MMBV809LT1

Preferred Device

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.

Features

- Controlled and Uniform Tuning Ratio
- Available in Surface Mount Package
- Available in 8 mm Tape and Reel
- Pb−Free Packages are Available

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	20	Vdc
Forward Current	I_F	20	mAdc
Total Power Dissipation (Note 1) @ T_A = 25°C Derate above 25°C	P_D	 225 1.8	 mW mW/°C
Junction Temperature	T_J	+125	°C
Storage Temperature Range	T_{stg}	−55 to +125	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. FR5 Board 1.0 x 0.75 x 0.62 in.

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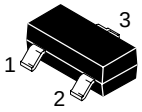
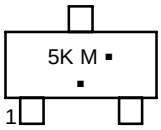
4.5−6.1 pF VOLTAGE VARIABLE CAPACITANCE DIODE



SOT−23 (TO−236)
CASE 318
STYLE 8

MARKING DIAGRAM



5K = Specific Device Code
M = Date Code*
▪ = Pb−Free Package
(Note: Microdot may be in either location)
*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
MMBV809LT1	SOT−23	3,000 / Tape & Reel
MMBV809LT1G	SOT−23 (Pb−Free)	3,000 / Tape & Reel
MMBV809LT3	SOT−23	10,000 / Tape & Reel
MMBV809LT3G	SOT−23 (Pb−Free)	10,000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

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 (Note 2)	
Device	**Min**	**Typ**	**Max**	**Typ**	**Min**	**Max**
MMBV809LT1	4.5	5.3	6.1	75	1.8	2.6

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

TYPICAL CHARACTERISTICS

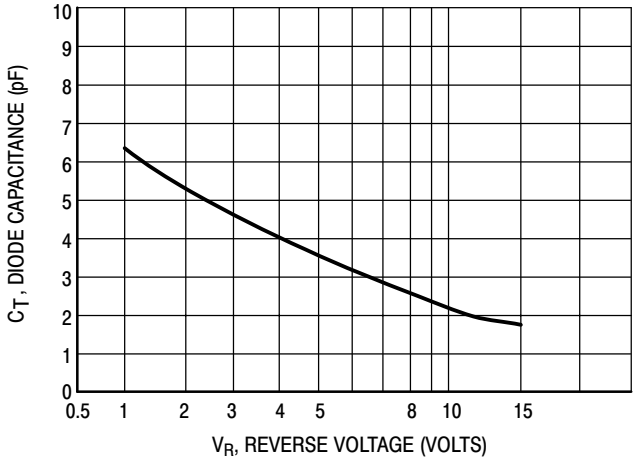


Figure 1. Diode Capacitance

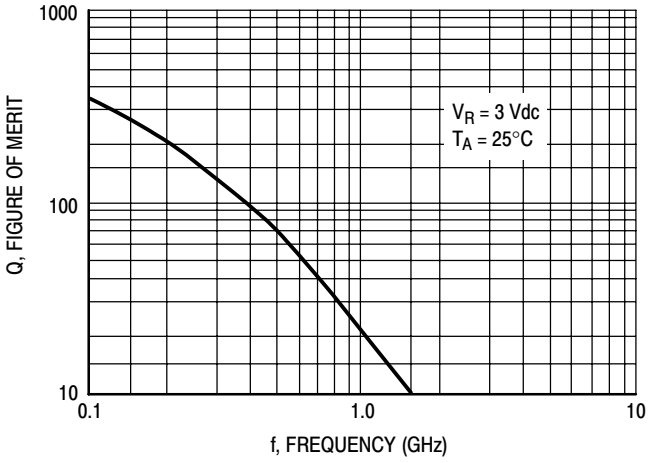


Figure 2. Figure of Merit

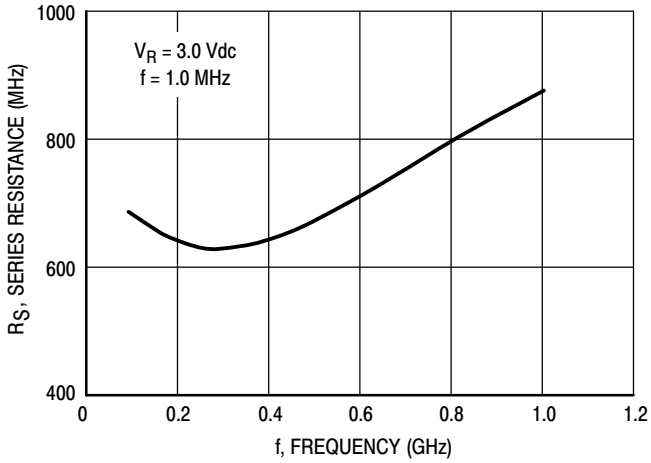


Figure 3. Series Resistance

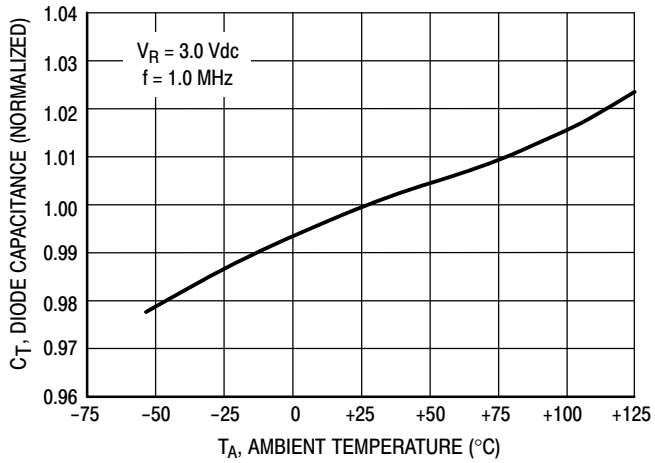


Figure 4. Diode Capacitance

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales

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