## MMBV432LT1

**Preferred Device** 

# **Silicon Tuning Diode**

This device is designed for FM tuning, general frequency control and tuning, or any top-of-the-line application requiring back-to-back diode configuration for minimum signal distortion and detuning. This device is supplied in the SOT-23 plastic package for high volume, pick and place assembly requirements.

#### **Features**

- High Figure of Merit Q = 150 (Typ) @  $V_R = 2.0$  Vdc, f = 100 MHz
- Guaranteed Capacitance Range
- Dual Diodes Save Space and Reduce Cost
- Surface Mount Package
- Available in 8 mm Tape and Reel
- Monolithic Chip Provides Improved Matching Guaranteed ±1.0% (Max) Over Specified Tuning Range
- Pb-Free Package is Available

#### MAXIMUM RATINGS (Each Diode)

Rating	Symbol	Value	Unit	
Reverse Voltage	V <sub>R</sub>	14	Vdc	
Forward Current	ΙF	200	mAdc	
Total Power Dissipation @ T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	225 1.8	mW mW/°C	
Junction Temperature	T <sub>J</sub>	+125	°C	
Storage Temperature Range	T <sub>stg</sub>	-55 to +125	°C	

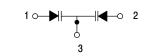
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur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



#### ON Semiconductor®

http://onsemi.com

# DUAL VOLTAGE VARIABLE CAPACITANCE DIODE





SOT-23 (TO-236) CASE 318 STYLE 9

#### **MARKING DIAGRAM**



M4B = 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 <sup>†</sup>	
MMBV432LT1	SOT-23	3,000 / Tape & Reel	
MMBV432LT1G	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.

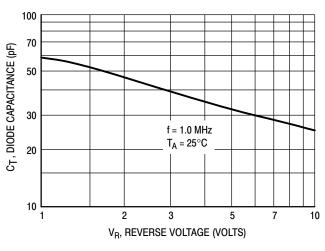
**Preferred** devices are recommended choices for future use and best overall value.

## MMBV432LT1

# $\textbf{ELECTRICAL CHARACTERISTICS (EACH DIODE)} \ (T_A = 25^{\circ}C \ unless \ otherwise \ noted)$

Characteristic	Symbol	Min	Тур	Max	Unit
Reverse Breakdown Voltage ( $I_R = 10 \mu Adc$ )	V <sub>(BR)R</sub>	14	-	-	Vdc
Reverse Voltage Leakage Current (V <sub>R</sub> = 9.0 Vdc)	I <sub>R</sub>	-	-	100	nAdc
Diode Capacitance (V <sub>R</sub> = 2.0 Vdc, f = 1.0 MHz)	C <sub>T</sub>	43	-	48.1	pF
Capacitance Ratio C2/C8 (f = 1.0 MHz)	C <sub>R</sub>	1.5	-	2.0	-
Figure of Merit (V <sub>R</sub> = 2.0 Vdc, f = 100 MHz)	Q	100	150	-	-

### TYPICAL CHARACTERISTICS (Each Diode)



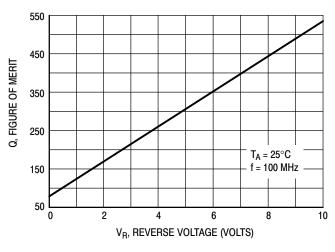
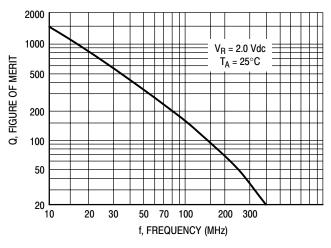


Figure 1. Diode Capacitance

Figure 2. Figure of Merit versus Voltage



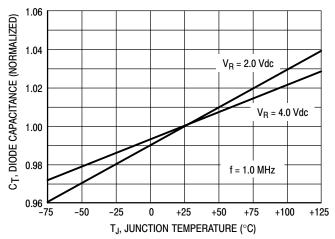


Figure 3. Figure of Merit versus Frequency

Figure 4. Diode Capacitance versus Temperature

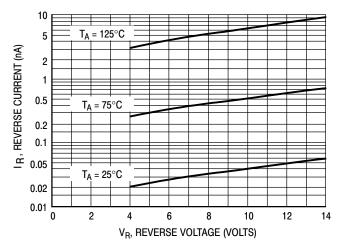


Figure 5. Reverse Current versus Reverse Voltage

onsemi, Onsemi, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "onsemi" or its affiliates and/or subsidiaries in the United States and/or other countries. onsemi owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of onsemi's product/patent coverage may be accessed at <a href="www.onsemi.com/site/pdf/Patent-Marking.pdf">www.onsemi.com/site/pdf/Patent-Marking.pdf</a>. Onsemi reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and onsemi makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does onsemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using onsemi products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by onsemi. "Typical" parameters which may be provided in onsemi data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. onsemi does not convey any license under any of its intellectual property rights nor the rights of others. onsemi products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA class 3 medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase

#### ADDITIONAL INFORMATION

**TECHNICAL PUBLICATIONS:** 

 $\textbf{Technical Library:} \ \underline{www.onsemi.com/design/resources/technical-documentation}$ 

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