

# SWITCHMODE™ Power Rectifier

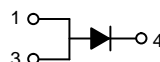
## DPAK Surface Mount Package

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"
- Guaranteed Reverse Avalanche
- Compact Size
- Lead Formed for Surface Mount

### Mechanical Characteristics

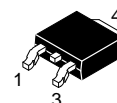
- Case: Epoxy, Molded
- Weight: 0.4 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 75 units per plastic tube
- Available in 16 mm Tape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



**MBRD835L**

Motorola Preferred Device

**SCHOTTKY BARRIER  
RECTIFIER  
8 AMPERES  
35 VOLTS**



**CASE 369A-13  
DPAK PLASTIC, STYLE 3**

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	35	Volts
Average Rectified Forward Current (At Rated $V_R$ , $T_C = +88^\circ\text{C}$ )	$I_F(AV)$	8	Amps
Peak Repetitive Forward Current (At Rated $V_R$ , Square Wave, 20 kHz) $T_C = +80^\circ\text{C}$	$I_{FRM}$	16	Amps
Non-Repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$	75	Amps
Repetitive Avalanche Current (Current Decaying Linearly to Zero in 1 $\mu\text{s}$ , Frequency Limited by $T_{Jmax}$ )	$I_{AR}$	2	Amps
Storage Temperature	$T_{stg}$	-65 to +150	$^\circ\text{C}$
Operating Junction Temperature	$T_J$	-65 to +125	$^\circ\text{C}$
Voltage Rate of Change (Rated $V_R$ )	$dv/dt$	10,000	$\text{V}/\mu\text{s}$

### THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Case	$R_{\theta JC}$	6	$^\circ\text{C}/\text{W}$
Thermal Resistance — Junction to Ambient <sup>(1)</sup>	$R_{\theta JA}$	80	$^\circ\text{C}/\text{W}$

### ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage <sup>(2)</sup> ( $I_F = 8$ 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 <sup>(2)</sup> (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  $\leq 2\%$ .

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



# TYPICAL CHARACTERISTICS

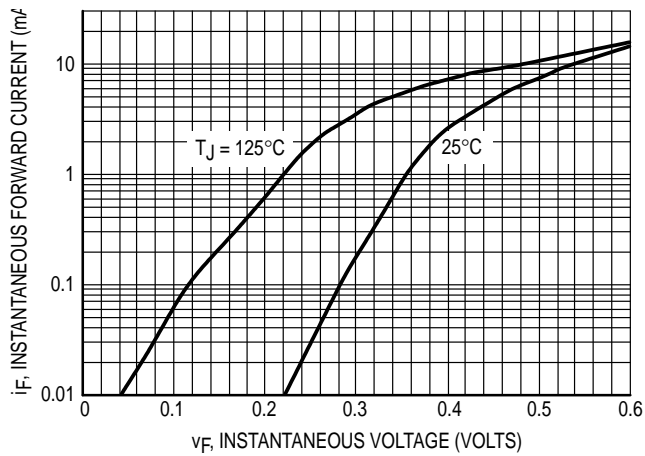


Figure 1. Maximum Forward Voltage

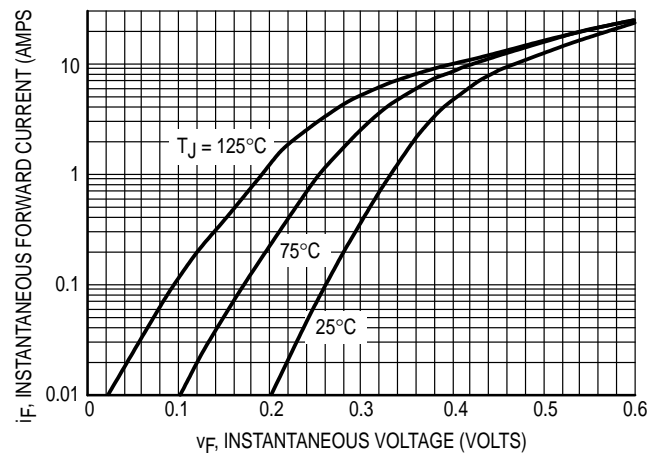


Figure 2. Typical Forward Voltage

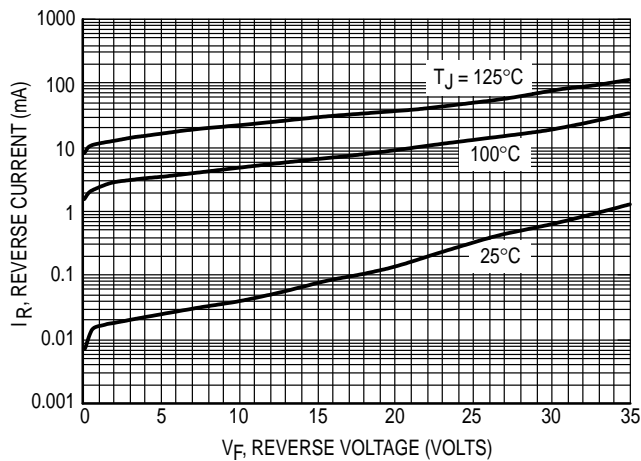


Figure 3. Maximum Reverse Current

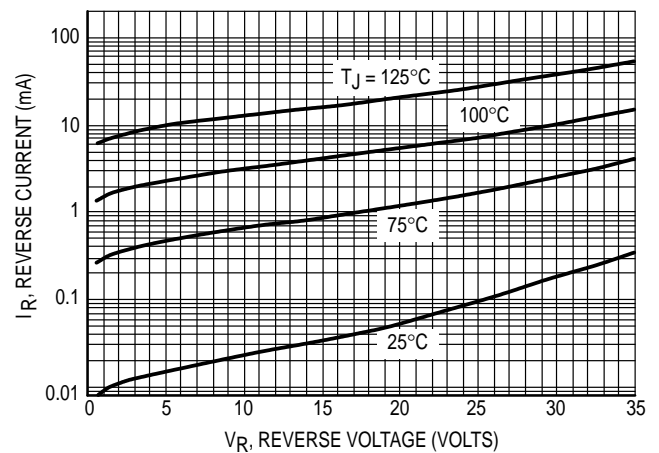


Figure 4. Typical Reverse Current

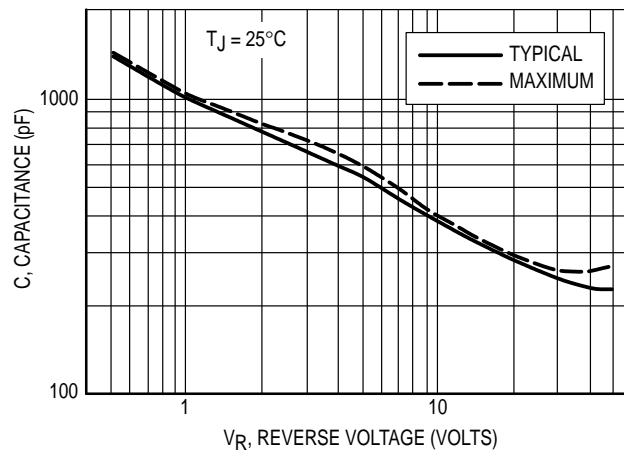


Figure 5. Maximum and Typical Capacitance

# TYPICAL CHARACTERISTICS

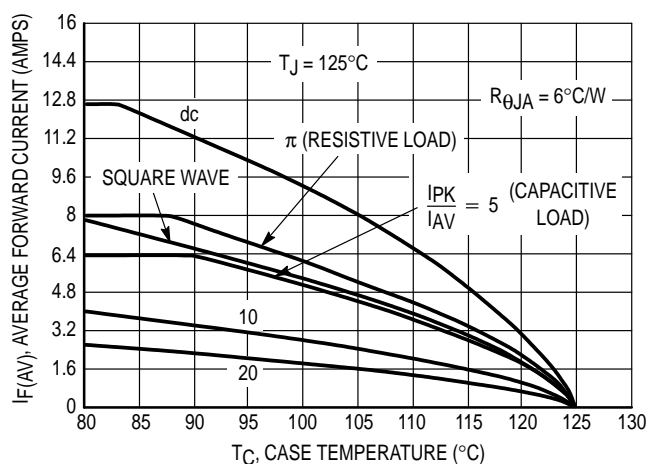


Figure 6. Current Derating, Infinite Heatsink

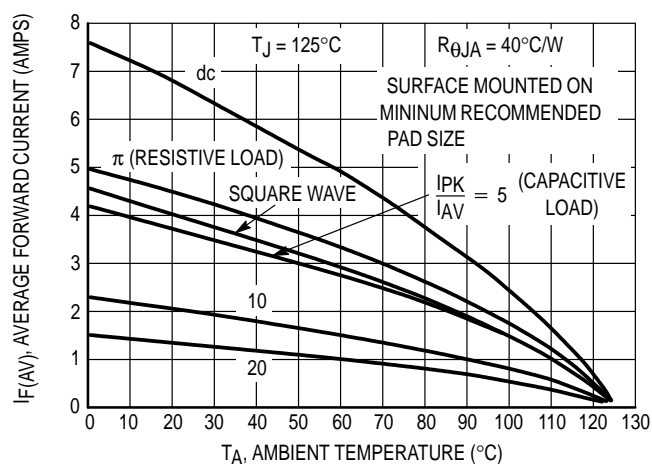


Figure 7. Current Derating

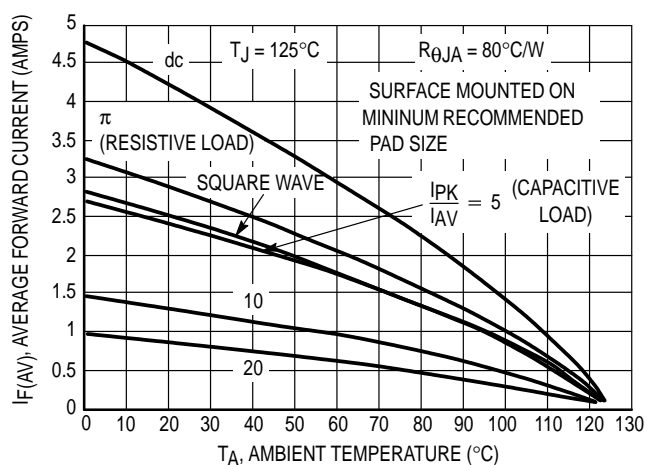


Figure 8. Current Derating, Free Air

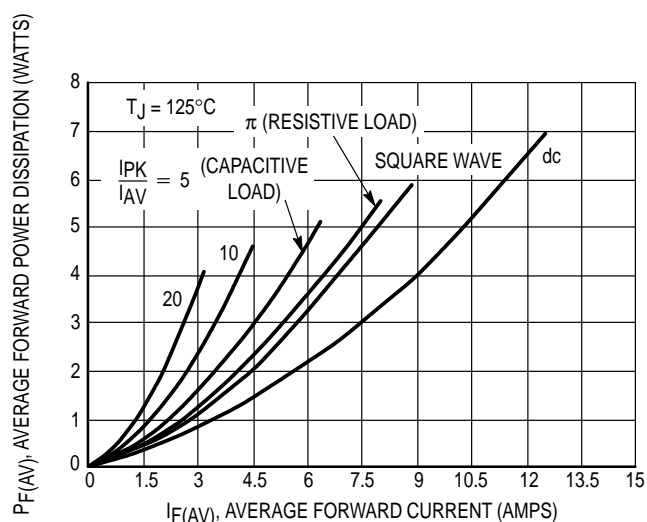
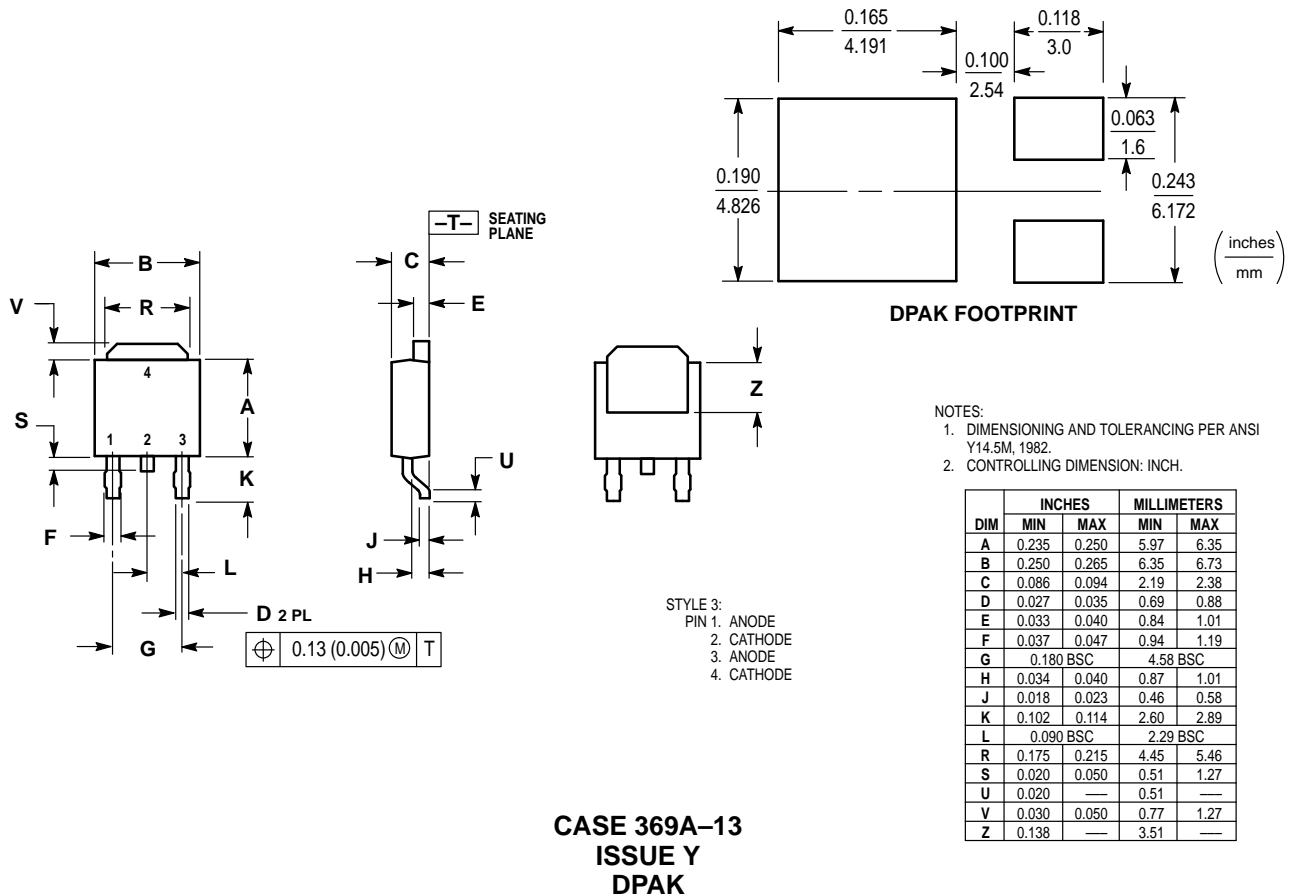



Figure 9. Forward Power Dissipation

## PACKAGE DIMENSIONS



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