MBRM560

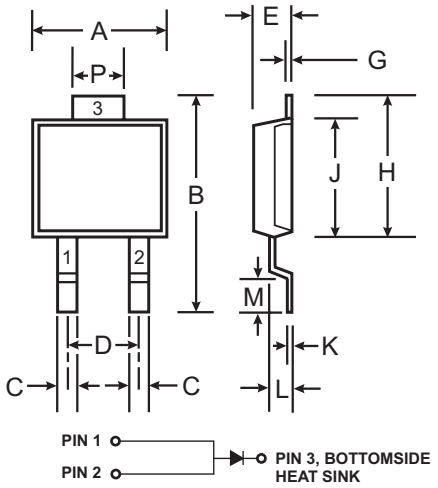
5A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER
POWERMITE®3

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-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish). (e3)
- Polarity: See Diagram
- Marking: See Page 3
- Weight: 0.072 grams (approximate)



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°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	60	V
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	$R_{\theta JS}$	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 0.56 0.74 0.64	0.69 0.60 0.78 0.68	V	I_F = 5A, T_J = 25°C I_F = 5A, T_J = 125°C I_F = 8A, T_J = 25°C I_F = 8A, T_J = 125°C
Reverse Current (Note 1)	I_R	— —	2 0.6	200 20	µA mA	T_J = 25°C, V_R = 60V T_J = 100°C, V_R = 60V

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.*

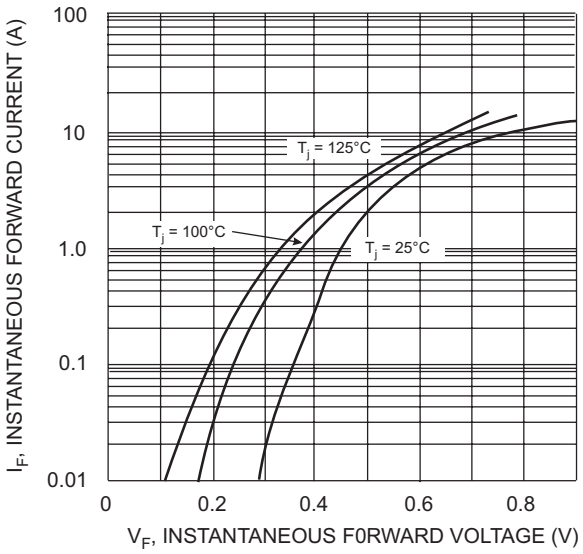


Fig. 1 Typical Forward Characteristics

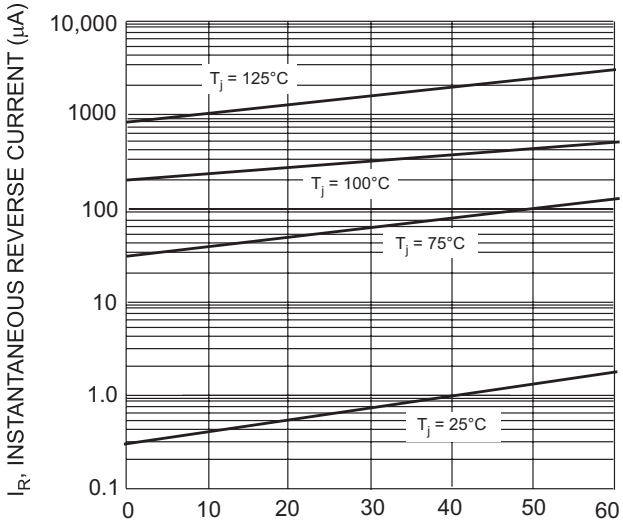


Fig. 2 Typical Reverse Characteristics

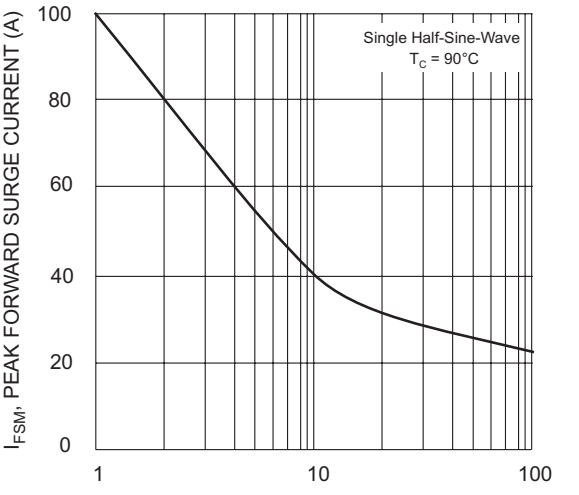


Fig. 3 Max Non-Repetitive Peak Forward Surge Current

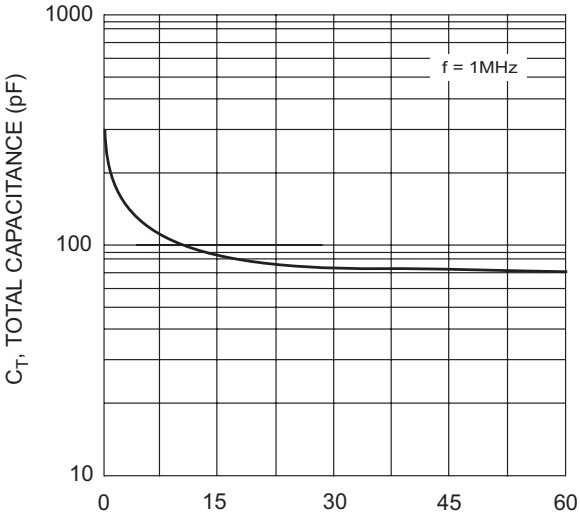


Fig. 4 Typical Capacitance vs. Reverse Voltage

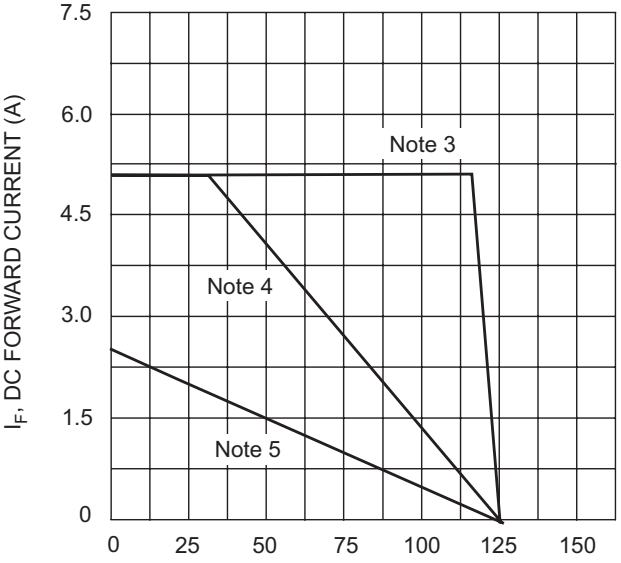


Fig. 5 DC Forward Current Derating

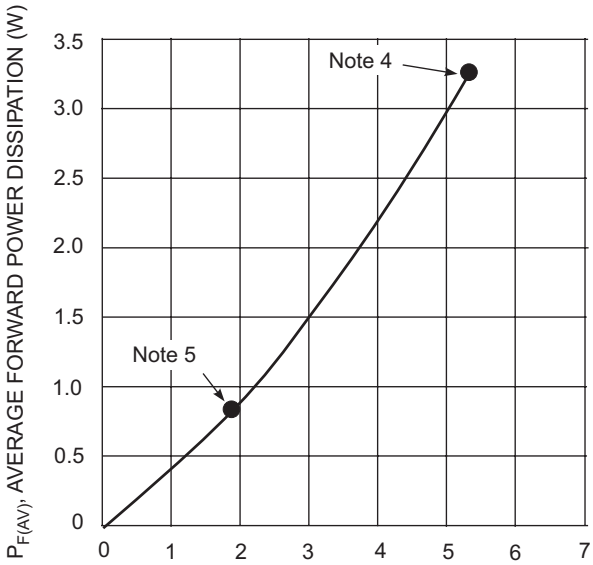


Fig. 6 Forward Power Dissipation

Notes: 3. $T_A = T_{SOLDERING\ POINT}$, $R_{\theta JS}$ = 2.7°C/W, $R_{\theta SA}$ = 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". $R_{\theta JA}$ in range of 20-40°C/W.

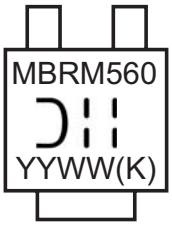
5. Device mounted on FR-4 substrate, 2"x2", 2 oz. copper, single-sided, pad layout as per Diodes Inc. suggested pad layout document AP02001 which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf. $R_{\theta JA}$ in range of 100-130°C/W.

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
= Manufacturers' code marking
YYWW = Date code marking
YY = Last digit of year ex: 02 for 2002
WW = Week code 01 to 52
(K) = Factory Designer Code

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