

# MBR8H100MFS, NRVB8H100MFS

## Switch Mode Power Rectifiers

### Features

- Low Power Loss / High Efficiency
- New Package Provides Capability of Inspection and Probe After Board Mounting
- Guardring for Stress Protection
- Low Forward Voltage Drop
- 175°C Operating Junction Temperature
- WF Suffix for Products with Wettable Flanks
- NRVB Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These are Pb-Free Devices

### Mechanical Characteristics:

- Case: Epoxy, Molded
- Epoxy Meets Flammability Rating UL 94-0 @ 0.125 in.
- Lead Finish: 100% Matte Sn (Tin)
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Device Meets MSL 1 Requirements

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	100	V
Average Rectified Forward Current (Rated $V_R$ , $T_C = 165^\circ\text{C}$ )	$I_{F(AV)}$	8.0	A
Peak Repetitive Forward Current, (Rated $V_R$ , Square Wave, 20 kHz, $T_C = 162^\circ\text{C}$ )	$I_{FRM}$	16	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	75	A
Storage Temperature Range	$T_{stg}$	-65 to +175	°C
Operating Junction Temperature	$T_J$	-55 to +175	°C
Unclamped Inductive Switching Energy (10 mH Inductor, Non-repetitive)	$E_{AS}$	75	mJ
ESD Rating (Human Body Model)		3B	
ESD Rating (Machine Model)		M4	

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

NOTE: The heat generated must be less than the thermal conductivity from Junction-to-Ambient:  $dPD/dT_J < 1/RJA$

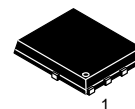


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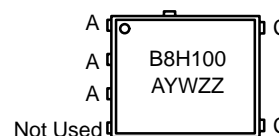
## SCHOTTKY BARRIER RECTIFIERS 8 AMPERES 100 VOLTS

1,2,3 5,6



SO-8 FLAT LEAD  
CASE 488AA  
STYLE 2

### MARKING DIAGRAM



B8H100 = Specific Device Code  
A = Assembly Location  
Y = Year  
W = Work Week  
ZZ = Lot Traceability

### ORDERING INFORMATION

Device	Package	Shipping†
MBR8H100MFST1G	SO-8 FL (Pb-Free)	1500 / Tape & Reel
MBR8H100MFST3G	SO-8 FL (Pb-Free)	5000 / Tape & Reel
NRVB8H100MFST1G	SO-8 FL (Pb-Free)	1500 / Tape & Reel
NRVB8H100MFST3G	SO-8 FL (Pb-Free)	5000 / Tape & Reel
NRVB8H100MFSWFT1G	SO-8 FL (Pb-Free)	1500 / Tape & Reel
NRVB8H100MFSWFT3G	SO-8 FL (Pb-Free)	5000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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## THERMAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance, Junction-to-Case, Steady State (Assumes 600 mm <sup>2</sup> 1 oz. copper bond pad, on a FR4 board)	$R_{\theta JC}$	-	2.2	°C/W

## ELECTRICAL CHARACTERISTICS

Instantaneous Forward Voltage (Note 1) ( $i_F = 8$ Amps, $T_J = 125^\circ\text{C}$ ) ( $i_F = 8$ Amps, $T_J = 25^\circ\text{C}$ )	$V_F$	0.68 0.81	0.76 0.90	V
Instantaneous Reverse Current (Note 1) (Rated dc Voltage, $T_J = 125^\circ\text{C}$ ) (Rated dc Voltage, $T_J = 25^\circ\text{C}$ )	$i_R$	180 0.06	300 2	$\mu\text{A}$

1. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

## TYPICAL CHARACTERISTICS

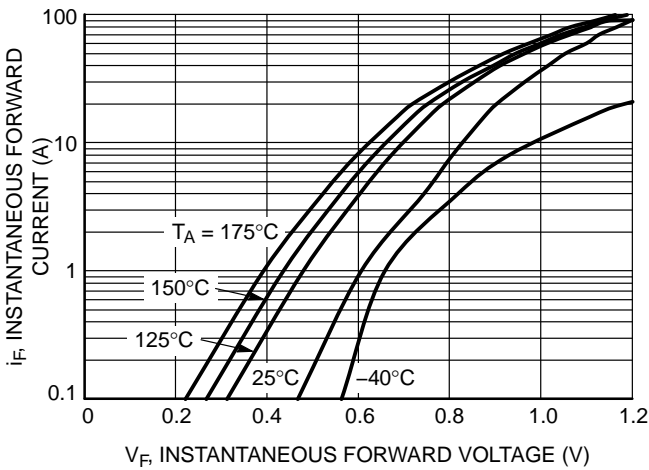


Figure 1. Typical Instantaneous Forward Characteristics

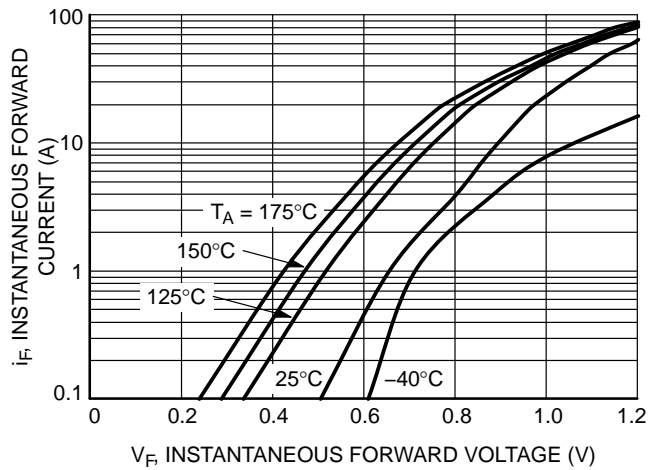


Figure 2. Maximum Instantaneous Forward Characteristics

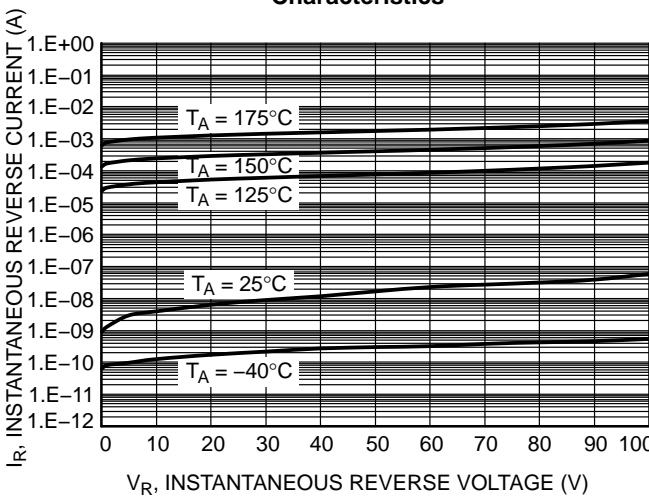


Figure 3. Typical Reverse Characteristics

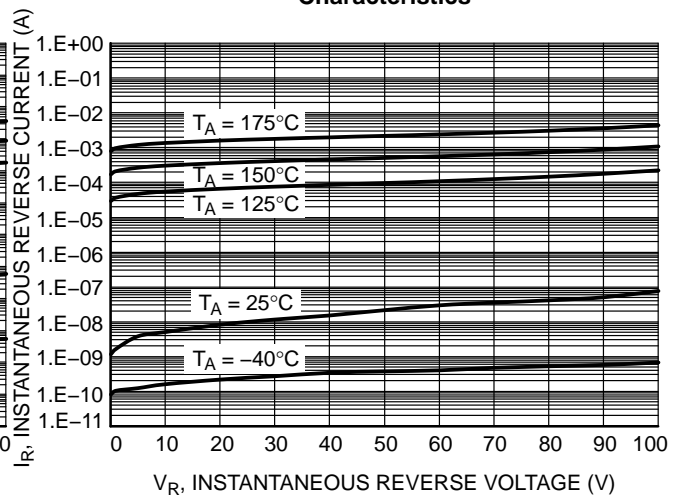


Figure 4. Maximum Reverse Characteristics

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## TYPICAL CHARACTERISTICS

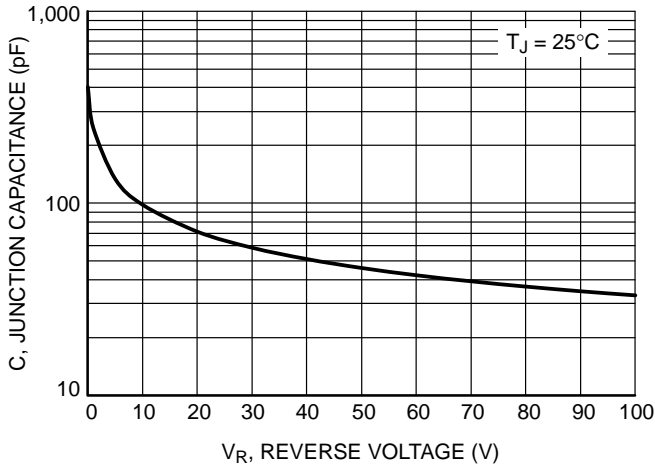


Figure 5. Typical Junction Capacitance

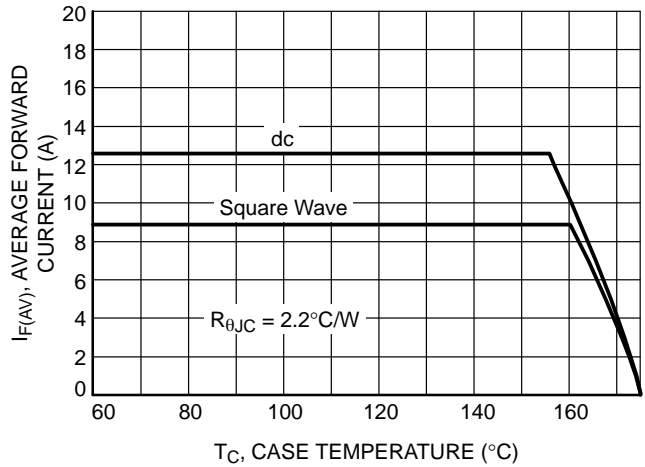


Figure 6. Current Derating

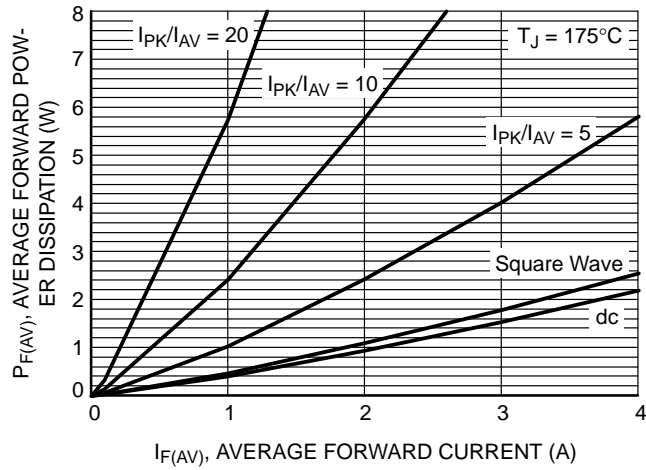


Figure 7. Forward Power Dissipation

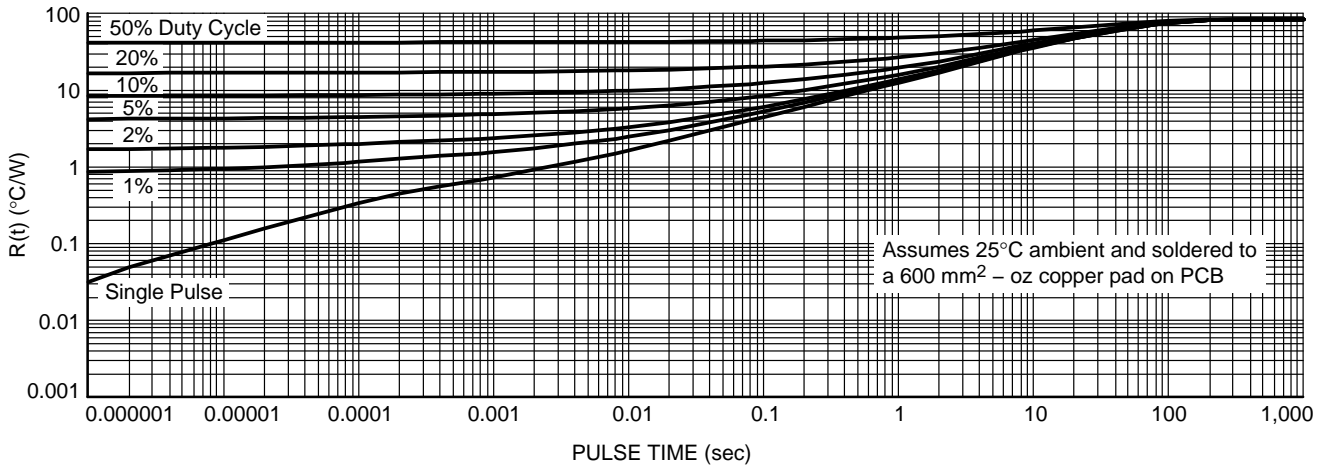
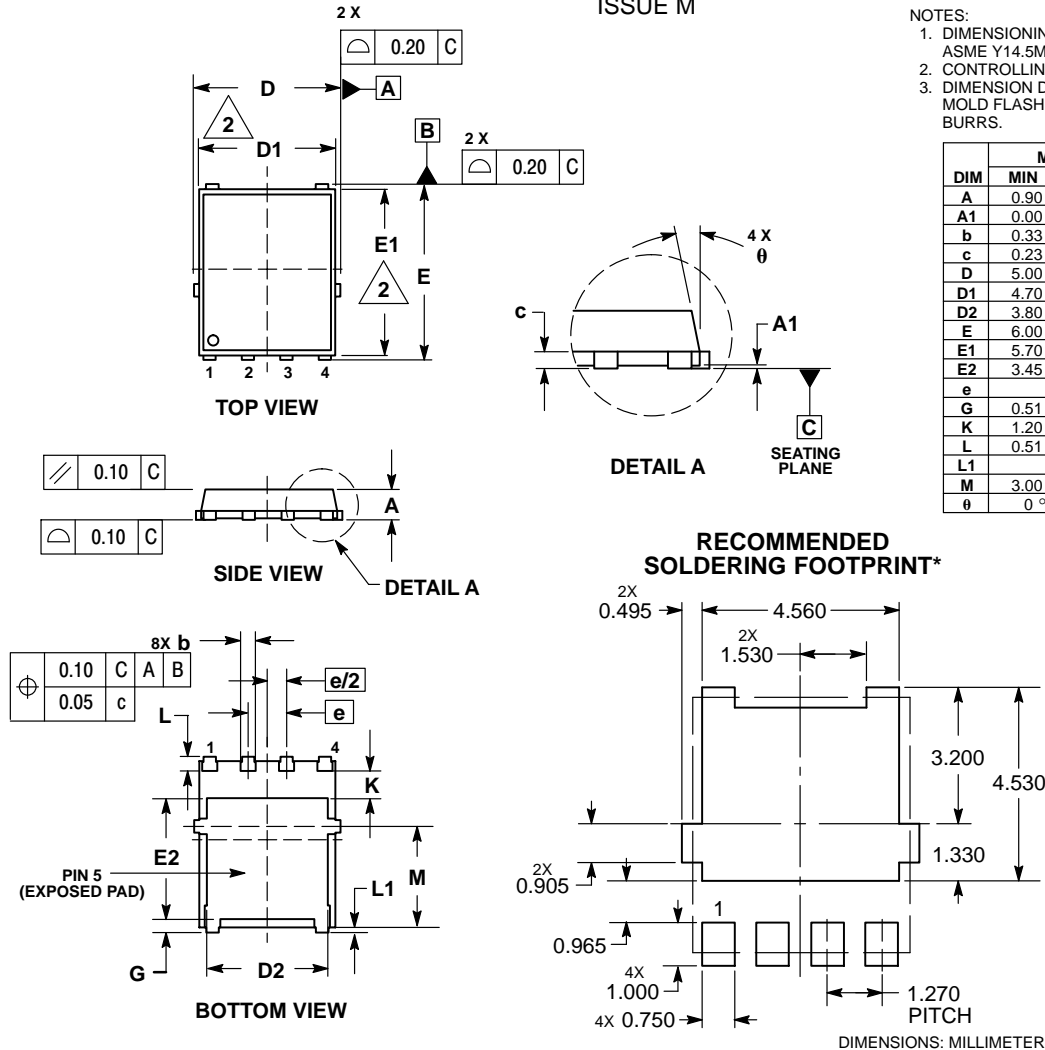


Figure 8. Thermal Response

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## PACKAGE DIMENSIONS

DFN6 5x6, 1.27P  
(SO8 FL)  
CASE 488AA  
ISSUE M



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
  2. CONTROLLING DIMENSION: MILLIMETER.
  3. DIMENSION D1 AND E1 DO NOT INCLUDE MOLD FLASH PROTRUSIONS OR GATE BURRS.

DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.90	1.00	1.10
A1	0.00	---	0.05
b	0.33	0.41	0.51
c	0.23	0.28	0.33
D	5.00	5.15	5.30
D1	4.70	4.90	5.10
D2	3.80	4.00	4.20
E	6.00	6.15	6.30
E1	5.70	5.90	6.10
E2	3.45	3.65	3.85
e	1.27 BSC		
G	0.51	0.575	0.71
K	1.20	1.35	1.50
L	0.51	0.575	0.71
L1	0.125 REF		
M	3.00	3.40	3.80
θ	0°	---	12°

- STYLE 2:
1. ANODE
  2. ANODE
  3. ANODE
  4. NO CONNECT
  5. CATHODE

\*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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