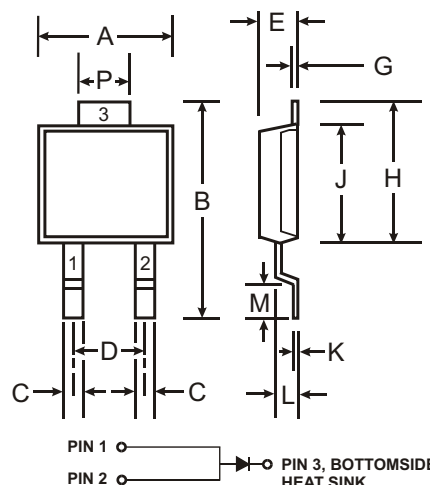


**UNDER DEVELOPMENT**
**Features**

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Reverse Breakdown Voltage
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- Plastic Material: UL Flammability Classification Rating 94V-0

**Mechanical Data**

- Case: POWERMITE®3, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Moisture sensitivity: Level 1 per J-STD-020A
- Polarity: See Diagram
- Marking: See Sheet 3
- Weight: 0.072 grams (approx.)



Note: Pins 1 & 2 must be electrically connected at the printed circuit board.

POWERMITE®3		
Dim	Min	Max
A	4.03	4.09
B	6.40	6.61
C	.889 NOM	
D	1.83 NOM	
E	1.10	1.14
G	.178 NOM	
H	5.01	5.17
J	4.37	4.43
K	.178 NOM	
L	.71	.77
M	.36	.46
P	1.73	1.83
All Dimensions in mm		

**Maximum Ratings** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

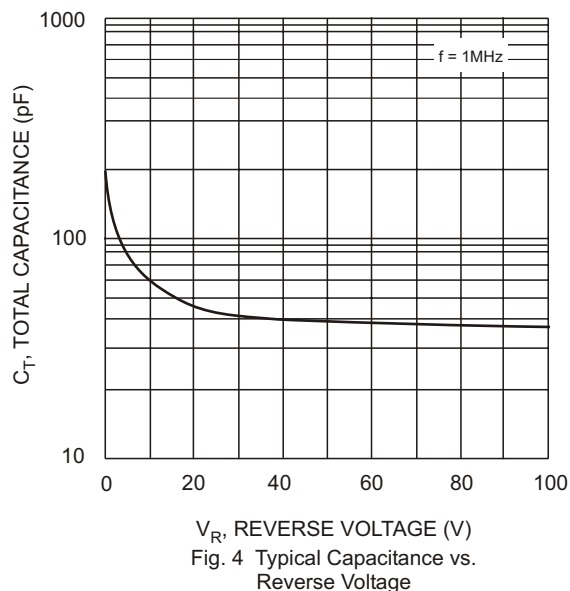
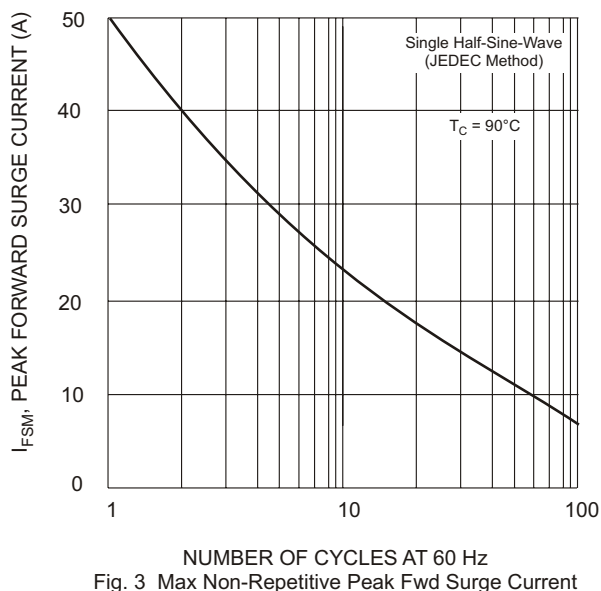
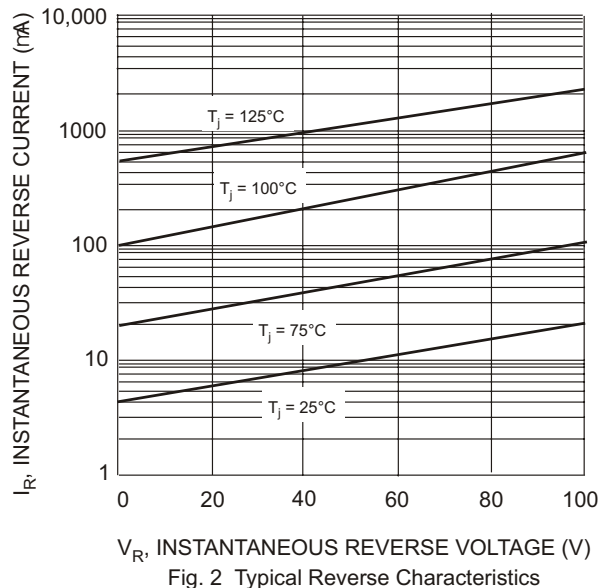
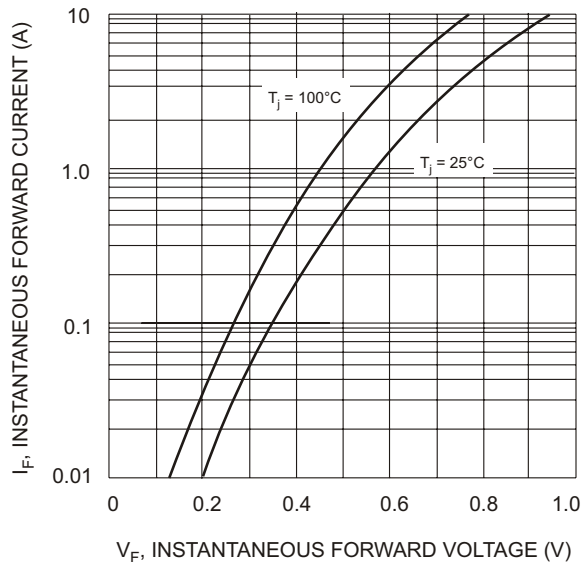
Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	V
Average Rectified Output Current (See also Figure 5)	$I_O$	3	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method) @ $T_C = 90^\circ\text{C}$	$I_{FSM}$	50	A
Typical Thermal Resistance Junction to Soldering Point	$R_{\theta JS}$	3.5	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	1.6	$^\circ\text{C/W}$
Operating Temperature Range	$T_J$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

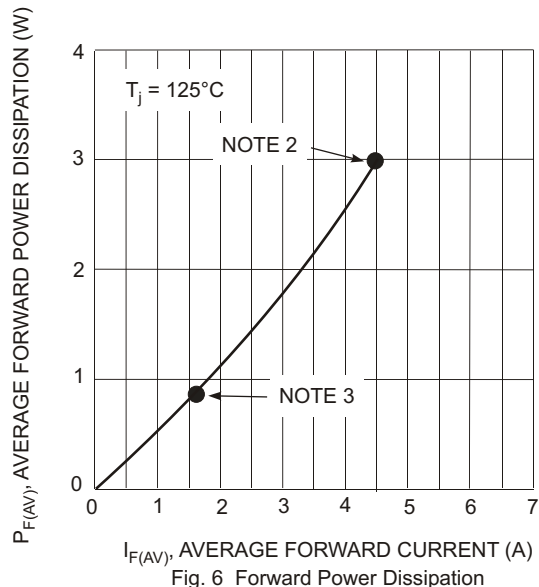
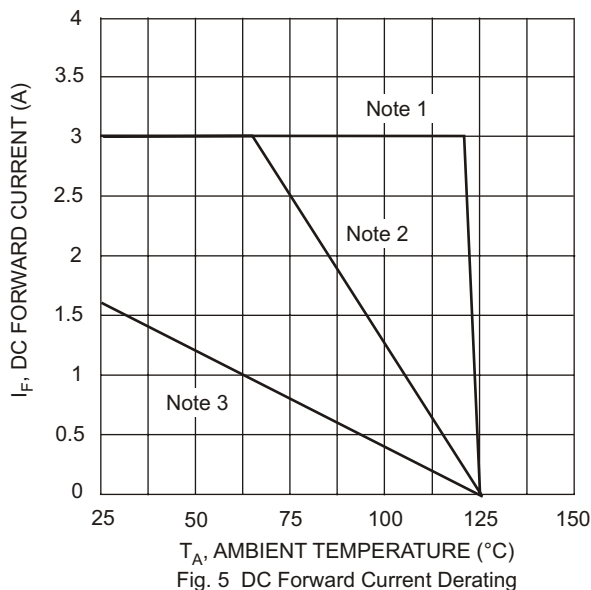
**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	100	—	—	V	$I_R = 0.2\text{mA}$
Forward Voltage (Note 1)	$V_F$	—	0.72 0.60 0.79 0.68	0.76 — — —	V	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$ $I_F = 3\text{A}, T_J = 100^\circ\text{C}$ $I_F = 6\text{A}, T_J = 25^\circ\text{C}$ $I_F = 6\text{A}, T_J = 100^\circ\text{C}$
Reverse Current (Note 1)	$I_R$	—	2 0.5	100 20	$\mu\text{A}$ mA	$T_J = 25^\circ\text{C}, V_R = 100\text{V}$ $T_J = 100^\circ\text{C}, V_R = 100\text{V}$
Total Capacitance	$C_T$	—	85	—	pF	$f = 1.0\text{MHz}, V_R = 4.0\text{V DC}$

Notes: 1. Short duration test pulse used to minimize self-heating effect.



UNDER DEVELOPMENT

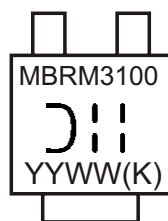


## Ordering Information (Note 4)

Device	Packaging	Shipping
MBRM3100-13	POWERMITE®3	5000/Tape & Reel

- Notes:
1.  $T_A = T_{\text{SOLDERING POINT}}$ ,  $R_{\theta JS} = 3.5^\circ\text{C/W}$ ,  $R_{\theta SA} = 0^\circ\text{C/W}$ .
  2. Device mounted on GETEK substrate, 2"x2", 2 oz. copper, double-sided, cathode pad dimensions 0.75" x 1.0", anode pad dimensions 0.25" x 1.0".  $R_{\theta JA}$  in range of 25-45°C/W.
  3. Device mounted on FR-4 substrate, 2"x2", 2 oz. copper, single-sided, pad layout as per Diodes Inc. suggested pad layout document AP02001 which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.  $R_{\theta JA}$  in range of 105-130°C/W.
  4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



MBRM3100 = Product type marking code  
 D||| = Manufacturers' code marking  
 YYWW = Date code marking  
 YY = Last digit of year ex: 02 for 2002  
 WW = Week code 01 to 52  
 (K) = Factory Designator

UNDER DEVELOPMENT

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