

MMVL809T1

Silicon Tuning Diode

This device is designed for 900 MHz frequency control and tuning applications. It provides solid-state reliability in replacement of mechanical tuning methods.

- Controlled and Uniform Tuning Ratio
- Surface Mount Package
- Available in 8 mm Tape and Reel
- Device Marking: 5K



ON Semiconductor™

<http://onsemi.com>

4.5 – 6.1 pF
VOLTAGE VARIABLE
CAPACITANCE DIODE

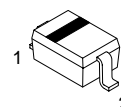
MAXIMUM RATINGS

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

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	$^\circ\text{C/W}$
T_J, T_{stg}	Junction and Storage Temperature	150	$^\circ\text{C}$

*FR–4 Minimum Pad



PLASTIC
SOD–323
CASE 477



ORDERING INFORMATION

Device	Package	Shipping
MMVL809T1	SOD–323	3000 / Tape & Reel

MMVL809T1

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

Characteristic – All Types	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	—	—	50	nAdc

	C _t , Diode Capacitance V _R = 2.0 Vdc, f = 1.0 MHz pF			Q, Figure of Merit V _R = 3.0 Vdc f = 500 MHz	C _R , Capacitance Ratio C ₂ /C ₈ f = 1.0 MHz ⁽¹⁾	
Device	Min	Typ	Max	Typ	Min	Max
MMVL809T1	4.5	5.3	6.1	75	1.8	2.6

1. C_R is the ratio of C_t measured at 2.0 Vdc divided by C_t measured at 8.0 Vdc.

TYPICAL CHARACTERISTICS

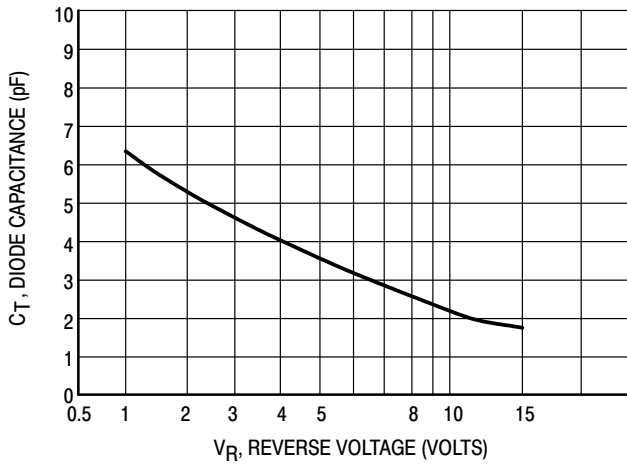


Figure 1. Diode Capacitance

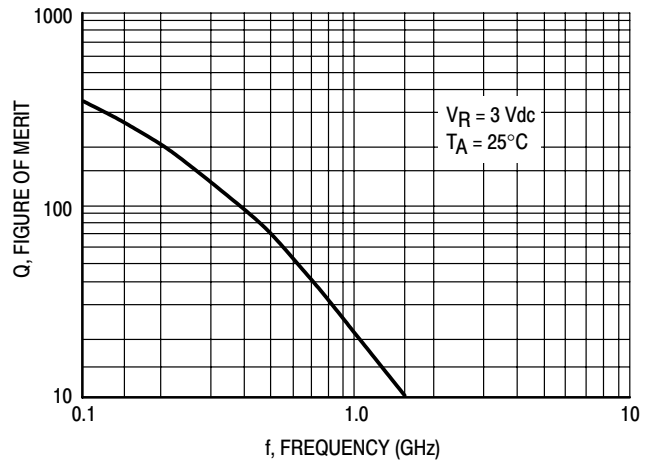


Figure 2. Figure of Merit

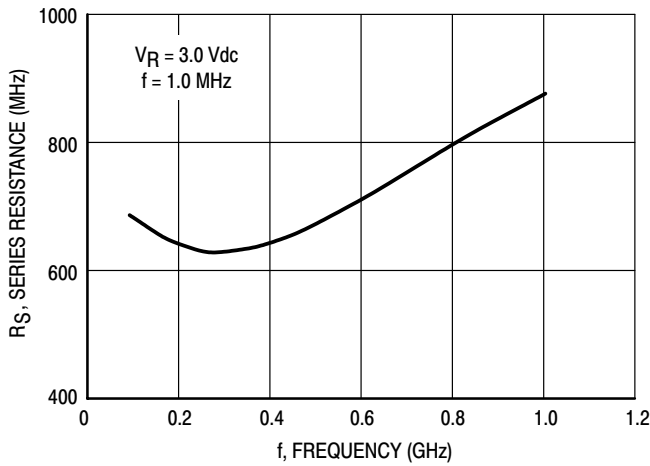


Figure 3. Series Resistance

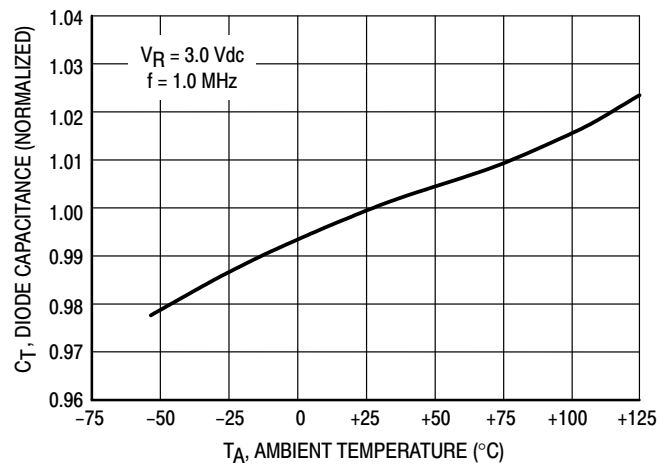
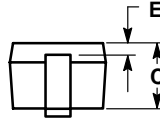
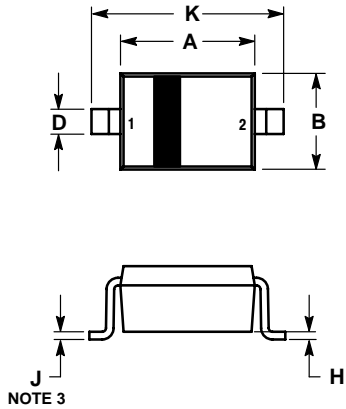


Figure 4. Diode Capacitance

MMVL809T1

PACKAGE DIMENSIONS

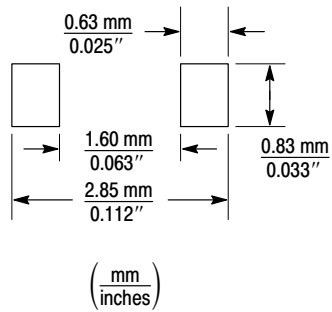
SOD-323 PLASTIC PACKAGE CASE 477-02 ISSUE A



- 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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