

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
- Surface Mount Package
- Device Marking: 4A

ORDERING INFORMATION

Device	Package	Shipping
MMVL109T1	SOD-323	3000 / Tape & Reel

MMVL109T1

26–32 pF
VOLTAGE VARIABLE
CAPACITANCE DIODES



PLASTIC, CASE 477
SOD-323



MAXIMUM RATINGS

Symbol	Rating	Value	Unit
V_R	Continuous Reverse Voltage	30	Vdc
I_F	Peak Forward Current	200	mAdc

THERMAL CHARACTERISTICS

Symbol	Characteristic	Max	Unit
P_D	Total Device Dissipation FR-5 Board,* $T_A = 25^\circ\text{C}$	200	mW
	Derate above 25°C	1.57	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	635	$^\circ\text{C/W}$
T_J, T_{stg}	Junction and Storage Temperature Range	-55 to +150	$^\circ\text{C}$

*FR-5 Minimum Pad

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	μAdc
Diode Capacitance Temperature Coefficient ($V_R = 3.0 \text{ Vdc}$, $f = 1.0 \text{ MHz}$)	TC_C	—	300	—	ppm/ $^\circ\text{C}$

	C_i , 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)	
Device	Min	Nom	Max	Min	Min	Max
MMVL109T1	26	29	32	200	5.0	6.5

1. C_R is the ratio of C_i measured at 3 Vdc divided by C_i measured at 25 Vdc.

MMVL109T1

TYPICAL CHARACTERISTICS

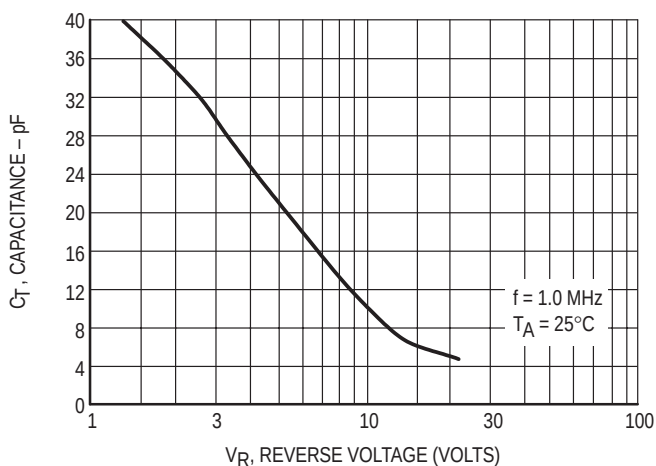


Figure 1. DIODE CAPACITANCE

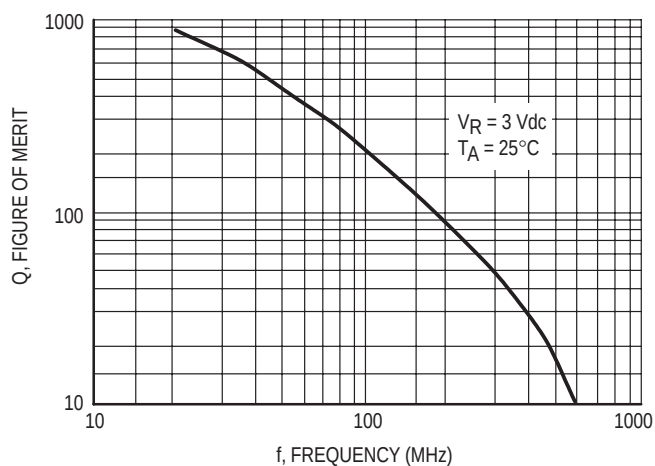


Figure 2. FIGURE OF MERIT

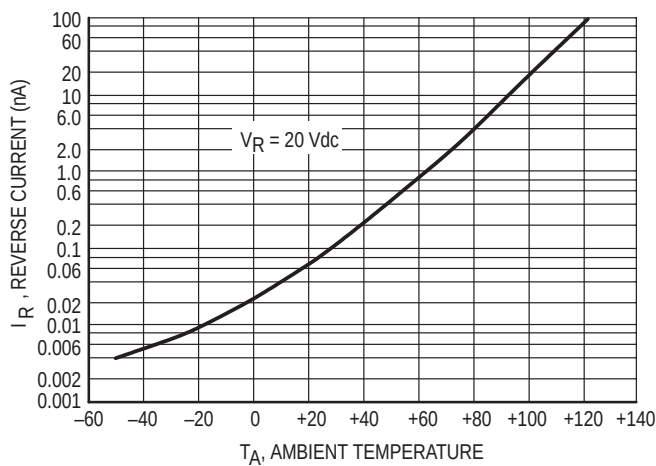


Figure 3. LEAKAGE CURRENT

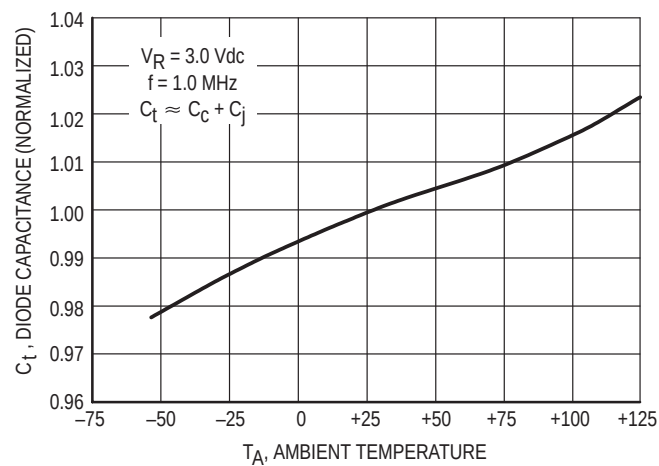


Figure 4. DIODE CAPACITANCE

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.