

Features

- High Q Values for Higher Frequency Performance
- Constant Gamma Design
- Low Reverse Current
- Available as Chip or Packaged Diodes
- Available in Chip-on-Board Packaging
- Custom Designs Available

Applications

- VCOs
- Phase-Locked Oscillators
- High Q Tunable Filters
- Phase Shifters
- Pre-Selectors

Maximum Ratings

Reverse Voltage	Breakdown Voltage
Forward Current	50 mA @ 25°C
Incident Power	+20 dBm @ 25°C
Operating Temperature	-55°C to +175°C
Storage Temperature	-55°C to +200°C



Description

Microsemi's GaAs abrupt junction varactors are fabricated from epitaxial layers grown at Microsemi using Chemical Vapor Deposition. The layers are processed using proprietary techniques resulting in a high Q factor and very repeatable tuning curves. The diodes are available in a variety of microwave ceramic packages or chips for operation from UHF to millimeter wave frequencies.

IMPORTANT: For the most current data, consult our website: www.MICROSEMI.com
Specifications are subject to change. Consult factory for the latest information.



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

¹ The MV20000 Series of products are supplied with a RoHS compliant Gold finish.

Specifications @ 25°C
Gamma = 0.5

Part Number	C_T @ 4 V ± 10% (pF) ^{1, 3, 4}	Typ. $\frac{C_T @ 0 V}{C_T @ V_{BR}^5}$	Min. V_{BR} @ 10 μ A (V)	Typ. Q @ -4 V ²
MV20001	0.3	2.4	15	8000
MV20002	0.4	2.6	15	7500
MV20003	0.5	2.8	15	7000
MV20004	0.6	2.9	15	6500
MV20005	0.8	3.0	15	6000
MV20006	1.0	3.1	15	5700
MV20007	1.2	3.2	15	5000
MV20008	1.5	3.3	15	5000
MV20009	1.8	3.4	15	5000
MV20010	2.2	3.4	15	4000
MV21001	0.3	2.8	30	8000
MV21002	0.4	3.1	30	7500
MV21003	0.5	3.4	30	7000
MV21004	0.6	3.6	30	6500
MV21005	0.8	3.8	30	6000
MV21006	1.0	4.0	30	5700
MV21007	1.2	4.2	30	5000
MV21008	1.5	4.3	30	5000
MV21009	1.8	4.5	30	5000
MV21010	2.2	4.6	30	4000

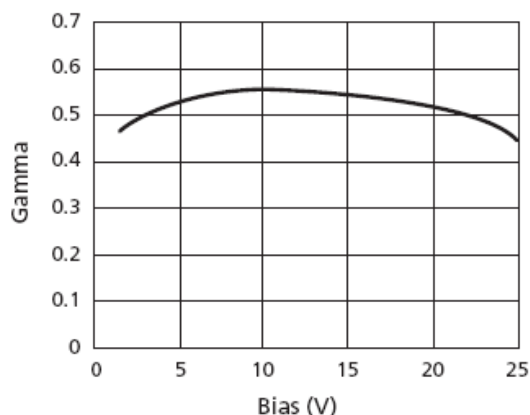
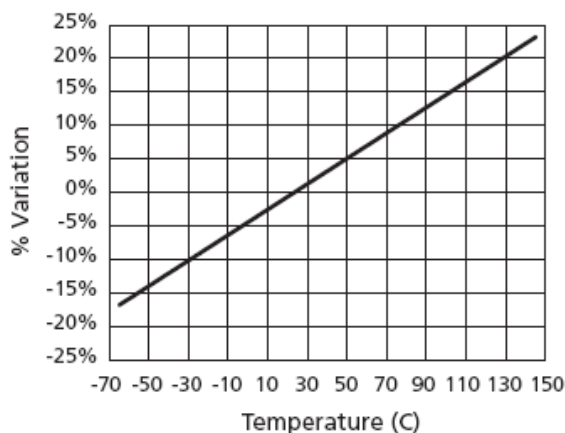
¹Capacitance is specified at 1 MHz.

²Measured by DeLoach Technique and referenced to 50 MHz.

³Tightened tolerances available upon request.

⁴Package capacitance of 0.15 pF is included in the above specification.

⁵The capacitance ratio is calculated using $C_P = 0.15$ pF. Ratios will vary depending upon package selection.

Typical Characteristics

Typical Gamma vs. Bias
Gamma = 0.50

Variation of Breakdown
Voltage vs. Temperature
(Normalized to 25°C V_{BR} @ 10 μ A)