



SBM540

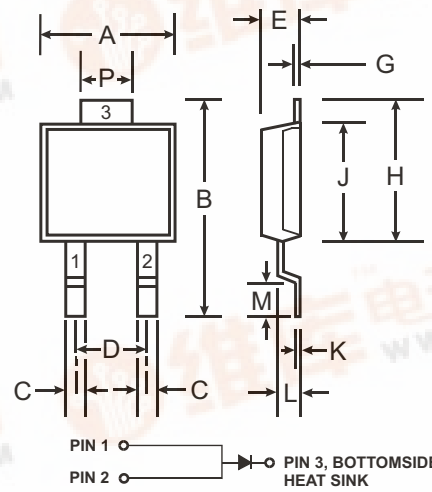
5A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER POWERMITE 3

Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- Lead Free Finish, RoHS Compliant (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: Type Number, See also Sheet 3
- Ordering Information, See Sheet 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%.

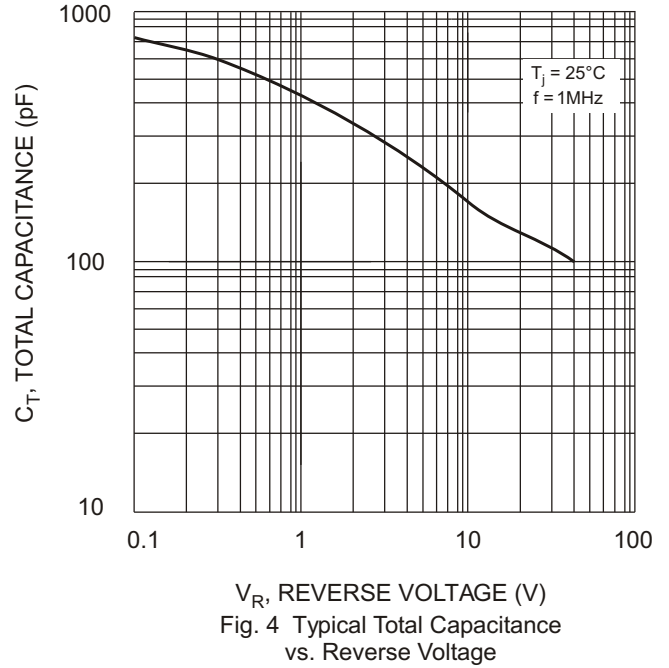
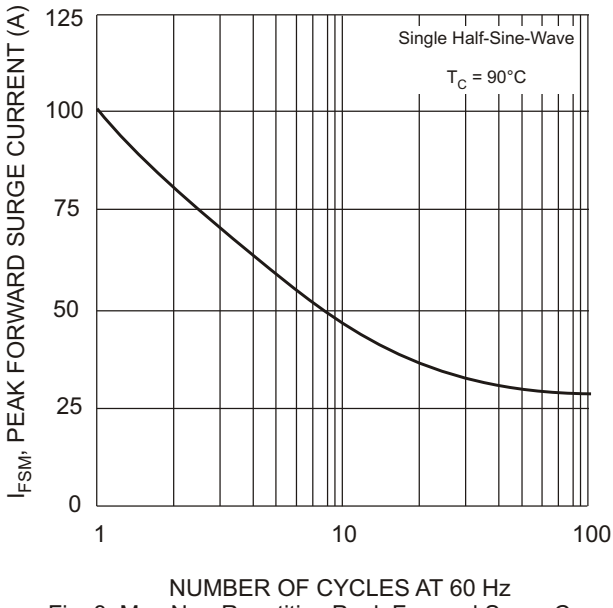
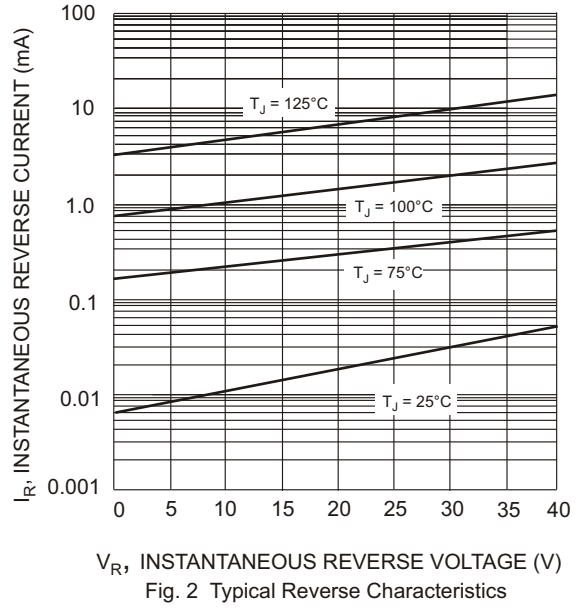
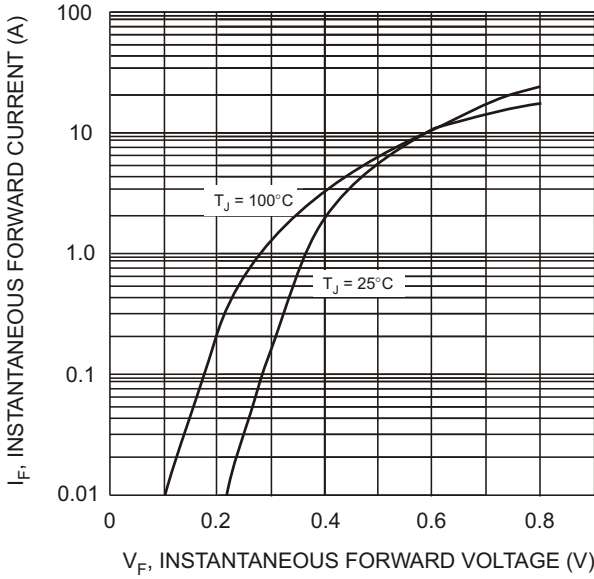
Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{VRWM} V _R	40	V
RMS Reverse Voltage	V _{R(RMS)}	28	V
Average Rectified Output Current (see also Figure 5)	I _O	5	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load @ T _C = 90 C	I _{FSM}	100	A
Typical Thermal Resistance Junction to Soldering Point	R _{JS}	3.2	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}	40			V	I _R = 0.5mA
Forward Voltage	V _{FM}		0.48 0.45 0.59 0.56	0.52	V	I _F = 5A, T _S = 25 C I _F = 5A, T _S = 125 C I _F = 10A, T _S = 25 C I _F = 10A, T _S = 125 C
Reverse Current (Note 1)	I _{RM}		0.05 2.5	0.5 20	mA	T _S = 25 C, V _R = 40V T _S = 100 C, V _R = 40V
Total Capacitance	C _T		250		pF	f = 1.0MHz, V _R = 4.0V DC

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.





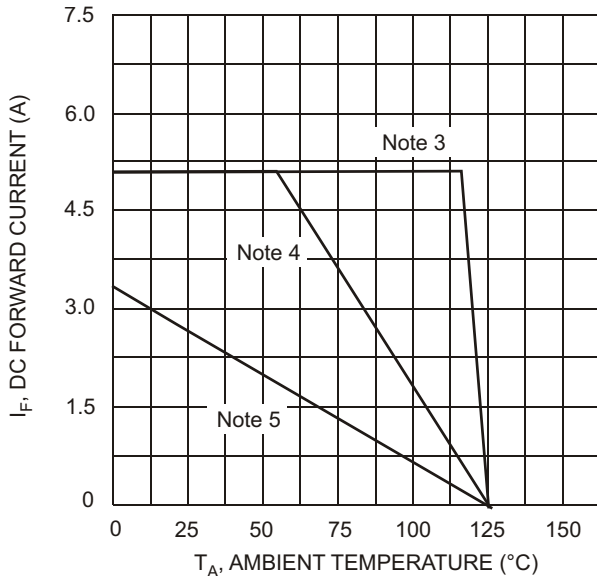


Fig. 5 DC Forward Current Derating

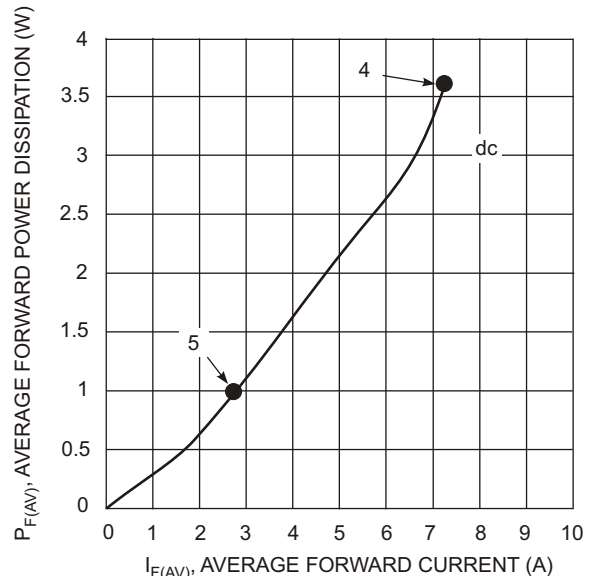


Fig. 6 Forward Power Dissipation

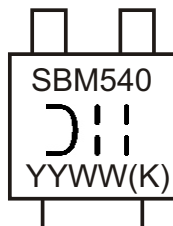
- Notes:
- $T_A = T_{\text{SOLDERING POINT}}$, $R_{\text{JS}} = 3.2 \text{ C/W}$, $R_{\text{SA}} = 0 \text{ C/W}$.
 - Device mounted on GETEK substrate, 2"x2", 2 oz. copper, double-sided, cathode pad dimensions 0.75" x 1.0", anode pad dimensions 0.25" x 1.0". R_{JA} in range of 15-30°C/W.
 - Device mounted 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_{JA} in range of 60-75°C/W.

Ordering Information (Note 6)

Device	Packaging	Shipping
SBM540-13-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



SBM540 = 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 Designator

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.