MMBD352LT1G, MMBD353LT1G, NSVMMBD353LT1G, MMBD354LT1G, NSVMMBD354LT1G, MMBD355LT1G

ON Semiconductor®

www.onsemi.com

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.

Features

- Very Low Capacitance – Less Than 1.0 pF @ Zero V
- Low Forward Voltage – 0.5 V (Typ) @ I_F = 10 mA
- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS (EACH DIODE)

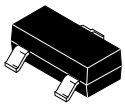
Rating	Symbol	Value	Unit
Continuous Reverse Voltage	V_R	7.0	V_{CC}

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

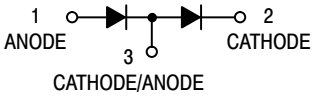
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR−5 Board, (Note 1) T_A = 25°C Derate above 25°C	P_D	 225 1.8	 mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (Note 2) T_A = 25°C Derate above 25°C	P_D	 300 2.4	 mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J, T_{stg}	−55 to +150	°C

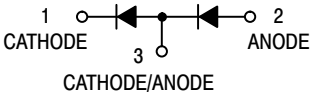
1. FR−5 = 1.0 x 0.75 x 0.062 in.
2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.



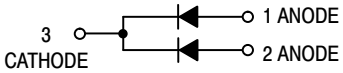
SOT−23 (TO−236)
CASE 318



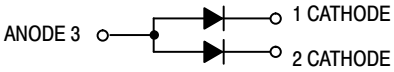
MMBD352LT1G
STYLE 11



MMBD353LT1G
NSVMMBD353LT1G
STYLE 19

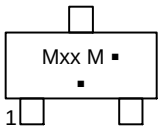


MMBD354LT1G
NSVMMBD354LT1G
STYLE 9



MMBD355LT1G
STYLE 12

MARKING DIAGRAM



Mxx = Device Code
M = Date Code*
▪ = Pb−Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

See detailed ordering, marking, and shipping information in the package dimensions section on page 2 of this data sheet.

October, 2016 – Rev. 9

Publication Order Number:
MMBD352LT1/D

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (EACH DIODE)

Rating	Symbol	Min	Max	Unit
Forward Voltage (I_F = 10 mAdc)	V_F	–	0.60	V
Reverse Leakage Current (Note 3) (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

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

3. For each individual diode while the second diode is unbiased.

ORDERING INFORMATION

Device	Marking	Package	Shipping†
MMBD352LT1G	M5G	SOT–23 (Pb–Free)	3,000 Units / Tape & Reel
MMBD352LT3G	M5G	SOT–23 (Pb–Free)	10,000 Units / Tape & Reel
MMBD353LT1G	M4F	SOT–23 (Pb–Free)	3,000 Units / Tape & Reel
NSVMMBD353LT1G	M4F	SOT–23 (Pb–Free)	3,000 Units / Tape & Reel
MMBD353LT3G	M4F	SOT–23 (Pb–Free)	10,000 Units / Tape & Reel
MMBD354LT1G	M6H	SOT–23 (Pb–Free)	3,000 Units / Tape & Reel
NSVMMBD354LT1G	M6H	SOT–23 (Pb–Free)	3,000 Units / Tape & Reel
MMBD355LT1G	MJ1	SOT–23 (Pb–Free)	3,000 Units / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

TYPICAL CHARACTERISTICS

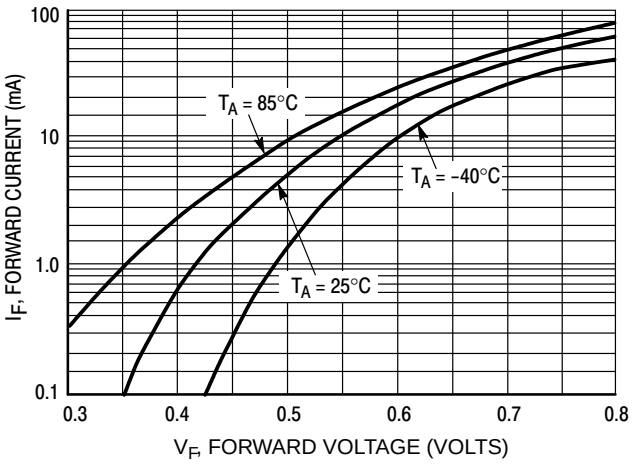


Figure 1. Forward Voltage

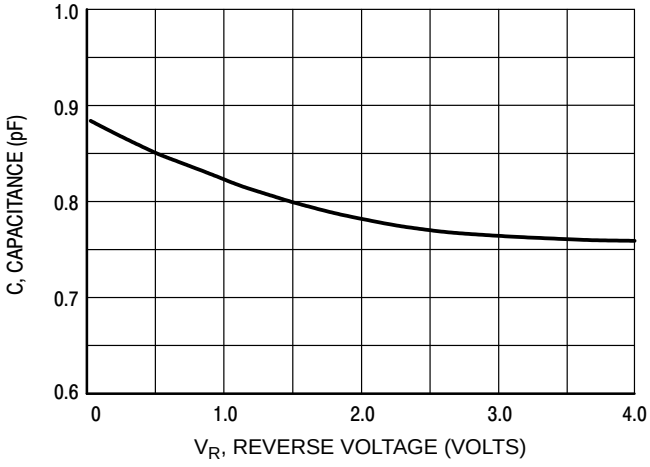
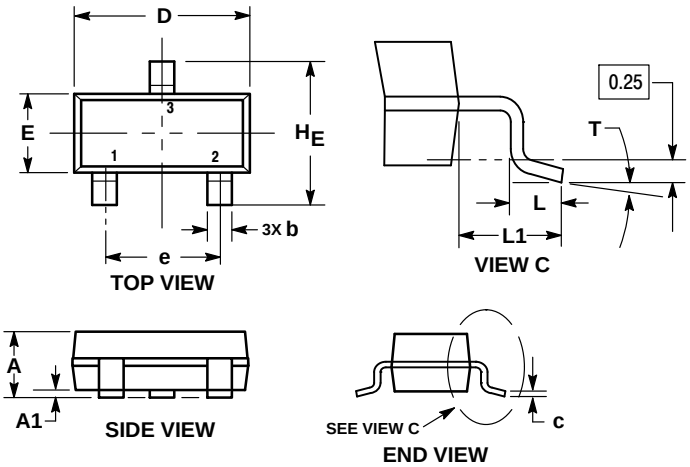


Figure 2. Capacitance

MMBD352LT1G, MMBD353LT1G, NSVMMBD353LT1G, MMBD354LT1G, NSVMMBD354LT1G, MMBD355LT1G

PACKAGE DIMENSIONS

SOT−23 (TO−236)
CASE 318−08
ISSUE AR



NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.039	0.044
A1	0.01	0.06	0.10	0.000	0.002	0.004
b	0.37	0.44	0.50	0.015	0.017	0.020
c	0.08	0.14	0.20	0.003	0.006	0.008
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.080
L	0.30	0.43	0.55	0.012	0.017	0.022
L1	0.35	0.54	0.69	0.014	0.021	0.027
H_E	2.10	2.40	2.64	0.083	0.094	0.104
T	0°	–––	10 °	0 °	–––	10 °

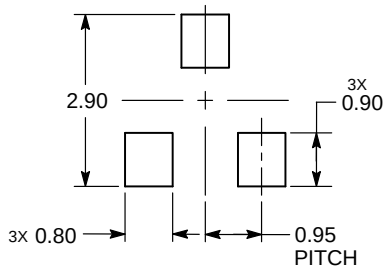
MMBD352LT1G
STYLE 11:
PIN 1. ANODE
2. CATHODE
3. CATHODE−ANODE

MMBD353LT1G
NSVMMBD353LT1G
STYLE 19:
PIN 1. CATHODE
2. ANODE
3. CATHODE−ANODE

MMBD354LT1G
NSVMMBD354LT1G
STYLE 9:
PIN 1. ANODE
2. ANODE
3. CATHODE

MMBD355LT1G
STYLE 12:
PIN 1. CATHODE
2. CATHODE
3. ANODE

RECOMMENDED SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
Fax: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800−282−9855 Toll Free USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81−3−5817−1050

ON Semiconductor Website: **www.onsemi.com**

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative