GMV1000 / GMV2100 / GMV5000

GigaMite™

Surface Mount Varactor Diodes

RoHS Compliant e3 RoHS

DESCRIPTION

This series of surface mount diodes are specifically design for high volume surface mount applications. The GigaMite design is optimized for improved electrical and thermal performance over standard plastic package technology. Our patented dual orthogonal lead frame provides both exceptionally low thermal impedance and series inductance. Microsemi utilizes only the highest quality dielectric materials resulting in low loss tangent and physical stability even in harsh environments. The result is higher frequency coverage and greater stability than comparable plastic packages.

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

KEY FEATURES

- Low Parasitics
  L_P = 0.5 nH Typical
  C_P = 0.07 pF Typical
- Surface Mount design
- Broadband Performance Through 5 GHz
- Available on Tape & Reel for Automated Pick & Place Assembly
- Small, SOD 323 Size Footprint
- RoHS Compliant [1]

APPLICATIONS

Microsemi Lowell offers a variety of Varactor diodes in the GigaMite package style. Their low internal series inductance makes these products well suited for VCOs and VVFs through 5 GHz. Choose GMV1981 for low voltage battery applications. GMV15007 offers state of the art frequency linearity. GMV2114, GMV2134, and GMV2154 offer smooth wide ratio 20V tuning. GMV1542 offers high Q performance for lowest phase noise and loss.

APPLICATIONS/BENEFITS

- Frequency Linear VCO's
- Low Phase Noise VCO's
- Wide Bandwidth VCO's
- Voltage variable Filters
- Analog Phase Shifters
- VCXO's
- Performance through 5 GHz

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

Rating	Symbol	Value	Unit
Maximum Leakage Current @80% of Rated V_B	I_R	100	nA
Storage Temperature	T_{STG}	-55 to +125	°C
Operating Temperature	T_{OP}	-55 to +125	°C

IMPORTANT: *Specifications are subject to change.*
For the most current data vist: ***www.MICROSEMI.com***

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

[1] These devices are supplied with a matte tin finish suitable for RoHS compliant assembly.

Microsemi
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Low Voltage / High Sensitivity Varactors

ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)

Model Number	V_b(V) I_r=10µA (Min)	C_T(pF)[1] @ V_r=1V (Min)	C_T(pF)[1] @ V_r=2.5V (Min – Max)	C_T(pF)[1] @ V_r=4V (Max)	C_T(pF)[1] @ V_r=8V (Typ)	Q^2 (Min)
GMV1981-GM1	12	1.2	0.7 – 1.1	0.5	0.25	1200

22V FLTVAR GigaMite

ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)

Model Number	V_b(V) I_r=10µA (Min)	C_T(pF)[1] @ V_r=0V (Min)	C_T(pF)[1] @ V_r=4V (Min – Max)	C_T(pF)[1] @ V_r=20V (Max)	Ratio C_T0/C_T20 (Typ)	Q^2 (Min)
GMV15007-GM1	22	2.5	0.9 – 1.3	0.5	8:1	1000

22V HyperAbrupt GigaMite

ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)

Model Number	V_b(V) I_r=10µA (Min)	C_T(pF)[1] @ V_r=0V (Min)	C_T(pF)[1] @ V_r=4V (Min-Max)	C_T(pF)[1] @ V_r=20V (Max)	Ratio C_T4/C_T20 (Typ)	Q^2 (Min)
GMV2114-GM1	22	2.1	0.8 – 1.1	0.5	3.0	900
GMV2134-GM1	22	4.9	1.7 – 2.2	0.7	3.7	750
GMV2154-GM1	22	14	4.4 – 5.5	1.3	4.1	600

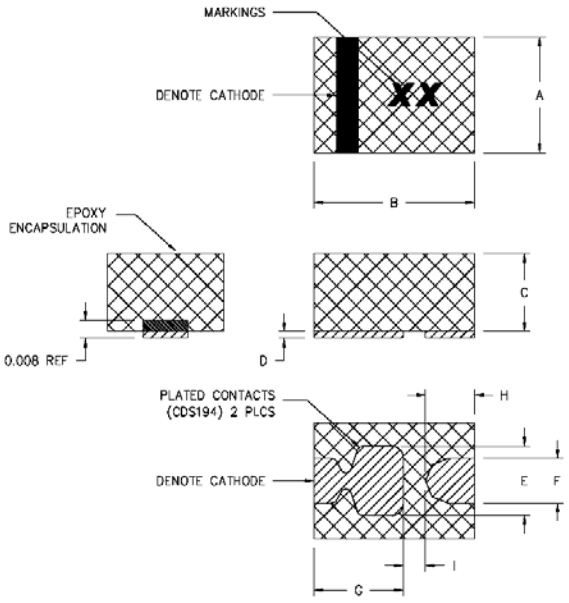
30V Abrupt Junction GigaMite

ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)

Model Number	V_b(V) I_r=10µA (Min)	C_T(pF)[1] @ V_r=0V (Min)	C_T(pF)[1] @ V_r=4V (Min-Max)	C_T(pF)[1] @ V_r=30V (Max)	Ratio C_T0/C_T30 (Typ)	Q^2 (Min)
GMV1542-GM1	30	2.4	1.0 – 1.3	0.75	3.4	3800

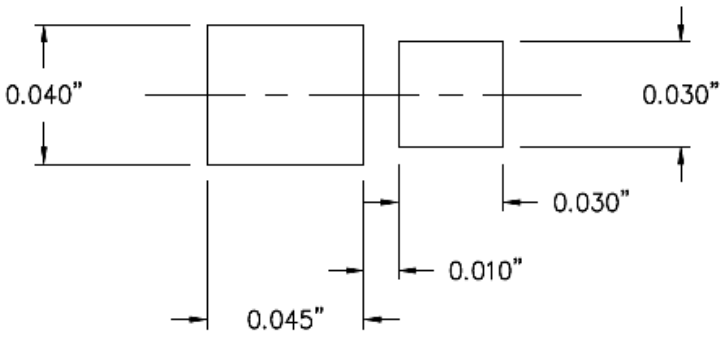
1. f = 1MHz.
2. V=4 V, f = 50 MHz

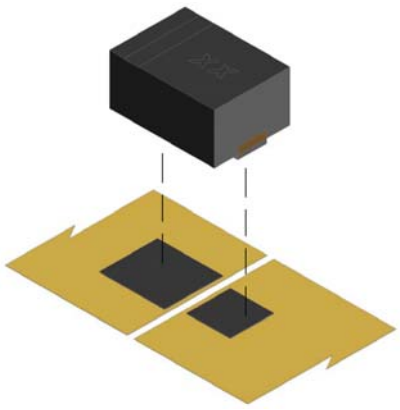
PACKAGE STYLE GM1



DIM	INCHES			MM		
	MIN	TYP	MAX	MIN	TYP	MAX
A	0.047	0.052	0.057	1.194	1.321	1.448
B	0.067	0.072	0.077	1.702	1.829	1.956
C	0.030	0.035	0.040	0.762	0.889	1.016
D	–	–	0.003	–	–	0.076
E	0.028	0.031	0.034	0.711	0.787	0.864
F	0.017	0.020	0.023	0.432	0.508	0.584
G	0.035	0.040	0.045	0.889	1.016	1.143
H	0.017	0.022	0.027	0.432	0.559	0.686
I	–	0.010	–	–	0.254	–

SUGGESTED SOLDER PAD LAYOUT





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