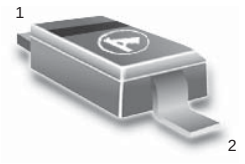
Silicon Tuning Diode

MMVL809T1

4.5 – 6.1 pF
VOLTAGE VARIABLE
CAPACITANCE 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



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°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

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	—	—	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_3/C_8 f = 1.0 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 Ct measured at 8.0 Vdc.

MMVL809T1

TYPICAL CHARACTERISTICS

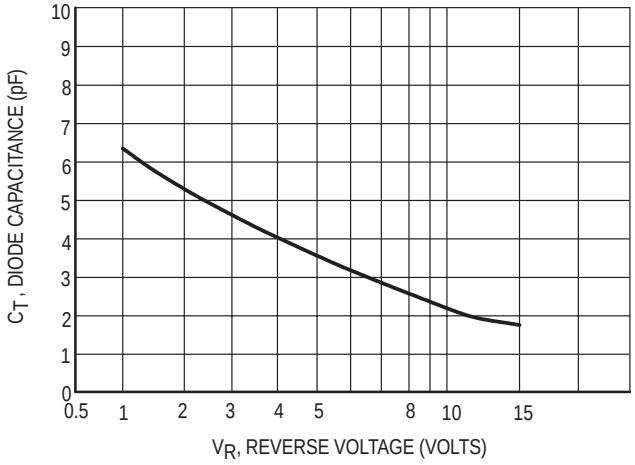


Figure 1. Diode Capacitance

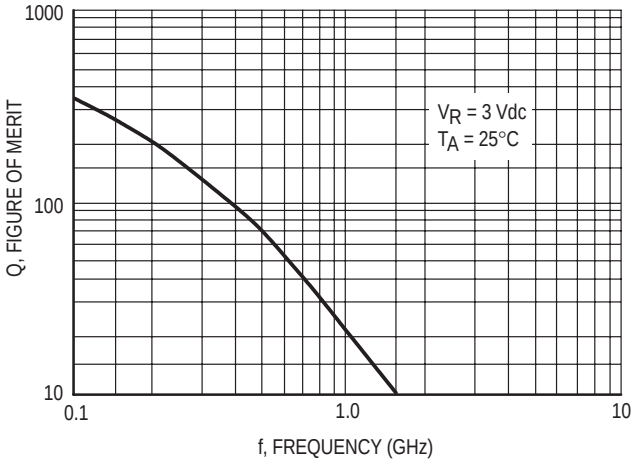


Figure 2. Figure of Merit

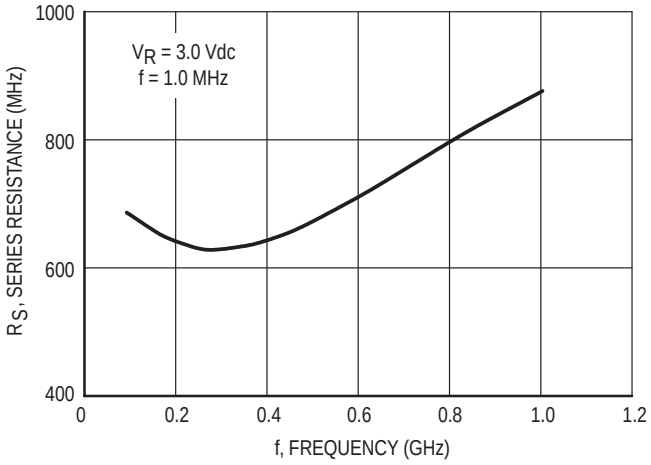


Figure 3. Series Resistance

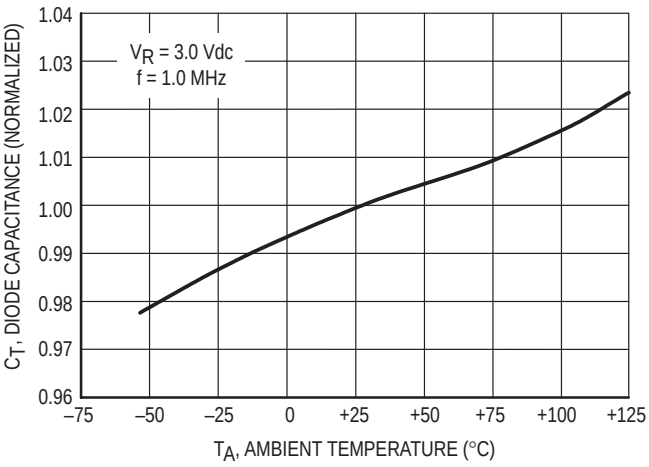


Figure 4. Diode Capacitance