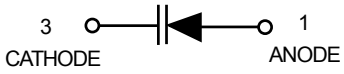
ETL
SEMICONDUCTOR

Silicon Epicap Diode

MMBV109LT1
MBV109T1
MV209

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



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

MAXIMUM RATINGS(EACH DIODE)

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°C		280	200	200	mW
Derate above 25°C		2.8	2.0	1.6	mW/°C
Junction Temperature	T_J		+125		°C
Storage Temperature Range	T_{stg}		–55 to +150		°C

DEVICE MARKING

MBV109T1= J4A, MMBV109LT1 =M4A, MV209 = MV209

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

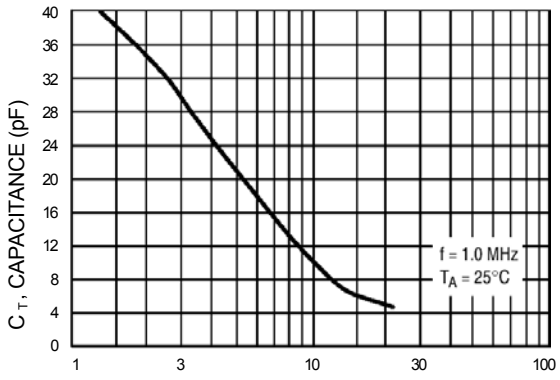
Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I_R = 10mAdc)	$V_{(BR)R}$	30	—	—	Vdc
Reverse Voltage Leakage Current (V_R = 25Vdc)	I_R	—	—	0.1	mAdc
Diode Capacitance Temperature Coefficient (V_R = 3.0 Vdc, f = 1.0 MHz)	TC_C	—	300	—	ppm/°C

	C_T Diode 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_{25} f=1.0MHz (Note 1)	
Device Type	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_t measured at 3 V dc divided by C_t measured at 25 Vdc.

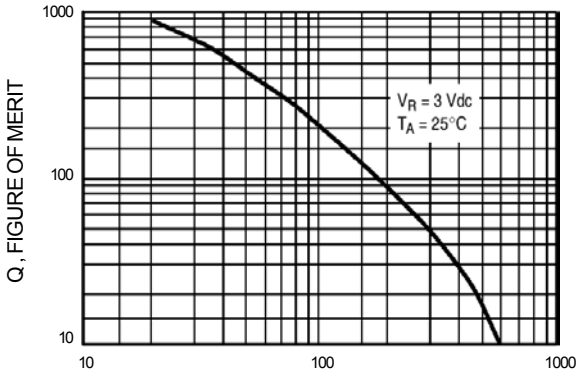
MMBV109LT1 is also available in bulk packaging. Use **MMBV109L** as the device title to order this device in bulk.

MBV109T1 MMBV109LT1 MV209



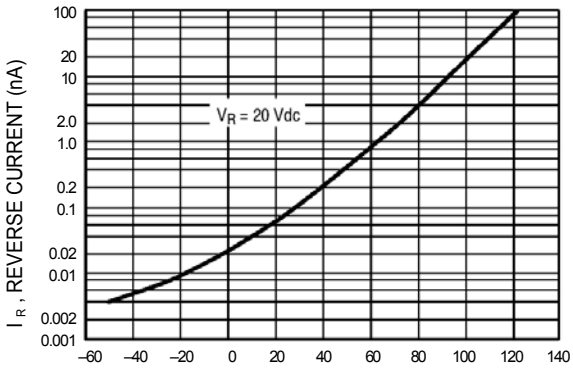
V R, REVERSE VOLTAGE (VOLTS)

Figure 1. Diode Capacitance



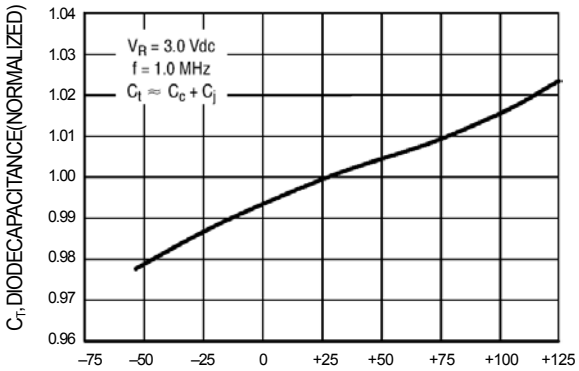
f, FREQUENCY (MHz)

Figure 2. Figure of Merit



T A, AMBIENT TEMPERATURE (°C)

Figure 3 . Leakage Current



T A, AMBIENT TEMPERATURE (°C)

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.