MV21001 - MV21010

GaAs VARACTOR DIODES
ABRUPT JUNCTION
RoHS Compliant

GENERAL 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.

APPLICATIONS

The diodes are available in a variety of microwave ceramic packages or chips for operation from UHF to millimeter wave frequencies.

Standard capacitance tolerance is ±10%, other capacitance values and custom mechanical configurations are also available. Consult package outline section of this catalog for other case styles available. Complete electrical and mechanical data is also provided.

KEY 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

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APPLICATION/BENEFITS

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

ABSOLUTE MAXIMUM RATINGS @ 25°C

Rating	Unit
Reverse Voltage	Breakdown Voltage
Incident Power	+20 dBm @ 25°C
Operating Temperature	-55°C to +175°C
Storage Temperature	-55°C to +200°C

For the most current data, consult MICROSEMI's website: ***www.MICROSEMI.com***
Specifications are subject to change, consult the RFIS factory at (978) 442-5600 *for the latest information.*

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DEVICE ELECTRICAL PARAMETERS AT 25°C

Gamma = 0.5

Part Number	C_T @ 4 V ±10% (pF)[1,3,4]	Typ. C_T @ 0 V / C_T @ V_{BR}[5]	Min. V_{BR} @ 10 µA (V)	Typ. Q @ -4 V^2
MV21001 (6)	0.3	4.8	30	8000
MV21002 (6)	0.4	4.8	30	7500
MV21003	0.5	3.0	30	7000
MV21004	0.6	3.2	30	6500
MV21005	0.8	3.5	30	6000
MV21006	1.0	3.6	30	5700
MV21007	1.2	3.8	30	5000
MV21008	1.5	3.9	30	5000
MV21009	1.8	4.1	30	5000
MV21010	2.2	4.2	30	4000

Notes:

1 - Capacitance is specified at 1 MHz.
2 - Measured by DeLoach Technique and referenced to 50 MHz.
3 - Tightened tolerances available upon request.
4 - Package capacitance of 0.15 pF is included in the above specification.
5 - The capacitance ratio is calculated using CP = 0.15 pF. Ratios will vary depending upon package selection.
6 - Part only offered in die form. The capacitance values are in die form.

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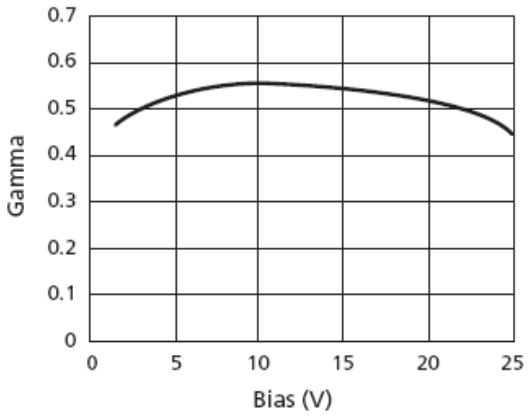
TYPICAL CHARACTERISTICS



Typical Gamma vs. Bias
Gamma = 0.50

Note:

Gamma value guaranteed for unpackaged chips only.

Revision History

Revision Level / Date	Para. Affected	Description
1 / 31 October 2013	-	Revised