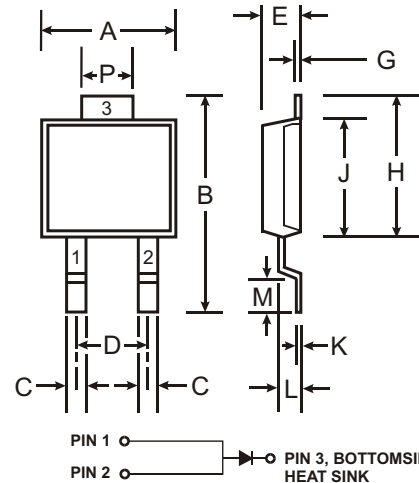


**3A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER
 POWERMITE 3**
Features

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
Lead Free Finish, RoHS Compliant Version (Note 2)

Mechanical Data

Case: POWERMITE 3
 Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
 Moisture Sensitivity: Level 1 per J-STD-020C
 Terminals: Solderable per MIL-STD-202, Method 208
 Lead Free Plating (Matte Tin Finish). **(e3)**
 Polarity: See Diagram
 Marking: See Page 3
 Ordering Information: See Page 3
 Weight: 0.072 grams (approximate)



POWERMITE 3		
Dim	Min	Max
A	4.03	4.09
B	6.40	6.61
C	.864	.914
D	1.83 NOM	
E	1.10	1.14
G	.173	.203
H	5.01	5.17
J	4.37	4.43
K	.173	.203
L	.71	.77
M	.36	.46
P	1.73	1.83
All Dimensions in mm		

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

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

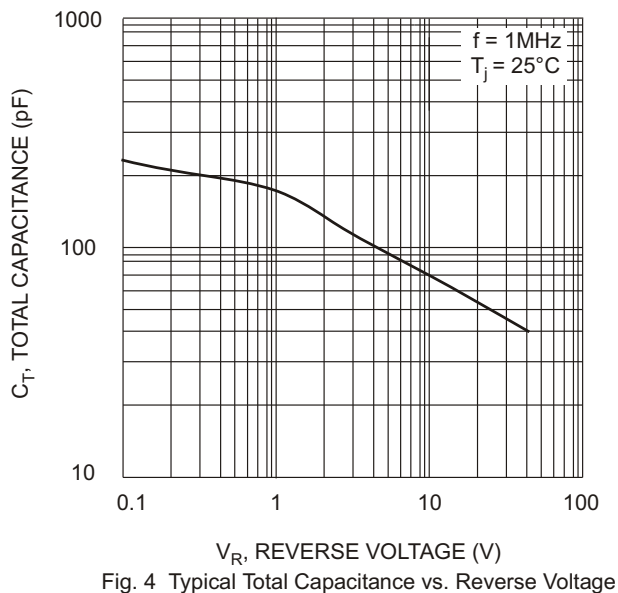
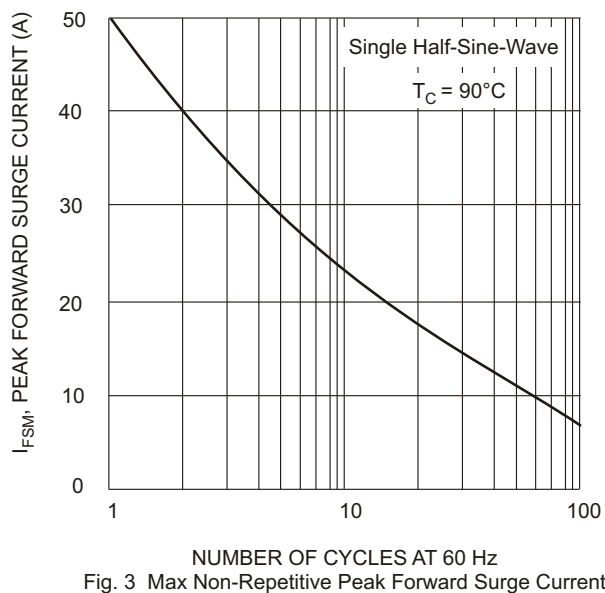
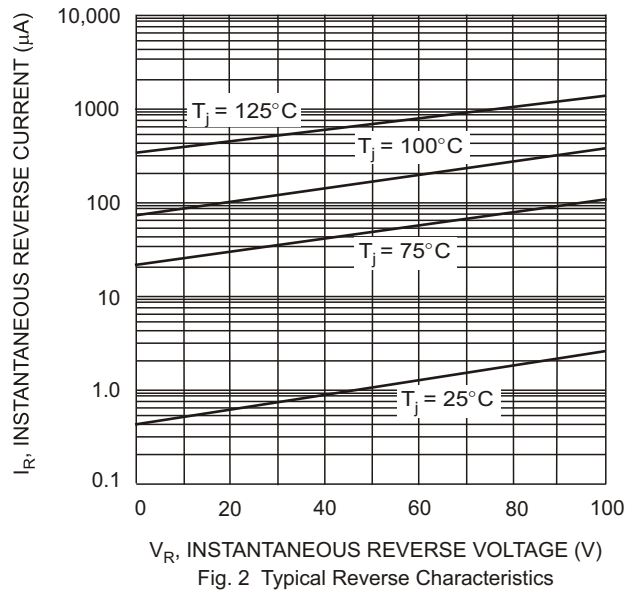
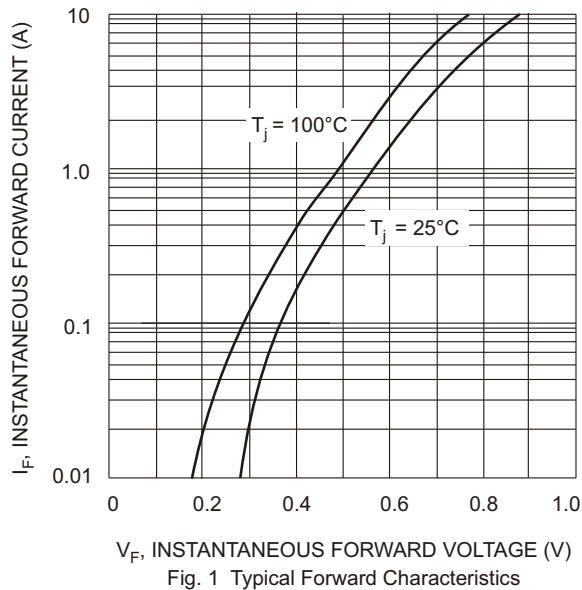
Single phase, half wave, 60Hz, resistive or inductive load.
 For capacitive load, derate current by 20%.

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 (Also see Figure 5)	I_O	3	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load @ $T_C = 90^\circ\text{C}$	I_{FSM}	50	A
Typical Thermal Resistance Junction to Soldering Point	R_{JS}	3.5	C/W
Typical Thermal Resistance Junction to Case	R_{JC}	1.6	C/W
Operating Temperature Range	T_J	-55 to +125	C
Storage Temperature Range	T_{STG}	-55 to +150	°C

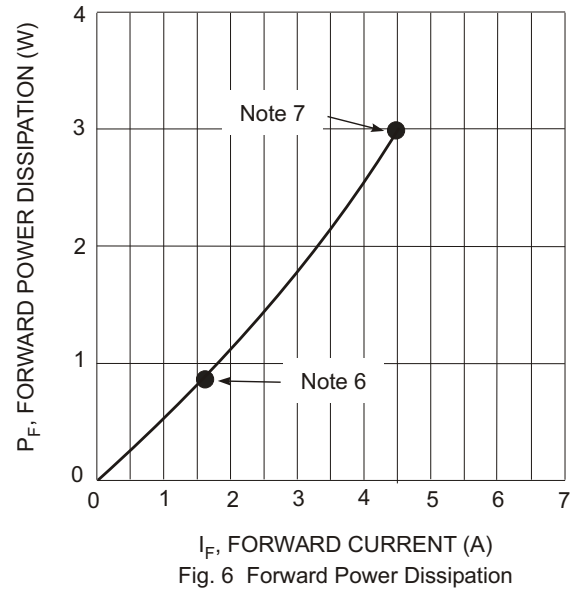
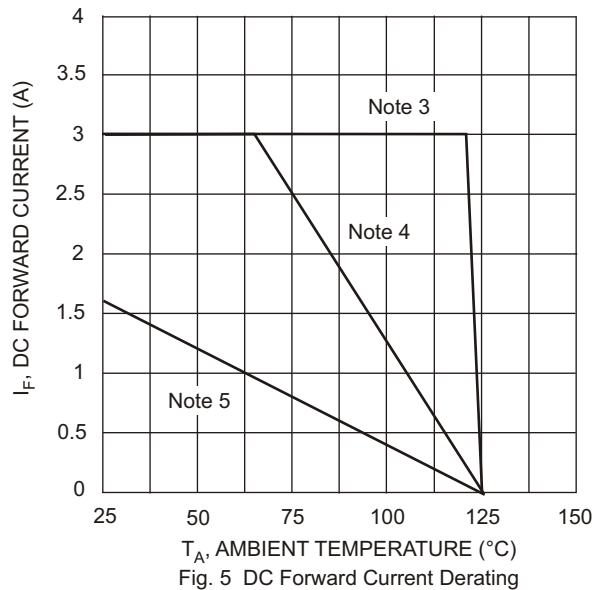
Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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	V_F		0.72 0.60 0.80 0.69	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		3 0.35	100 20	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		100		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.
 2. RoHS revision 13.2.2003. High Temperature Solder Exemption Applied see EU Directive Annex Note 7.



**NOT RECOMMENDED FOR NEW DESIGNS
USE PDS3100**

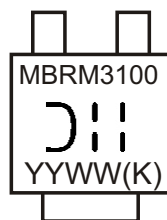


Ordering Information (Note 8)

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

- Notes:
- $T_A = T_{\text{SOLDERING POINT}}$, $R_{\text{JS}} = 3.5 \text{ C/W}$, $R_{\text{SA}} = 0 \text{ C/W}$.
 - 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_{JA} in range of 30-35°C/W.
 - 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_{JA} in range of 115-125°C/W.
 - Maximum power dissipation when the device is mounted in accordance to the conditions described in Note 4.
 - Maximum power dissipation when the device is mounted in accordance to the conditions described in Note 3.
 - For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



MBRM3100 = Product type marking code
 ⤴⤵ = 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

**NOT RECOMMENDED FOR NEW DESIGNS
USE PDS3100**

POWERMITE is a registered trademark of Microsemi Corporation.

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