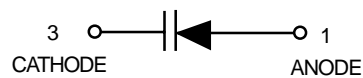


Silicon Tuning Diode

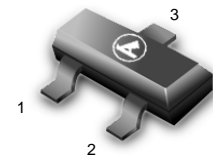
This device is designed in the Surface Mount package for general frequency control and tuning applications. It provides solid-state reliability in replacement of mechanical tuning methods.

- High Q with Guaranteed Minimum Values at VHF Frequencies
- Controlled and Uniform Tuning Ratio



MMBV3102LT1

22 pF(Nominal) 30Volts
VOLTAGE VARIABLE
CAPACITANCE DIODES



CASE 318-08, STYLE 8
SOT-23 (TO-236AB)

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|-----------|-------------|----------------------|
| Reverse Voltage | V_R | 30 | Vdc |
| Forward Current | I_F | 200 | mAdc |
| Device Dissipation @ $T_A = 25^\circ\text{C}$ | P_D | 225 | mW |
| Derate above 25°C | | 1.8 | mW/ $^\circ\text{C}$ |
| Junction Temperature | T_J | +125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{slg} | -55 to +150 | $^\circ\text{C}$ |

DEVICE MARKING

MMBV3102LT1=M4C

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

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|-------------|-----|-----|-----|-----------------------|
| Reverse Breakdown Voltage ($I_R=10\mu\text{Adc}$) | $V_{(BR)R}$ | 30 | — | — | Vdc |
| Reverse Voltage Leakage Current ($V_R=15\text{Vdc}$) | I_R | — | — | 0.1 | μAdc |
| Diode Capacitance Temperature Coefficient ($V_R=4.0\text{Vdc}, f=1.0\text{MHz}$) | T_{CC} | — | 300 | — | ppm/ $^\circ\text{C}$ |

| Device Type | C_T Diode Capacitance $V_R=3.0\text{Vdc}, f=1.0\text{MHz}$ pF | | | Q , Figure of Merit $V_R=3.0\text{Vdc}$ $f=50\text{MHz}$ | C_R , Capacitance Ratio C_3/C_{25} $f=1.0\text{MHz}$ | |
|-------------|---|-----|-----|--|--|-----|
| | Min | Nom | Max | Min | Min | Typ |
| MMBV3102LT1 | 20 | 22 | 25 | 200 | 4.5 | 4.8 |

MMBV3102LT1

TYPICAL CHARACTERISTICS

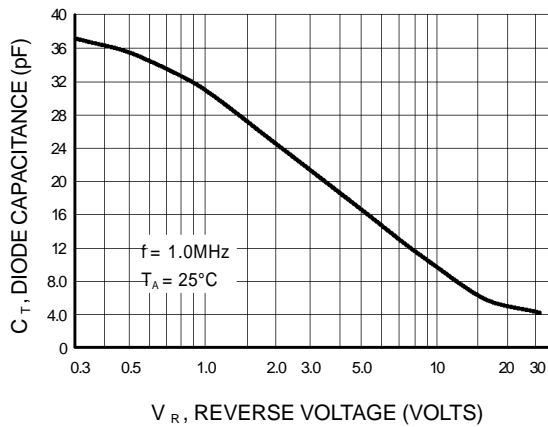


Figure 1. Diode Capacitance

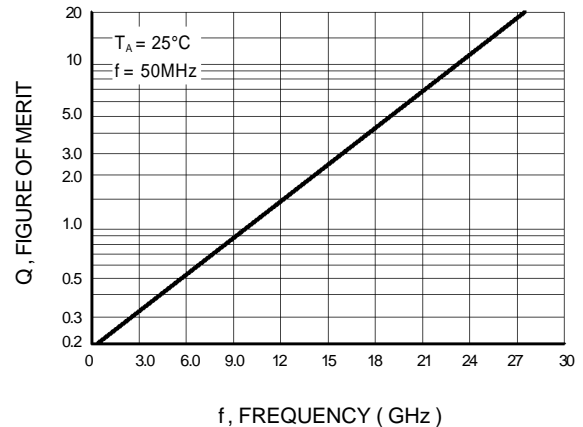


Figure 2. Figure of Merit

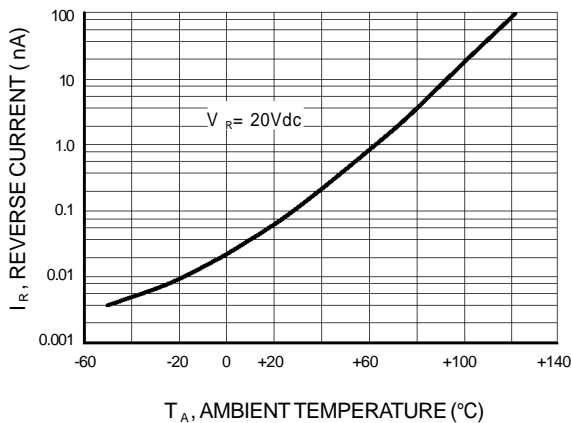


Figure 3. Leakage Current

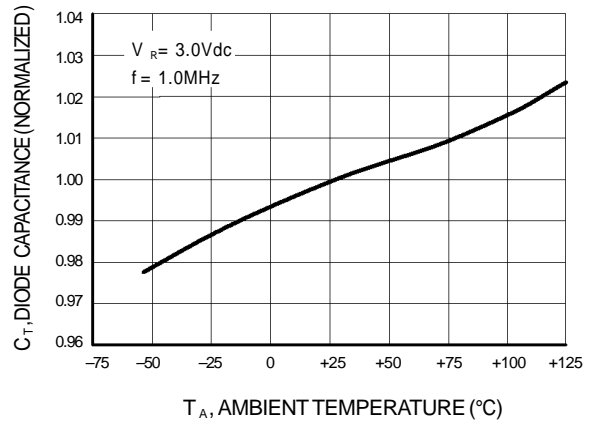


Figure 4. Diode Capacitance

NOTES ON TESTING AND SPECIFICATIONS

1. C_R is the ratio of C_T measured at 3.0 Vdc divided by C_T measured at 25 Vdc.