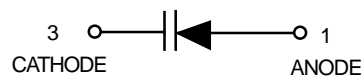


## Silicon Tuning Diode

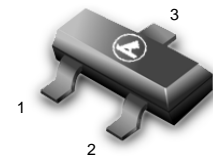
This device is designed in the Surface Mount package for general frequency control and tuning applications. It provides solid-state reliability in replacement of mechanical tuning methods.

- 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

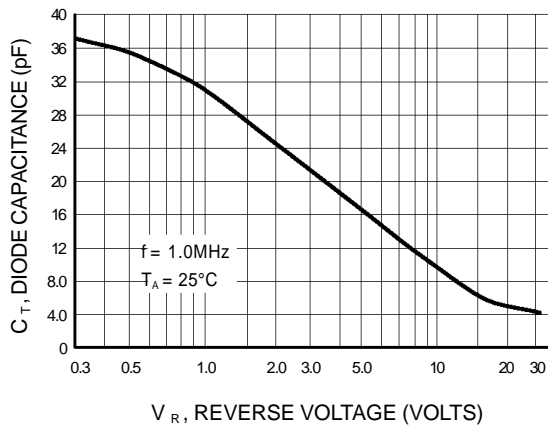


Figure 1. Diode Capacitance

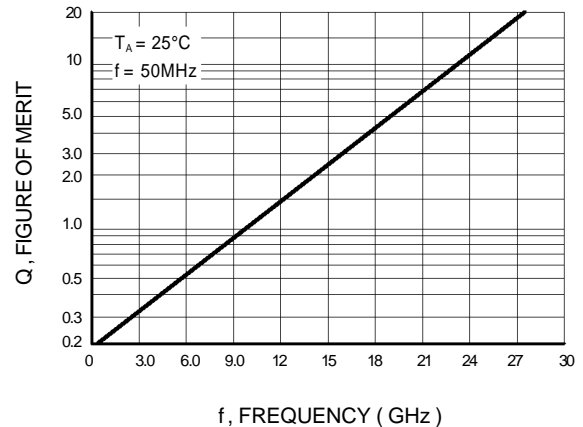


Figure 2. Figure of Merit

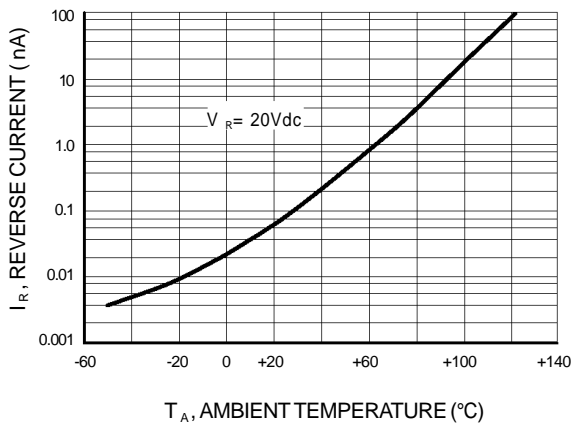


Figure 3. Leakage Current

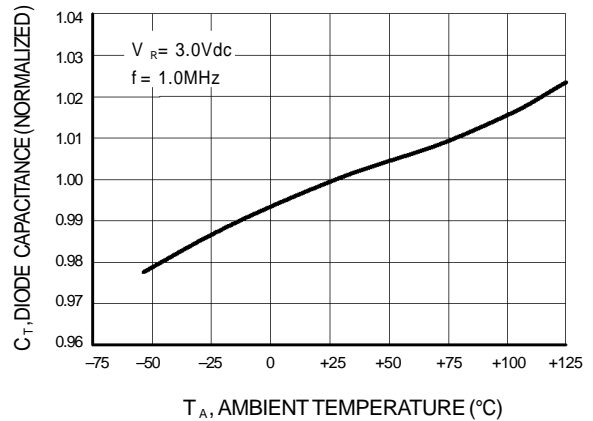


Figure 4. Diode Capacitance

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.