

Tuning Varactors: MTV 4045 Series

45-Volt Abrupt Tuning Varactors

Description

The **MicroMetrics** MTV 4045 series Tuning Varactors are silicon abrupt junction devices. They offer the highest Q and lowest resistance available in 45 volt tuning diodes.

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

Applications

The MTV 4045 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 $\pm 10\%$. Diodes can be optimized for custom electrical or mechanical specifications upon request.

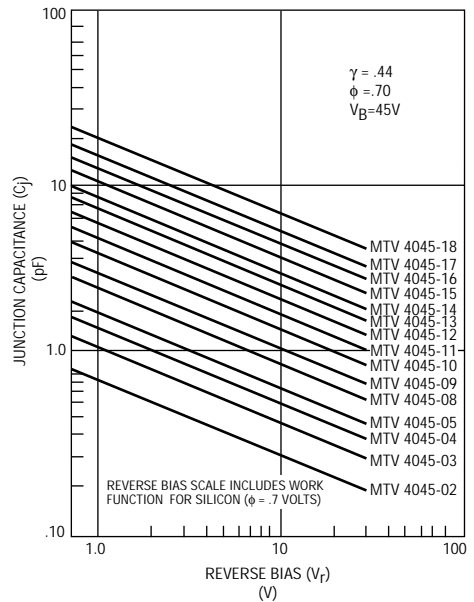
Features

- 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



Electrical Characteristics

Total Capacitance, C_t^1 at -4V, 1 MHz (pF)	Capacitance Ratio C_{10}/C_{t45} MIN	Quality Factor, Q^2 @-4V, 50 MHz MIN	Part Number
0.4	7.0	3000	MTV4045-01
0.6	7.0	3000	MTV4045-02
0.8	7.0	2800	MTV4045-03
1.0	7.0	2800	MTV4045-04
1.2	7.0	2600	MTV4045-05
1.4	7.0	2400	MTV4045-06
1.6	7.0	2400	MTV4045-07
1.8	7.0	2300	MTV4045-08
2.2	7.0	2200	MTV4045-09
2.7	7.0	2200	MTV4045-10
3.3	7.0	2100	MTV4045-11
3.6	7.0	2000	MTV4045-12
3.9	7.0	2000	MTV4045-13
4.7	7.0	2000	MTV4045-14
5.6	7.0	1900	MTV4045-15
6.8	7.0	1800	MTV4045-16
8.2	7.0	1700	MTV4045-17
10.0	7.0	1600	MTV4045-18
12.0	7.0	1500	MTV4045-19
15.0	7.0	1400	MTV4045-20
18.0	7.0	1300	MTV4045-21
22.0	7.0	1200	MTV4045-22

Notes:

1. Capacitance tolerance is $\pm 10\%$ except for $\pm 20\%$ for suffix number 01, 02, and 03.
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	$^{\circ}C$
Storage Temperature Range	T_{stg}	-65 to + 200	$^{\circ}C$
Reverse Voltage	V_r	45	Volts
Device Dissipation at $T_A = 25^{\circ}C$		250	mW

