

Silicon Tuning Diodes

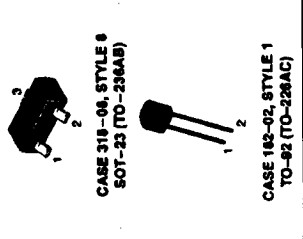
These devices are designed in the popular PLASTIC PACKAGE for high volume requirements of FM Radio and TV tuning and AFC, general frequency control and tuning applications. They provide solid-state reliability in replacement of mechanical tuning methods. Also available in Surface Mount Package up to 35pF.

- High Q
- Controlled and Uniform Tuning Ratio
- Standard Capacitance Tolerance — 10%
- Complete Typical Design Curves



- MMBV2101LT1
- MMBV2103LT1
- MMBV2105LT1
- MMBV2107LT1
- MMBV2108LT1
- MMBV2109LT1
- MV2101 MV2104
- MV2105 MV2108
- MV2109 MV2111
- MV2115

6.8-100 pF
30 VOLTS
VOLTAGE VARIABLE
CAPACITANCE DIODES



Rating	Symbol	MV21xxx	MMBV21xxxLT1	Unit
Reverse Voltage	V_R	30	30	Vdc
Forward Current	I_F	200	200	mA dc
Forward Power Dissipation ① $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	280	225	mW
		2.8	1.8	mW/ $^\circ\text{C}$
Junction Temperature	T_J			$^\circ\text{C}$
Storage Temperature Range	T_{stg}			-55 to $+150$ $^\circ\text{C}$

DEVICE MARKING
MMBV2101LT1 = M4G MMBV2107LT1 = 4W
MMBV2103LT1 = 4H MMBV2108LT1 = 4X
MMBV2105LT1 = 4U MMBV2109LT1 = 4J

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R = 10 \mu\text{A dc}$)	$V_{(BR)}$	30	—	—	Vdc
Reverse Voltage Leakage Current ($V_R = 25 \text{ Vdc}$, $T_A = 25^\circ\text{C}$)	I_R	—	—	0.1	$\mu\text{A dc}$
Diode Capacitance Temperature Coefficient ($V_R = 4.0 \text{ Vdc}$, $f = 1.0 \text{ MHz}$)	TCc	—	280	—	ppm/ $^\circ\text{C}$

Device	C _T : Diode Capacitance $V_R = 4.0 \text{ Vdc}$, $f = 1.0 \text{ MHz}$			Q: Figure of Merit $V_R = 4.0 \text{ Vdc}$, $f = 50 \text{ MHz}$			TR: Tuning Ratio C _g C ₃₀ $f = 1.0 \text{ MHz}$		
	Min	Nom	Max	Typ	Min	Max	Typ	Min	Max
MMBV2101LT1/MV2101	6.1	6.8	7.5	450	2.5	2.7	3.2	2.5	3.2
MMBV2103LT1	9.0	10	11	400	2.5	2.9	3.2	2.5	3.2
MV2104	10.6	12	13.2	400	2.5	2.9	3.2	2.5	3.2
MMBV2105LT1/MV2105	13.5	15	16.5	400	2.5	2.9	3.2	2.5	3.2
MMBV2107LT1	19.8	22	24.2	350	2.5	2.9	3.2	2.5	3.2
MMBV2108LT1/MV2108	24.3	27	29.7	300	2.5	3.0	3.2	2.5	3.2
MMBV2109LT1/MV2109	29.7	33	36.3	200	2.5	3.0	3.2	2.5	3.2
MV2111	42.3	47	51.7	150	2.5	3.0	3.2	2.5	3.2
MV2115	90	100	110	100	2.5	3.0	3.3	2.5	3.3

MMBV2101LT1, MMBV2103LT1, MMBV2105LT1, MMBV2107LT1, MMBV2108LT1, MMBV2109LT1, are also available in bulk. Use the device title and drop the "LT" suffix when ordering any of these devices in bulk.

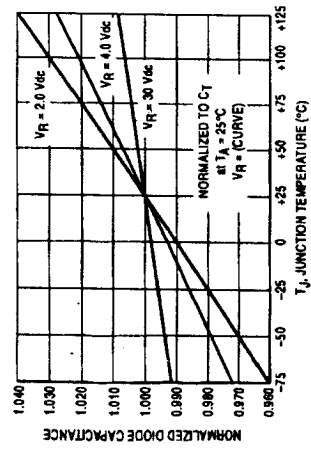


Figure 1. Diode Capacitance versus Reverse Voltage

Figure 2. Normalized Diode Capacitance versus Junction Temperature

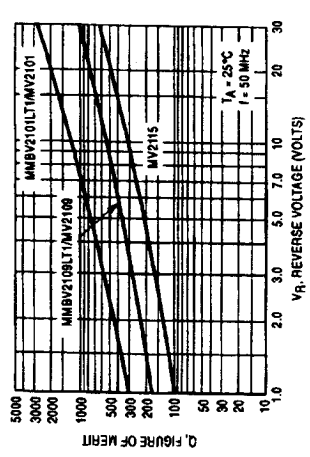


Figure 3. Reverse Current versus Reverse Bias Voltage

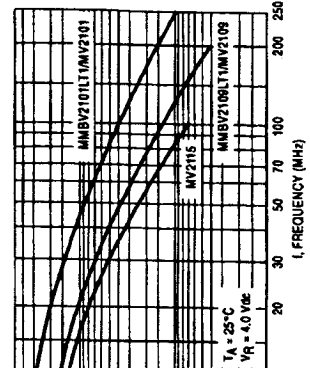


Figure 4. Figure of Merit versus Reverse Voltage

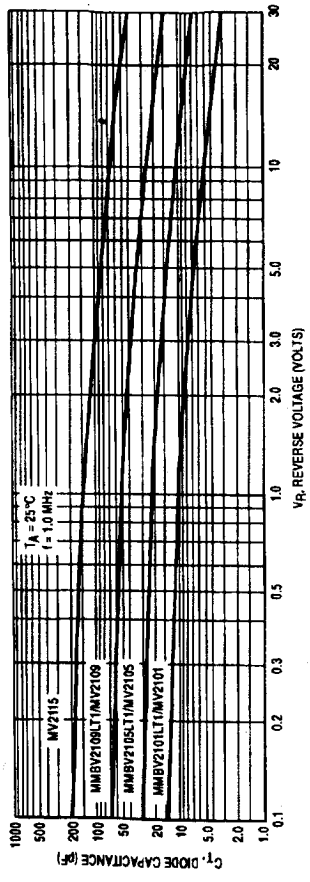


Figure 5. Figure of Merit versus Frequency

