MMVL409T1

Preferred Device

Silicon Tuning Diode

These devices are designed for general frequency control and tuning applications. They provide 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: X5

ON Semiconductor™

http://onsemi.com

VOLTAGE VARIABLE CAPACITANCE DIODE

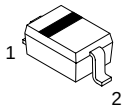
MAXIMUM RATINGS

Symbol	Rating	Value	Unit
V_R	Continuous Reverse Voltage	20	Vdc
I_F	Peak Forward Current	200	mAdc

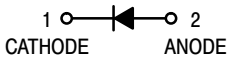
THERMAL CHARACTERISTICS

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

*FR–4 Minimum Pad



PLASTIC
SOD–323
CASE 477



ORDERING INFORMATION

Device	Package	Shipping
MMVL409T1	SOD–323	3000 / Tape & Reel

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

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I_R = 10 μAdc)	$V_{(BR)R}$	20	—	—	Vdc
Reverse Voltage Leakage Current (V_R = 15 Vdc)	I_R	—	—	0.1	μAdc
Diode Capacitance Temperature Coefficient (V_R = 3.0 Vdc, f = 1.0 MHz)	TC_C	—	300	—	ppm/°C

	C_t, Diode Capacitance V_R = 3.0 Vdc, f = 1.0 MHz pF			Q, Figure of Merit V_R = 3.0 Vdc f = 50 MHz	C_R, Capacitance Ratio C_3/C_8 f = 1.0 MHz(1)	
Device	**Min**	**Nom**	**Max**	**Min**	**Min**	**Max**
MMVL409T1	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

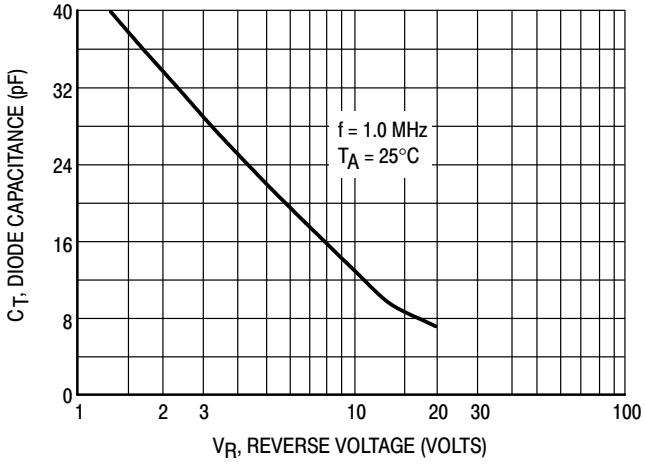


Figure 1. Diode Capacitance

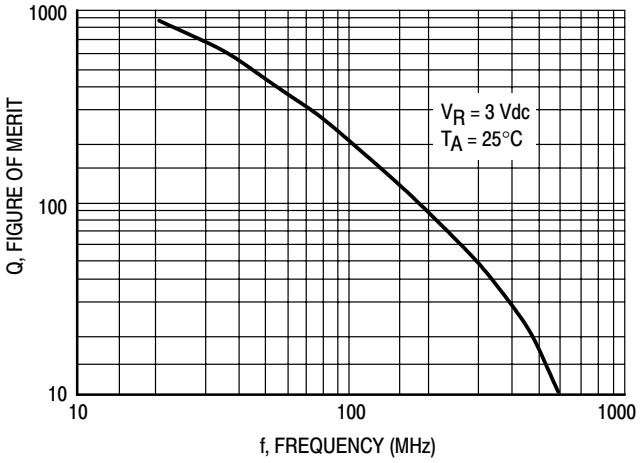


Figure 2. Figure of Merit

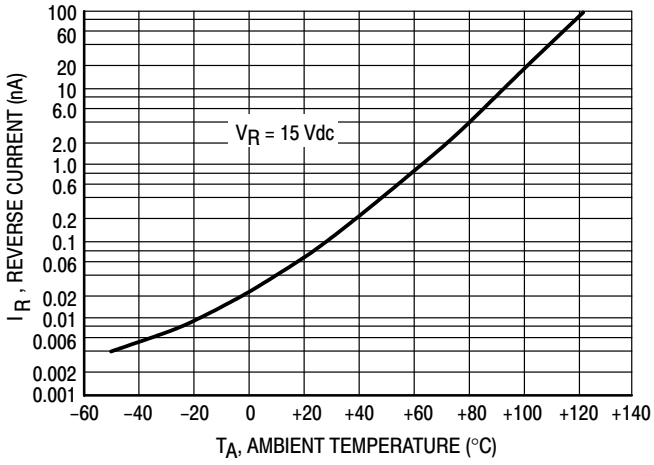


Figure 3. Leakage Current

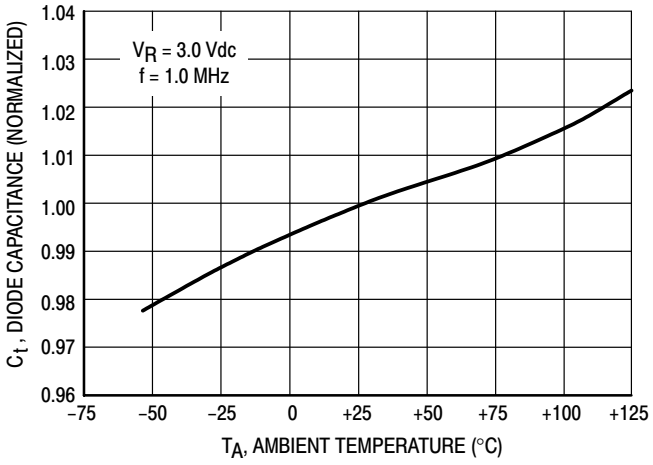
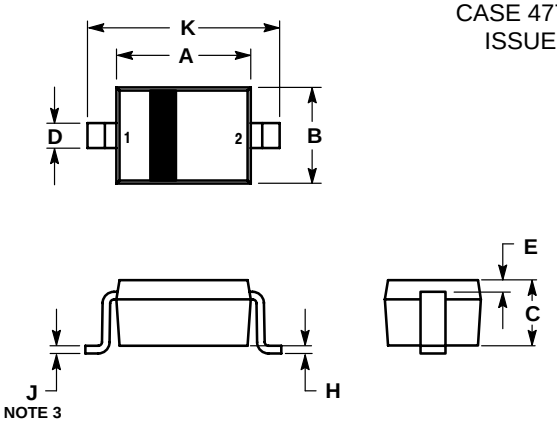


Figure 4. Diode Capacitance

PACKAGE DIMENSIONS

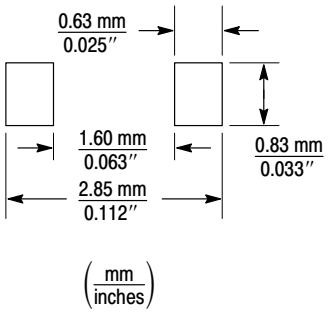
SOD–323
PLASTIC PACKAGE
CASE 477–02
ISSUE A



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.

	MILLIMETERS		INCHES	
DIM	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

Thermal Clad is a trademark of the Bergquist Company.

PUBLICATION ORDERING INFORMATION

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Phone: 303–675–2175 or 800–344–3860 Toll Free USA/Canada
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JAPAN: ON Semiconductor, Japan Customer Focus Center
4–32–1 Nishi–Gotanda, Shinagawa–ku, Tokyo, Japan 141–0031
Phone: 81–3–5740–2700
Email: r14525@onsemi.com

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