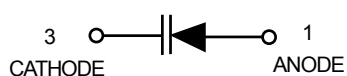


Silicon Epicap Diode

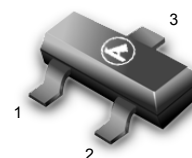
Designed for general frequency control and tuning applications; providing solid-state reliability in replacement of mechanical tuning methods.

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



MMBV109LT1
MBV109T1
MV209

26–32 pF
VOLTAGE VARIABLE
CAPACITANCE DIODES



CASE 318-08, STYLE 6
SOT-23 (TO-236AB)

MAXIMUM RATINGS

Rating	Symbol	Value			Unit
		MBV109T1	MMBV109LT1	MV209	
Reverse Voltage	V_R		30		Vdc
Forward Current	I_F		200		mAdc
Device Dissipation	P_D				
@ $T_A = 25^\circ\text{C}$		280	200	200	mW
Derate above 25°C		2.8	2.0	1.6	mW/ $^\circ\text{C}$
Junction Temperature	T_J		+125		$^\circ\text{C}$
Storage Temperature Range	T_{stg}		–55 to +150		$^\circ\text{C}$

DEVICEMARKING

MBV109T1= J4A, MMBV109LT1 =M4A, MV209 = MV209

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 ($V_R = 25\text{Vdc}$)	I_R	—	—	0.1	mAdc
Diode Capacitance Temperature Coefficient ($V_R = 3.0\text{Vdc}$, $f = 1.0\text{MHz}$)	TC_C	—	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} $f=1.0\text{MHz}$ (Note 1)	
	Min	Nom	Max	Min	Min	Max
MBV109T1, MMBV109LT1, MV209	26	29	32	200	5.0	6.5

1. C_R is the ratio of C_1 measured at 3 V dc divided by C_1 measured at 25 Vdc.

MMBV109LT1 is also available in bulk packaging. Use **MMBV109L** as the device title to order this device in bulk.

MBV109T1 MMBV109LT1 MV209

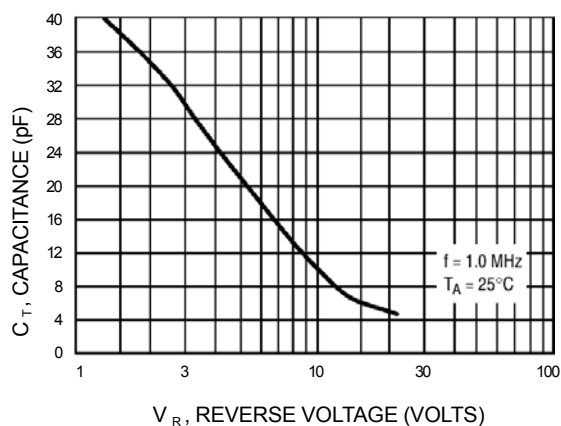


Figure 1. Diode Capacitance

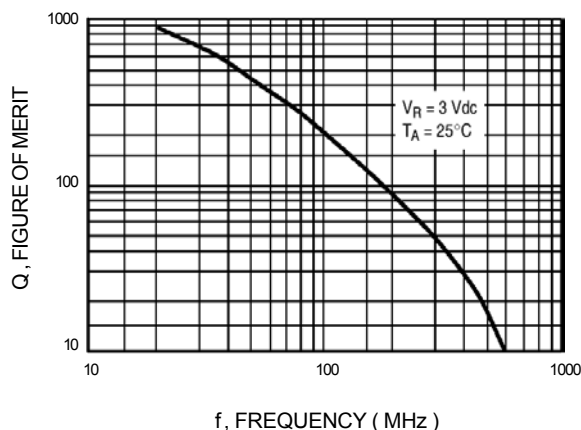


Figure 2. Figure of Merit

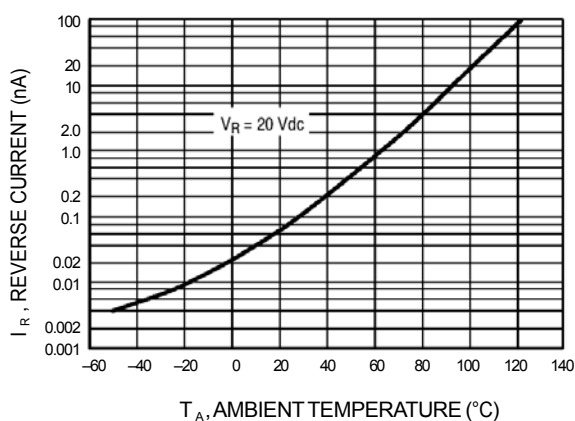


Figure 3 . Leakage Current

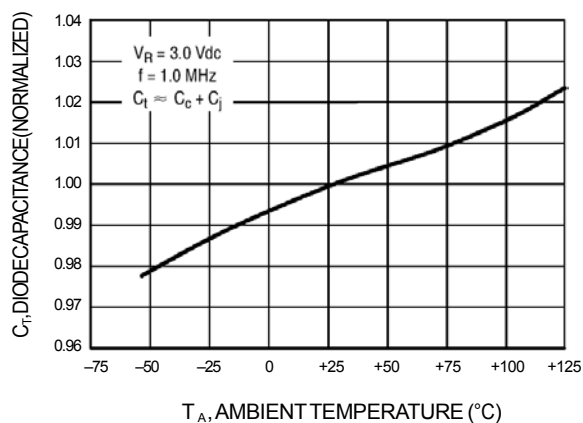


Figure 4. Diode Capacitance

NOTES ON TESTING AND SPECIFICATIONS

1. C_R is the ratio of C_T measured at 3.0 Vdc divided by C_T measured at 25 Vdc.