

# Dual Hot Carrier Mixer Diodes

These devices are designed primarily for UHF mixer applications but are suitable also for use in detector and ultra-fast switching circuits.

- Very Low Capacitance — Less Than 1.0 pF @ Zero Volts
- Low Forward Voltage — 0.5 Volts (Typ) @  $I_F = 10$  mA

**MMBD352LT1**  
**MMBD353LT1**  
**MMBD354LT1**  
**MMBD355LT1**

## MAXIMUM RATINGS (EACH DIODE)

| Rating                     | Symbol | Value | Unit     |
|----------------------------|--------|-------|----------|
| Continuous Reverse Voltage | $V_R$  | 7.0   | $V_{CC}$ |

## THERMAL CHARACTERISTICS

| Characteristic                                                                                                    | Symbol          | Max         | Unit               |
|-------------------------------------------------------------------------------------------------------------------|-----------------|-------------|--------------------|
| Total Device Dissipation FR-5 Board <sup>(1)</sup><br>$T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_D$           | 225         | mW                 |
| Thermal Resistance, Junction to Ambient                                                                           | $R_{\theta JA}$ | 556         | $^\circ\text{C/W}$ |
| Total Device Dissipation<br>Alumina Substrate (2) $T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$     | $P_D$           | 300         | mW                 |
| Thermal Resistance, Junction to Ambient                                                                           | $R_{\theta JA}$ | 417         | $^\circ\text{C/W}$ |
| Junction and Storage Temperature                                                                                  | $T_J, T_{stg}$  | -55 to +150 | $^\circ\text{C}$   |

## DEVICE MARKING

MMBD352LT1 = M5G; MMBD353LT1 = M4F; MMBD354LT1 = M6H; MMBD355LT1 = MJ1

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

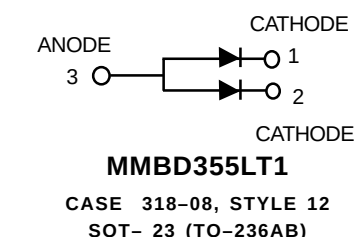
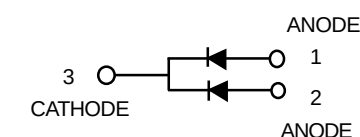
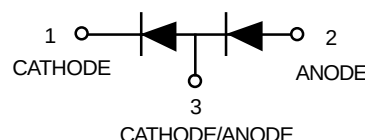
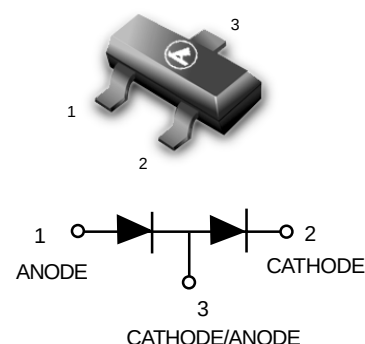
| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

## OFF CHARACTERISTICS

|                                                                         |       |   |            |               |
|-------------------------------------------------------------------------|-------|---|------------|---------------|
| Forward Voltage<br>( $I_F = 10$ mAdc)                                   | $V_F$ | — | 0.60       | V             |
| Reverse Voltage Leakage Current<br>( $V_R = 3.0$ V)<br>( $V_R = 7.0$ V) | $I_R$ | — | 0.25<br>10 | $\mu\text{A}$ |
| Capacitance<br>( $V_R = 0$ V, $f = 1.0$ MHz)                            | C     | — | 1.0        | pF            |

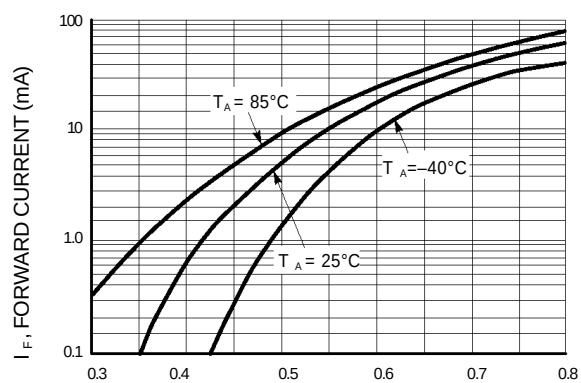
1. FR-5 =  $1.0 \times 0.75 \times 0.062$  in.

2. Alumina =  $0.4 \times 0.3 \times 0.024$  in. 99.5% alumina.

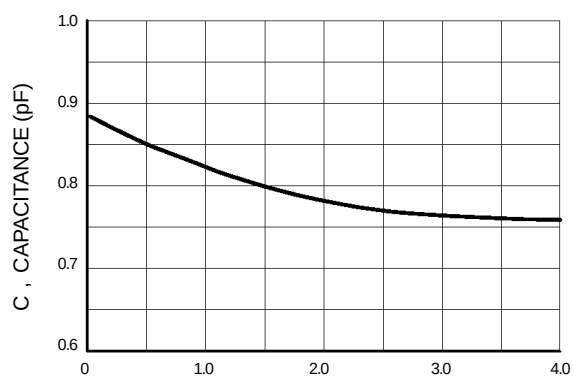


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**TYPICAL CHARACTERISTICS**



**Figure 1. Forward Voltage**



**Figure 2. Capacitance**