

**MMBV109**CASE 318-02/03, STYLE 8  
SOT-23 (TO-236AA/AB)**VOLTAGE VARIABLE  
CAPACITANCE DIODE****MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	30	Vdc
Forward Current	$I_F$	200	mAdc

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
*Total Device Dissipation, $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	350 2.8	mW mW/ $^\circ\text{C}$
Storage Temperature	$T_{stg}$	150	$^\circ\text{C}$
*Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$

\*Package mounted on 99.5% alumina 10 x 8 x 0.6 mm.

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

Characteristic	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Reverse Breakdown Voltage ( $I_R = 10 \mu\text{Adc}$ )	$V_{(BR)}$	30	—	—	Vdc
Reverse Voltage Leakage Current ( $V_R = 28 \text{ Vdc}$ )	$I_R$	—	—	0.1	$\mu\text{Adc}$
Series Inductance ( $f = 250 \text{ MHz}$ )	$L_S$	—	3.0	—	nH
Case Capacitance ( $f = 1.0 \text{ MHz}$ )	$C_C$	—	0.1	—	pF
Diode Capacitance Temperature Coefficient ( $V_R = 3.0 \text{ Vdc}$ , $f = 1.0 \text{ MHz}$ )	$T_{CC}$	—	280	—	ppm/ $^\circ\text{C}$
Figure of Merit ( $V_R = 3.0 \text{ Vdc}$ , $f = 50 \text{ MHz}$ )	$Q$	280	—	—	—
Diode Capacitance ( $V_R = 3.0 \text{ Vdc}$ , $f = 1.0 \text{ MHz}$ )	$C_T$	26	—	32	pF