Tuning Varactors: MTV 4090 Series

90-Volt Abrupt Tuning Varactors

Description

The **MicroMetrics** MTV 4090 series Tuning Varactors are silicon abrupt junction devices. They offer the highest Q and lowest resistance available in 90 volt tuning diodes.

A unique silicon dioxide passivation process assures greater stability, reliability and low leakage currents at higher temperatures.

Applications

The MTV 4090 series Tuning Varactors are used for both narrow and wide band tuning through X-band.

These devices are used in circuits requiring a high Q voltage variable capacitance such as: tunable filters and amplifiers, voltage controlled oscillators, frequency synthesizers and continuous phase shifters. They are also useful as frequency and phase modulators in communications applications.

Standard capacitance tolerance is ±10%. Diodes can be optimized for custom electrical or mechanical specifications upon request.

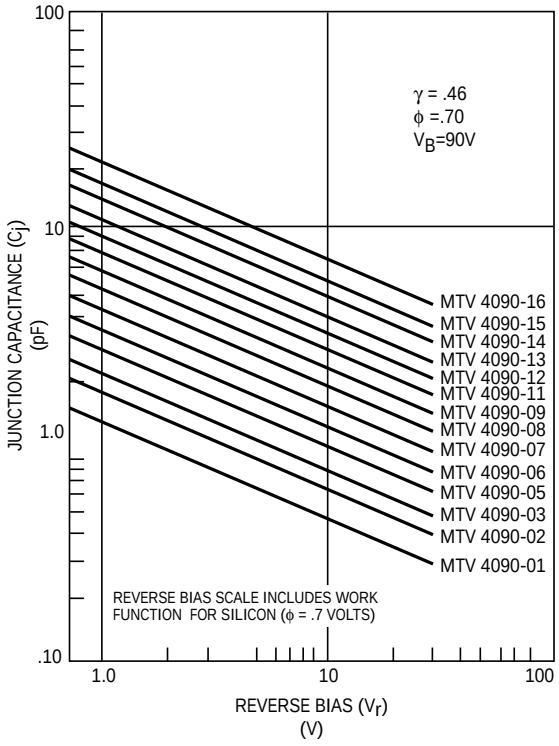
Features

- Low Series Resistance - High Q
- Extensive Selection of Capacitance Values

Packaging

- Available in a Wide Range of Case Styles as well as Chip Form

Typical Performance



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Electrical Characteristics

Total Capacitance, C_t[1] at -4V, 1 MHz (pF)	Capacitance Ratio C_t0/C_t90 MIN	Quality Factor, Q[2] at -4V, 50 MHz MIN	Part Number
0.8	8.0	1000	MTV4090-01
1.0	8.0	1000	MTV4090-02
1.2	8.0	900	MTV4090-03
1.4	8.0	900	MTV4090-04
1.6	8.0	850	MTV4090-05
1.8	8.0	850	MTV4090-06
2.2	8.0	850	MTV4090-07
2.7	8.0	850	MTV4090-08
3.3	8.0	850	MTV4090-09
3.6	8.0	800	MTV4090-10
3.9	8.0	800	MTV4090-11
4.7	8.0	800	MTV4090-12
5.6	8.0	800	MTV4090-13
6.8	8.0	750	MTV4090-14
8.2	8.0	750	MTV4090-15
10.0	8.0	750	MTV4090-16

Notes:
1. Capacitance tolerance is ± 10% except for ± 20% for suffix number 01, 02.
2. Q specified V_r = 4V, 50 MHz equivalent from 1 GHz or 100 MHz measurement.

Maximum Ratings

Parameter	Symbol	Value	Units
Operating Temperature	T_{op}	-55 to + 150	°C
Storage Temperature Range	T_{stg}	-65 to + 200	°C
Reverse Voltage	V_r	90	Volts
Device Dissipation at TA = 25°C		250	mW