

# MMBD2835LT1G, MMBD2836LT1G, SMMBD2835LT1G

## Monolithic Dual Switching Diodes

### Features

- S 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
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 $25^\circ\text{C}$	$P_D$	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 $25^\circ\text{C}$	$P_D$	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	$^\circ\text{C}$

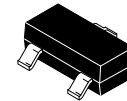
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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.

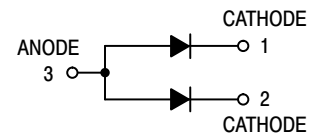


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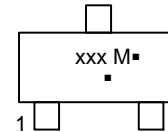
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SOT-23 (TO-236AB)  
CASE 318-08  
STYLE 12



### 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

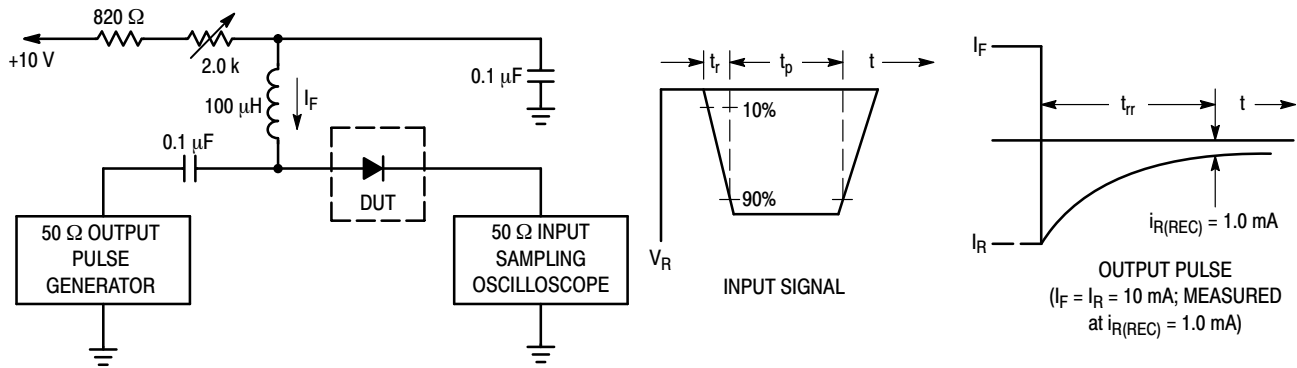
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

# MMBD2835LT1G, MMBD2836LT1G, SMMBD2835LT1G

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

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Reverse Breakdown Voltage ( $I_R = 100 \mu\text{A dc}$ ) 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	nA dc
Diode Capacitance ( $V_R = 0 \text{ V}$ , $f = 1.0 \text{ MHz}$ )	$C_T$	-	4.0	pF
Forward Voltage ( $I_F = 10 \text{ mA dc}$ ) ( $I_F = 50 \text{ mA dc}$ ) ( $I_F = 100 \text{ mA dc}$ )	$V_F$	- - -	1.0 1.0 1.2	Vdc
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mA dc}$ , $I_{R(REC)} = 1.0 \text{ mA dc}$ ) (Figure 1)	$t_{rr}$	-	4.0	ns

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.



- 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

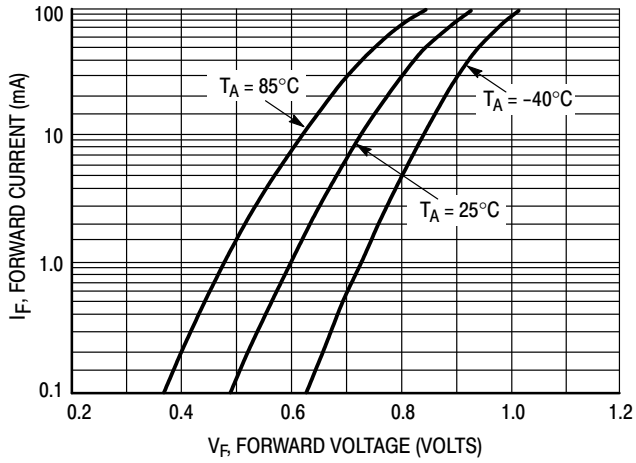


Figure 2. Forward Voltage

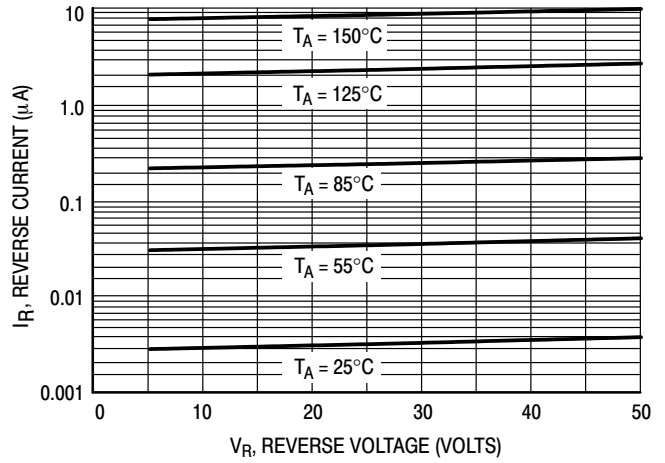


Figure 3. Leakage Current

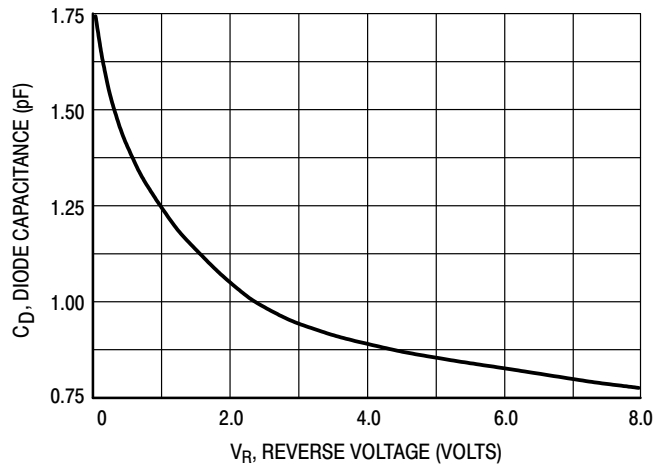
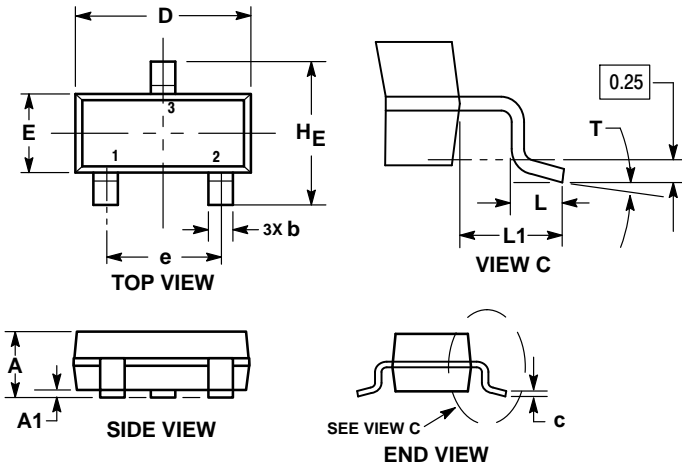


Figure 4. Capacitance

# MMBD2835LT1G, MMBD2836LT1G, SMMBD2835LT1G

## PACKAGE DIMENSIONS

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

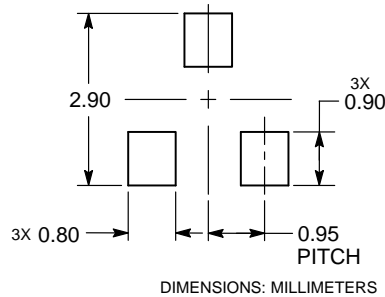


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
  2. CONTROLLING DIMENSION: MILLIMETERS.
  3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
  4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

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
HE	2.10	2.40	2.64	0.083	0.094	0.104
T	0°	---	10°	0°	---	10°

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

### RECOMMENDED SOLDERING FOOTPRINT\*



\*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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