

**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  
 $L_P = 0.5 \text{ nH Typical}$   
 $C_P = 0.07 \text{ pF Typical}$
- Surface Mount design
- Broadband Performance Through 5 GHz
- Available on Tape & Reel for Automated Pick & Place Assembly
- Small, SOD 323 Size Footprint
- RoHS Compliant <sup>1</sup>

**APPLICATIONS**

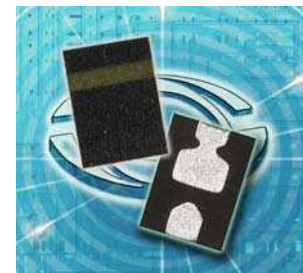
Microsemi Lowell offers a variety of Varactor diodes in the GigaMite package style. Their low internal series inductance makes these products well suited for VCOs and VVFs through 5 GHz. Choose GMV1981 for low voltage battery applications. GMV5007 offers state of the art frequency linearity. GMV2114, 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 visit: [www.MICROSEMI.com](http://www.MICROSEMI.com)



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

<sup>1</sup> These devices are supplied with a matte tin finish suitable for RoHS compliant assembly.

**Low Voltage / High Sensitivity Varactors**

<b>ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)</b>						
<b>Model Number</b>	<b>V<sub>b</sub>(V)</b> I <sub>R</sub> =10μA <b>(Min)</b>	<b>C<sub>T</sub>(pF)<sup>1</sup></b> @ V <sub>R</sub> =1V <b>(Min)</b>	<b>C<sub>T</sub>(pF)<sup>1</sup></b> @ V <sub>R</sub> =2.5V <b>(Min - Max)</b>	<b>C<sub>T</sub>(pF)</b> @ V <sub>R</sub> =4V <b>(Max)</b>	<b>C<sub>T</sub>(pF)</b> @ V <sub>R</sub> =8V <b>(Typ)</b>	<b>Q<sup>2</sup></b> <b>(Min)</b>
GMV1981-GM1	12	1.2	0.7 - 1.1	0.5	0.25	1200

**20V FLTVAR GigaMite**

<b>ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)</b>						
<b>Model Number</b>	<b>V<sub>b</sub>(V)</b> I <sub>R</sub> =10μA <b>(Min)</b>	<b>C<sub>T</sub>(pF)<sup>1</sup></b> @ 0V <b>(Min)</b>	<b>C<sub>T</sub>(pF)<sup>1</sup></b> @ -4V <b>(Min - Max)</b>	<b>C<sub>T</sub>(pF)</b> @ -20V <b>(Max)</b>	<b>Ratio</b> C <sub>T0</sub> /C <sub>T20</sub> <b>(Typ)</b>	<b>Q<sup>2</sup></b> <b>(Min)</b>
GMV5007-GM1	22	2.5	0.9 - 1.3	0.5	13:1	1200

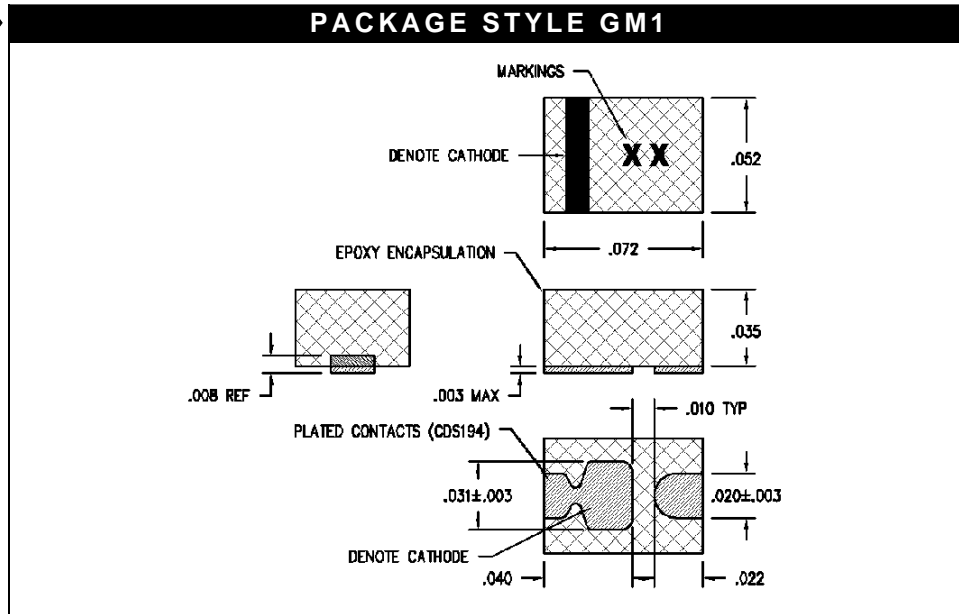
**20V HyperAbrupt GigaMite**

<b>ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)</b>						
<b>Model Number</b>	<b>V<sub>b</sub>(V)</b> I <sub>R</sub> =10μA <b>(Min)</b>	<b>C<sub>T</sub>(pF)<sup>1</sup></b> @ V <sub>R</sub> =0V <b>(Min)</b>	<b>C<sub>T</sub>(pF)<sup>1</sup></b> @ V <sub>R</sub> =4V <b>(Min-Max)</b>	<b>C<sub>T</sub>(pF)</b> @ V <sub>R</sub> =20V <b>(Max)</b>	<b>Ratio</b> C <sub>T4</sub> /C <sub>T20</sub> <b>(Typ)</b>	<b>Q<sup>2</sup></b> <b>(Min)</b>
GMV2114-GM1	22	2.1	0.8 - 1.1	0.5	3.3	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**

<b>ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)</b>						
<b>Model Number</b>	<b>V<sub>b</sub>(V)</b> I <sub>R</sub> =10μA <b>(Min)</b>	<b>C<sub>T</sub>(pF)<sup>1</sup></b> @ V <sub>R</sub> =0V <b>(Min)</b>	<b>C<sub>T</sub>(pF)<sup>1</sup></b> @ V <sub>R</sub> =4V <b>(Min-Max)</b>	<b>C<sub>T</sub>(pF)</b> @ V <sub>R</sub> =30V <b>(Max)</b>	<b>Ratio</b> C <sub>T0</sub> /C <sub>T30</sub> <b>(Typ)</b>	<b>Q<sup>2</sup></b> <b>(Min)</b>
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**

**NOTES**