

MMVL109T1

Preferred Device

Silicon Epicap Diodes

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

MAXIMUM RATINGS

Symbol	Rating	Value	Unit
V_R	Continuous Reverse Voltage	30	Vdc
I_F	Peak Forward Current	200	mA _{dc}

THERMAL CHARACTERISTICS

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

*FR-5 Minimum Pad

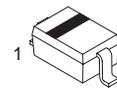


ON Semiconductor

Formerly a Division of Motorola

<http://onsemi.com>

26–32 pF VOLTAGE VARIABLE CAPACITANCE DIODES



PLASTIC
SOD-323
CASE 477



ORDERING INFORMATION

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

Preferred devices are recommended choices for future use and best overall value.

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

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

Device	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
MMVL109T1	26	29	32	200	5.0	6.5

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

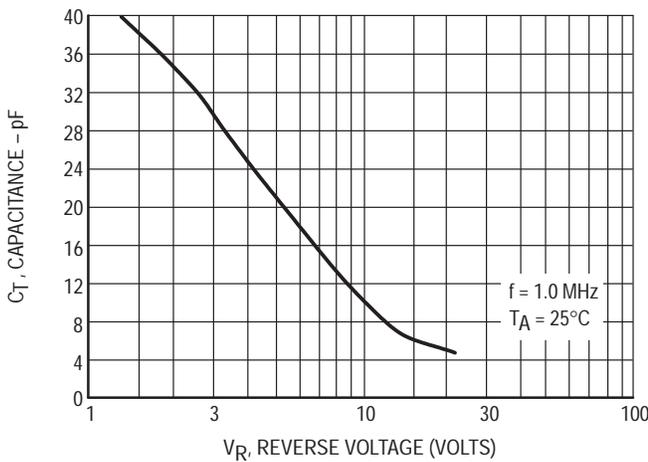


Figure 1. DIODE CAPACITANCE

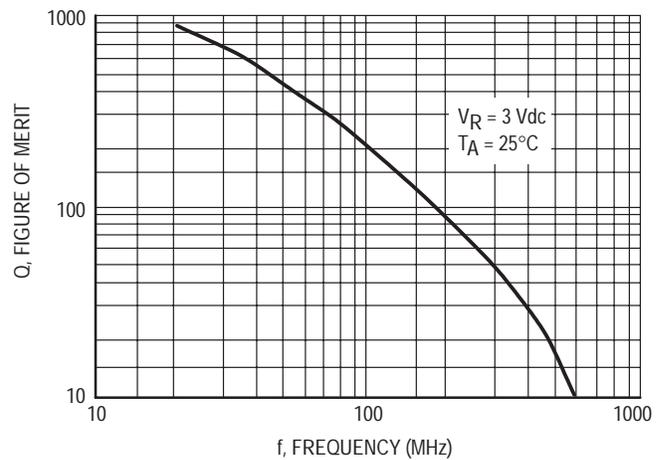


Figure 2. FIGURE OF MERIT

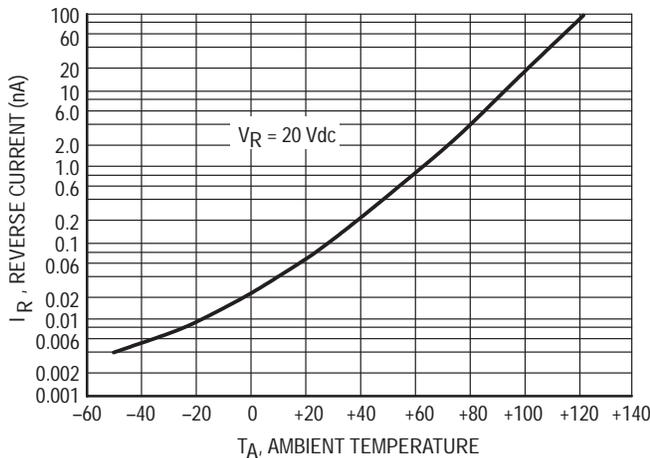


Figure 3. LEAKAGE CURRENT

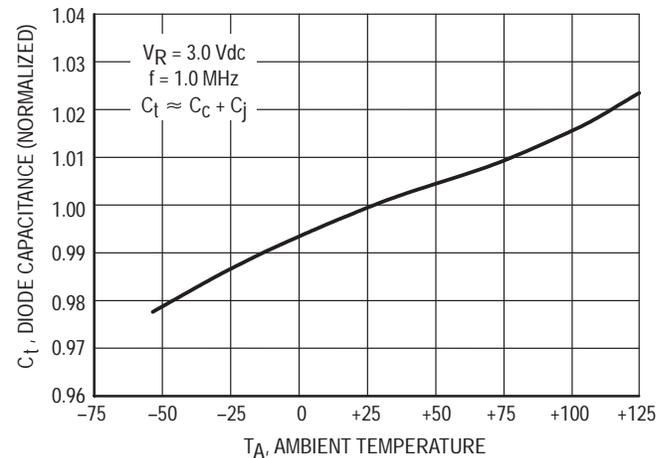


Figure 4. DIODE CAPACITANCE

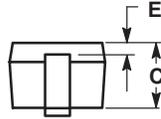
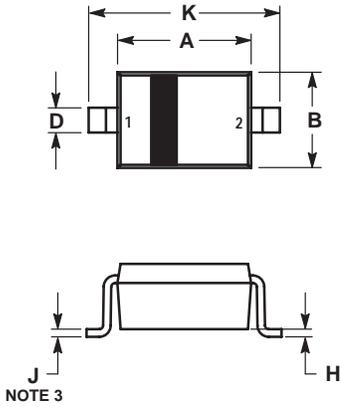
NOTES ON TESTING AND SPECIFICATIONS

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

MMVL109T1

PACKAGE DIMENSIONS

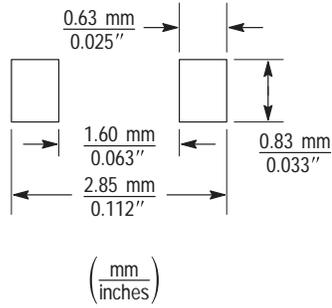
SOD-323 PLASTIC PACKAGE CASE 477-02 ISSUE A



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETERS.
 3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.60	1.80	0.063	0.071
B	1.15	1.35	0.045	0.053
C	0.80	1.00	0.031	0.039
D	0.25	0.40	0.010	0.016
E	0.15 REF		0.006 REF	
H	0.00	0.10	0.000	0.004
J	0.089	0.177	0.0035	0.0070
K	2.30	2.70	0.091	0.106

- STYLE 1:
PIN 1. CATHODE
2. ANODE



SOD-323 Soldering Footprint

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