

MMBD2835LT1G, MMBD2836LT1G, SMMBD2835LT1G

Monolithic Dual Switching Diodes

Features

- AEC-Q101 Qualified and PPAP Capable
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant*

MAXIMUM RATINGS (EACH DIODE)

| Rating | Symbol | Value | Unit |
|--|--------|----------|------|
| Reverse Voltage MMBD2835LT1G, SMMBD2835LT1G MMBD2836LT1G | V_R | 35 75 | Vdc |
| Forward Current | I_F | 100 | mAdc |

THERMAL CHARACTERISTICS

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

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

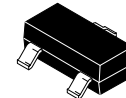
1. FR-5 = $1.0 \times 0.75 \times 0.062$ in.
2. Alumina = $0.4 \times 0.3 \times 0.024$ in. 99.5% alumina.

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

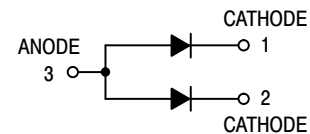


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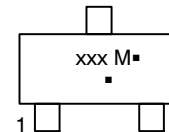
<http://onsemi.com>



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



MARKING DIAGRAM



xxx = Specific Device Code
A3X = MMBD2835LT1G
SMMBD2835LT1G
A2X = MMBD2836LT1G
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† |
|---------------|---------------------|------------------------|
| MMBD2835LT1G | SOT-23 (Pb-Free) | 3,000 / Tape & Reel |
| SMMBD2835LT1G | SOT-23 (Pb-Free) | 3,000 / Tape & Reel |
| MMBD2836LT1G | SOT-23 (Pb-Free) | 3,000 / Tape & Reel |

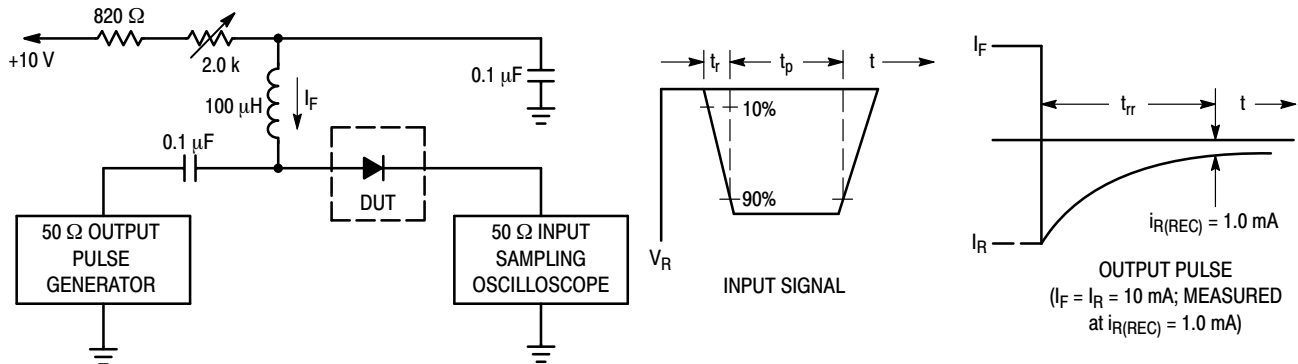
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MMBD2835LT1G, MMBD2836LT1G, SMMBD2835LT1G

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

| Characteristic | Symbol | Min | Max | Unit |
|---|------------|-------------|-------------------|------|
| OFF CHARACTERISTICS | | | | |
| Reverse Breakdown Voltage ($I_R = 100 \mu\text{Adc}$) MMBD2835LT1G, SMMBD2835LT1G MMBD2836LT1G | $V_{(BR)}$ | 35 75 | - - | Vdc |
| Reverse Voltage Leakage Current (Note 3) ($V_R = 30 \text{ Vdc}$) MMBD2835LT1G, SMMBD2835LT1G ($V_R = 50 \text{ Vdc}$) MMBD2836LT1G | I_R | - - | 100 100 | nAdc |
| Diode Capacitance ($V_R = 0 \text{ V}$, $f = 1.0 \text{ MHz}$) | C_T | - | 4.0 | pF |
| Forward Voltage ($I_F = 10 \text{ mAdc}$) ($I_F = 50 \text{ mAdc}$) ($I_F = 100 \text{ mAdc}$) | V_F | - - - | 1.0 1.0 1.2 | Vdc |
| Reverse Recovery Time ($I_F = I_R = 10 \text{ mAdc}$, $I_{R(REC)} = 1.0 \text{ mAdc}$) (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 $I_{R(\text{peak})}$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

MMBD2835LT1G, MMBD2836LT1G, SMMBD2835LT1G

CURVES APPLICABLE TO EACH CATHODE

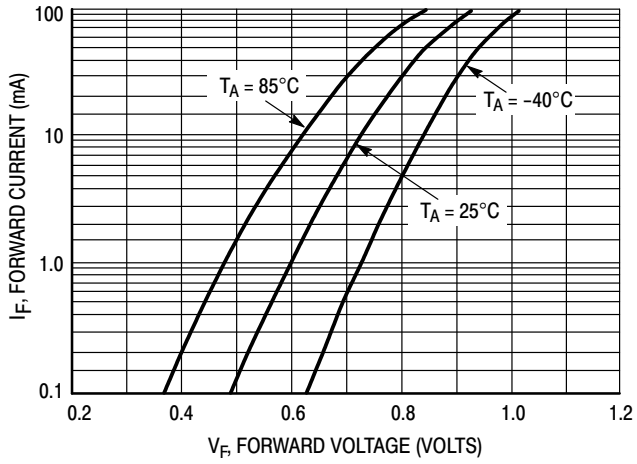


Figure 2. Forward Voltage

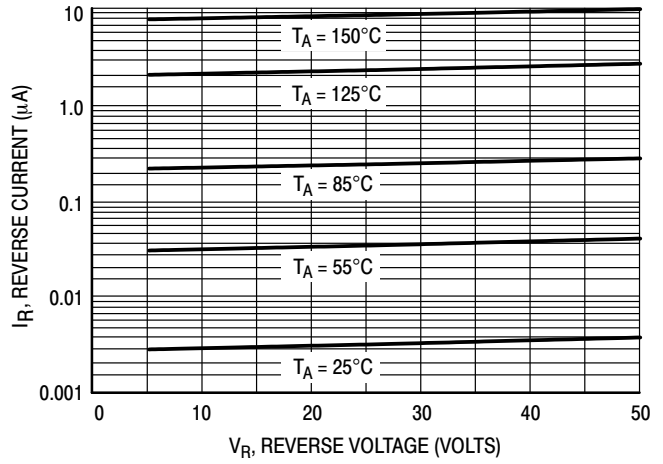


Figure 3. Leakage Current

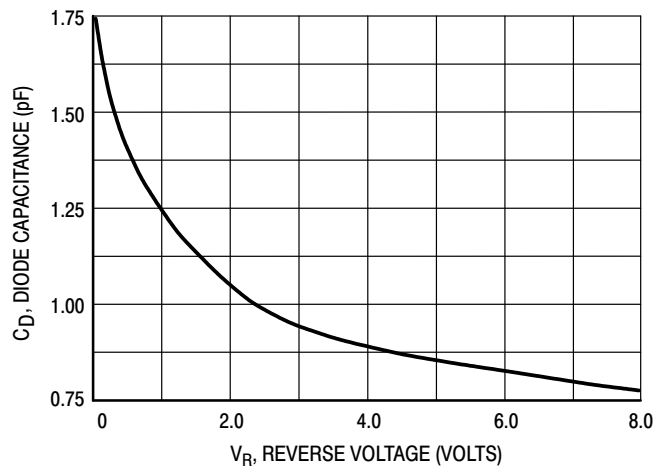


Figure 4. Capacitance

MMBD2835LT1G, MMBD2836LT1G, SMMBD2835LT1G

PACKAGE DIMENSIONS

SOT-23 (TO-236)
CASE 318-08
ISSUE AP



NOTES:

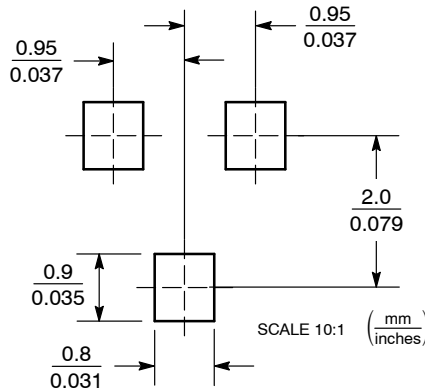
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.89 | 1.00 | 1.11 | 0.035 | 0.040 | 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 | 0.10 | 0.20 | 0.30 | 0.004 | 0.008 | 0.012 |
| L1 | 0.35 | 0.54 | 0.69 | 0.014 | 0.021 | 0.029 |
| HE | 2.10 | 2.40 | 2.64 | 0.083 | 0.094 | 0.104 |
| θ | 0° | --- | 10° | 0° | --- | 10° |

STYLE 12:

1. CATHODE
2. CATHODE
3. ANODE

SOLDERING FOOTPRINT



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