MBRD320, MBRD330, MBRD340, MBRD350, MBRD360

MBRD320, MBRD340 and MBRD360 are Preferred Devices

SWITCHMODE™ Power Rectifiers

DPAK Surface Mount Package

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

- Extremely Fast Switching
- Extremely Low Forward Drop
- Platinum Barrier with Avalanche Guardrings

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 reel, by adding a "T4'' suffix to the part number
- Marking: B320, B330, B340, B350, B360

MAXIMUM RATINGS

Please See the Table on the Following Page

ON Semiconductor™

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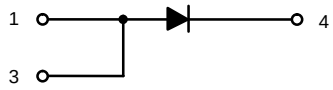
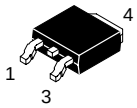
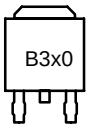
SCHOTTKY BARRIER RECTIFIERS 3.0 AMPERES 20 TO 60 VOLTS





DPAK
CASE 369A
PLASTIC

MARKING DIAGRAM



B3x0 = Device Code
x = 2, 3, 4, 5 or 6

ORDERING INFORMATION

Device	Package	Shipping
MBRD320	DPAK	75 Units/Rail
MBRD320RL	DPAK	1800/Tape & Reel
MBRD320T4	DPAK	2500/Tape & Reel
MBRD330	DPAK	75 Units/Rail
MBRD330RL	DPAK	1800/Tape & Reel
MBRD330T4	DPAK	2500/Tape & Reel
MBRD340	DPAK	75 Units/Rail
MBRD340RL	DPAK	1800/Tape & Reel
MBRD340T4	DPAK	2500/Tape & Reel
MBRD350	DPAK	75 Units/Rail
MBRD350RL	DPAK	1800/Tape & Reel
MBRD350T4	DPAK	2500/Tape & Reel
MBRD360	DPAK	75 Units/Rail
MBRD360RL	DPAK	1800/Tape & Reel
MBRD360T4	DPAK	2500/Tape & Reel

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

MAXIMUM RATINGS

Rating	Symbol	MBRD					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	Volts
Average Rectified Forward Current (T_C = +125°C, Rated V_R)	$I_{F(AV)}$	3					Amps
Peak Repetitive Forward Current, T_C = +125°C (Rated V_R, Square Wave, 20 kHz)	I_{FRM}	6					Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	75					Amps
Peak Repetitive Reverse Surge Current (2 μs, 1 kHz)	I_{RRM}	1					Amp
Operating Junction Temperature Range	T_J	–65 to +150					°C
Storage Temperature Range	T_{stg}	–65 to +175					°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000					V/μs

THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 2.) 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	Volts
Maximum Instantaneous Reverse Current (Note 2.) (Rated dc Voltage, T_C = +25°C) (Rated dc Voltage, T_C = +125°C)	i_R	 0.2 20	mA

1. Rating applies when surface mounted on the minimum pad size recommended.
2. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

TYPICAL CHARACTERISTICS

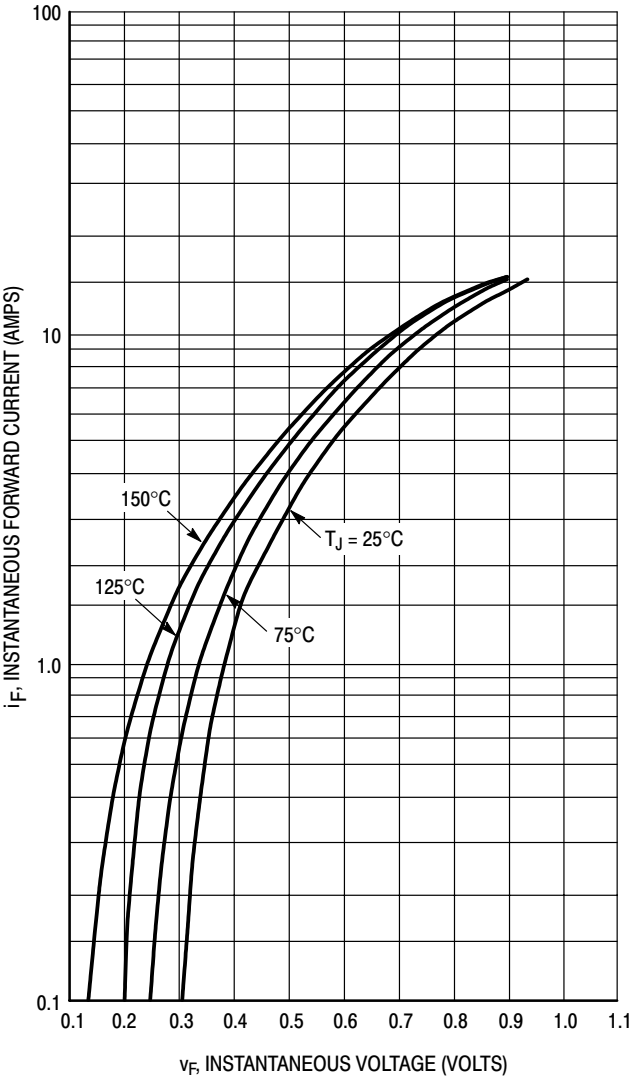
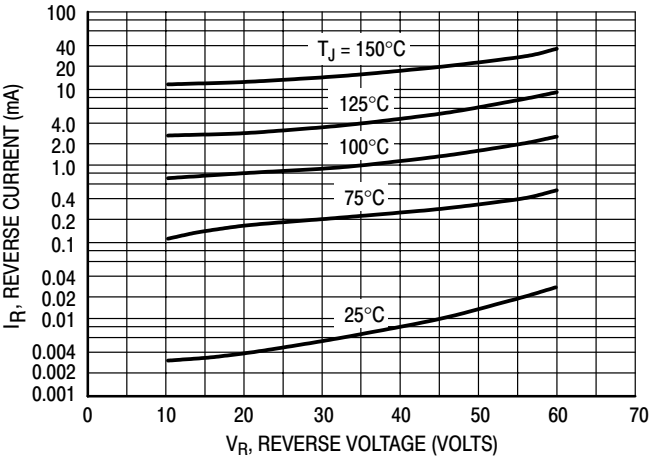


Figure 1. Typical Forward Voltage



*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

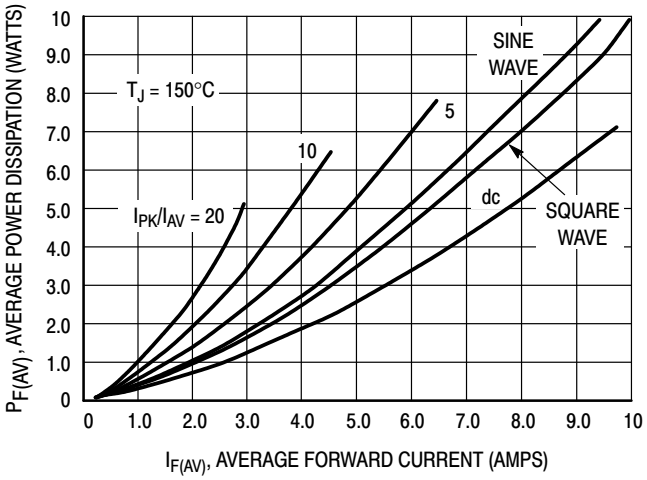


Figure 3. Average Power Dissipation

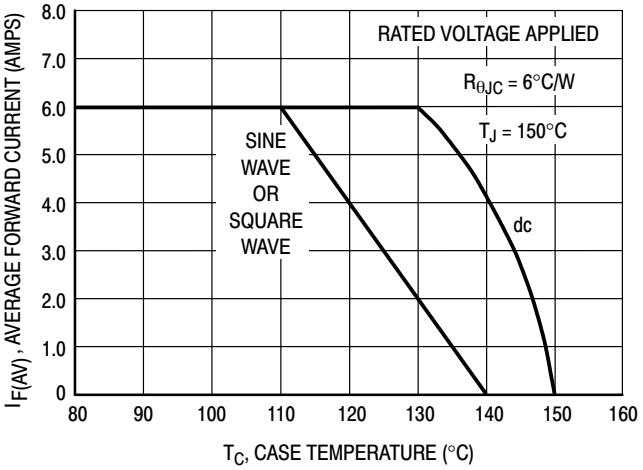


Figure 4. Current Derating, Case

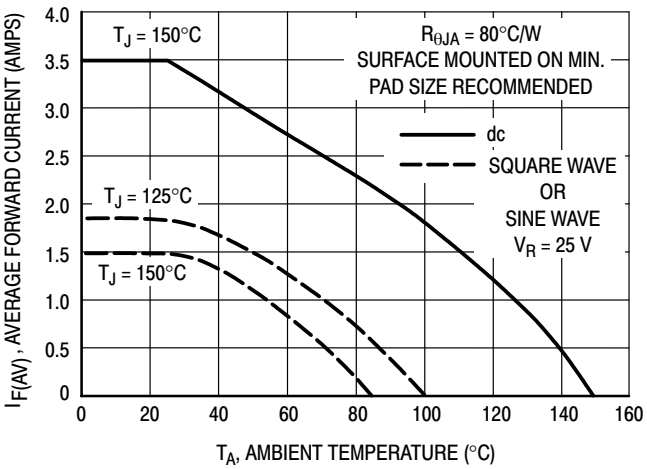


Figure 5. Current Derating, Ambient

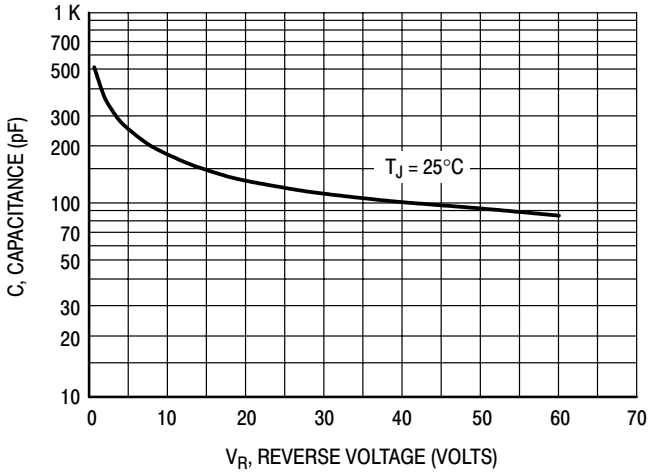
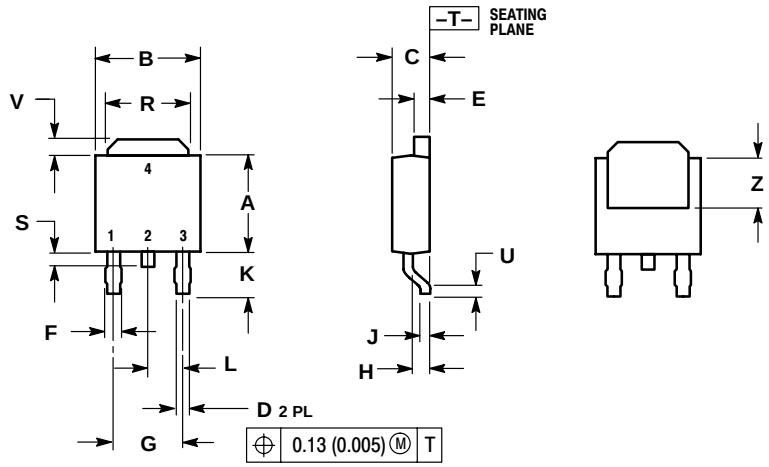


Figure 6. Typical Capacitance

PACKAGE DIMENSIONS

DPAK
PLASTIC
CASE 369A–13
ISSUE AA



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	---

Notes

Notes

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Literature Distribution Center for ON Semiconductor
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Toll Free from Hong Kong & Singapore:
001–800–4422–3781
Email: ONlit–asia@hibbertco.com

JAPAN: ON Semiconductor, Japan Customer Focus Center
4–32–1 Nishi–Gotanda, Shinagawa–ku, Tokyo, Japan 141–0031
Phone: 81–3–5740–2700
Email: r14525@onsemi.com

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