MTV4030-x Series

Silicon Abrupt Tuning Varactor Diodes

Rev. V1

Features

- Low Series Resistance
- High Q
- Extensive Selection of Capacitance Values
- RoHS* Compliant



Description

The MTV4030 Series tuning varactors are silicon abrupt junction devices. They offer the highest Q and lowest resistance available in 30 volt tuning devices.

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

The MTV4030 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.

Electrical Specifications: T_C = +25°C

Part Number	Reverse Voltage V_B I_R = 10 µA	Junction Capacitance[1] C_J V_R = 4 V, 1 MHz	Capacitance Ratio C_R C_T0 / C_T30	Quality Factor Q V_R = 4 V, 50 MHz
	Minimum	Typical	Minimum	Minimum
MTV4030-01	30	0.4	5	5000
MTV4030-02	30	0.6	5	5000
MTV4030-03	30	0.8	5	4800
MTV4030-04	30	1.0	5	4800
MTV4030-05	30	1.2	5	4600
MTV4030-06	30	1.4	5	4400
MTV4030-07	30	1.6	5	4400
MTV4030-08	30	1.8	5	4200
MTV4030-09	30	2.2	5	4000
MTV4030-10	30	2.7	5	3800

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* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

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	Minimum	Typical	Minimum	Minimum
MTV4030-11	30	3.3	5	3600
MTV4030-12	30	3.6	5	3400
MTV4030-13	30	3.9	5	3400
MTV4030-14	30	4.7	5	3200
MTV4030-15	30	5.6	5	3000
MTV4030-16	30	6.8	5	2800
MTV4030-17	30	8.2	5	2600
MTV4030-18	30	10.0	5	2400
MTV4030-19	30	12.0	5	2200
MTV4030-20	30	15.0	5	2000
MTV4030-21	30	18.0	5	1800
MTV4030-22	30	22.0	5	1600
MTV4030-23	30	27.0	5	1400
MTV4030-24	30	33.0	5	1400
MTV4030-25	30	39.0	5	1200
MTV4030-26	30	47.0	5	1000

1. Total Capacitance (C_T) values will vary depending upon the desired packaging type (C_J + package = C_T).

Absolute Maximum Ratings

Parameter	Absolute Maximum
Device Dissipation	250 mW
Operating Temperature	-55°C to +150°C
Storage Temperature	-65°C to +100°C

Package Style	Package Capacitance (pF)	Series Inductance (nH)
	Typical	Typical
CS11	0	0.12
H20	0.20	0.12
CS37	0.19	0.40
CS75	0.25	1.20
CS85	0.30	1.50

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these HBM Class 0 devices.

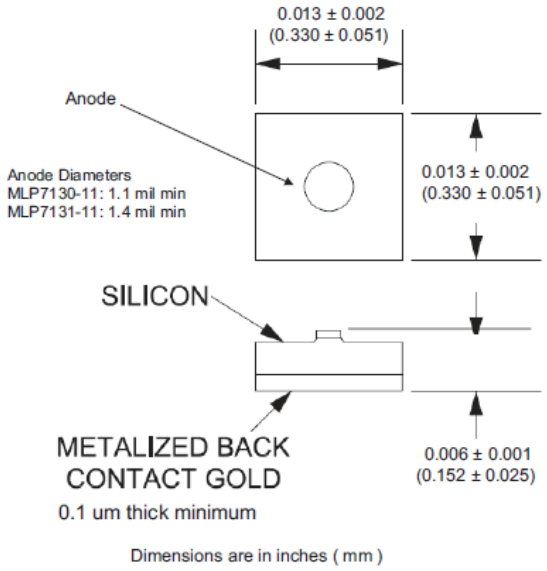
Moisture Sensitivity

These electronic devices are rated MSL 1.

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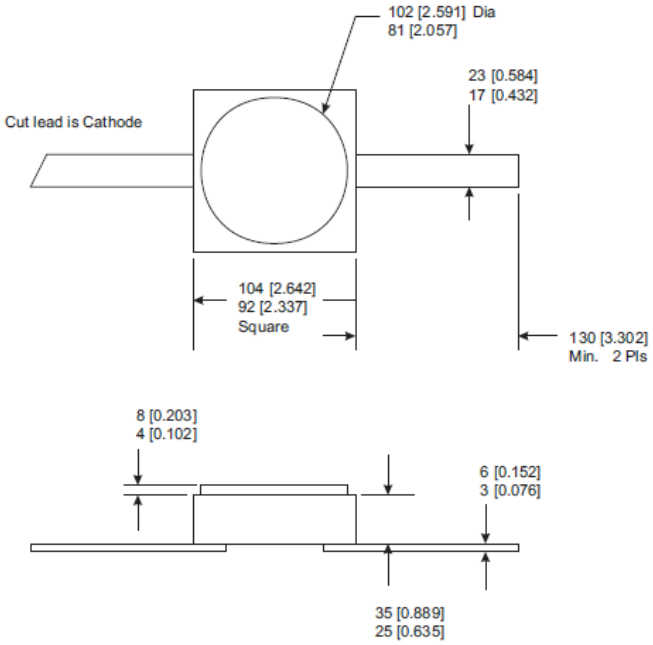
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Outline Drawing - CS11



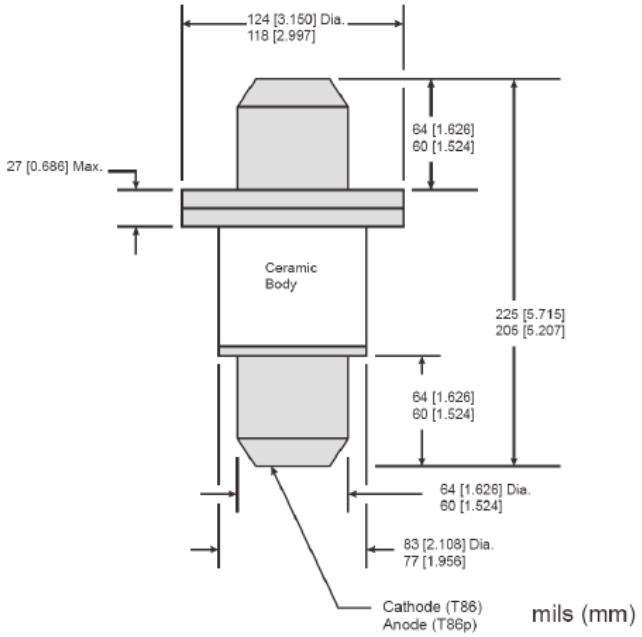
Dimensions are in inches (mm)

Outline Drawing - CS20 (H20)



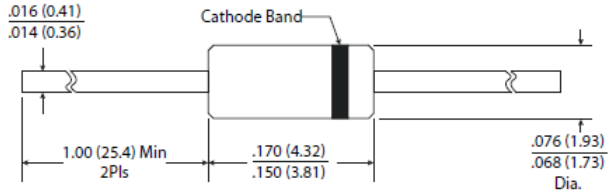
Package Capacitance (C_{PKG}) = 0.2 pF

Outline Drawing - CS37 (T86)

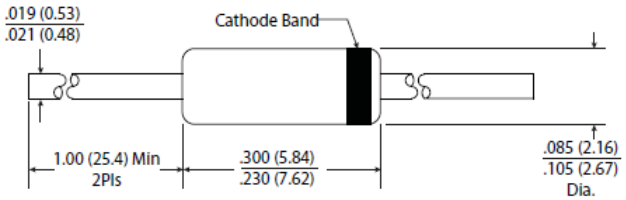


Package Capacitance (C_{PKG}) = 0.17 pF

Outline Drawing - CS75 (A15)



Outline Drawing - CS85



Note: Dimensions are in inches (mm)

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Ordering Information

Example Part: MTV4030-01-XX, replace –XX with desired case style suffix	
-11	CS11 (C11), Silicon Die
-20	H20, Surface Mount, Ceramic Package
-37	CS37 (T86), Pill Package, Ceramic Body
-75	CS75 (A15), Glass Axial Leaded (Hermetic)
-85	CS85, Glass Axial Leaded

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