SWITCHMODE Power Rectifier

DPAK Surface Mount Package

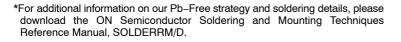
This SWITCHMODE power rectifier which uses the Schottky Barrier principle with a proprietary barrier metal, is designed for use as output rectifiers, free wheeling, protection and steering diodes in switching power supplies, inverters and other inductive switching circuits.

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
- 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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SCHOTTKY BARRIER RECTIFIER 8.0 AMPERES, 35 VOLTS



DPAK CASE 369C



MARKING DIAGRAM



B835LG = Specific Device Number

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

ORDERING INFORMATION

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

^{** 16} mm Tape, 13" 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.

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 , $T_C = 88^{\circ}C$)	I _{F(AV)}	8.0	Α
Peak Repetitive Forward Current (At Rated V_R , Square Wave, 20 kHz, $T_C = 80^{\circ}C$)	I _{FRM}	16	А
Non-Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	I _{FSM}	75	А
Repetitive Avalanche Current (Current Decaying Linearly to Zero in 1 μ s, Frequency Limited by T_{Jmax})	I _{AR}	2.0	Α
Storage / Operating Case Temperature	T _{stg}	-65 to +150	°C
Operating Junction Temperature (Note 1)	TJ	-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

Characteristic	Symbol	Value	Unit
Thermal Resistance – Junction-to-Case	$R_{ heta JC}$	2.8	°C/W
Thermal Resistance – Junction–to–Ambient (Note 2)	$R_{ heta JA}$	80	°C/W

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

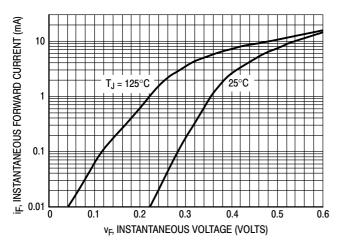
ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 3) ($i_F = 8$ Amps, $T_C = +25^{\circ}C$) ($i_F = 8$ Amps, $T_C = +125^{\circ}C$)	V _F	0.51 0.41	V
Maximum Instantaneous Reverse Current (Note 3) (Rated dc Voltage, $T_C = +25^{\circ}C$) (Rated dc Voltage, $T_C = +100^{\circ}C$)	I _R	1.4 35	mA

^{3.} Pulse Test: Pulse Width = 300 μ s, Duty Cycle \leq 2%.

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

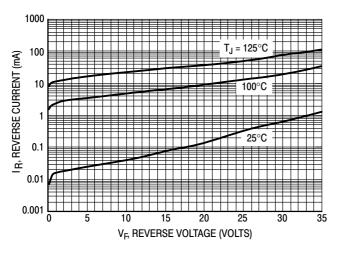
TYPICAL CHARACTERISTICS



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Figure 1. Maximum Forward Voltage

Figure 2. Typical Forward Voltage



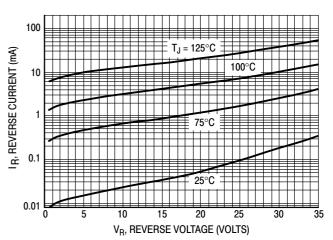


Figure 3. Maximum Reverse Current

Figure 4. Typical Reverse Current

TYPICAL CHARACTERISTICS

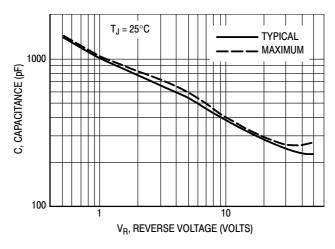


Figure 5. Maximum and Typical Capacitance

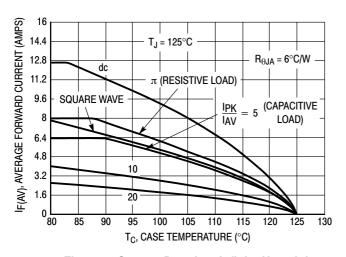
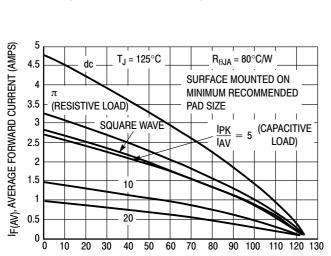


Figure 6. Current Derating, Infinite Heatsink



T_A, AMBIENT TEMPERATURE (°C)

Figure 8. Current Derating, Free Air

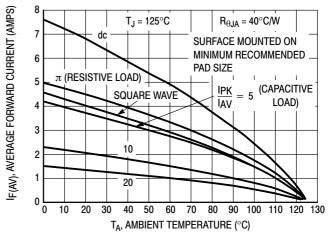


Figure 7. Current Derating

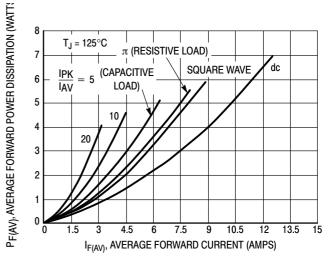
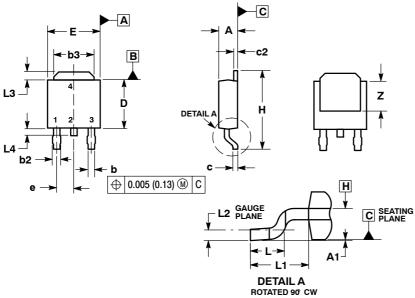


Figure 9. Forward Power Dissipation

PACKAGE DIMENSIONS

DPAK (SINGLE GAUGE)

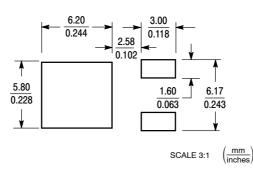
CASE 369C ISSUE D



- 1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994
- 2. CONTROLLING DIMENSION: INCHES.
 3. THERMAL PAD CONTOUR OPTIONAL WITHIN DI-
- MENSIONS 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

	INCHES		MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	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	
С	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	
е	0.090	0.090 BSC		2.29 BSC	
Н	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.

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Офис по работе с юридическими лицами:

105318, г. Москва, ул. Щербаковская д. 3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru moschip.ru_6 moschip.ru 4 moschip.ru 9