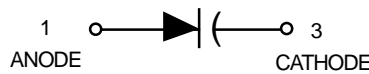


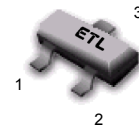
# Silicon Tuning Diode

This device is designed for 900 MHz frequency control and tuning applications. It provides solid-state reliability in replacement of mechanical tuning methods.

- Controlled and Uniform Tuning Ratio
- Available in Surface Mount Package
- Available in 8 mm Tape and Reel



## MMBV809LT1



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

### MAXIMUM RATINGS(EACH DIODE)

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	20	Vdc
Forward Current	$I_F$	20	mAdc
Device Dissipation <sup>(1)</sup> @ $T_A = 25^\circ\text{C}$	$P_D$	225	mW
Derate above 25°C		1.8	mW/°C
Junction Temperature	$T_J$	+125	°C
Storage Temperature Range	$T_{stg}$	-55 to +150	°C

### DEVICE MARKING

MMBV809LT1=5K

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

Characteristic	Symbol	Min	Max	Unit
Reverse Breakdown Voltage ( $I_R=10\mu\text{Adc}$ )	$V_{(BR)R}$	20	—	Vdc
Reverse Voltage Leakage Current ( $V_R=15\text{Vdc}$ )	$I_R$	—	50	nAdc

Device Type	$C_T$ , Diode Capacitance $V_R=2.0\text{Vdc}, f=1.0\text{MHz}$ pF			$Q$ , Figure of Merit $V_R=3.0\text{Vdc}$ $f=500\text{MHz}$	$C_R$ , Capacitance Ratio $C_2/C_8$ $f=1.0\text{MHz}(2)$	
	Min	Typ	Max	Typ	Min	Max
MMBV809LT1	4.5	5.3	6.1	75	1.8	2.6

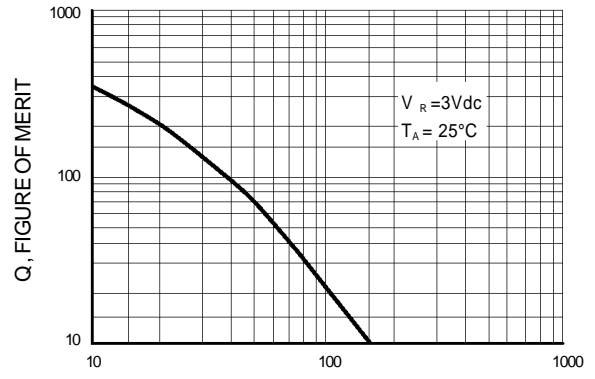
1. FR-5 Board 1.0 x 0.75 x 0.62 in.

2.  $C_R$  is the ratio of  $C_i$  measured at 2.0 Vdc divided by  $C_i$  measured at 8.0 vdc

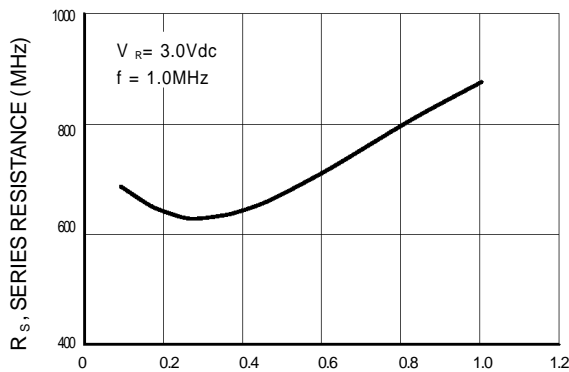
TYPICAL CHARACTERISTICS



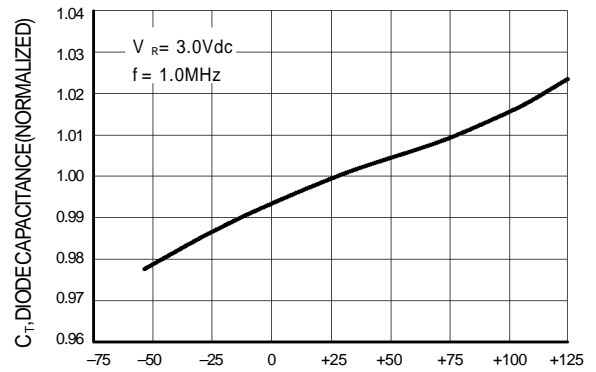
V<sub>R</sub>, REVERSE VOLTAGE (VOLTS)  
Figure 1. Diode Capacitance



f, FREQUENCY (GHz)  
Figure 2. Figure of Merit



f, FREQUENCY (GHz)  
Figure 3. Series Resistance



T<sub>A</sub>, AMBIENT TEMPERATURE (°C)  
Figure 4. Diode Capacitance

