

# MBRD835L

Preferred Device

## SWITCHMODE™ Power Rectifier

### DPAK Surface Mount Package

This SWITCHMODE power rectifier which uses the Schottky Barrier principle with a proprietary barrier metal, is designed for use as output rectifiers, free wheeling, protection and steering diodes in switching power supplies, inverters and other inductive switching circuits. This state of the art device has the following features:

- Low Forward Voltage
- 125°C Operating Junction Temperature
- Epoxy Meets UL94, VO at 1/8"
- Compact Size
- Lead Formed for Surface Mount
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish

#### Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 0.4 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 75 units per plastic tube
- Available in 16 mm Tape and Reel, 2500 units per 13" reel, by adding a "T4" suffix to the part number
- Marking: B835L

#### MAXIMUM RATINGS

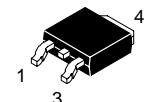
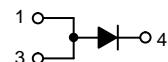
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	35	V
Average Rectified Forward Current (At Rated $V_R$ , $T_C = 88^\circ\text{C}$ )	$I_{F(AV)}$	8.0	A
Peak Repetitive Forward Current (At Rated $V_R$ , Square Wave, 20 kHz, $T_C = 80^\circ\text{C}$ )	$I_{FRM}$	16	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	75	A
Repetitive Avalanche Current (Current Decaying Linearly to Zero in 1 $\mu\text{s}$ , Frequency Limited by $T_{Jmax}$ )	$I_{AR}$	2.0	A
Storage Temperature Range	$T_{stg}$	-65 to +150	°C
Operating Junction Temperature	$T_J$	-65 to +125	°C
Voltage Rate of Change (Rated $V_R$ )	$dv/dt$	10,000	V/ $\mu\text{s}$



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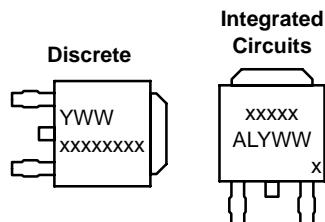
<http://onsemi.com>

SCHOTTKY BARRIER  
RECTIFIER  
8.0 AMPERES  
35 VOLTS



DPAK  
CASE 369A  
STYLE 3

#### MARKING DIAGRAMS



xxxxxxxx = Device Code  
A = Assembly Location  
IL = Wafer Lot  
Y = Year  
WW = Work Week

#### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
MBRD835L	DPAK	75 Units/Rail
MBRD835LT4	DPAK	2500/Tape & Reel
MBRD835LT4G	DPAK (Pb-Free)	2500/Tape & Reel

<sup>†</sup>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.

Preferred devices are recommended choices for future use and best overall value.

**THERMAL CHARACTERISTICS**

Rating	Symbol	Value	Unit
Thermal Resistance — Junction to Case	$R_{\theta JC}$	6	°C/W
Thermal Resistance — Junction to Ambient (Note 1.)	$R_{\theta JA}$	80	°C/W

**ELECTRICAL CHARACTERISTICS**

Maximum Instantaneous Forward Voltage (Note 2.) ( $i_F = 8$ Amps, $T_C = +25^\circ\text{C}$ ) ( $i_F = 8$ Amps, $T_C = +125^\circ\text{C}$ )	$V_F$	0.51 0.41	Volts
Maximum Instantaneous Reverse Current (Note 2.) (Rated dc Voltage, $T_C = +25^\circ\text{C}$ ) (Rated dc Voltage, $T_C = +100^\circ\text{C}$ )	$I_R$	1.4 35	mA

1. Rating applies when surface mounted on the minimum pad size recommended.

2. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

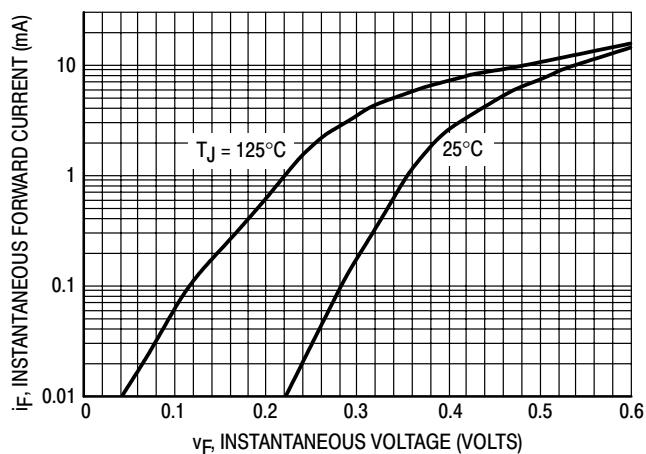
**TYPICAL CHARACTERISTICS**


Figure 1. Maximum Forward Voltage

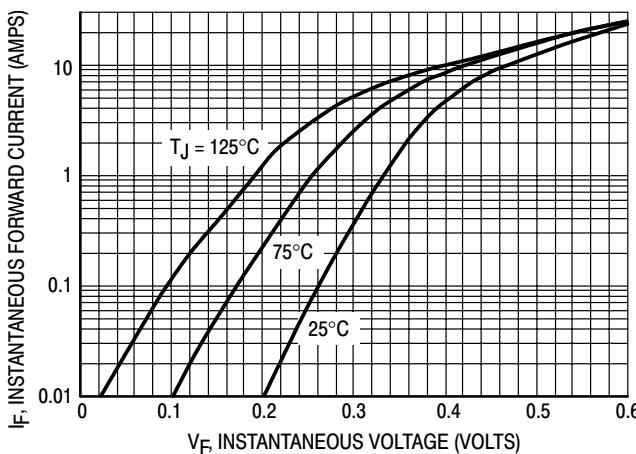


Figure 2. Typical Forward Voltage

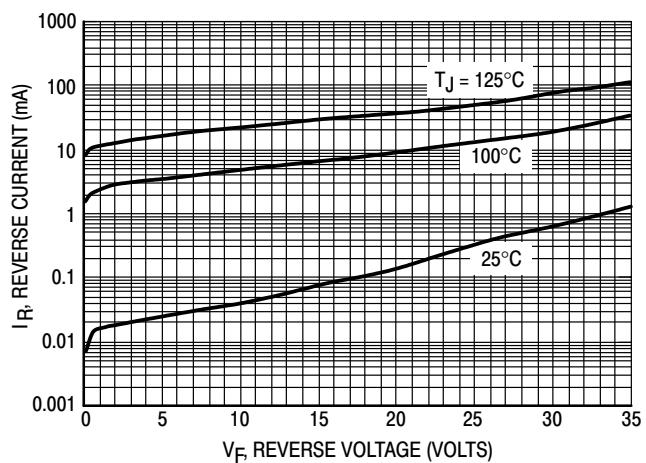


Figure 3. Maximum Reverse Current

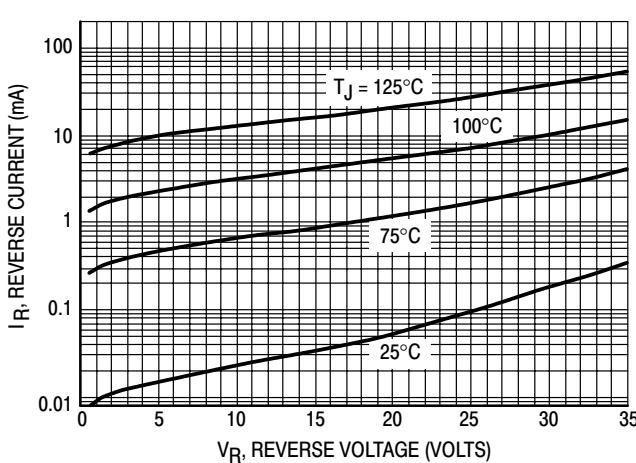
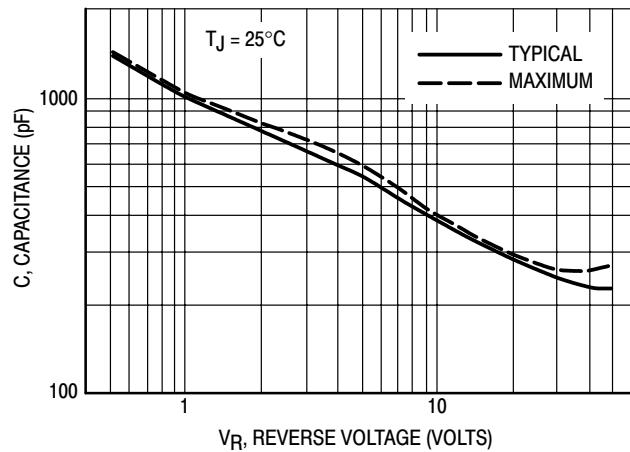
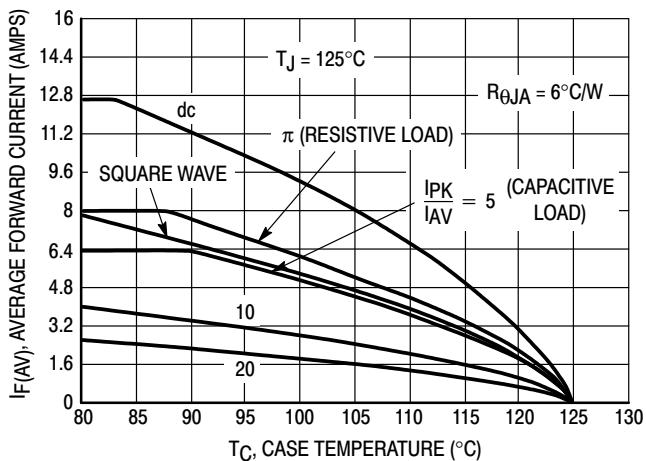


Figure 4. Typical Reverse Current

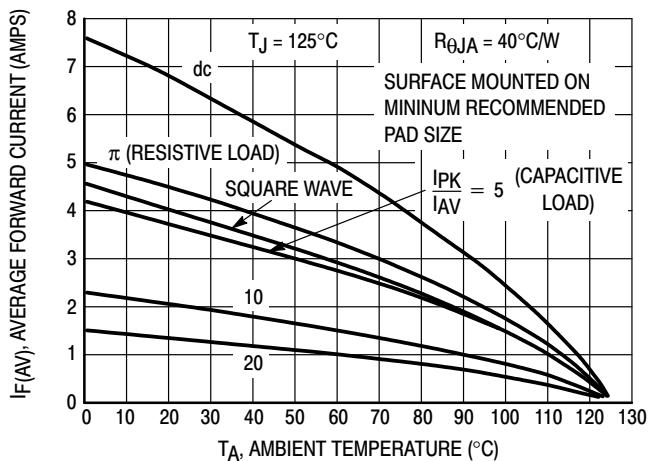
**TYPICAL CHARACTERISTICS**



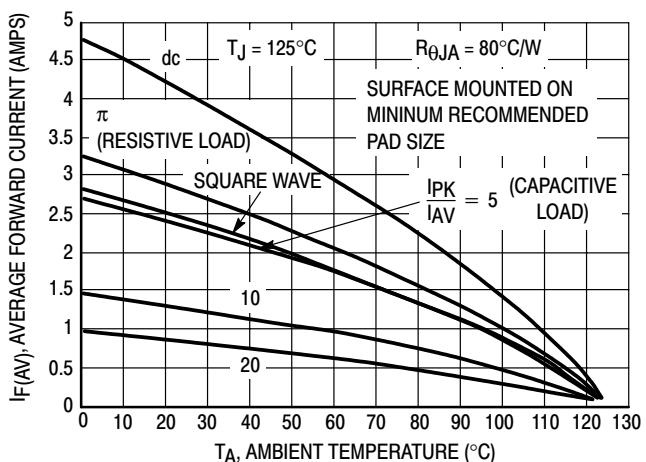
**Figure 5. Maximum and Typical Capacitance**



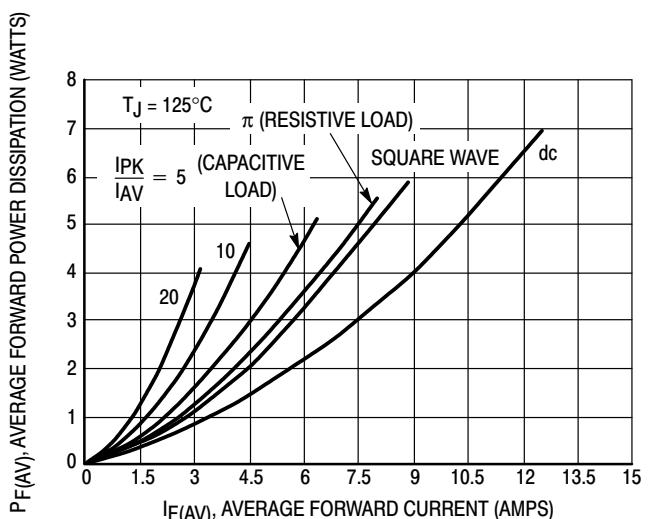
**Figure 6. Current Derating, Infinite Heatsink**



**Figure 7. Current Derating**



**Figure 8. Current Derating, Free Air**

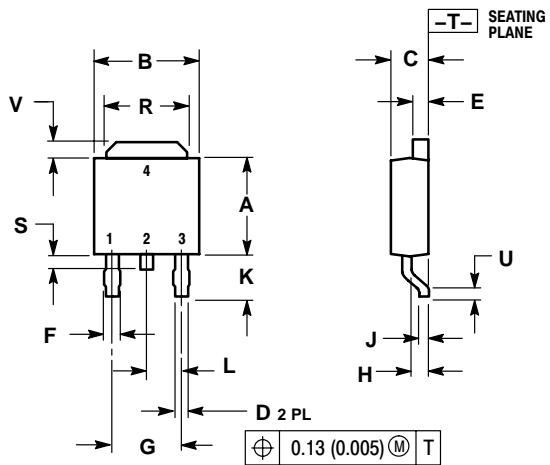


**Figure 9. Forward Power Dissipation**

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## PACKAGE DIMENSIONS

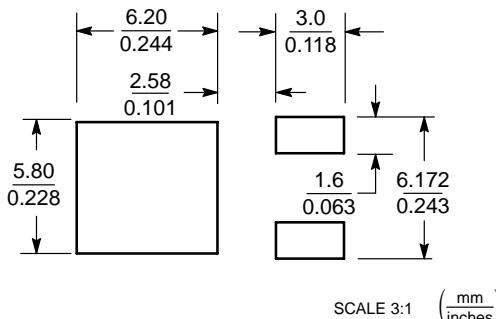
### DPAK PLASTIC CASE 369A-13 ISSUE AB



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.235	0.250	5.97	6.35
B	0.250	0.265	6.35	6.73
C	0.086	0.094	2.19	2.38
D	0.027	0.035	0.69	0.88
E	0.033	0.040	0.84	1.01
F	0.037	0.047	0.94	1.19
G	0.180	BSC	4.58	BSC
H	0.034	0.040	0.87	1.01
J	0.018	0.023	0.46	0.58
K	0.102	0.114	2.60	2.89
L	0.090	BSC	2.29	BSC
R	0.175	0.215	4.45	5.46
S	0.020	0.050	0.51	1.27
U	0.020	---	0.51	---
V	0.030	0.050	0.77	1.27
Z	0.138	---	3.51	---

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

### SOLDERING FOOTPRINT\*



SCALE 3:1 (mm)  
(inches)

Figure 10. DPAK

\*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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