite heat sink

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

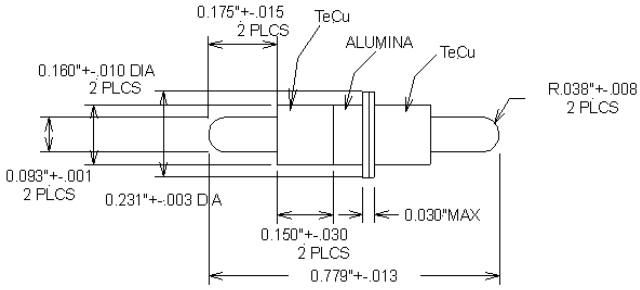
Rating	Symbol	Value	Unit
Maximum Leakage Current @80% of Minimum Rated V_B	I_R	20	nA
Storage Temperature	T_{STG}	-65 to +150	°C
Operating Temperature	T_{OP}	-55 to +125	°C

Typical Package Options

PACKAGE STYLE 00



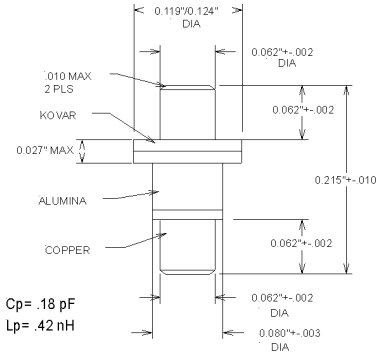
PACKAGE STYLE 20



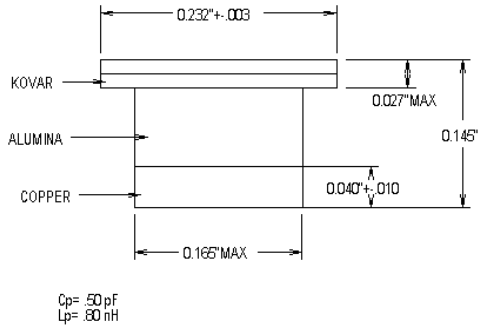
Notes:

- Dimensions vary by model number
- Consult factory for details
- Order as GC32xx – 00

PACKAGE STYLE 30



PACKAGE STYLE 55



OTHER PACKAGE STYLES AVAILABLE ON REQUEST
CONSULT FACTORY

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