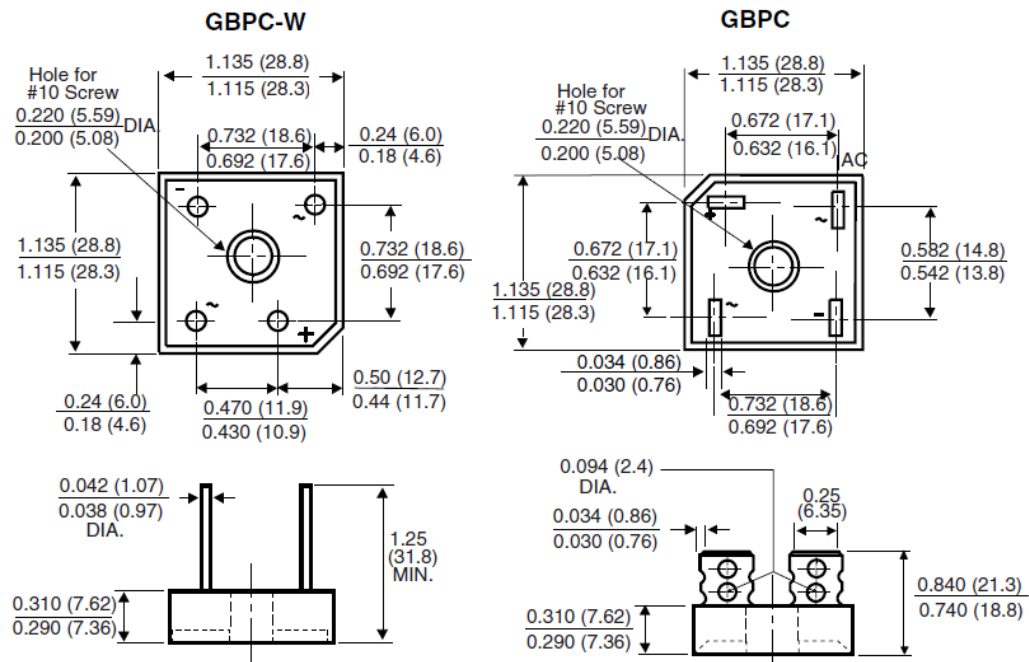


**GBPC50005(W)-GBPC5010(W)**
**Single-Phase 50A Glass Passivated Bridge Rectifier**
**Features:**

- Universal 3-way terminals: snap-on, wire wrap-around, or P.C.B. mounting
- Typical IR less than 0.3  $\mu$ A
- High surge current capability
- Low thermal resistance
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC
- This is a Pb – Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

**Mechanical Data:**

- Case: GBPC, GBPC-W, Molded plastic
- Terminals: Nickel plated on faston lugs or Silver plated on wire leads, solderable per J-STD-002B and JESD22-B102D. E4 suffix for commercial grade. Suffix letter "W" added to indicate wire leads (e.g.GBPC15005W).
- Polarity: As marked, positive lead by beveled corner
- Mounting Position: Any
- Marking: Type Number
- Mounting Torque: 20 inches-lbs. max.

**Mechanical Dimensions: In Inches/mm**




## GBPC50005(W)-GBPC5010(W)

Technical Data  
Data Sheet N1852, Rev. -

Green Products

### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single Phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Type Number	Symbol	GBPC 50005	GBPC 5001	GBPC 5002	GBPC 5004	GBPC 5006	GBPC 5008	GBPC 5010	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_{DC}$	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum average forward rectified output current (see Fig. 1)	$I_{F(AV)}$	50							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	500							A
Maximum instantaneous forward drop per diode @ $I_F = 25A$	$V_F$	1.1							V
Maximum reverse DC current at rated DC blocking voltage per diode	$I_R @ T_A = 25^\circ C$	5.0							$\mu A$
	$I_R @ T_A = 125^\circ C$	500							
Typical Junction Capacitance(per leg) @ 4 V, 1 MHz	$C_J$	300							pF
Typical Thermal Resistance (per leg)	$R_{\theta JC}$	1.4							°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150							°C
Case Style	GBPC/ GBPC-W								

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

**RATINGS AND CHARACTERISTICS CURVES**

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

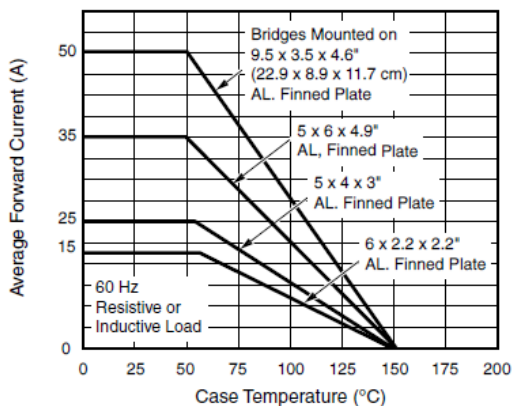


Figure 1. Maximum Output Rectified Current

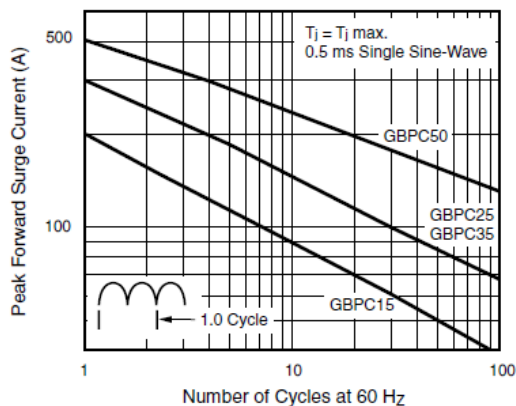


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

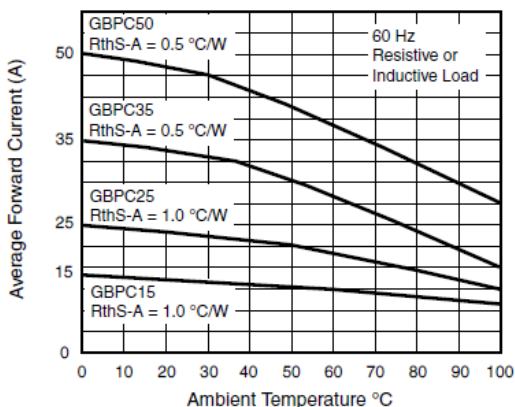


Figure 2. Maximum Output Rectified Current

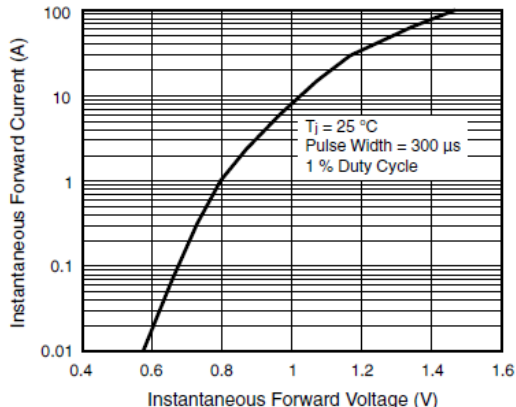


Figure 5. Typical Instantaneous Forward Characteristics Per Diode

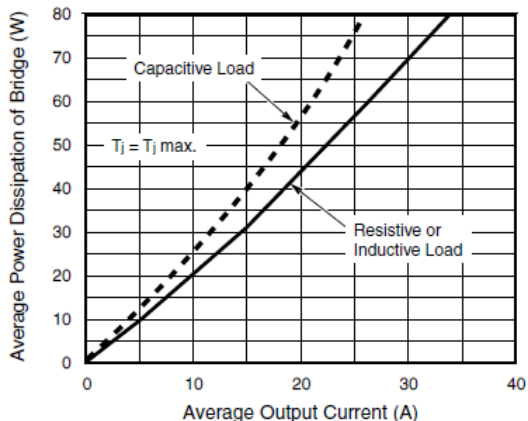


Figure 3. Maximum Power Dissipation

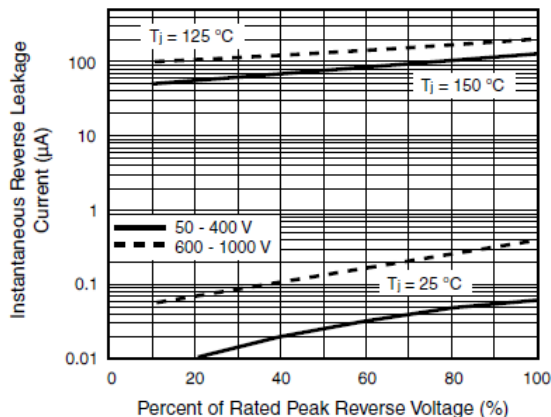


Figure 6. Typical Reverse Leakage Characteristics Per Diode

**Technical Data**  
**Data Sheet N1852, Rev. -**

*Green Products*

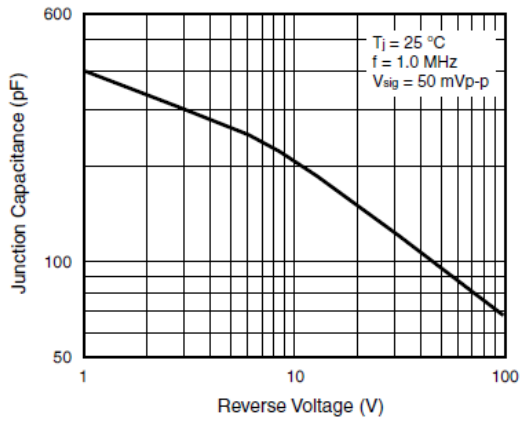


Figure 7. Typical Junction Capacitance Per Diode

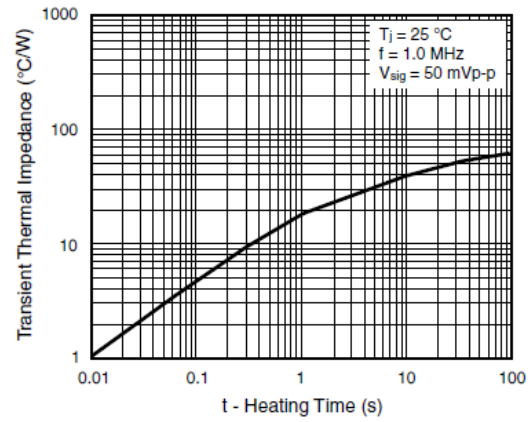


Figure 8. Typical Transient Thermal Impedance Per Diode



**DISCLAIMER:**

1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC - Sangdest Microelectronics (Nanjing) Co., Ltd sales department for the latest version of the datasheet(s).

2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.

3- In no event shall SMC - Sangdest Microelectronics (Nanjing) Co., Ltd be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC - Sangdest Microelectronics (Nanjing) Co., Ltd assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.

4- In no event shall SMC - Sangdest Microelectronics (Nanjing) Co., Ltd be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.

5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC - Sangdest Microelectronics (Nanjing) Co., Ltd.

6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC - Sangdest Microelectronics (Nanjing) Co., Ltd.

7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..