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.

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
- Pb−Free Packages are Available

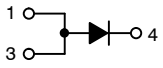
Mechanical Characteristics

- 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 in Reel, by Adding a “T4” Suffix to the Part Number
- ESD Rating: Machine Model = C (> 400 V)
  Human Body Model = 3B (> 8000 V)

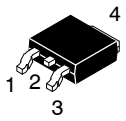
ON Semiconductor®

http://onsemi.com

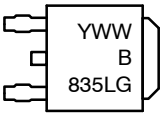
SCHOTTKY BARRIER RECTIFIER 8.0 AMPERES, 35 VOLTS



MARKING DIAGRAM



DPAK
CASE 369C



Y = Year
WW = Work Week
G = Pb−Free Device

ORDERING INFORMATION

Device	Package	Shipping†
MBRD835L	DPAK	75 Units/Rail
MBRD835LG	DPAK (Pb−Free)	75 Units/Rail
MBRD835LT4	DPAK	2500/Tape & Reel
MBRD835LT4G	DPAK (Pb−Free)	2500/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.

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

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°C)	$I_{F(AV)}$	8.0	A
Peak Repetitive Forward Current (At Rated V_R, Square Wave, 20 kHz, T_C = 80°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	°C
Operating Junction Temperature (Note 1)	T_J	−65 to +150	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000	V/μs

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.

THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Thermal Resistance − Junction−to−Case	$R_{\theta JC}$	2.8	°C/W
Thermal Resistance − Junction−to−Ambient (Note 2)	$R_{\theta JA}$	80	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 3)	(i_F = 8 Amps, T_C = +25°C) (i_F = 8 Amps, T_C = +125°C)	V_F	0.51 0.41	V
Maximum Instantaneous Reverse Current (Note 3)	(Rated dc Voltage, T_C = +25°C) (Rated dc Voltage, T_C = +100°C)	I_R	1.4 35	mA

1. The heat generated must be less than the thermal conductivity from Junction−to−Ambient: $dP_D/dT_J < 1/R_{\theta JA}$.
2. Rating applies when surface mounted on the minimum pad size recommended.
3. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2%.

TYPICAL CHARACTERISTICS

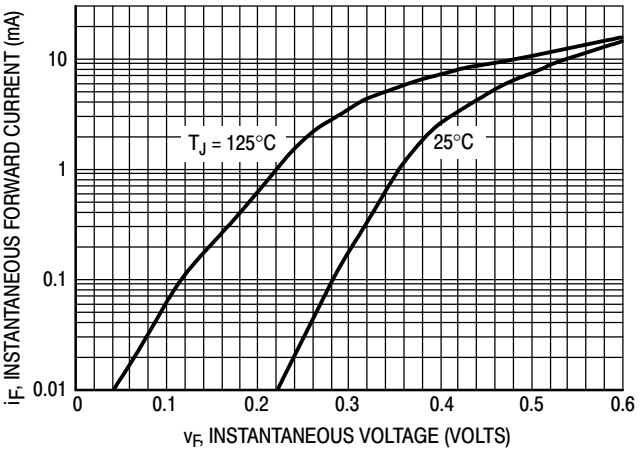


Figure 1. Maximum Forward Voltage

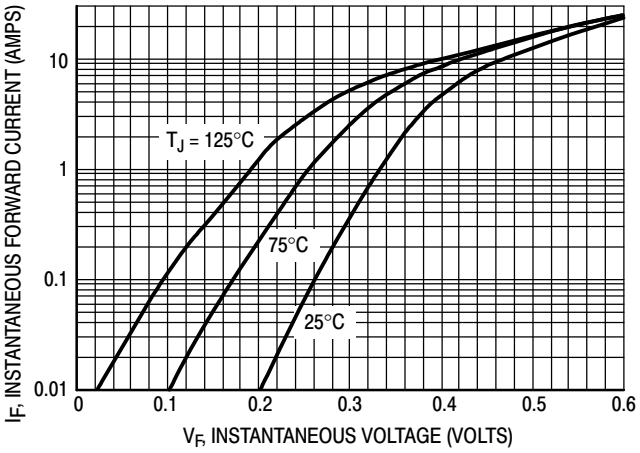


Figure 2. Typical Forward Voltage

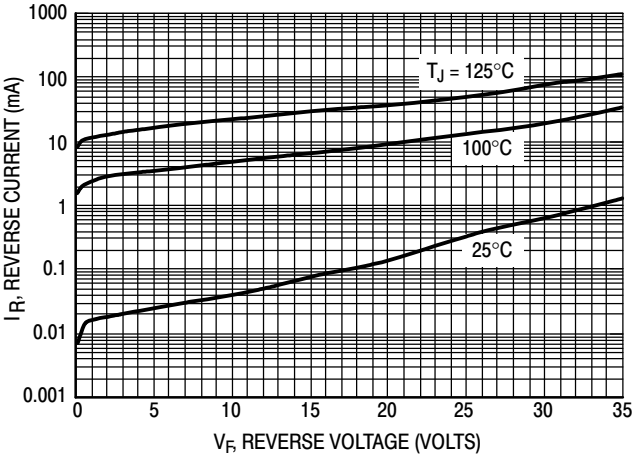


Figure 3. Maximum Reverse Current

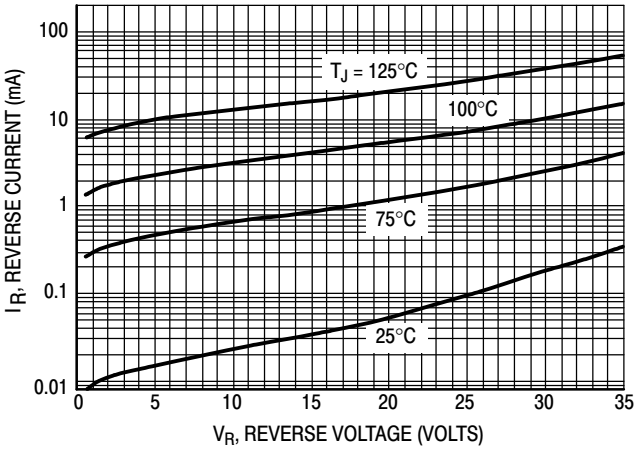


Figure 4. Typical Reverse Current

TYPICAL CHARACTERISTICS

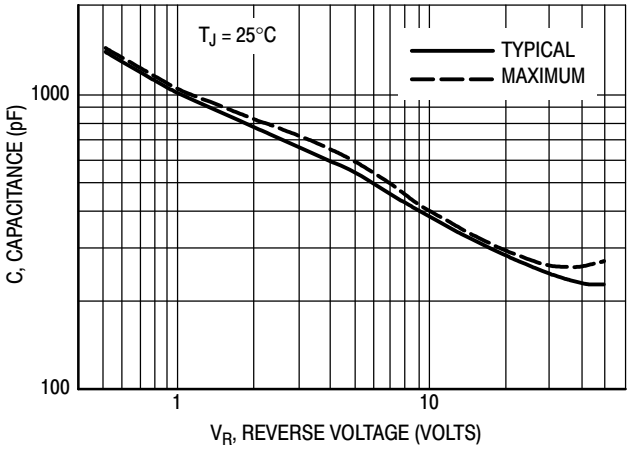


Figure 5. Maximum and Typical Capacitance

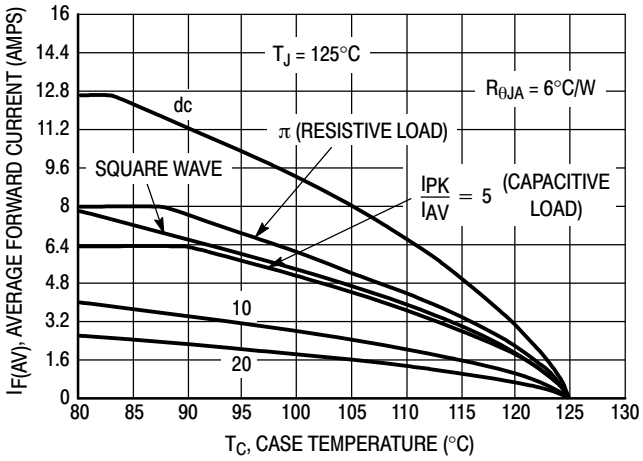


Figure 6. Current Derating, Infinite Heatsink

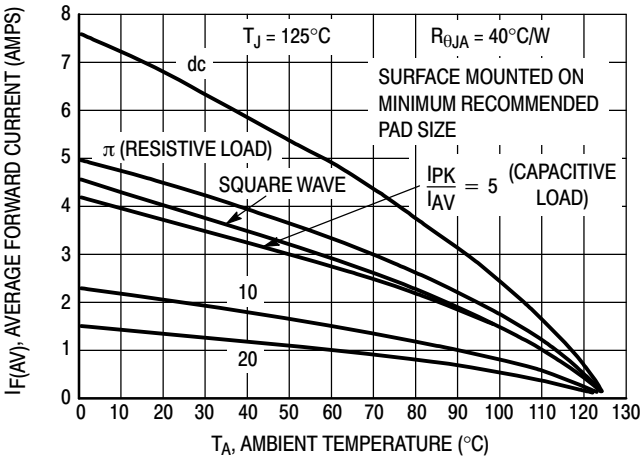


Figure 7. Current Derating

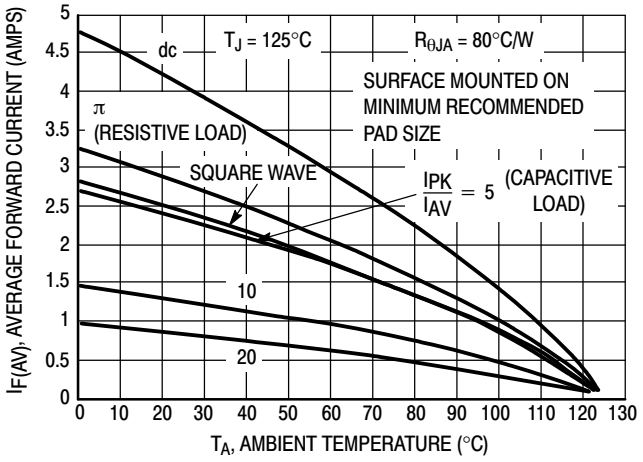


Figure 8. Current Derating, Free Air

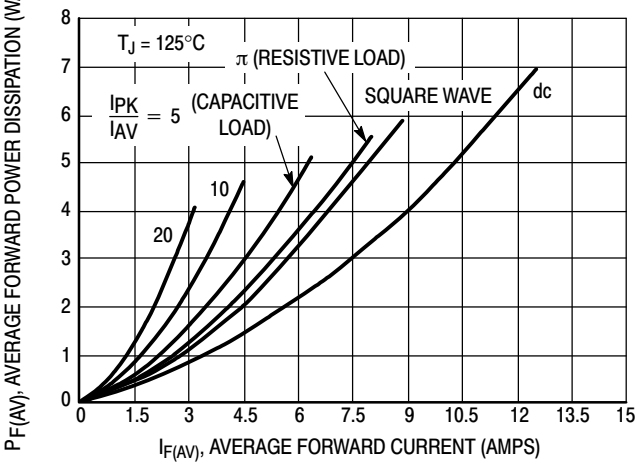
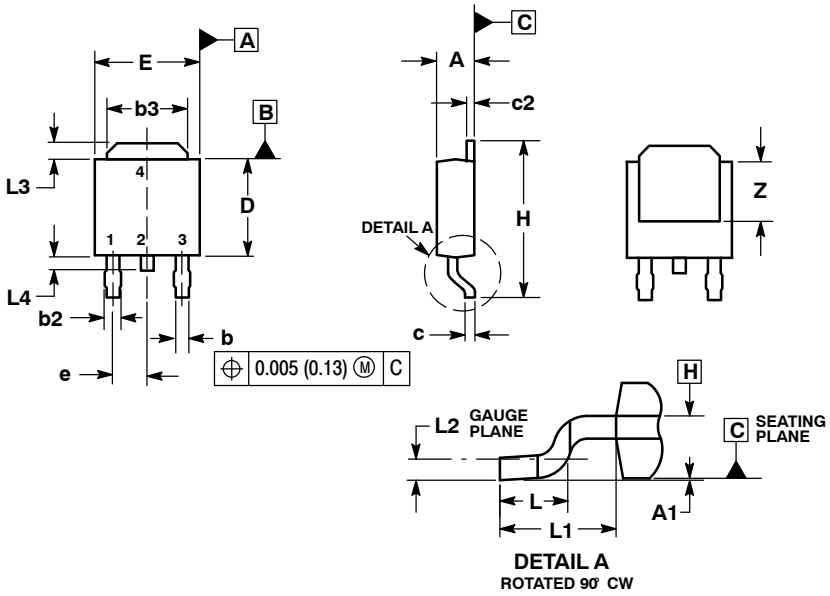


Figure 9. Forward Power Dissipation

PACKAGE DIMENSIONS

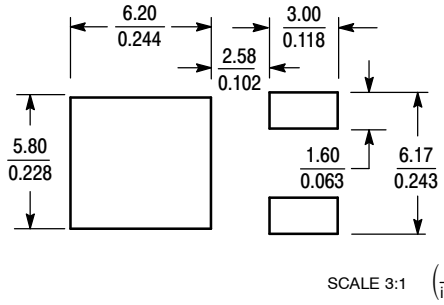
DPAK (SINGLE GAUGE)
CASE 369C−01
ISSUE D



NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. THERMAL PAD CONTOUR OPTIONAL WITHIN DIMENSIONS b3, L3 and Z.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.006 INCHES PER SIDE.
5. DIMENSIONS D AND E ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY.
6. DATUMS A AND B ARE DETERMINED AT DATUM PLANE H.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.086	0.094	2.18	2.38
A1	0.000	0.005	0.00	0.13
b	0.025	0.035	0.63	0.89
b2	0.030	0.045	0.76	1.14
b3	0.180	0.215	4.57	5.46
c	0.018	0.024	0.46	0.61
c2	0.018	0.024	0.46	0.61
D	0.235	0.245	5.97	6.22
E	0.250	0.265	6.35	6.73
e	0.090 BSC		2.29 BSC	
H	0.370	0.410	9.40	10.41
L	0.055	0.070	1.40	1.78
L1	0.108 REF		2.74 REF	
L2	0.020 BSC		0.51 BSC	
L3	0.035	0.050	0.89	1.27
L4	−−−	0.040	−−−	1.01
Z	0.155	−−−	3.93	−−−

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.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
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