MMBD6100LT1G

Monolithic Dual Switching Diode

Features

- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS (EACH DIODE)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	70	Vdc
Forward Current	I_F	200	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mAdc

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 Range	T_J, T_{stg}	−55 to +150	°C

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.
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.

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

| Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Breakdown Voltage ($I_{(BR)}$ = 100 μAdc)	$V_{(BR)}$	70	−	Vdc
Reverse Voltage Leakage Current (V_R = 50 Vdc) (For each individual diode while the second diode is unbiased)	I_R	−	0.1	μAdc
Forward Voltage (I_F = 1.0 mAdc) (I_F = 100 mAdc)	V_F	0.55 0.8	0.7 1.1	Vdc
Reverse Recovery Time ($I_F = I_R$ = 10 mAdc, $I_{R(REC)}$ = 1.0 mAdc) (Figure 1)	t_{rr}	−	4.0	ns
Capacitance (V_R = 0 V)	C	−	2.5	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.
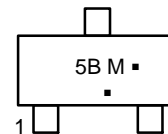
3 CATHODE
ANODE 1
ANODE 2
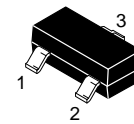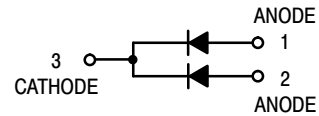
**SOT−23
CASE 318
STYLE 9**

MARKING DIAGRAM

5B M ▪
1

5B = Specific 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

Device	Package	Shipping[†]
MMBD6100LT1G	SOT−23 (Pb−Free)	3000/Tape & Reel
MMBD6100LT3G	SOT−23 (Pb−Free)	10,000/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.

MMBD6100LT1G
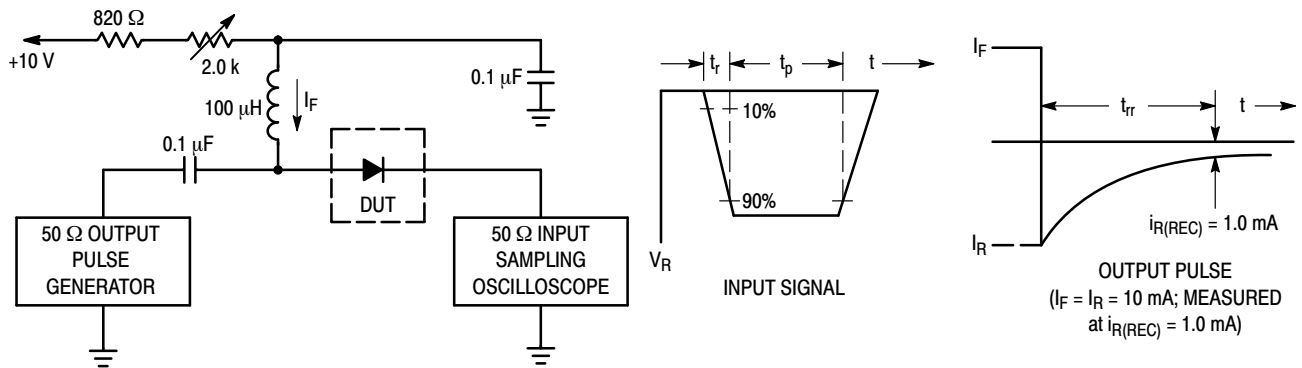
Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit
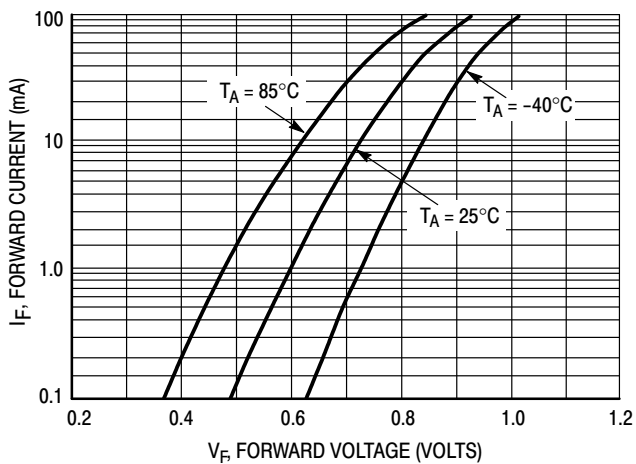
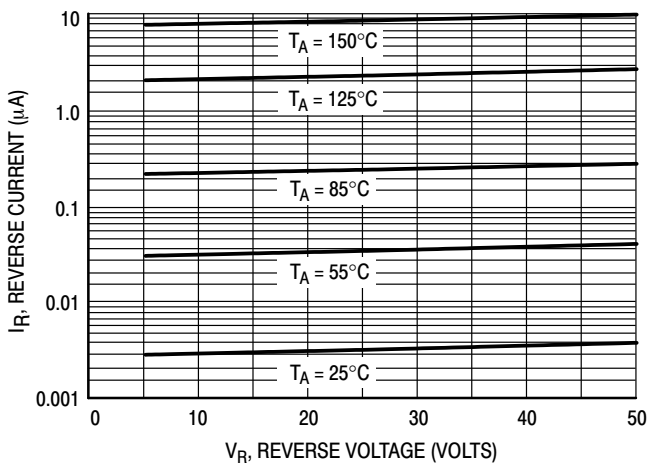## CURVES APPLICABLE TO EACH CATHODE

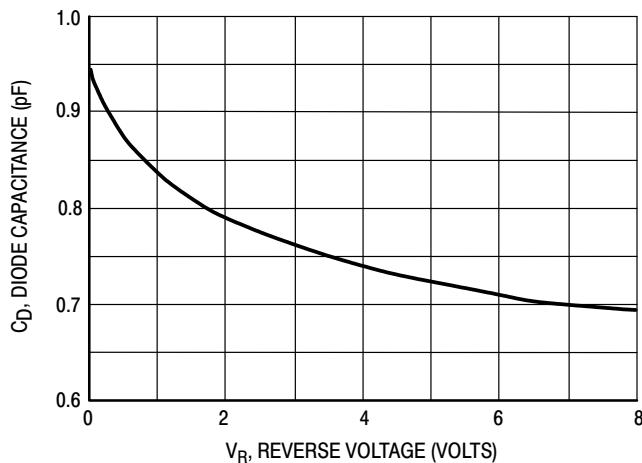
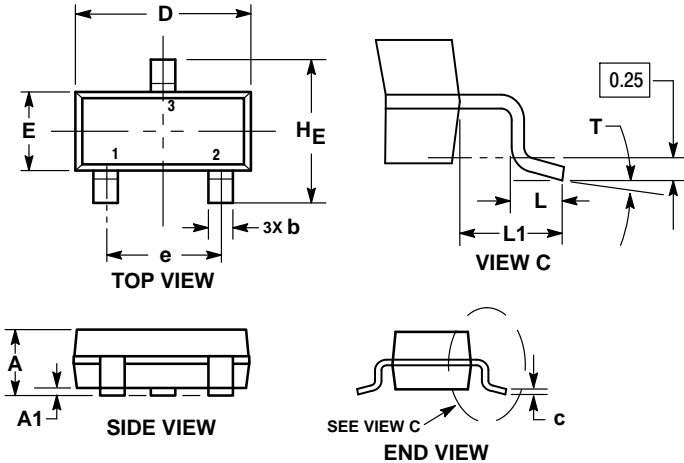**Figure 2. Forward Voltage**

Figure 3. Leakage Current

Figure 4. Capacitance

MMBD6100LT1G

PACKAGE DIMENSIONS

SOT–23 (TO–236)
CASE 318–08
ISSUE AR

TOP VIEW

SIDE VIEW

VIEW C

END VIEW

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.

DIM	MILLIMETERS			INCHES		
	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°

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

RECOMMENDED SOLDERING FOOTPRINT*

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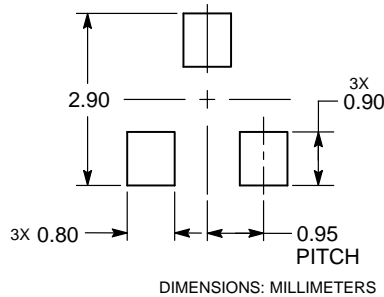
*For additional information on our Pb–Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

PUBLICATION ORDERING INFORMATION

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