SWITCHMODE™ Power Rectifier

DPAK Surface Mount Package

MBRD835L

Motorola Preferred Device

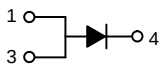
SCHOTTKY BARRIER RECTIFIER 8 AMPERES 35 VOLTS

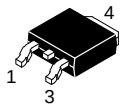
This SWITCHMODE power rectifier which uses the Schottky Barrier principle with a proprietary barrier metal, is designed for use as output rectifiers, free wheeling, protection and steering diodes in switching power supplies, inverters and other inductive switching circuits. This state of the art device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





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°C	$I_{F(AV)}$	8	Amps
Peak Repetitive Forward Current (At Rated V_R, Square Wave, 20 kHz) T_C = +80°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 μs, Frequency Limited by T_{Jmax})	I_{AR}	2	Amps
Storage Temperature	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/μs

THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage(2)	(i_F = 8 Amps, T_C = +25°C) (i_F = 8 Amps, T_C = +125°C)	V_F	0.51 0.41	Volts
Maximum Instantaneous Reverse Current(2)	(Rated dc Voltage, T_C = +25°C) (Rated dc Voltage, T_C = +100°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 μs, Duty Cycle ≤ 2%.

SWITCHMODE is a trademark of Motorola, Inc.

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

Rev 1

TYPICAL CHARACTERISTICS

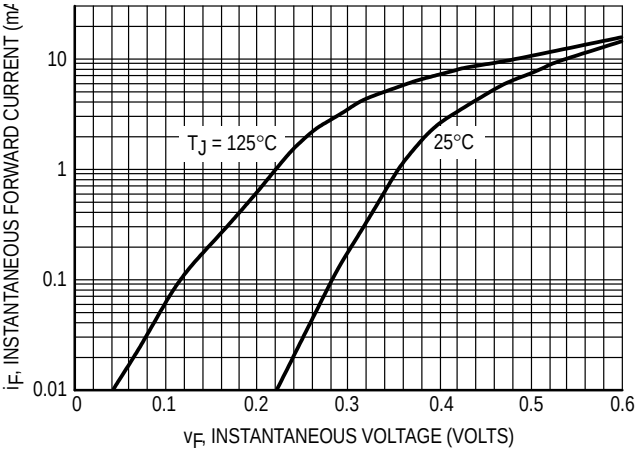


Figure 1. Maximum Forward Voltage

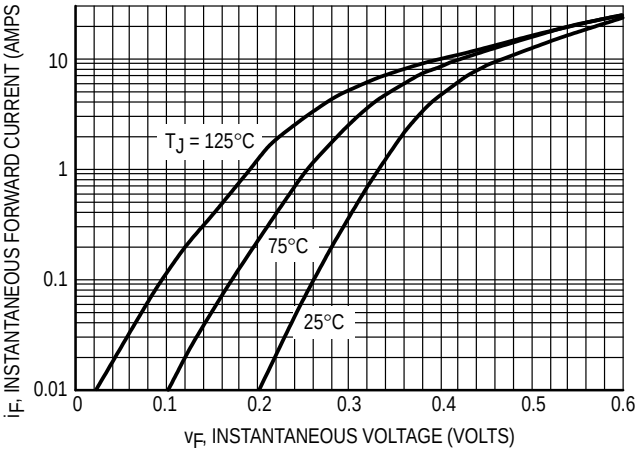


Figure 2. Typical Forward Voltage

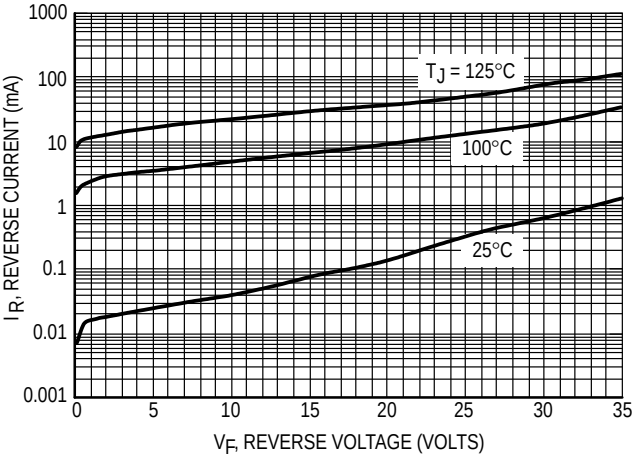


Figure 3. Maximum Reverse Current

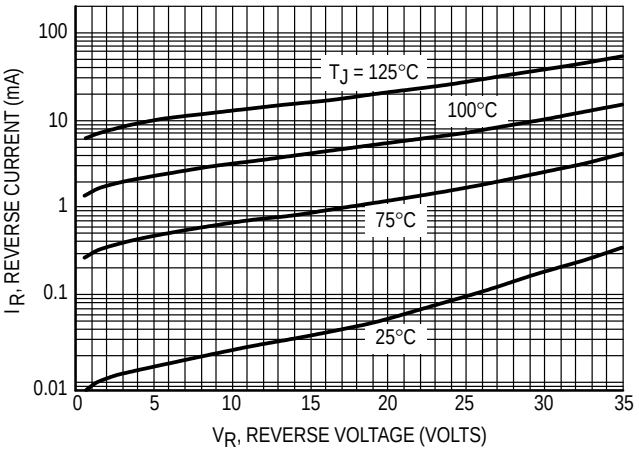


Figure 4. Typical Reverse Current

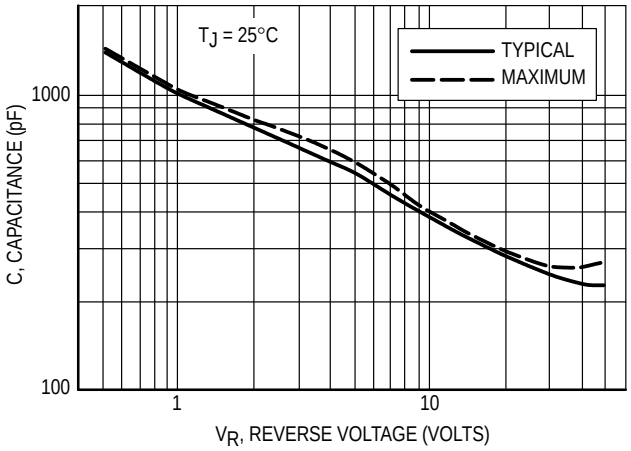


Figure 5. Maximum and Typical Capacitance

TYPICAL CHARACTERISTICS

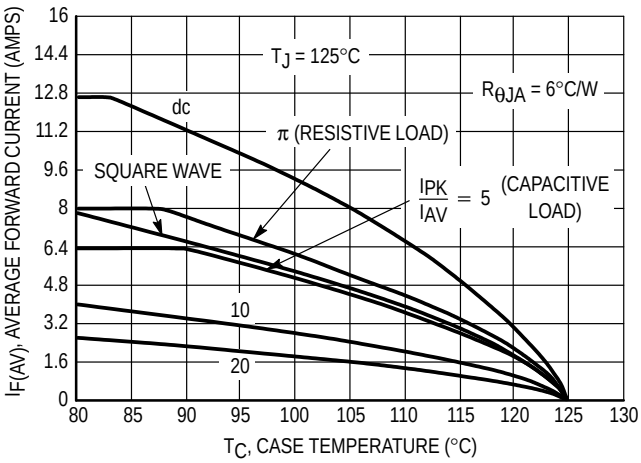


Figure 6. Current Derating, Infinite Heatsink

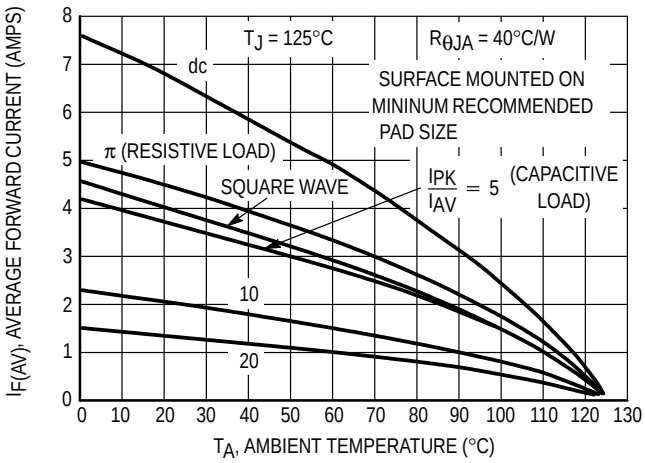


Figure 7. Current Derating

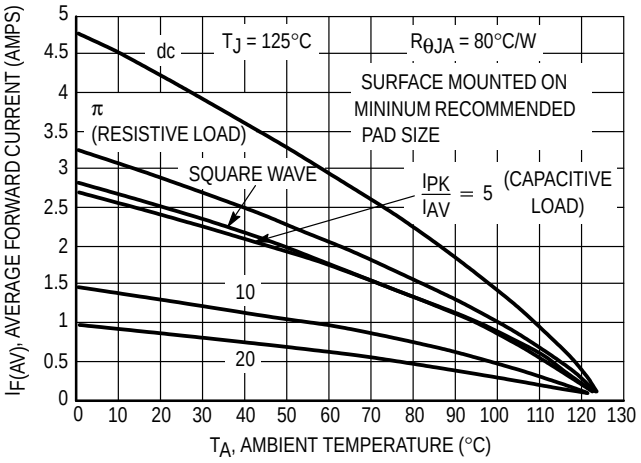


Figure 8. Current Derating, Free Air

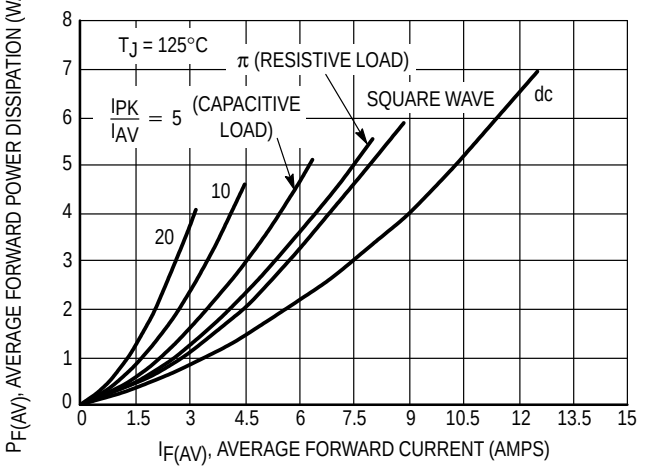
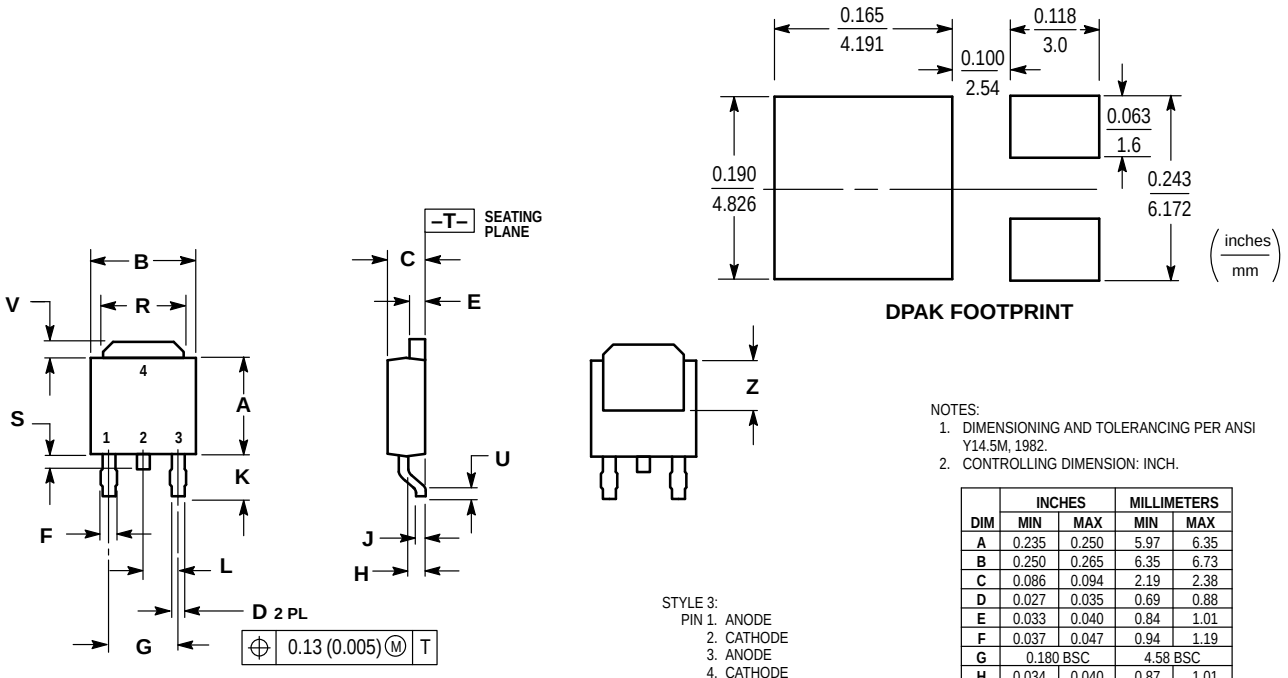


Figure 9. Forward Power Dissipation

PACKAGE DIMENSIONS



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS	
DIM	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

CASE 369A–13
ISSUE Y
DPAK

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