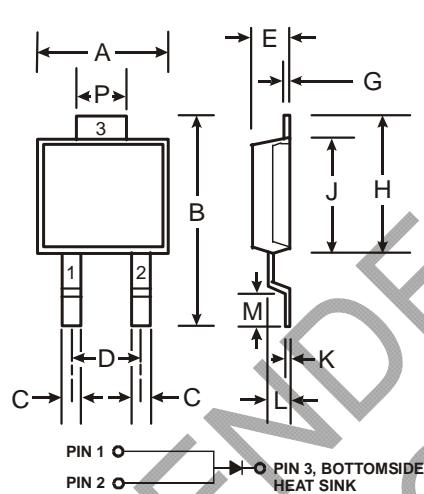


## Features

- 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

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

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

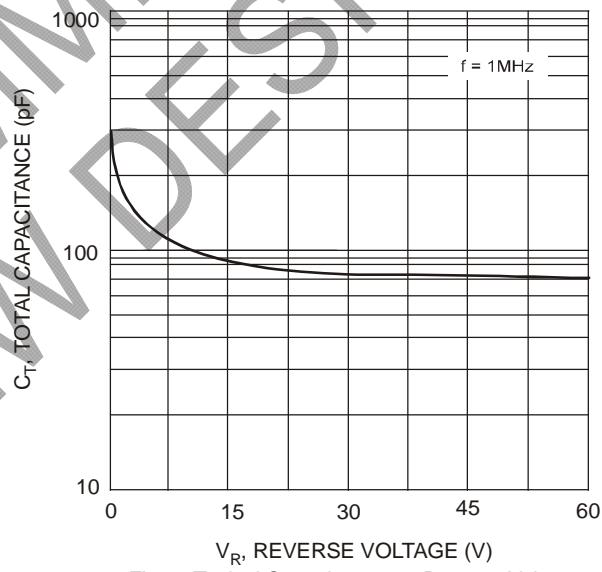
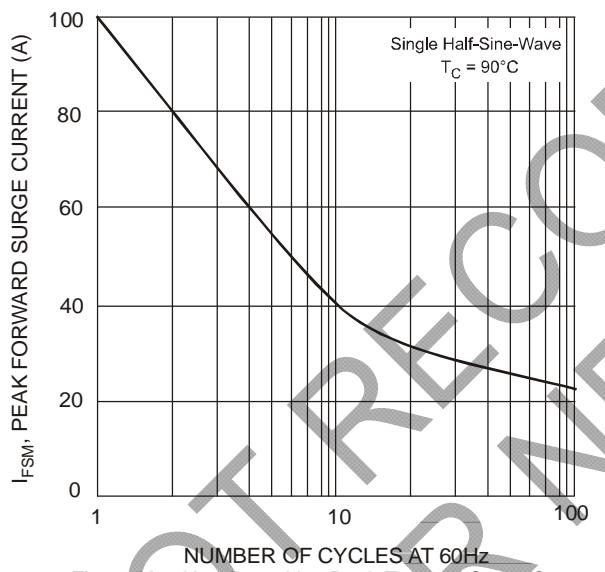
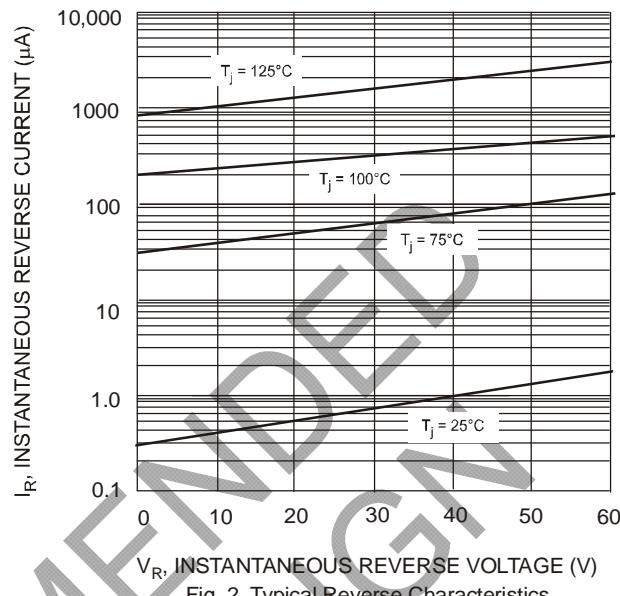
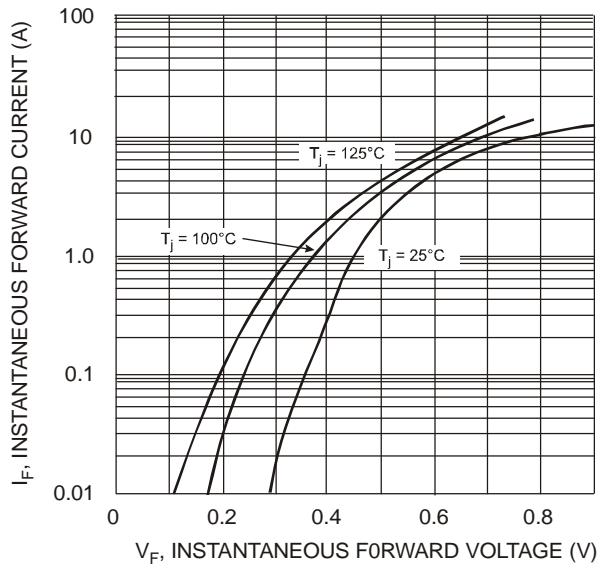
Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	60	V
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{R(RMS)}$	42	V
Average Rectified Output Current (See also Figure 5)	$I_O$	5	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load @ $T_C = 90^\circ\text{C}$	$I_{FSM}$	100	A
Typical Thermal Resistance Junction to Soldering Point	$R_{\theta JS}$	2.7	$^\circ\text{C/W}$
Operating Temperature Range	$T_J$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

## Electrical Characteristics

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	60	—	—	V	$I_R = 0.2\text{mA}$
Forward Voltage	$V_F$	—	0.65	0.69	V	$I_F = 5\text{A}, T_J = 25^\circ\text{C}$
		—	0.56	0.60		$I_F = 5\text{A}, T_J = 125^\circ\text{C}$
		—	0.74	0.78		$I_F = 8\text{A}, T_J = 25^\circ\text{C}$
		—	0.64	0.68		$I_F = 8\text{A}, T_J = 125^\circ\text{C}$
Reverse Current (Note 1)	$I_R$	—	2	200	$\mu\text{A}$	$T_J = 25^\circ\text{C}, V_R = 60\text{V}$
		—	0.6	20	$\text{mA}$	$T_J = 100^\circ\text{C}, V_R = 60\text{V}$

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.



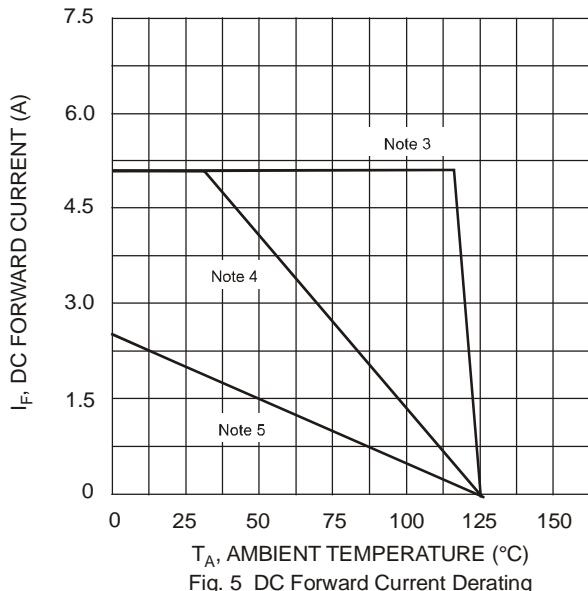


Fig. 5 DC Forward Current Derating

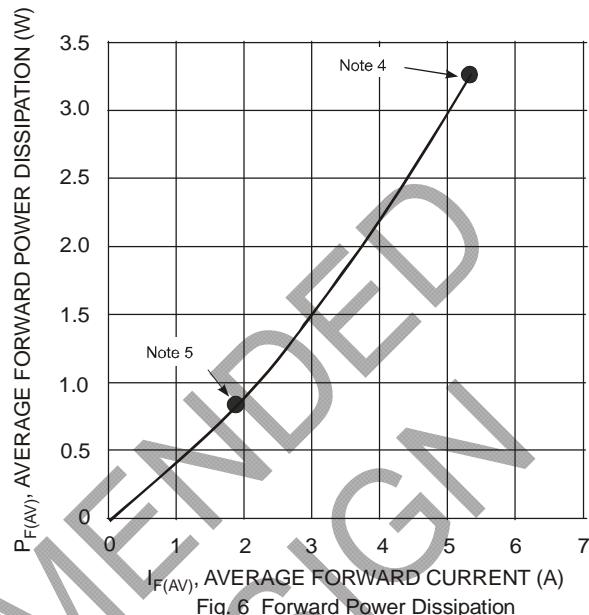


Fig. 6 Forward Power Dissipation

Notes:

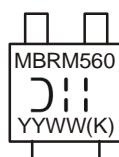
3. T<sub>A</sub> = TSOLDERING POINT, R<sub>0JS</sub> = 2.7°C/W, R<sub>0SA</sub> = 0°C/W.
4. Device mounted on GETEK substrate, 2"x2", 2 oz. copper, double-sided, cathode pad dimensions 0.75" x 1.0", anode pad dimensions 0.25" x 1.0". R<sub>0JA</sub> in range of 20-40°C/W.
5. Device mounted on FR-4 substrate, 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<sub>0JA</sub> in range of 100-130°C/W.

## Ordering Information (Note 6)

Device	Packaging	Shipping
MBRM560-13-F	POWERMITE®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  
 D = 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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