



**THE DATASHEET OF
MBRM5100-13**

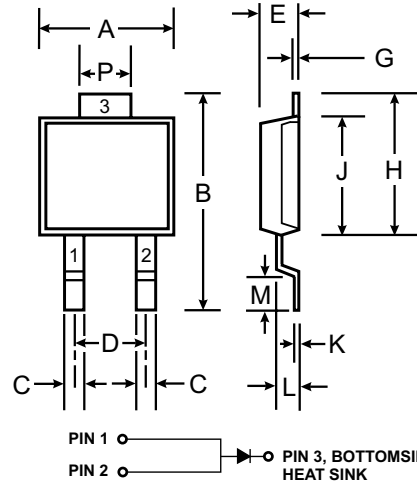


Features

- 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
- Plastic Material: UL Flammability Classification Rating 94V-0

Mechanical Data

- Case: POWERMITE®3 Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Marking: See sheet 3
- Weight: 0.072 grams (approx.)



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

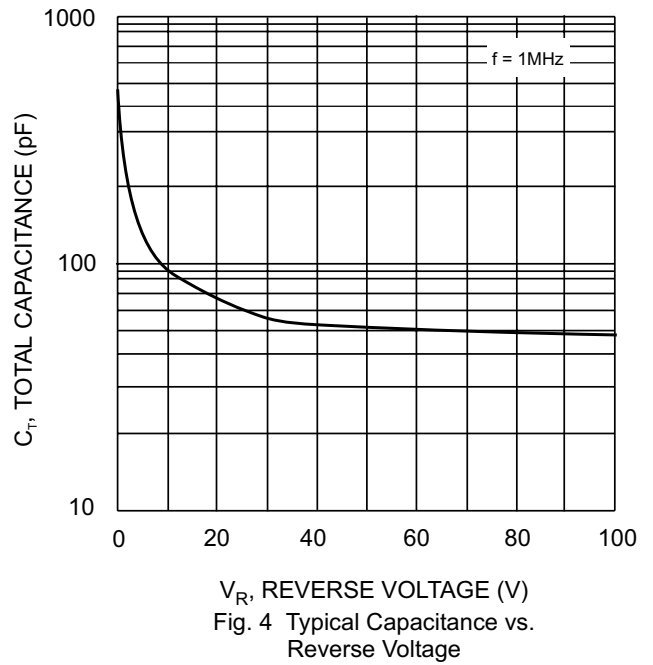
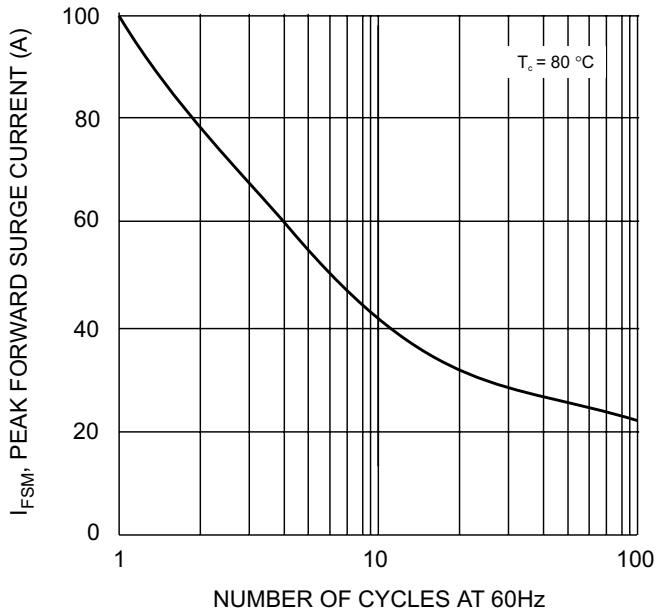
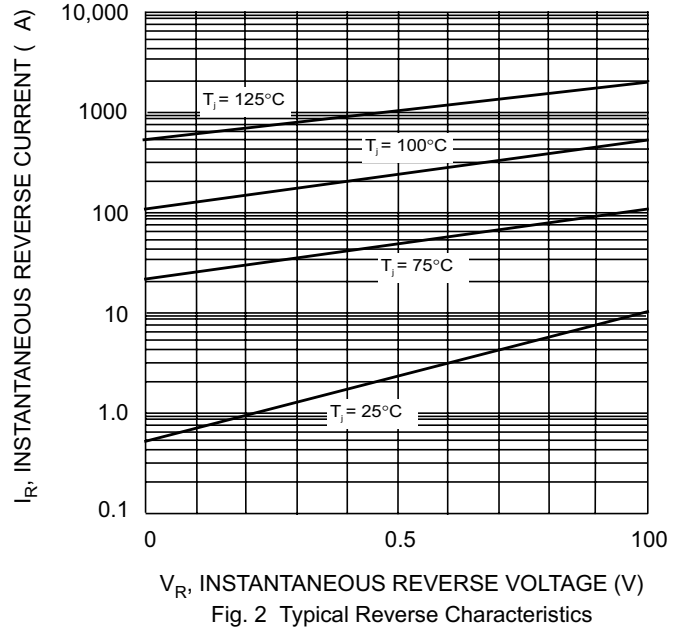
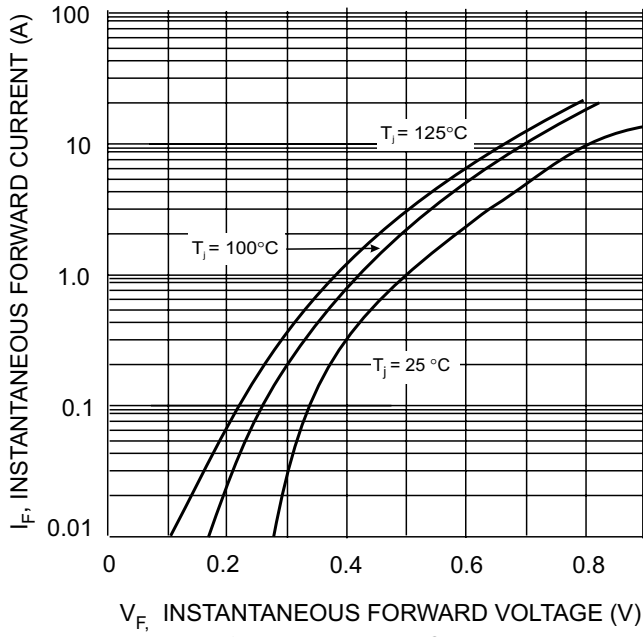
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage 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 (See also figure 5)	I _O	5	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method) @ T _C = 80°C	I _{FSM}	100	A
Typical Thermal Resistance Junction to Case	R _{θJC}	1.2	°C/W
Typical Thermal Resistance Junction to Soldering Point	R _{θJS}	2.7	°C/W
Operating Temperature Range	T _j	-65 to +125	°C
Storage Temperature Range	T _{STG}	-65 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}	100	—	—	V	I _R = 0.2mA
Forward Voltage (Note 1)	V _{FM}	—	0.75 0.58 0.84 0.67	0.81 0.64 0.90 0.73	V	I _F = 5A, T _j = 25°C I _F = 5A, T _j = 125°C I _F = 10A, T _j = 25°C I _F = 10A, T _j = 125°C
Peak Reverse Current (Note 1)	I _{RM}	—	0.015 2	0.2 100	mA	T _j = 25°C, V _R = 100V T _j = 125°C, V _R = 100V

Notes: 1. Short duration test pulse used to minimize self-heating effect.



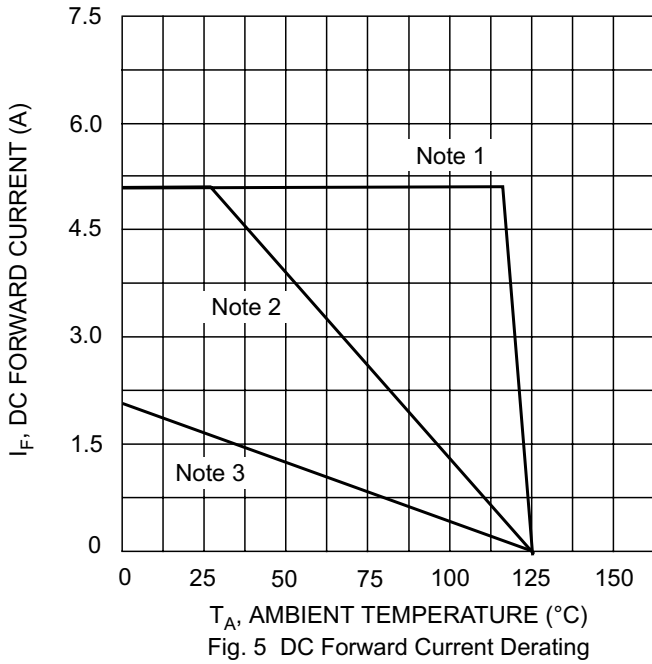


Fig. 5 DC Forward Current Derating

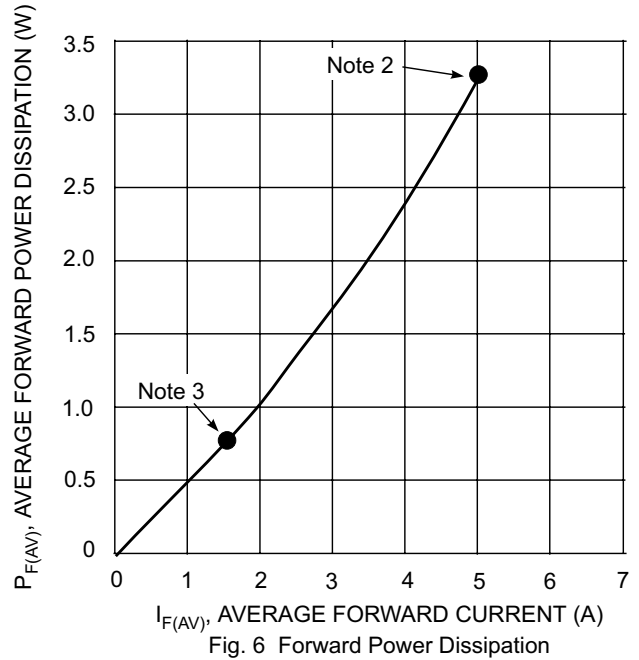


Fig. 6 Forward Power Dissipation

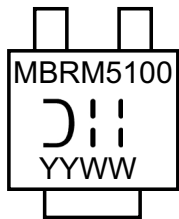
- Notes:
1. $T_A = T_{\text{SOLDERING POINT}}$, $R_{\theta JS} = 2.7^\circ\text{C/W}$, $R_{\theta SA} = 0^\circ\text{C/W}$.
 2. Device mounted on GETEK substrate, 2"x2", 2 oz. copper, double-sided, cathode pad dimensions 0.75" x 1.0", anode pad dimensions 0.25" x 1.0". $R_{\theta JA}$ in range of 20-40°C/W.
 3. 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 100-140°C/W.

Ordering Information (Note 4)

Device	Packaging	Shipping
MBRM5100-13	POWERMITE®3	5000/Tape & Reel

- Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information





MBRM5100 = Product type marking code
 ☺|| = Manufacturers' code marking
 YYWW = Date code marking
 YY = Last digit of year ex: 2 for 2002
 WW = Week code 01 to 52

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