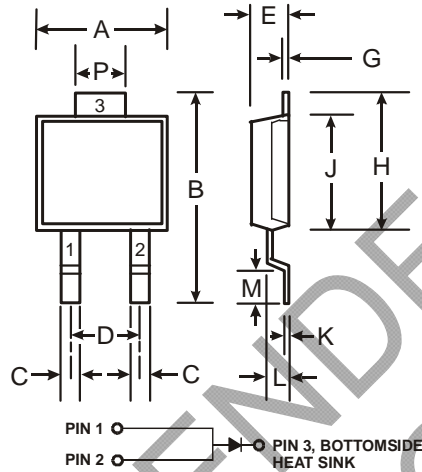


## Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Low Reverse Current
- 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-020
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish). **(e3)**
- Polarity: See Diagram
- Marking Information: 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	.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		

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

## Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

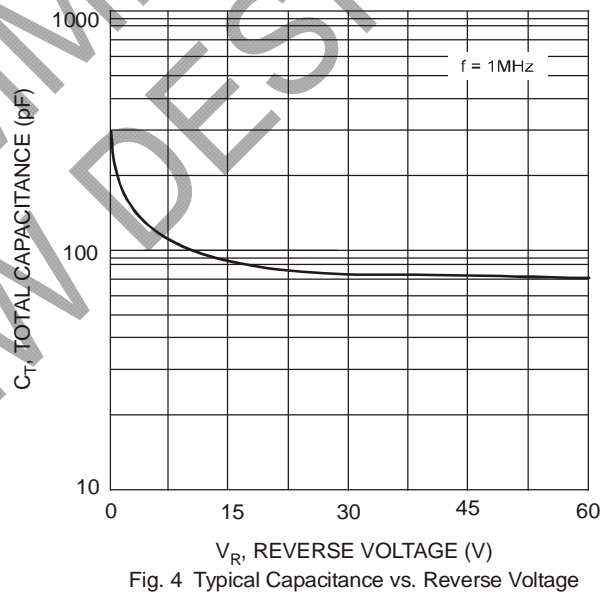
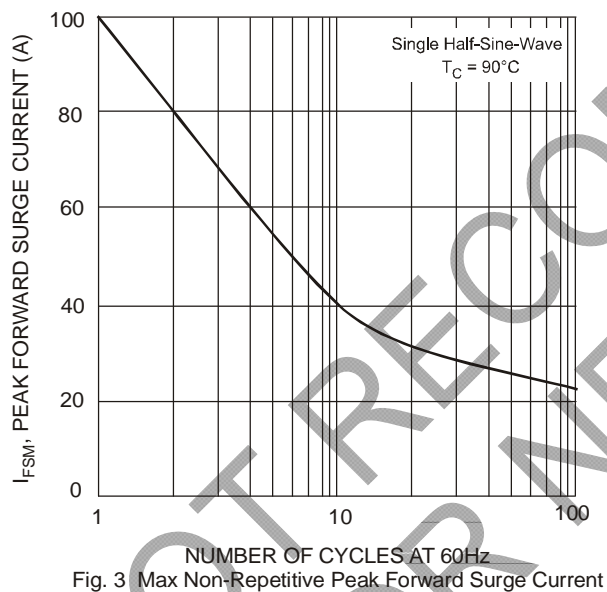
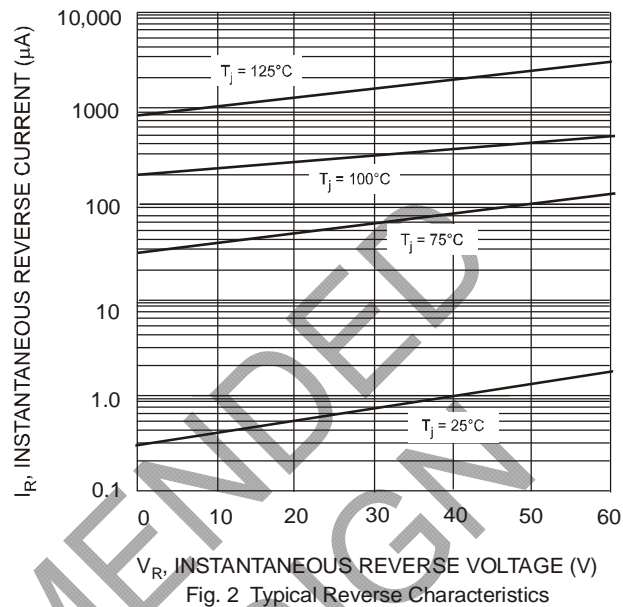
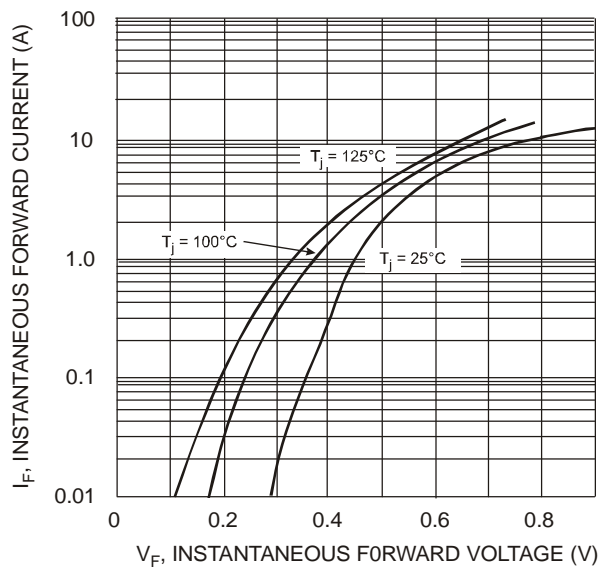
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

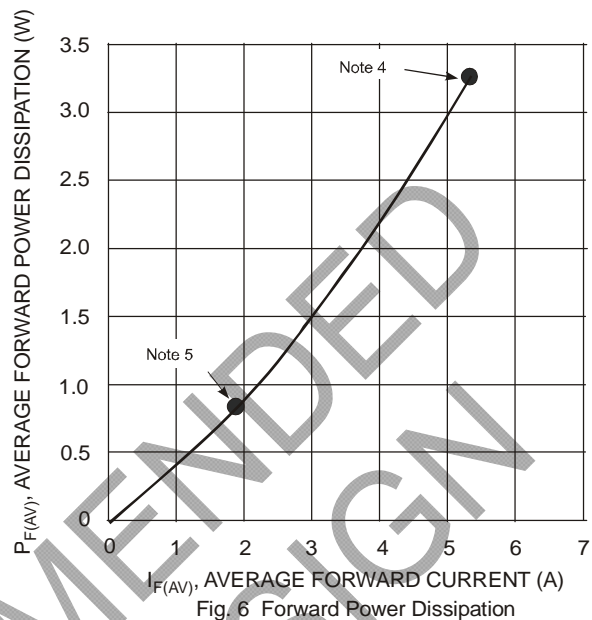
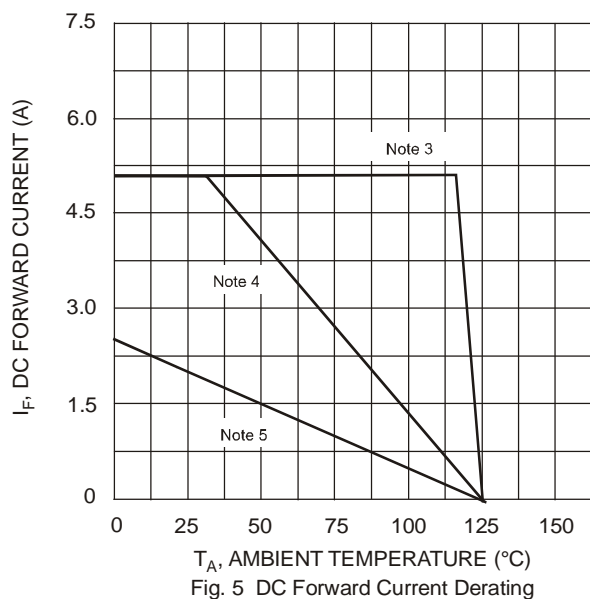
Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	60	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	42	V
Average Rectified Output Current (See also Figure 5)	I <sub>O</sub>	5	A
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	100	A
8.3ms Single half sine-wave Superimposed on Rated Load @ T <sub>C</sub> = 90°C			
Typical Thermal Resistance Junction to Soldering Point	R <sub>θJS</sub>	2.7	°C/W
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

## Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V <sub>(BR)R</sub>	60	—	—	V	I <sub>R</sub> = 0.2mA
Forward Voltage	V <sub>F</sub>	—	0.65	0.69	V	I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C
		—	0.56	0.60		I <sub>F</sub> = 5A, T <sub>J</sub> = 125°C
		—	0.74	0.78		I <sub>F</sub> = 8A, T <sub>J</sub> = 25°C
		—	0.64	0.68		I <sub>F</sub> = 8A, T <sub>J</sub> = 125°C
Reverse Current (Note 1)	I <sub>R</sub>	—	2	200	μA	T <sub>J</sub> = 25°C, V <sub>R</sub> = 60V
		—	0.6	20	mA	T <sub>J</sub> = 100°C, V <sub>R</sub> = 60V

Notes: 1. Short duration pulse test used to minimize self-heating effect.  
2. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.





- Notes:
- $T_A = T_{\text{SOLDERING POINT}}$ ,  $R_{\theta JS} = 2.7^{\circ}\text{C/W}$ ,  $R_{\theta SA} = 0^{\circ}\text{C/W}$ .
  - 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".  $R_{\theta JA}$  in range of 20-40°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>.  $R_{\theta JA}$  in range of 100-130°C/W.

## Ordering Information (Note 6)

Device	Packaging	Shipping
MBRM560-13-F	POWERMITE <sup>®</sup> 3	5000/Tape & Reel

- Notes: 6. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



MBRM560 = Product type marking code  
 J = Manufacturers' code marking  
 YYWW = Date code marking  
 YY = Last digit of year (ex: 02 for 2002)  
 WW = Week code (01 to 53)  
 (K) = Factory Designer Code

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