



**THE DATASHEET OF
MBRM560-13-F**

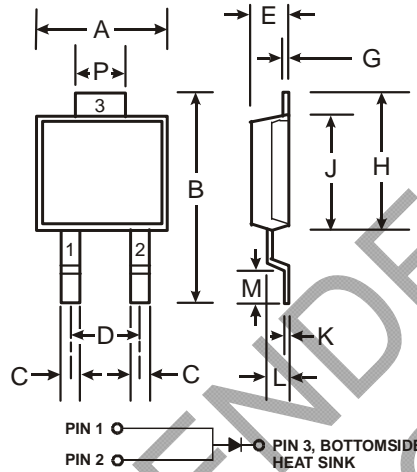


Features

- 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).
- 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_A} = 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 _{RRM}	60	V
Working Peak Reverse Voltage	V _{RWM}		
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°C	I _{FSM}	100	A
Typical Thermal Resistance Junction to Soldering Point	R _{θJS}	2.7	°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°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V _{(BR)R}	60	—	—	V	I _R = 0.2mA
Forward Voltage	V _F	—	0.65	0.69	V	I _F = 5A, T _J = 25°C
		—	0.56	0.60		I _F = 5A, T _J = 125°C
		—	0.74	0.78		I _F = 8A, T _J = 25°C
		—	0.64	0.68		I _F = 8A, T _J = 125°C
Reverse Current (Note 1)	I _R	—	2	200	μA	T _J = 25°C, V _R = 60V
		—	0.6	20	mA	T _J = 100°C, V _R = 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.

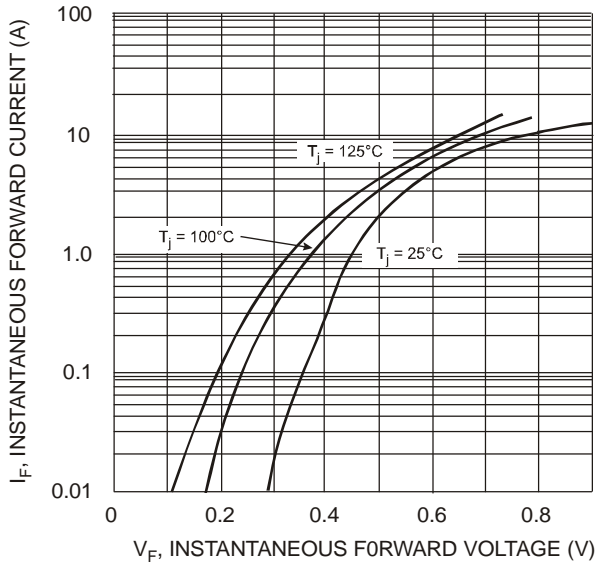


Fig. 1 Typical Forward Characteristics

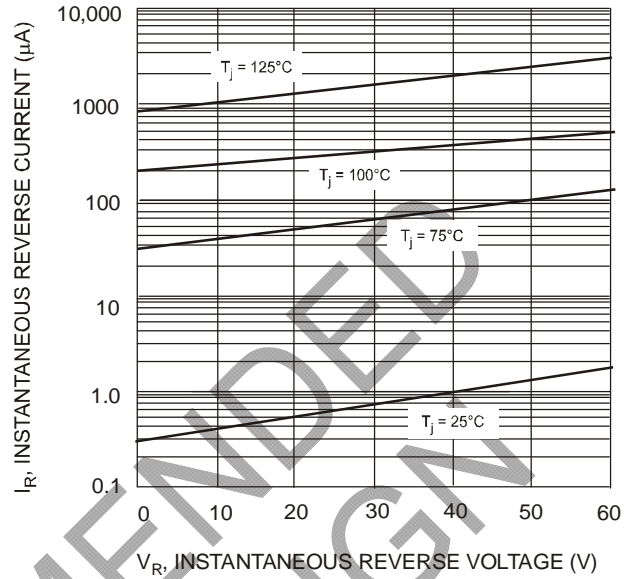


Fig. 2 Typical Reverse Characteristics

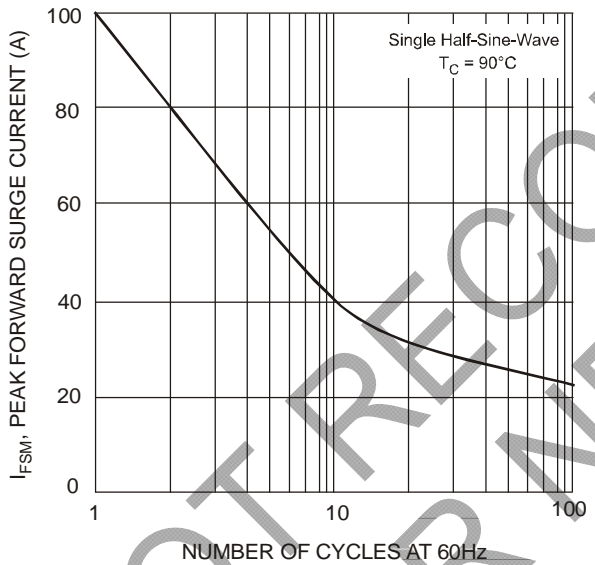


Fig. 3 Max Non-Repetitive Peak Forward Surge Current

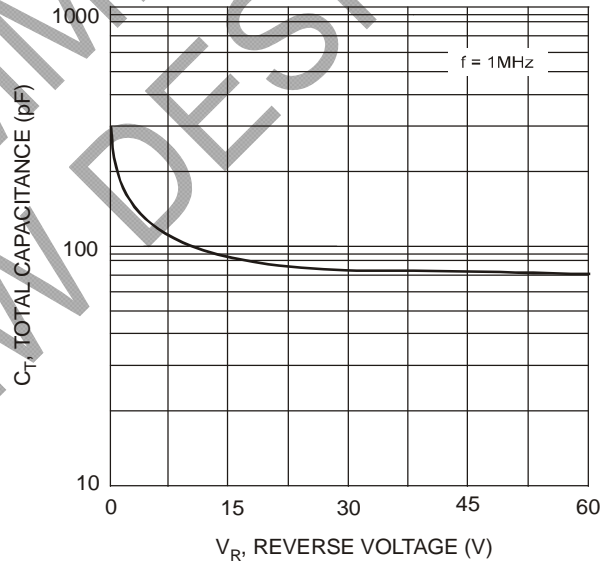


Fig. 4 Typical Capacitance vs. Reverse Voltage

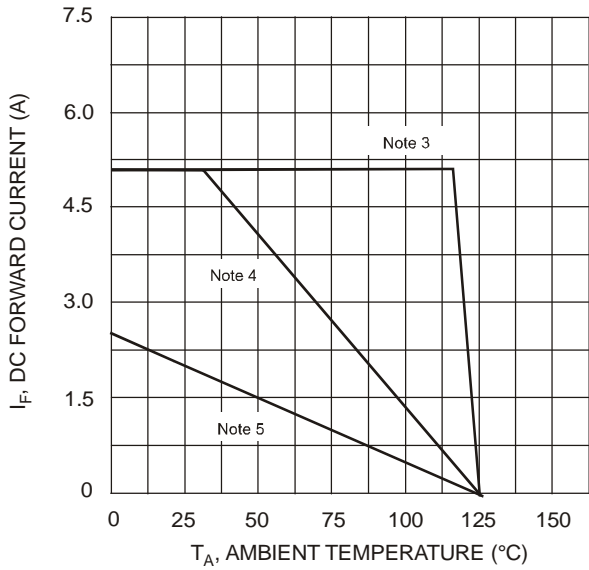


Fig. 5 DC Forward Current Derating

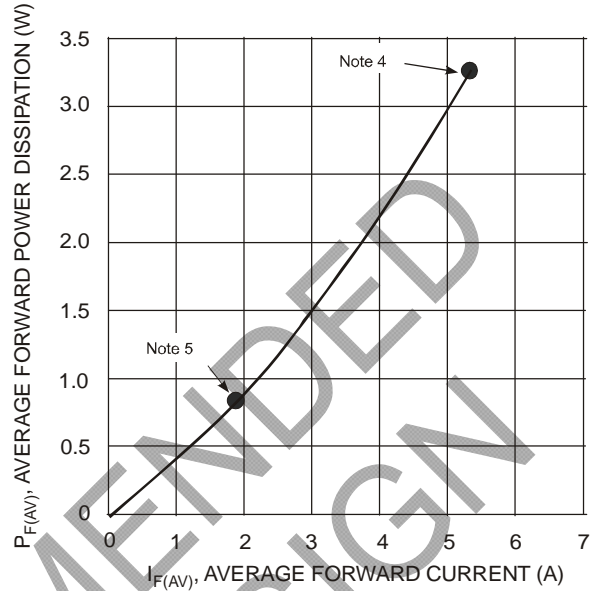


Fig. 6 Forward Power Dissipation

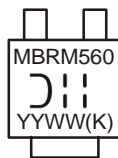
- Notes:
3. $T_A = T_{SOLDERING\ POINT}$, $R_{\theta JS} = 2.7^{\circ}C/W$, $R_{\theta SA} = 0^{\circ}C/W$.
 4. Device mounted on GETEK substrate, 2"x2", 2 oz. copper, double-sided, cathode pad dimensions 0.75" x 1.0", anode pad dimensions 0.25" x 1.0". $R_{\theta JA}$ in range of 20-40°C/W.
 5. Device 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>. $R_{\theta JA}$ 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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