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°C)	$I_{F(AV)}$	8.0	A
Peak Repetitive Forward Current, (Rated V_R, Square Wave, 20 kHz, T_C = 162°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/dTJ < 1/RJA

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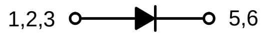
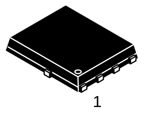
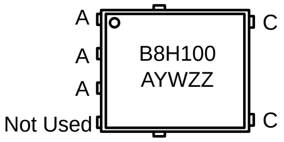
SCHOTTKY BARRIER RECTIFIERS
8 AMPERES
100 VOLTS





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.

August, 2015 − Rev. 2

THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Instantaneous Forward Voltage (Note 1) (i_F = 8 Amps, T_J = 125°C) (i_F = 8 Amps, T_J = 25°C)	v_F	 0.68 0.81	 0.76 0.90	V
Instantaneous Reverse Current (Note 1) (Rated dc Voltage, T_J = 125°C) (Rated dc Voltage, T_J = 25°C)	i_R	 180 0.06	 300 2	μA

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

TYPICAL CHARACTERISTICS

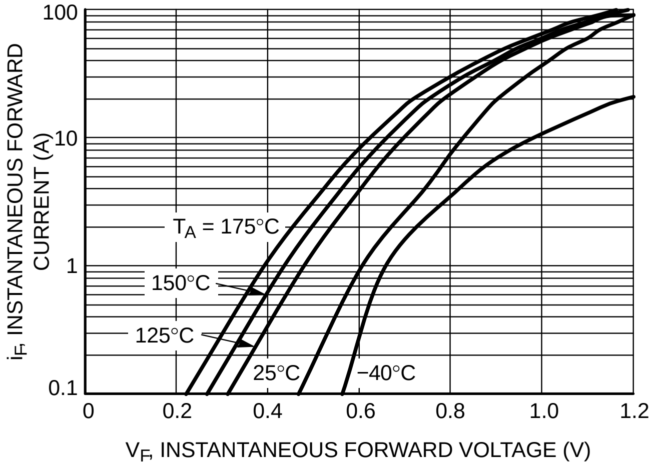


Figure 1. Typical Instantaneous Forward Characteristics

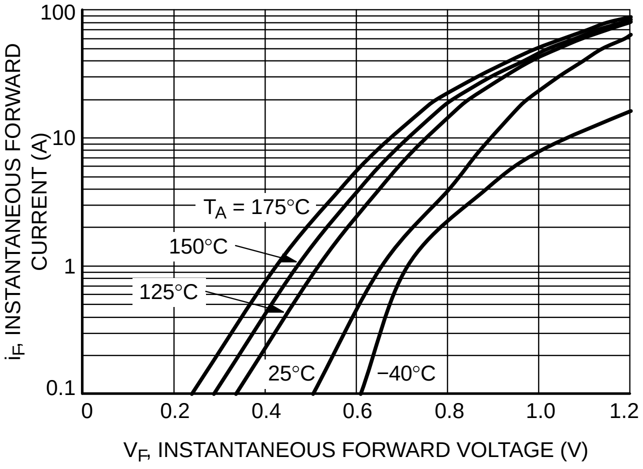


Figure 2. Maximum Instantaneous Forward Characteristics

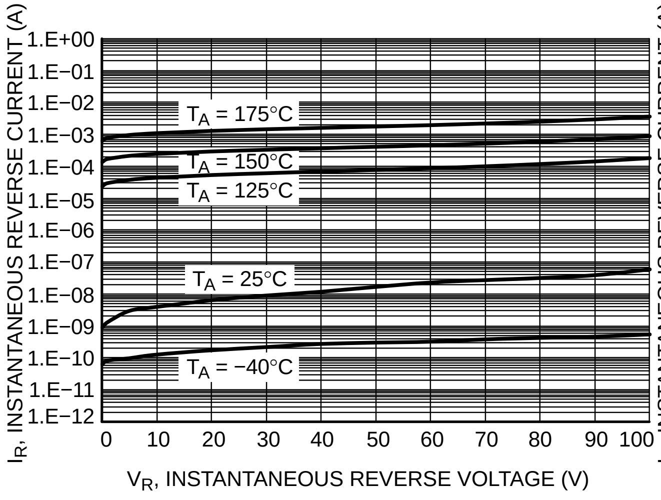


Figure 3. Typical Reverse Characteristics

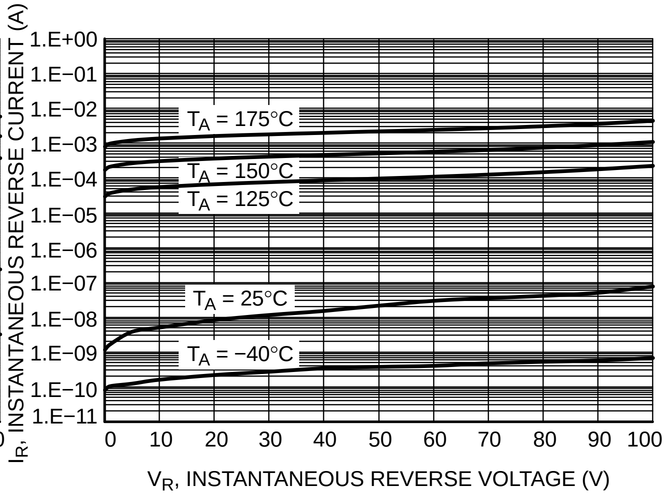


Figure 4. Maximum Reverse Characteristics

TYPICAL CHARACTERISTICS

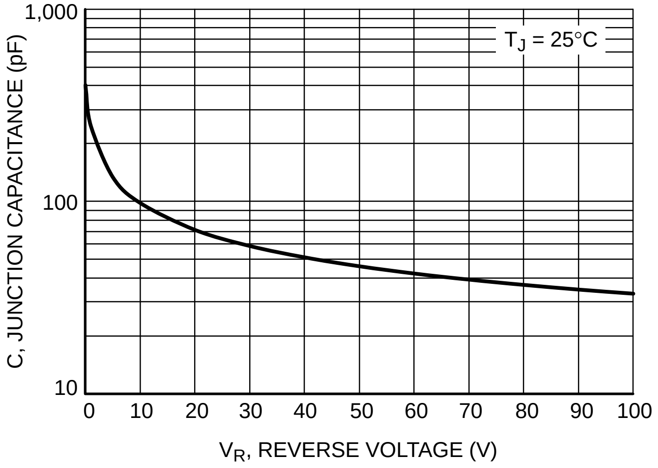


Figure 5. Typical Junction Capacitance

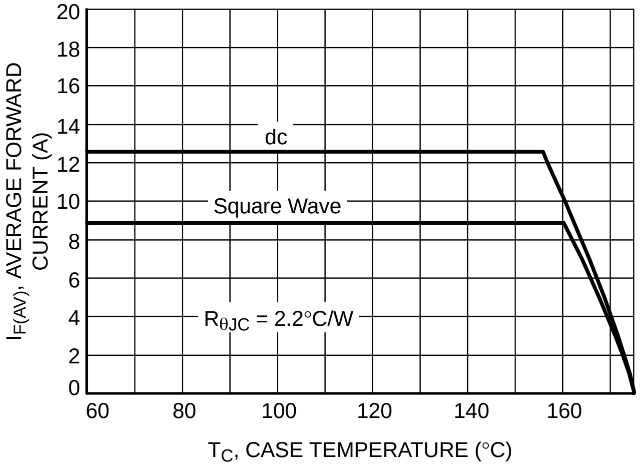


Figure 6. Current Derating

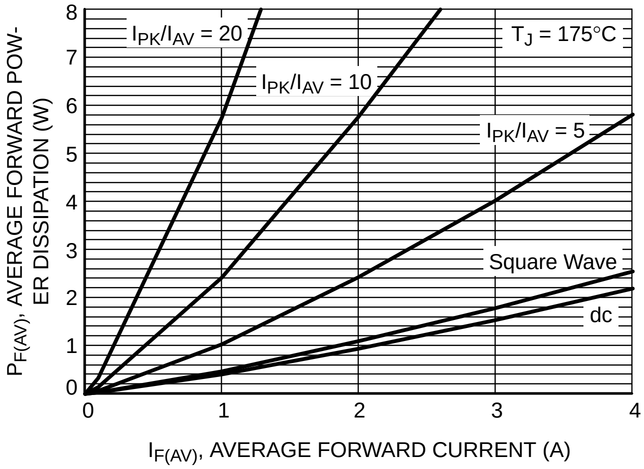


Figure 7. Forward Power Dissipation

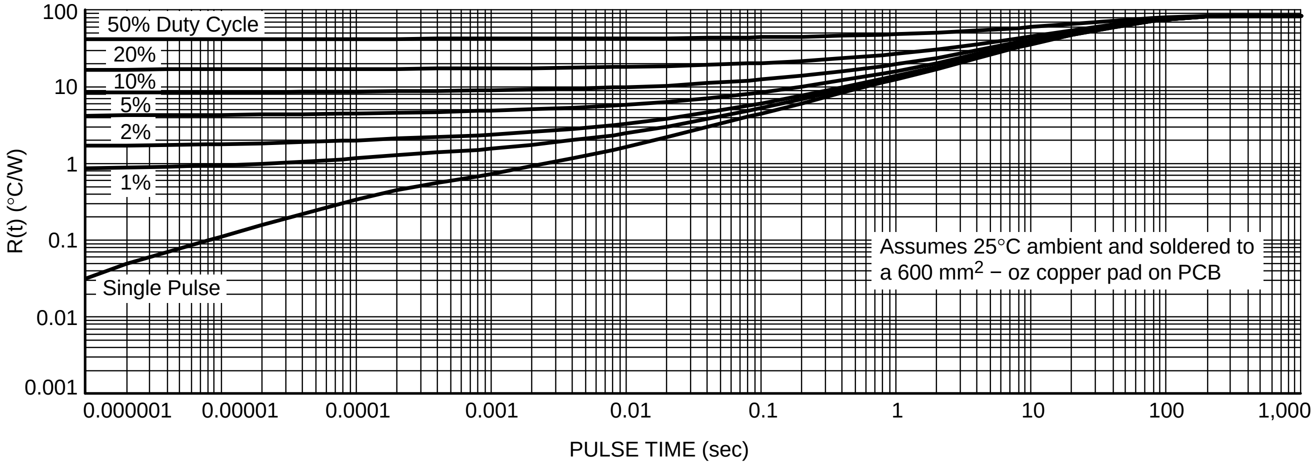
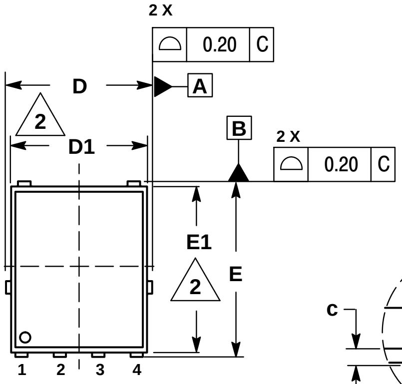


Figure 8. Thermal Response

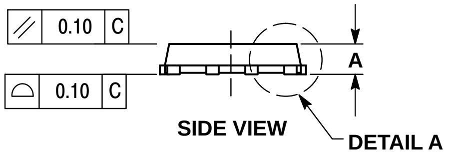
PACKAGE DIMENSIONS

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

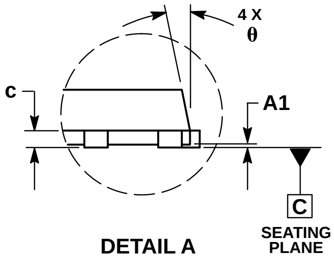
NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION D1 AND E1 DO NOT INCLUDE MOLD FLASH PROTRUSIONS OR GATE BURRS.



TOP VIEW



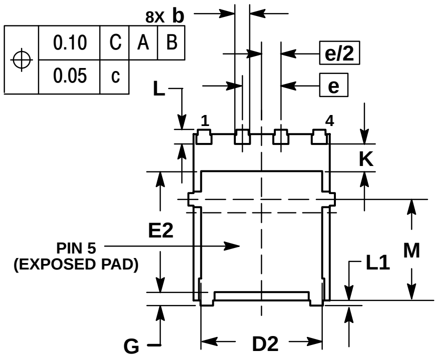
SIDE VIEW



DETAIL A

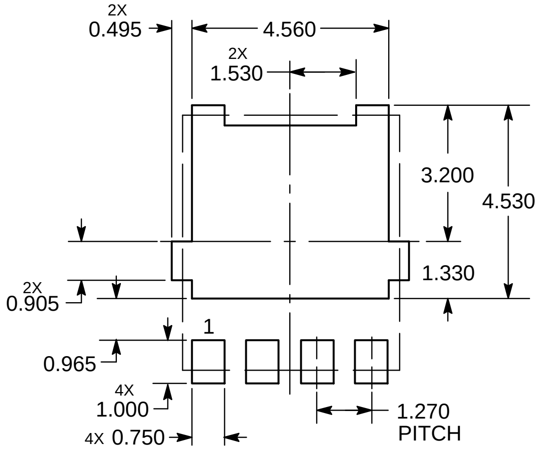
DIM	MILLIMETERS MIN	NOM	MAX
A	0.90	1.00	1.10
A1	0.00	−−−	0.05
b	0.33	0.41	0.51
c	0.23	0.28	0.33
D	5.00	5.15	5.30
D1	4.70	4.90	5.10
D2	3.80	4.00	4.20
E	6.00	6.15	6.30
E1	5.70	5.90	6.10
E2	3.45	3.65	3.85
e	1.27 BSC		
G	0.51	0.575	0.71
K	1.20	1.35	1.50
L	0.51	0.575	0.71
L1	0.125 REF		
M	3.00	3.40	3.80
θ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

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



BOTTOM VIEW

RECOMMENDED SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

*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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