MMBV409LT1

Preferred Device

Silicon Tuning Diode

This device is designed in the Surface Mount package for general frequency control and tuning applications. It provides solid–state reliability in replacement of mechanical tuning methods.

Features

- High Q with Guaranteed Minimum Values at VHF Frequencies
- Controlled and Uniform Tuning Ratio
- Available in Surface Mount Package
- Pb-Free Package is Available



Rating	Symbol	Value	Unit
Reverse Voltage	V _R	20	Vdc
Forward Current	Ι _F	200	mAdc
Forward Power Dissipation @ T _A = 25°C Derate above 25°C	P _D	225 1.8	mW mW/°C
Junction Temperature	TJ	+125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°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.



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SOT-23 (TO-236) CASE 318 STYLE 8

MARKING DIAGRAM



X5 = Specific Device Code

M = Date Code*

= Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping [†]
MMBV409LT1	SOT-23	3,000 / Tape & Reel
MMBV409LT1G	SOT-23 (Pb-Free)	3,000 / 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.

^{*}Date Code orientation and/or overbar may vary depending upon manufacturing location.

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

Characteristic	Symbol	Min	Тур	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

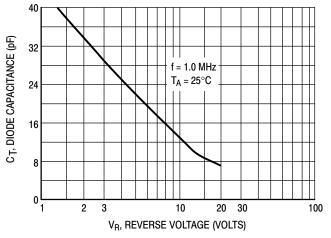
	C _t , Diode Capacitance V _R = 3.0 Vdc, f = 1.0 MHz pF		Q, Figure of Merit V _R = 3.0 Vdc f = 50 MHz	C _R , Capacitance Ratio C ₃ /C ₈ f = 1.0 MHz (Note 1)		
Device	Min	Nom	Max	Min	Min	Max
MMBV409LT1	26	29	32	200	1.5	1.9

^{1.} C_R is the ratio of C_t measured at 3 Vdc divided by C_t measured at 8 Vdc.

TYPICAL CHARACTERISTICS

1000

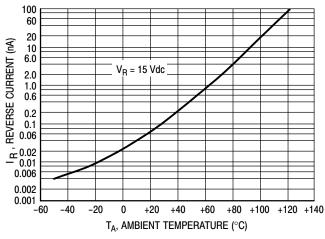
1.04



100 V_R = 3 Vdc T_A = 25°C 1000 f, FREQUENCY (MHz)

Figure 1. Diode Capacitance

Figure 2. Figure of Merit



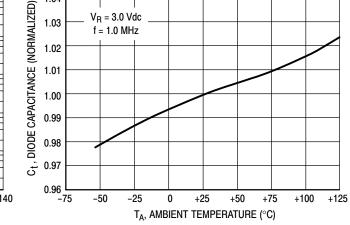


Figure 3. Leakage Current

Figure 4. Diode Capacitance

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