Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

ON Semiconductor
SBRD8320G

For any questions, you can email us directly:
sales@integrated-circuit.com

MBRD320G, SBRD8320G, MBRD330G, SBRD8330G, MBRD340G, SBRD8340G, MBRD350G, SBRD8350G, MBRD360G, SBRD8360G

MBRD320, MBRD340 and MBRD360 are Preferred Devices

SWITCHMODE Power Rectifiers

DPAK Surface Mount Package

These state−of−the−art devices are designed for use as output rectifiers, free wheeling, protection and steering diodes in switching power supplies, inverters and other inductive switching circuits.

Features

- Extremely Fast Switching
- Extremely Low Forward Drop
- Platinum Barrier with Avalanche Guardrings
- AEC−Q101 Qualified and PPAP Capable
- SBRD8 Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- All Packages are Pb−Free*

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
- ESD Ratings:
  - ♦ Machine Model = C
  - ♦ Human Body Model = 3B

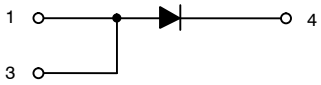
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

ON Semiconductor®

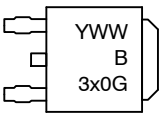
http://onsemi.com

SCHOTTKY BARRIER RECTIFIERS 3.0 AMPERES, 20 – 60 VOLTS

DPAK
CASE 369C



MARKING DIAGRAM



Y	= Year
WW	= Work Week
B3x0	= Device Code
x	= 2, 3, 4, 5, or 6
G	= Pb−Free Package

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

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

MBRD320G, SBRD8320G, MBRD330G, SBRD8330G, MBRD340G, SBRD8340G, MBRD350G, SBRD8350G, MBRD360G, SBRD8360G

MAXIMUM RATINGS

Rating	Symbol	MBRD/SBRD8					Unit
		320	330	340	350	360	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	30	40	50	60	V
Average Rectified Forward Current (T_C = +125°C, Rated V_R)	$I_{F(AV)}$	3					A
Peak Repetitive Forward Current, T_C = +125°C (Rated V_R, Square Wave, 20 kHz)	I_{FRM}	6					A
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	75					A
Peak Repetitive Reverse Surge Current (2 μs, 1 kHz)	I_{RRM}	1					A
Operating Junction Temperature Range (Note 1)	T_J	−65 to +175					°C
Storage Temperature Range	T_{stg}	−65 to +175					°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.

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
Maximum Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	6	°C/W
Maximum Thermal Resistance, Junction−to−Ambient (Note 2)	$R_{\theta JA}$	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 = 3 Amps, T_C = +25°C i_F = 3 Amps, T_C = +125°C i_F = 6 Amps, T_C = +25°C i_F = 6 Amps, T_C = +125°C	V_F	 0.6 0.45 0.7 0.625	V
Maximum Instantaneous Reverse Current (Note 3) (Rated dc Voltage, T_C = +25°C) (Rated dc Voltage, T_C = +125°C)	i_R	 0.2 20	mA

3. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

ORDERING INFORMATION

Device	Package	Shipping†
MBRD320G	DPAK (Pb−Free)	75 Units / Rail
SBRD8320G	DPAK (Pb−Free)	75 Units / Rail
MBRD320RLG	DPAK (Pb−Free)	1,800 Tape & Reel
MBRD320T4G	DPAK (Pb−Free)	2,500 Tape & Reel
SBRD8320T4G	DPAK (Pb−Free)	2,500 Tape & Reel
MBRD330G	DPAK (Pb−Free)	75 Units / Rail
SBRD8330G	DPAK (Pb−Free)	75 Units / Rail

ORDERING INFORMATION

Device	Package	Shipping†
MBRD330RLG	DPAK (Pb−Free)	1,800 Tape & Reel
MBRD330T4G	DPAK (Pb−Free)	2,500 Tape & Reel
SBRD8330T4G	DPAK (Pb−Free)	2,500 Tape & Reel
MBRD340G	DPAK (Pb−Free)	75 Units / Rail
SBRD8340G	DPAK (Pb−Free)	75 Units / Rail
MBRD340RLG	DPAK (Pb−Free)	1,800 Tape & Reel
MBRD340T4G	DPAK (Pb−Free)	2,500 Tape & Reel
SBRD8340T4G	DPAK (Pb−Free)	2,500 Tape & Reel
MBRD350G	DPAK (Pb−Free)	75 Units / Rail
SBRD8350G	DPAK (Pb−Free)	75 Units / Rail
MBRD350RLG	DPAK (Pb−Free)	1,800 Tape & Reel
SBRD8350RLG	DPAK (Pb−Free)	1,800 Tape & Reel
MBRD350T4G	DPAK (Pb−Free)	2,500 Tape & Reel
SBRD8350T4G	DPAK (Pb−Free)	2,500 Tape & Reel
MBRD360G	DPAK (Pb−Free)	75 Units / Rail
SBRD8360G	DPAK (Pb−Free)	75 Units / Rail
MBRD360RLG	DPAK (Pb−Free)	1,800 Tape & Reel
SBRD8360RLG	DPAK (Pb−Free)	1,800 Tape & Reel
MBRD360T4G	DPAK (Pb−Free)	2,500 Tape & Reel
SBRD8360T4G	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.

MBRD320G, SBRD8320G, MBRD330G, SBRD8330G, MBRD340G, SBRD8340G, MBRD350G, SBRD8350G, MBRD360G, SBRD8360G

TYPICAL CHARACTERISTICS

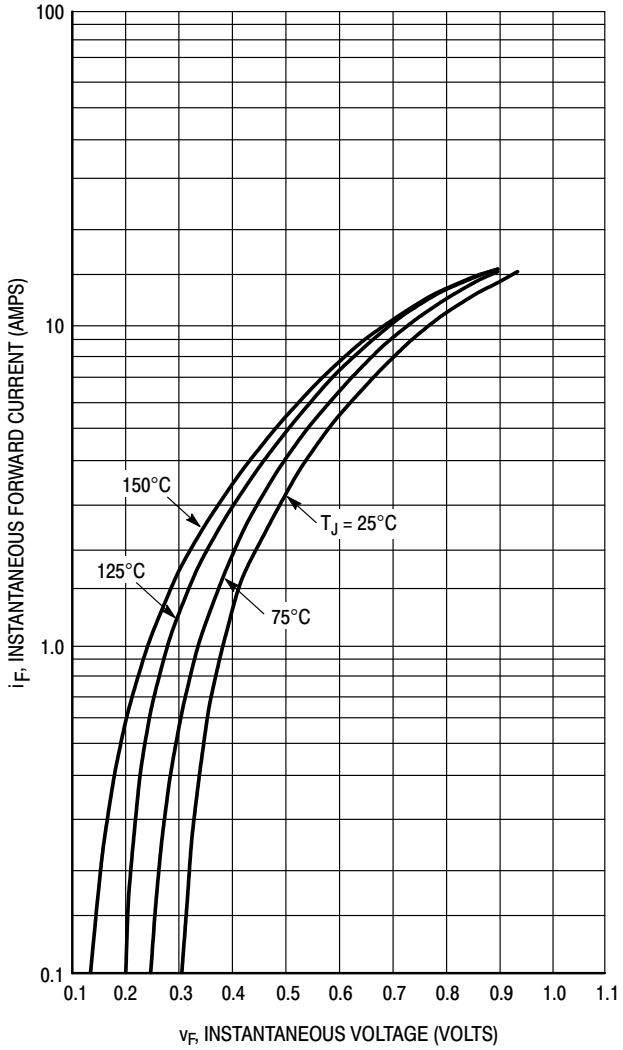
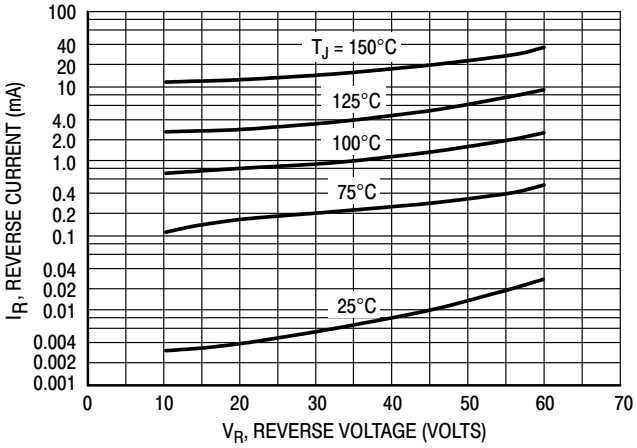


Figure 1. Typical Forward Voltage



*The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these curves if V_R is sufficient below rated V_R.

Figure 2. Typical Reverse Current

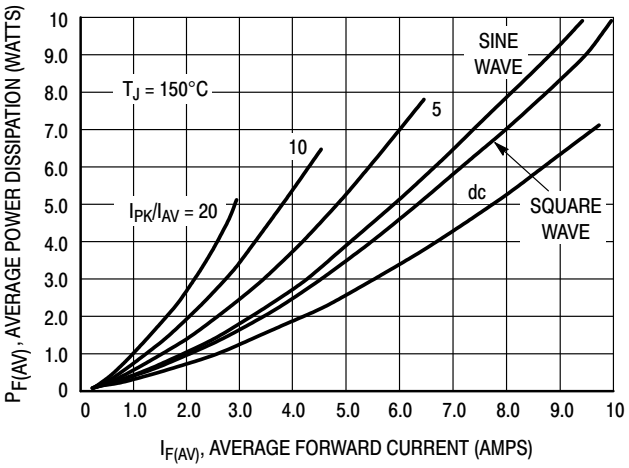


Figure 3. Average Power Dissipation

TYPICAL CHARACTERISTICS

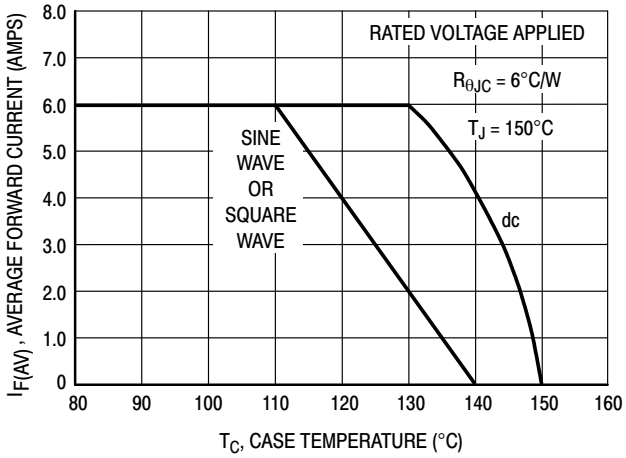


Figure 4. Current Derating, Case

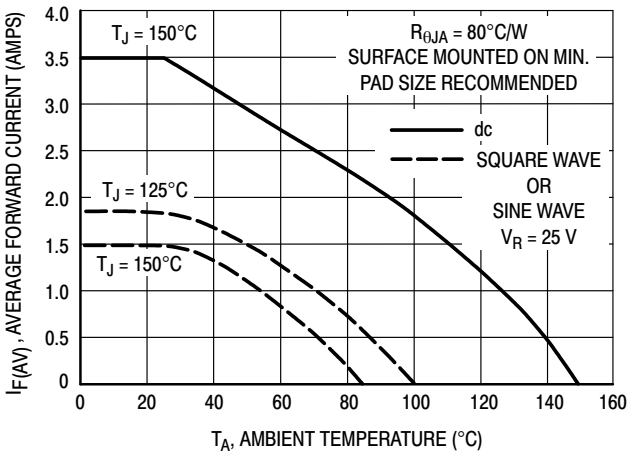


Figure 5. Current Derating, Ambient

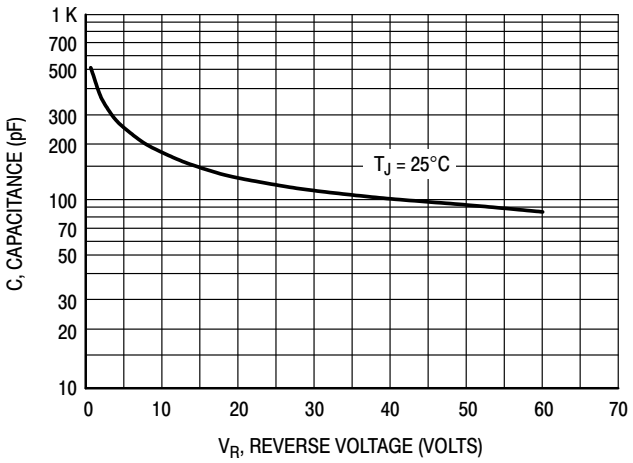
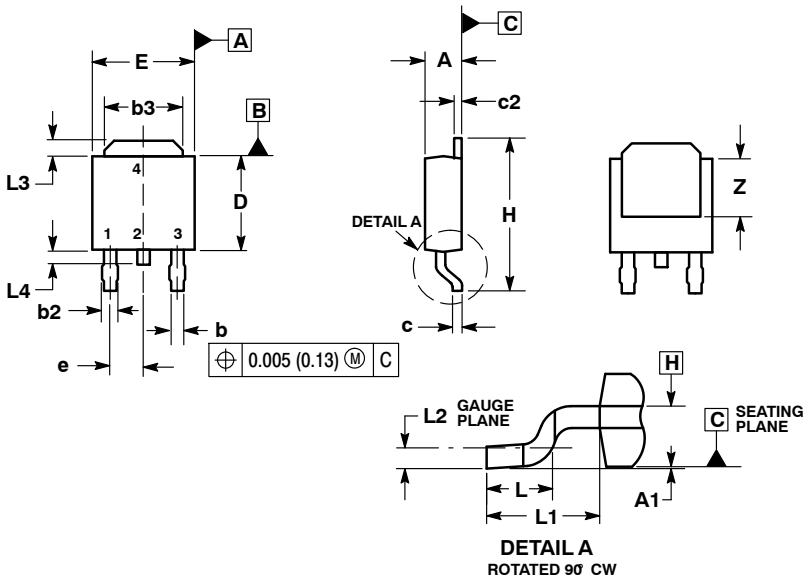


Figure 6. Typical Capacitance

MBRD320G, SBRD8320G, MBRD330G, SBRD8330G, MBRD340G, SBRD8340G, MBRD350G, SBRD8350G, MBRD360G, SBRD8360G

PACKAGE DIMENSIONS

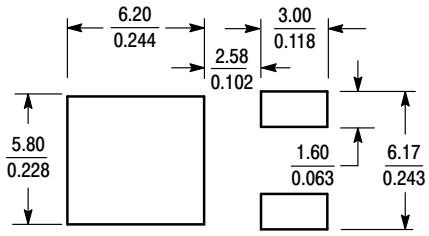
DPAK (SINGLE GAUGE)
CASE 369C−01
ISSUE D



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*



SCALE 3:1 (mm / inches)

*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
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
Fax: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
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