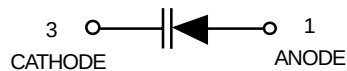


Silicon Tuning Diode

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 @ $T_A = 25^\circ\text{C}$	P_D	280	225	mW
Derate above 25°C		2.8	1.8	mW/ $^\circ\text{C}$
Junction Temperature	T_J	+125		$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150		$^\circ\text{C}$

DEVICE MARKING

MMBV409LT1=X5, MV409=MV409

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R=10\mu\text{Adc}$)	$V_{(BR)R}$	20	—	—	Vdc
Reverse Voltage Leakage Current ($V_R=15\text{Vdc}$)	I_R	—	—	0.1	μAdc
Diode Capacitance Temperature Coefficient	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_8 $f=1.0\text{MHz}(1)$	
	Min	Nom	Max	Min	Min	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

MMBV409LT1 MV409

TYPICAL CHARACTERISTICS

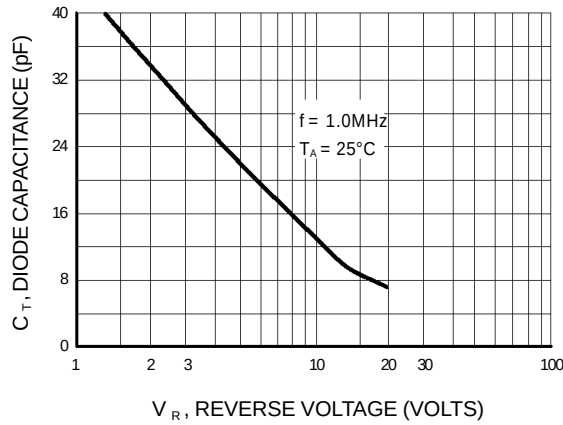


Figure 1. Diode Capacitance

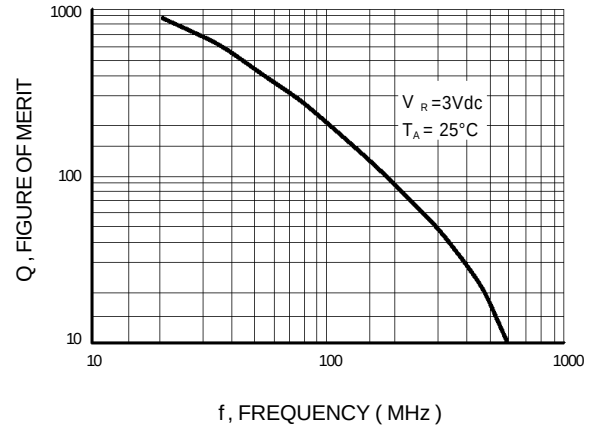


Figure 2. Figure of Merit

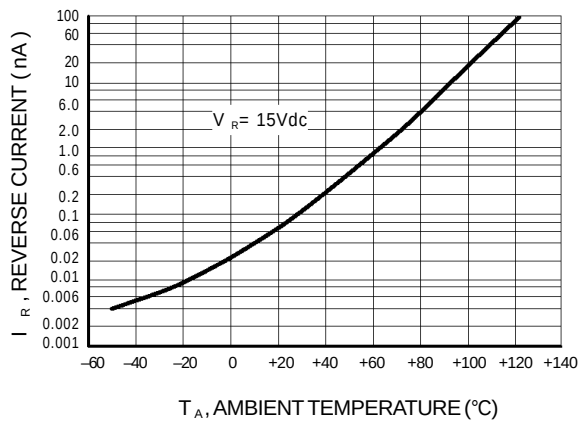


Figure 3. Leakage Current

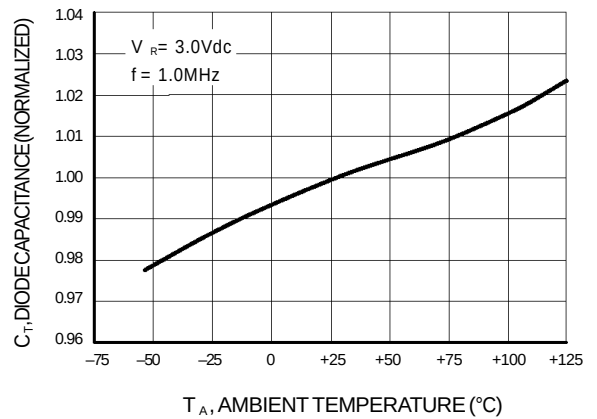


Figure 4. Diode Capacitance