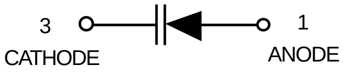
Silicon Tuning Diode

MMBV409LT1
MV409

VOLTAGE VARIABLE CAPACITANCE DIODES

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



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°C	P_D	280	225	mW
Derate above 25°C		2.8	1.8	mW/°C
Junction Temperature	T_J	+125		℃
Storage Temperature Range	T_{stg}	–55 to +150		℃

DEVICE MARKING

MMBV409LT1=X5,MV409=MV409

ELECTRICAL CHARACTERISTICS(T_A=25°C unless otherwise noted)

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

Device Type	C_TDiode Capacitance V_R=3.0Vdc,f=1.0MHz pF			Q,Figure of Merit V_R=3.0Vdc f=50MHz	C_R,Capacitance Ratio C_3/C_8 f=1.0MHz(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

TYPICAL CHARACTERISTICS

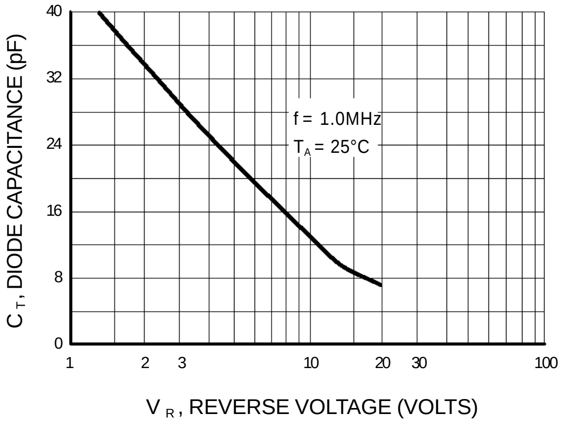


Figure 1. Diode Capacitance

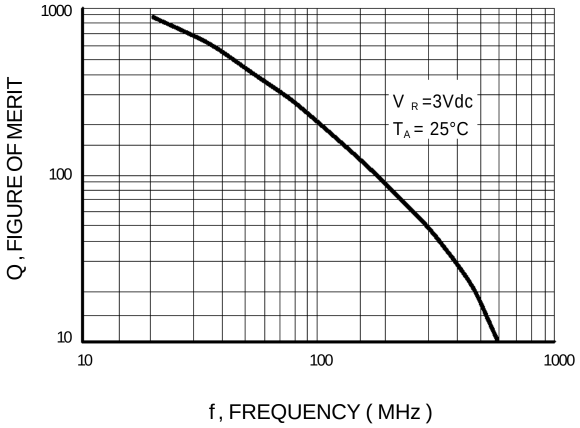


Figure 2. Figure of Merit

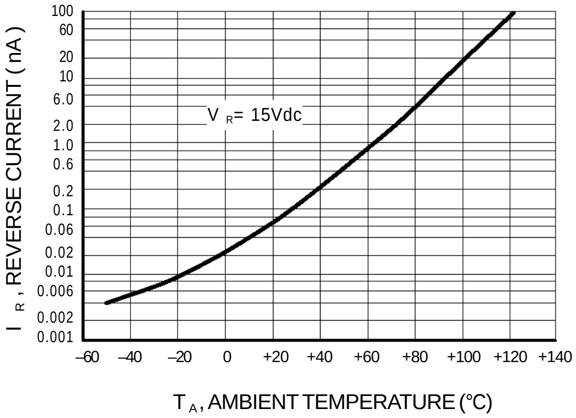


Figure 3. Leakage Current

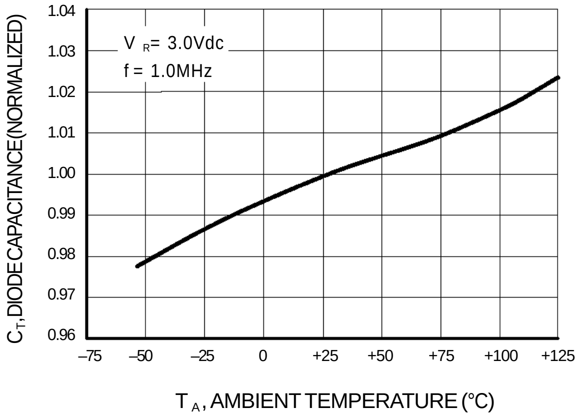


Figure 4. Diode Capacitance