# MMBD2835LT1, MMBD2836LT1

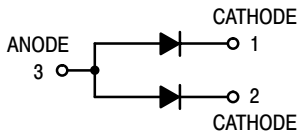
# Monolithic Dual Switching Diodes

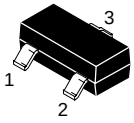
**Features**

- Pb−Free Packages are Available

**ON Semiconductor®**

**http://onsemi.com**




**SOT−23 (TO−236AB)**
**CASE 318−08**
**STYLE 12**

**MAXIMUM RATINGS (EACH DIODE)**

| Rating | | Symbol | Value | Unit |
|---|---|---|---|---|
| Reverse Voltage | MMBD2835LT1<br>MMBD2836LT1 | $V_R$ | 35<br>75 | Vdc |
| Forward Current | | $I_F$ | 100 | mAdc |

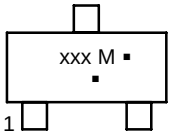
**THERMAL CHARACTERISTICS**

| | | | |
|---|---|---|---|
| Total Device Dissipation FR−5 Board (Note 1)<br>$T_A$ = 25°C<br>Derate above 25°C | $P_D$ | 225<br><br>1.8 | mW<br><br>mW/°C |
| Thermal Resistance, Junction−to−Ambient | $R_{\theta JA}$ | 556 | °C/W |
| Total Device Dissipation Alumina Substrate, (Note 2)<br>$T_A$ = 25°C<br>Derate above 25°C | $P_D$ | 300<br><br>2.4 | mW<br><br>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 |

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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

**MARKING DIAGRAM**




xxx = Specific Device Code
A3X = MMBD2835LT1
A2X = MMBD2836LT1
M = Date Code
▪ = Pb−Free Package
(Note: Microdot may be in either location)

**ORDERING INFORMATION**

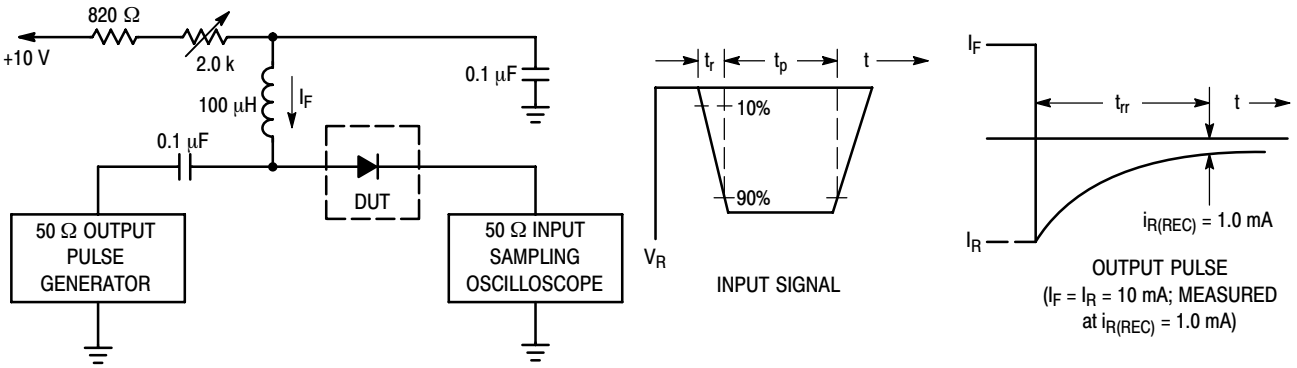
| Device | Package | Shipping† |
|---|---|---|
| MMBD2835LT1 | SOT−23 | 3000 / Tape & Reel |
| MMBD2835LT1G | SOT−23 (Pb−Free) | 3000 / Tape & Reel |
| MMBD2836LT1 | SOT−23 | 3000 / Tape & Reel |
| MMBD2836LT1G | SOT−23 (Pb−Free) | 3000 / Tape & Reel |

†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.

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

| Characteristic | | Symbol | Min | Max | Unit |
|---|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | | |
| Reverse Breakdown Voltage ($I_R$ = 100 μAdc) | MMBD2835LT1<br>MMBD2836LT1 | $V_{(BR)}$ | 35<br>75 | –<br>– | Vdc |
| Reverse Voltage Leakage Current (Note 3)<br>($V_R$ = 30 Vdc)<br>($V_R$ = 50 Vdc) | <br>MMBD2835LT1<br>MMBD2836LT1 | $I_R$ | –<br>– | <br>100<br>100 | nAdc |
| Diode Capacitance ($V_R$ = 0 V, f = 1.0 MHz) | | $C_T$ | – | 4.0 | pF |
| Forward Voltage ($I_F$ = 10 mAdc)<br>($I_F$ = 50 mAdc)<br>($I_F$ = 100 mAdc) | | $V_F$ | –<br>–<br>– | 1.0<br>1.0<br>1.2 | Vdc |
| Reverse Recovery Time ($I_F$ = $I_R$ = 10 mAdc, $I_{R(REC)}$ = 1.0 mAdc) (Figure 1) | | $t_{rr}$ | – | 4.0 | ns |

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




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

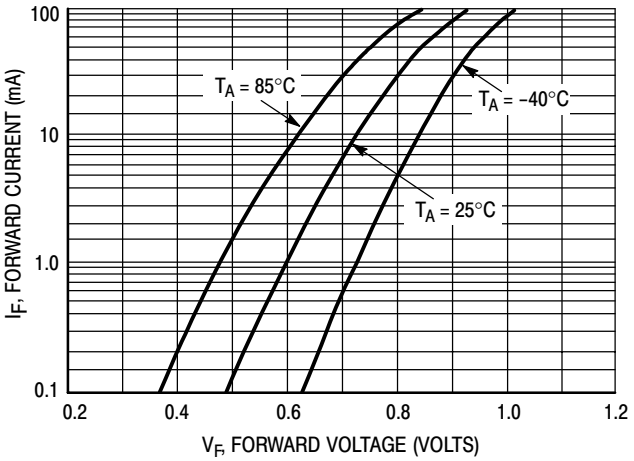



**Figure 2. Forward Voltage**

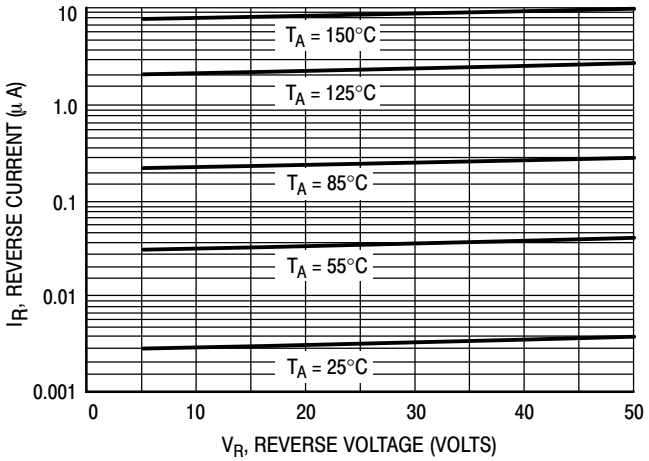



**Figure 3. Leakage Current**

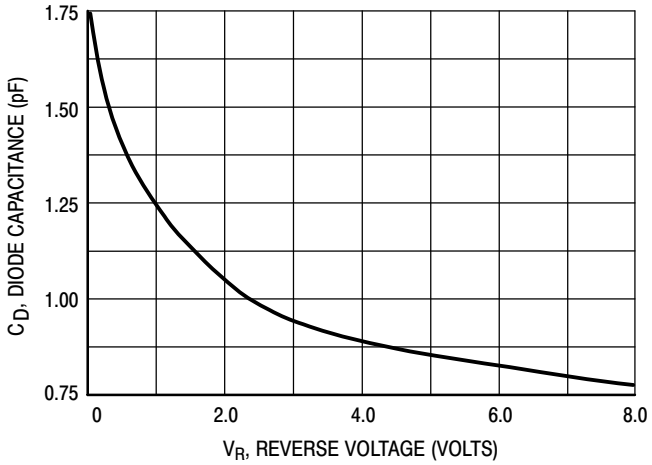
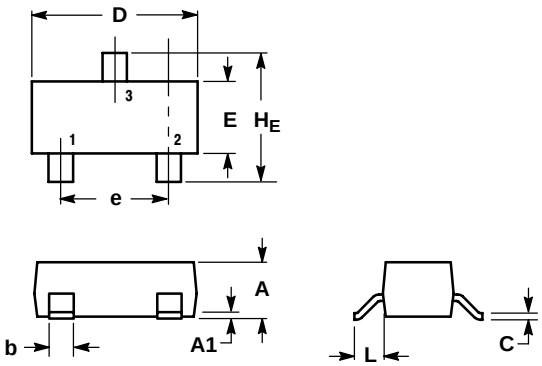



**Figure 4. Capacitance**

## PACKAGE DIMENSIONS

**SOT−23 (TO−236)**
CASE 318−08
ISSUE AL

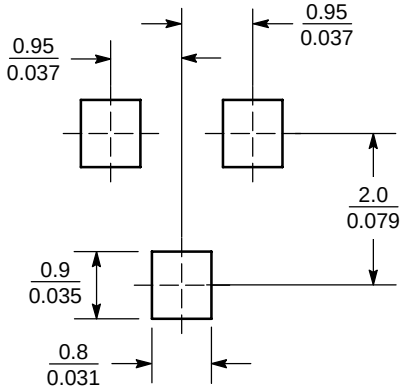



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318−01 THRU −07 AND −09 OBSOLETE, NEW STANDARD 318−08.

| | MILLIMETERS | | | INCHES | | |
|---|---|---|---|---|---|---|
| DIM | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.89 | 1.00 | 1.11 | 0.035 | 0.040 | 0.044 |
| A1 | 0.01 | 0.06 | 0.10 | 0.001 | 0.002 | 0.004 |
| b | 0.37 | 0.44 | 0.50 | 0.015 | 0.018 | 0.020 |
| c | 0.09 | 0.13 | 0.18 | 0.003 | 0.005 | 0.007 |
| 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 | 0.081 |
| L | 0.35 | 0.54 | 0.69 | 0.014 | 0.021 | 0.029 |
| $H_E$ | 2.10 | 2.40 | 2.64 | 0.083 | 0.094 | 0.104 |

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

### SOLDERING FOOTPRINT*




SCALE 10:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

*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
P.O. Box 61312, Phoenix, Arizona 85082−1312 USA
**Phone**: 480−829−7710 or 800−344−3860 Toll Free USA/Canada
**Fax**: 480−829−7709 or 800−344−3867 Toll Free USA/Canada
**Email**: orderlit@onsemi.com

**N. American Technical Support**: 800−282−9855 Toll Free USA/Canada

**Japan**: ON Semiconductor, Japan Customer Focus Center
2−9−1 Kamimeguro, Meguro−ku, Tokyo, Japan 153−0051
**Phone**: 81−3−5773−3850

**ON Semiconductor Website**: http://onsemi.com

**Order Literature**: http://www.onsemi.com/litorder

For additional information, please contact your local Sales Representative.