

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 ⁽¹⁾ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate (2) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300 2.4	mW mW/ $^\circ\text{C}$
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)

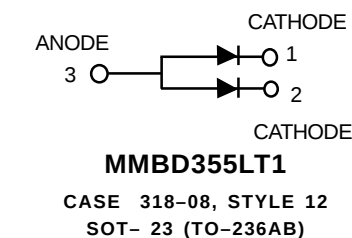
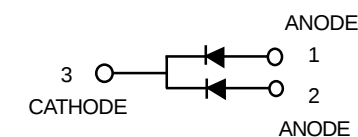
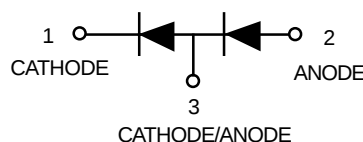
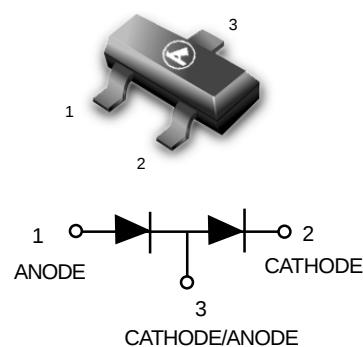
Characteristic	Symbol	Min	Max	Unit
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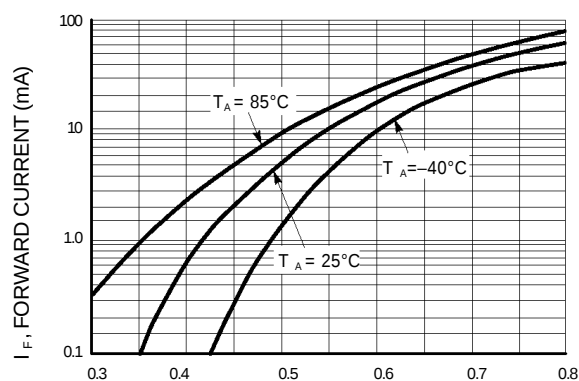
OFF CHARACTERISTICS

Forward Voltage ($I_F = 10$ mAdc)	V_F	—	0.60	V
Reverse Voltage Leakage Current ($V_R = 3.0$ V) ($V_R = 7.0$ V)	I_R	—	0.25 10	μA
Capacitance ($V_R = 0$ V, $f = 1.0$ MHz)	C	—	1.0	pF

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

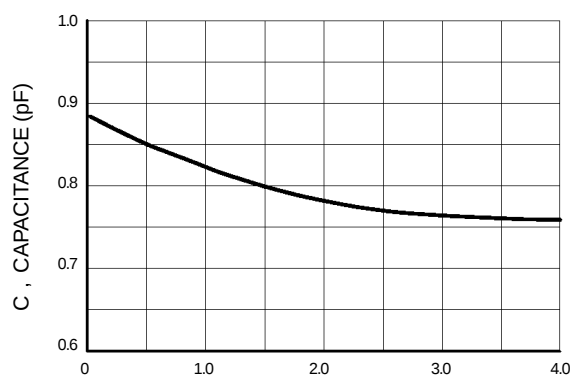
2. Alumina = $0.4 \times 0.3 \times 0.024$ in. 99.5% alumina.



**MMBD352LT1 MMBD353LT1
MMBD354LT1 MMBD355LT1****TYPICAL CHARACTERISTICS**

V_F, FORWARD VOLTAGE (VOLTS)

Figure 1. Forward Voltage



V_R, REVERSE VOLTAGE (VOLTS)

Figure 2. Capacitance