

Switch-mode Power Rectifier

DPAK Surface Mount Package

MBRD835L, SBRD8835L

This switch-mode 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.

Features

- Low Forward Voltage
- 150°C Operating Junction Temperature
- Epoxy Meets UL 94 V-0 @ 0.125 in
- Compact Size
- Lead Formed for Surface Mount
- SBRD8 Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free and are RoHS Compliant

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
- ESD Rating:
 - ◆ Machine Model = C (> 400 V)
 - ◆ Human Body Model = 3B (> 8000 V)

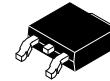


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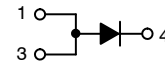
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SCHOTTKY BARRIER RECTIFIER

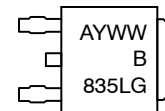
8.0 AMPERES, 35 VOLTS



**DPAK
CASE 369C**



MARKING DIAGRAM



B835LG = Specific Device Number
 A = Assembly Location*
 Y = Year
 WW = Work Week
 G = Pb-Free Device

* The Assembly Location Code (A) is front side optional. In cases where the Assembly Location is stamped in the package bottom (molding ejector pin), the front side assembly code may be blank.

ORDERING INFORMATION

| Device | Package | Shipping† |
|-------------------|-------------------|------------------------|
| MBRD835LG | DPAK (Pb-Free) | 75 Units / Rail |
| SBRD8835LG | DPAK (Pb-Free) | 75 Units / Rail |
| SBRD8835LG-VF01 | DPAK (Pb-Free) | 75 Units / Rail |
| MBRD835LT4G | DPAK (Pb-Free) | 2,500 / Tape & Reel |
| SBRD835LT4G-VF01 | DPAK (Pb-Free) | 2,500 / Tape & Reel |
| SBRD8835LT4G | DPAK (Pb-Free) | 2,500 / Tape & Reel |
| SBRD8835LT4G-VF01 | DPAK (Pb-Free) | 2,500 / 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

MBRD835L, SBRD8835L

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 ($T_C = 88^\circ\text{C}$) | $I_{F(AV)}$ | 8.0 | A |
| Peak Repetitive Forward Current (Square Wave, Duty = 0.5, $T_C = 80^\circ\text{C}$) | 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 μs , Frequency Limited by T_{Jmax}) | I_{AR} | 2.0 | A |
| Storage / Operating Case Temperature | T_{stg} | -65 to +150 | $^\circ\text{C}$ |
| Operating Junction Temperature (Note 1) | T_J | -65 to +150 | $^\circ\text{C}$ |
| Voltage Rate of Change (Rated V_R) | dv/dt | 10,000 | V/ μs |

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. The heat generated must be less than the thermal conductivity from Junction-to-Ambient: $dP_D/dT_J < 1/R_{\theta JA}$.

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------|--------------------|
| Thermal Resistance – Junction-to-Case | $R_{\theta JC}$ | 2.8 | $^\circ\text{C/W}$ |
| Thermal Resistance – Junction-to-Ambient (Note 2) | $R_{\theta JA}$ | 80 | $^\circ\text{C/W}$ |

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

ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|---|--------|--------------|------|
| Maximum Instantaneous Forward Voltage (Note 3) ($I_F = 8$ Amps, $T_C = +25^\circ\text{C}$) ($I_F = 8$ Amps, $T_C = +125^\circ\text{C}$) | V_F | 0.51 0.41 | V |
| Maximum Instantaneous Reverse Current (Note 3) (Rated dc Voltage, $T_C = +25^\circ\text{C}$) (Rated dc Voltage, $T_C = +100^\circ\text{C}$) | I_R | 1.4 35 | mA |

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. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2\%$.

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TYPICAL CHARACTERISTICS

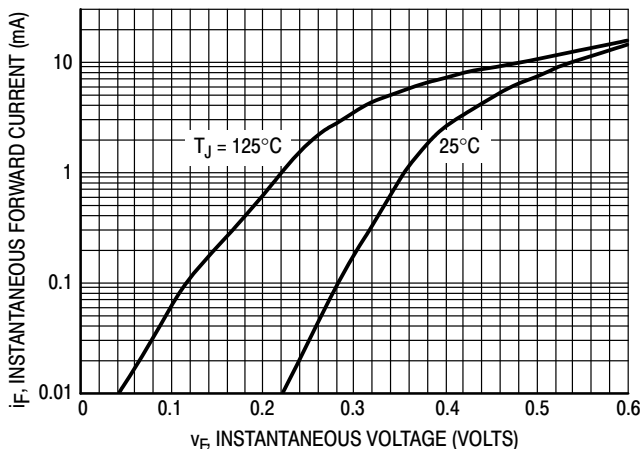


Figure 1. Maximum Forward Voltage

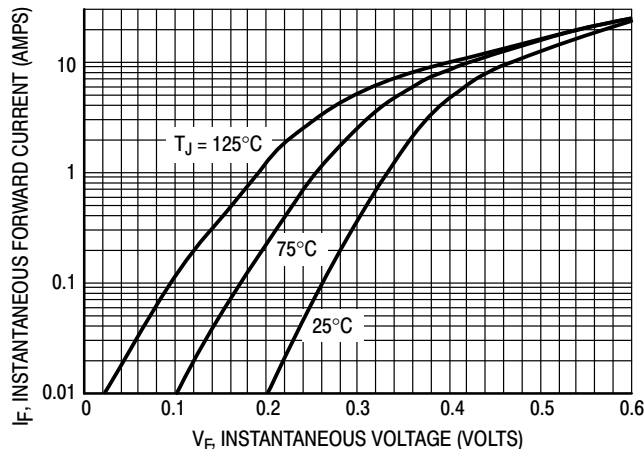


Figure 2. Typical Forward Voltage

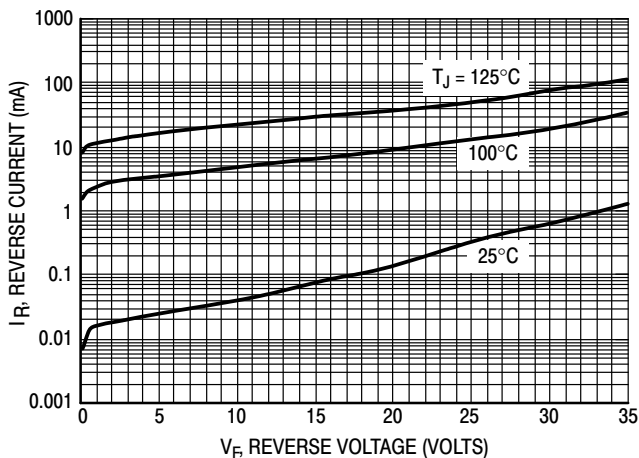


Figure 3. Maximum Reverse Current

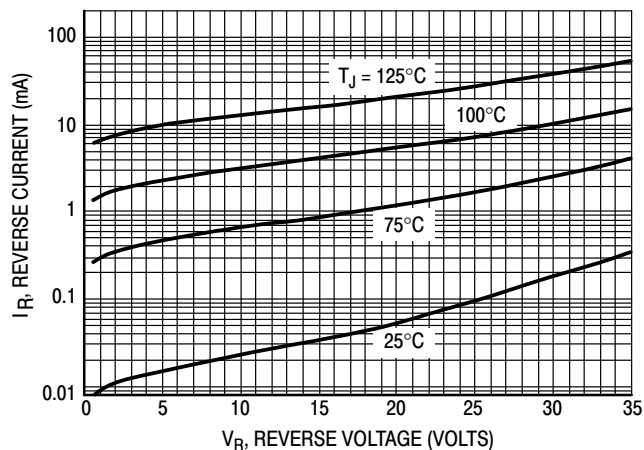


Figure 4. Typical Reverse Current

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TYPICAL CHARACTERISTICS

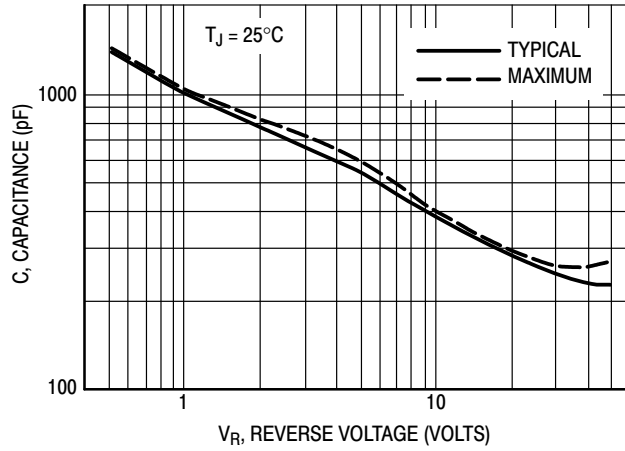


Figure 5. Maximum and Typical Capacitance

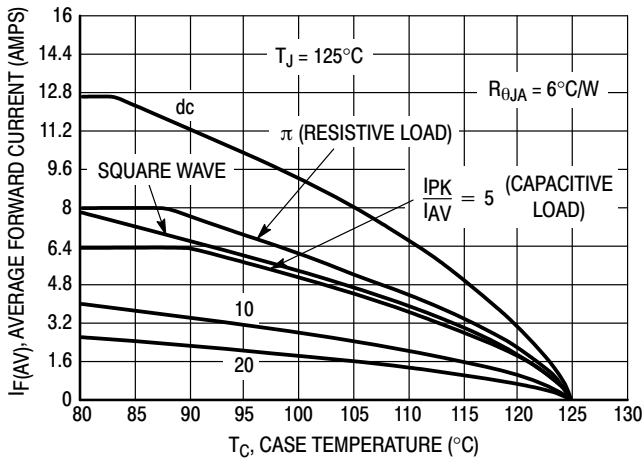


Figure 6. Current Derating, Infinite Heatsink

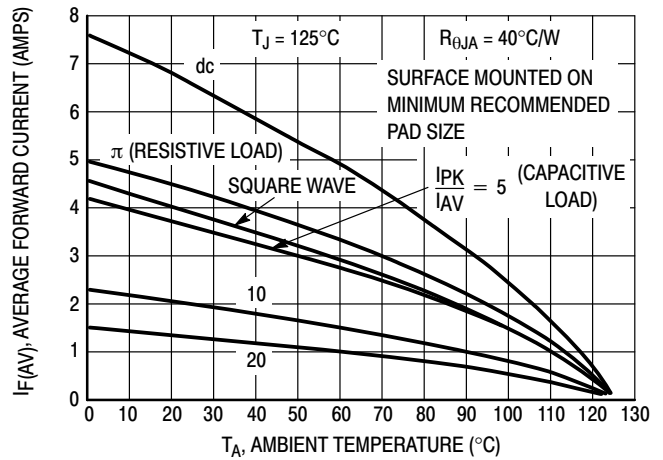


Figure 7. Current Derating

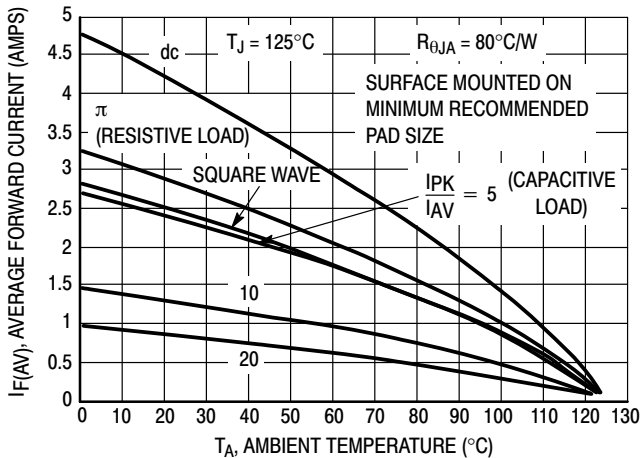


Figure 8. Current Derating, Free Air

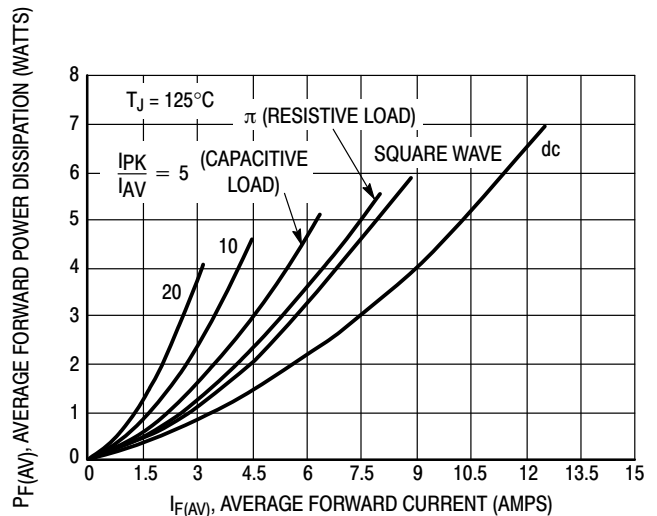


Figure 9. Forward Power Dissipation

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