

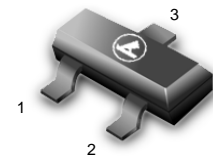
# Silicon Tuning Diode

This device is designed in the Surface Mount package for general frequency control and tuning applications. It provides solid-state reliability in replacement of mechanical tuning methods.

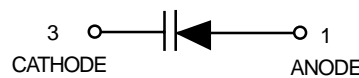
- High Q with Guaranteed Minimum Values at VHF Frequencies
- Controlled and Uniform Tuning Ratio

## MMBV3102LT1

22 pF(Nominal) 30Volts  
VOLTAGE VARIABLE  
CAPACITANCE DIODES



CASE 318-08, STYLE 8  
SOT-23 (TO-236AB)



### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	30	Vdc
Forward Current	$I_F$	200	mAdc
Device Dissipation @ $T_A = 25^\circ\text{C}$	$P_D$	225	mW
Derate above $25^\circ\text{C}$		1.8	mW/ $^\circ\text{C}$
Junction Temperature	$T_J$	+125	$^\circ\text{C}$
Storage Temperature Range	$T_{slg}$	-55 to +150	$^\circ\text{C}$

### DEVICE MARKING

MMBV3102LT1=M4C

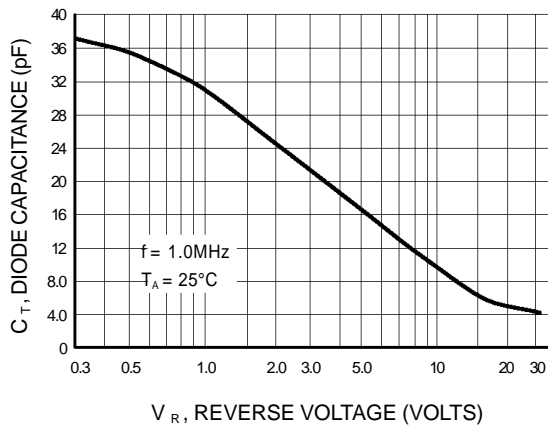
### ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ( $I_R=10\mu\text{Adc}$ )	$V_{(BR)R}$	30	—	—	Vdc
Reverse Voltage Leakage Current ( $V_R=15\text{Vdc}$ )	$I_R$	—	—	0.1	$\mu\text{Adc}$
Diode Capacitance Temperature Coefficient ( $V_R=4.0\text{Vdc}, f=1.0\text{MHz}$ )	$T_{CC}$	—	300	—	ppm/ $^\circ\text{C}$

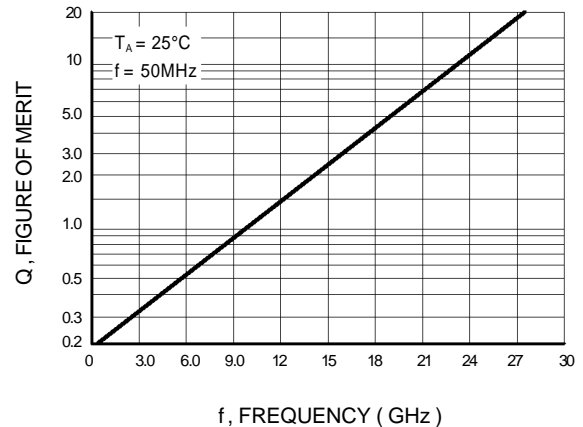
Device Type	$C_T$ Diode Capacitance $V_R=3.0\text{Vdc}, f=1.0\text{MHz}$ pF			$Q$ , Figure of Merit $V_R=3.0\text{Vdc}$ $f=50\text{MHz}$	$C_R$ , Capacitance Ratio $C_3/C_{25}$ $f=1.0\text{MHz}$	
	Min	Nom	Max	Min	Min	Typ
MMBV3102LT1	20	22	25	200	4.5	4.8

**MMBV3102LT1**

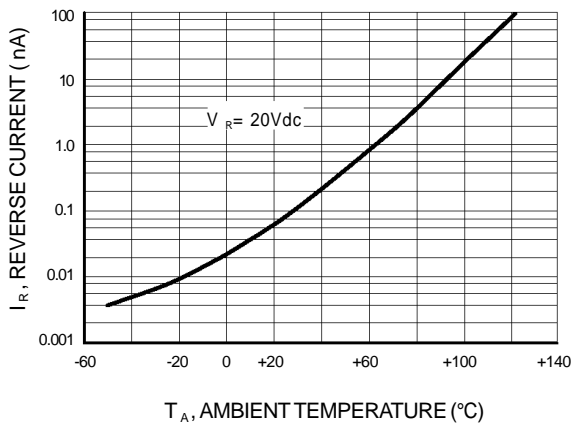
**TYPICAL CHARACTERISTICS**



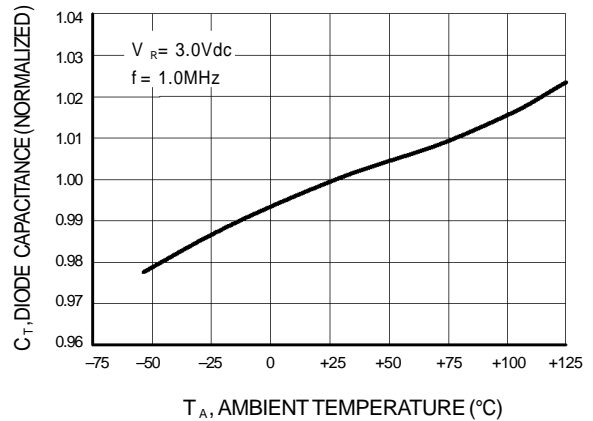
**Figure 1. Diode Capacitance**



**Figure 2. Figure of Merit**



**Figure 3. Leakage Current**



**Figure 4. Diode Capacitance**

**NOTES ON TESTING AND SPECIFICATIONS**

1. C<sub>R</sub> is the ratio of C<sub>T</sub> measured at 3.0 Vdc divided by C<sub>T</sub> measured at 25 Vdc.