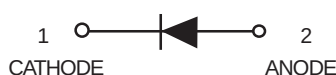


Silicon Tuning Diode

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



MMVL809T1

4.5 – 6.1 pF
VOLTAGE VARIABLE
CAPACITANCE DIODE



PLASTIC, CASE 477
SOD- 323

ORDERING INFORMATION

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

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,* $T_A = 25^\circ\text{C}$ Derate above 25°C	200 1.57	mW 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

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R = 10 \mu\text{Adc}$)	$V_{(BR)R}$	20	—	—	Vdc
Reverse Voltage Leakage Current ($V_R = 15 \text{ Vdc}$)	I_R	—	—	50	nAdc

	C_t , Diode Capacitance $V_R = 2.0 \text{ Vdc}$, $f = 1.0 \text{ MHz}$ pF			Q , Figure of Merit $V_R = 3.0 \text{ Vdc}$ $f = 500 \text{ MHz}$	C_R , Capacitance Ratio C_3/C_8 $f = 1.0 \text{ MHz}(1)$	
Device	Min	Nom	Max	Min	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.

MMVL809T1

TYPICAL CHARACTERISTICS

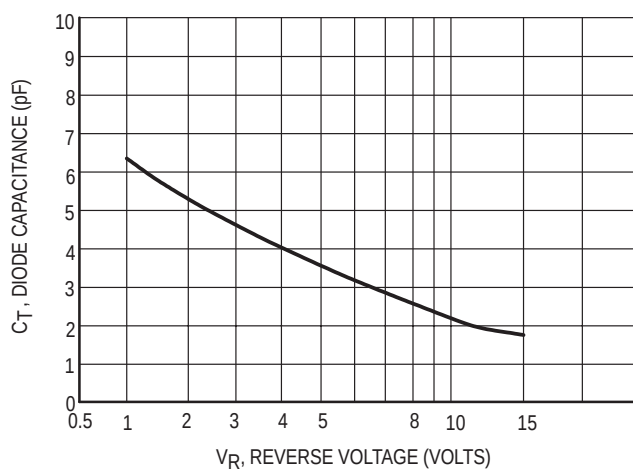


Figure 1. Diode Capacitance

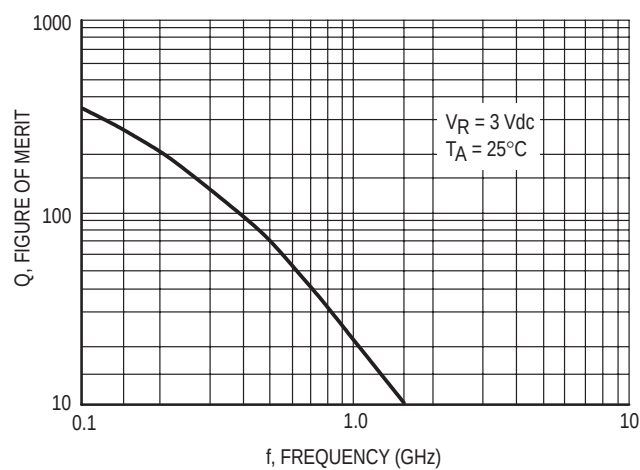


Figure 2. Figure of Merit

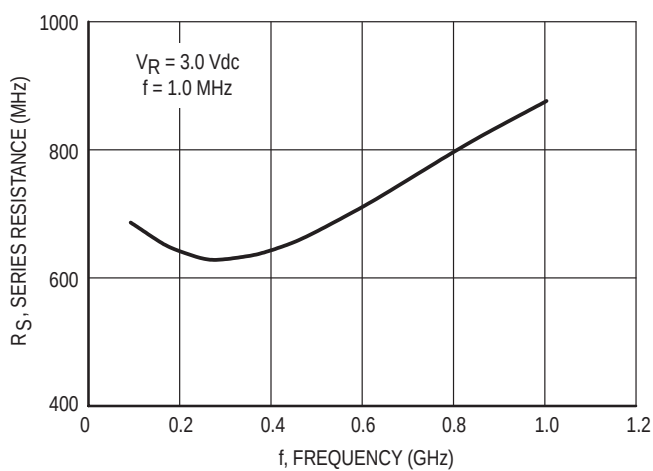


Figure 3. Series Resistance

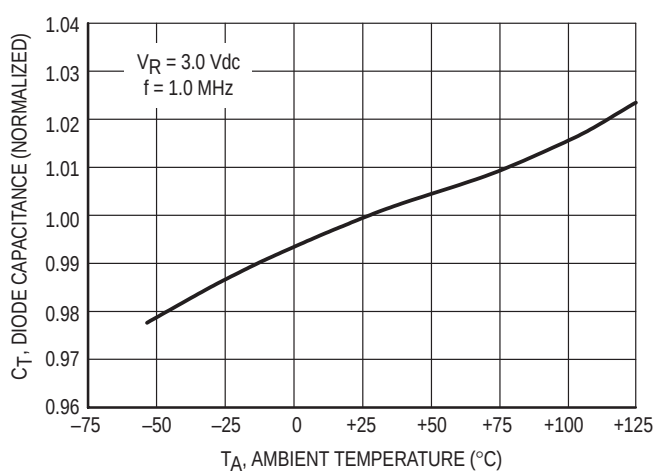


Figure 4. Diode Capacitance