

## Silicon Tuning Diode

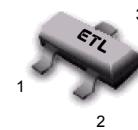
This device is designed in the surface Mount package for general frequency control and tuning applications. It provides solid-state reliability in replacement of mechanical tuning methods.

- High Q with Guaranteed Minimum Values at VHF Frequencies
- Controlled and Uniform Tuning Ratio
- Available in Surface Mount Package



**MMBV409LT1  
MV409**

VOLTAGE VARIABLE  
CAPACITANCE DIODES



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

### MAXIMUM RATINGS(EACH DIODE)

Rating	Symbol	MBV409	MMBV409LT1	Unit
Reverse Voltage	$V_R$	20	20	Vdc
Forward Current	$I_F$	200	200	mAdc
Device Dissipation @ $T_A = 25^\circ C$	$P_D$	280	225	mW
Derate above $25^\circ C$		2.8	1.8	$mW/^\circ C$
Junction Temperature	$T_J$	+125		°C
Storage Temperature Range	$T_{stg}$	-55 to +150		°C

### DEVICE MARKING

MMBV409LT1=X5,MV409=MV409

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ( $I_R=10\mu Adc$ )	$V_{(BR)R}$	20	—	—	Vdc
Reverse Voltage Leakage Current ( $V_R=15Vdc$ )	$I_R$	—	—	0.1	$\mu Adc$
Diode Capacitance Temperature Coefficient	$T_{cc}$	—	300	—	$ppm/^\circ C$

Device Type	$C_t$ Diode Capacitance $V_R=3.0Vdc, f=1.0MHz$ pF	Q,Figure of Merit		$C_R$ ,Capacitance Ratio $C_3/C_8$ $f=1.0MHz(1)$		
		Min	Nom	Max		
MMBV409LT1,MV409	26	29	32	200	1.5	1.9

1.  $C_R$  is the ratio of  $C_t$  measured at 3 Vdc divided by  $C_t$  measured at 8 vdc

**SEMICONDUCTOR**

## MMBV409LT1 MV409

### TYPICAL CHARACTERISTICS

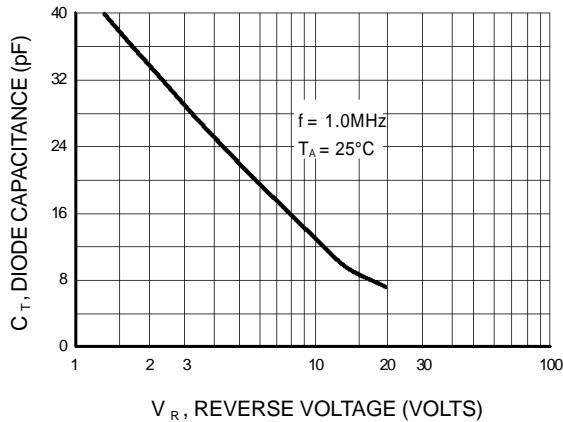


Figure 1. Diode Capacitance

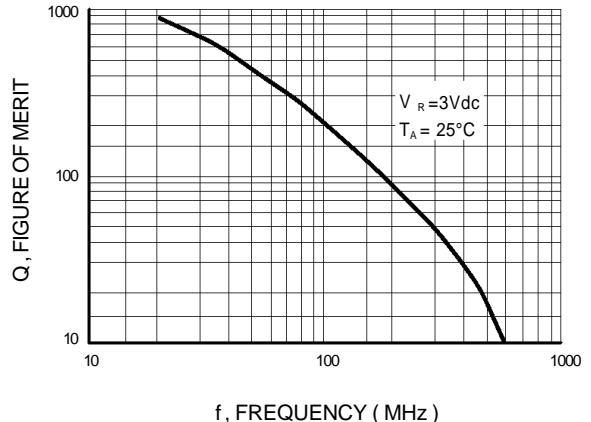


Figure 2. Figure of Merit

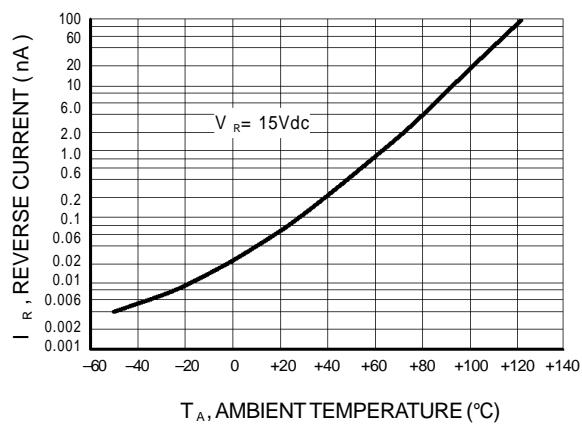


Figure 3. Leakage Current

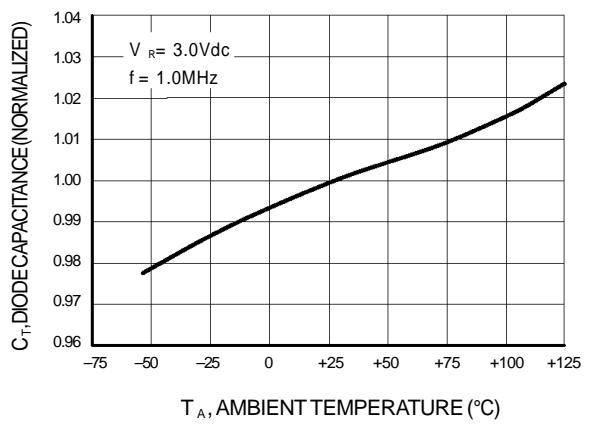


Figure 4. Diode Capacitance