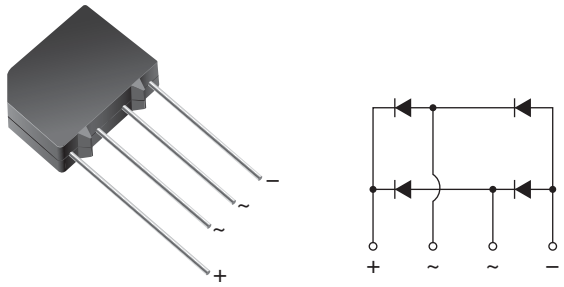
Glass Passivated Single-Phase Bridge Rectifier



Case Style KBPM

FEATURES

- UL recognition file number E54214
- Ideal for printed circuit board
- High surge current capability
- High case dielectric strength
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for switching power supply, home appliances, office equipment, and telecommunication applications.

MECHANICAL DATA

Case: KBPM
Molding compound meets UL 94 V-0 flammability rating Base P/N-M4 - halogen-free, RoHS-compliant, and commercial grade

Terminals: Silver plated leads, solderable per J-STD-002 and JESD 22-B102

Polarity: As marked on body

PRIMARY CHARACTERISTICS	
Package	KBPM
$I_{F(AV)}$	1.5 A
V_{RRM}	50 V to 1000 V
I_{FSM}	60 A
I_R	5 µA
V_F	1.0 V
T_J max.	150 °C
Diode variations	In-line

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER		SYMBOL	KBP005M 3N246	KBP01M 3N247	KBP02M 3N248	KBP04M 3N249	KBP06M 3N250	KBP08M 3N251	KBP10M 3N252	UNIT
Maximum repetitive peak reverse voltage (1)		V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage (1)		V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage (1)		V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward output rectified current at T_A = 40 °C		$I_{F(AV)}$	1.5							A
Peak forward surge current single half sine-wave (1)	T_A = 25 °C	I_{FSM}	60							A
	T_A = 150 °C		40							
Rating for fusing (t < 8.3 ms)		I^2t	10							A^2s
Operating junction and storage temperature range (1)		T_J, T_{STG}	-55 to +150							°C

Note
(1) JEDEC® registered values

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	KBP005M 3N246	KBP01M 3N247	KBP02M 3N248	KBP04M 3N249	KBP06M 3N250	KBP08M 3N251	KBP10M 3N252	UNIT
Maximum instantaneous forward voltage drop per diode (1)	1.0 A	V_F	1.0							V
	1.57 A		1.3							
Maximum DC reverse current at rated DC blocking voltage per diode (1)	T_J = 25 °C	I_R	5.0							µA
	T_J = 125 °C		500							
Typical junction capacitance per diode	4.0 V, 1 MHz	C_J	15							pF

Note
(1) JEDEC® registered values

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	KBP005M	KBP01M	KBP02M	KBP04M	KBP06M	KBP08M	KBP10M	UNIT
		3N246	3N247	3N248	3N249	3N250	3N251	3N252	
Typical thermal resistance (1)	$R_{\theta JA}$	40							°C/W
	$R_{\theta JL}$	13							

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on PCB with, 0.47" x 0.47" (12 mm x 12 mm) copper pads

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
KBP06M-M4/51	1.895	51	600	Anti-static PVC tray
3N250-M4/51	1.895	51	600	Anti-static PVC tray

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

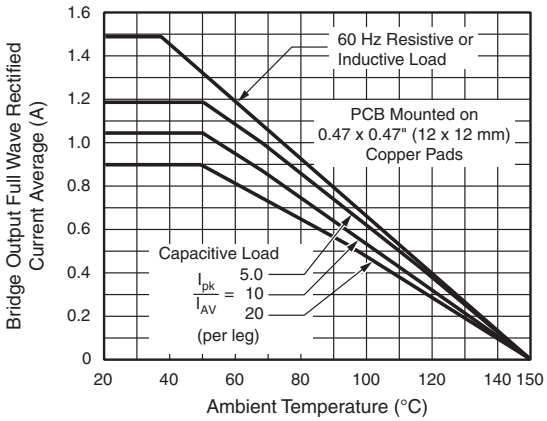


Fig. 1 - Derating Curve Output Rectified Current

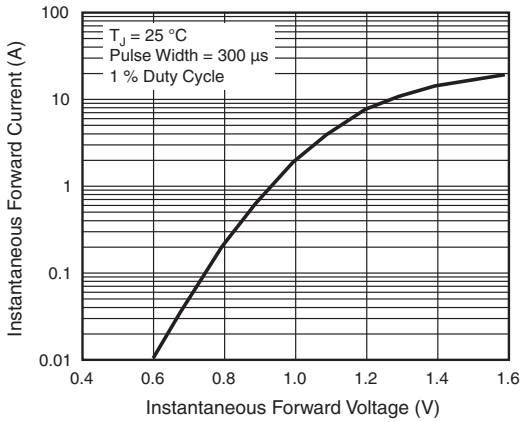


Fig. 3 - Typical Forward Characteristics Per Diode

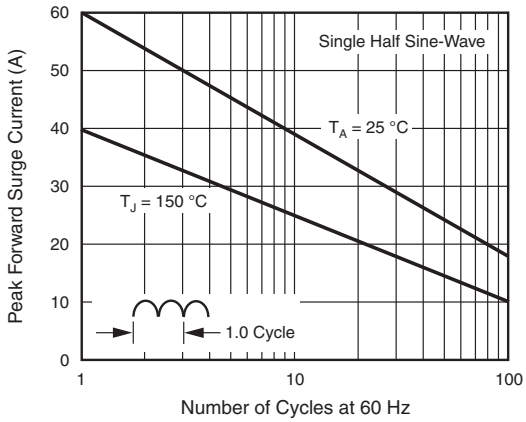


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

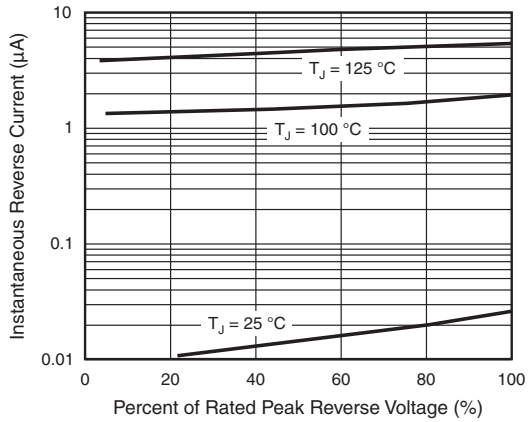


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

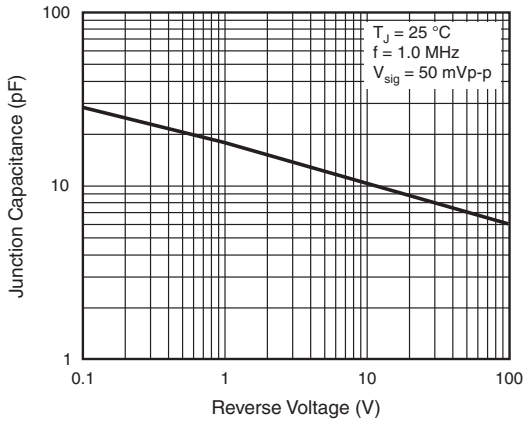
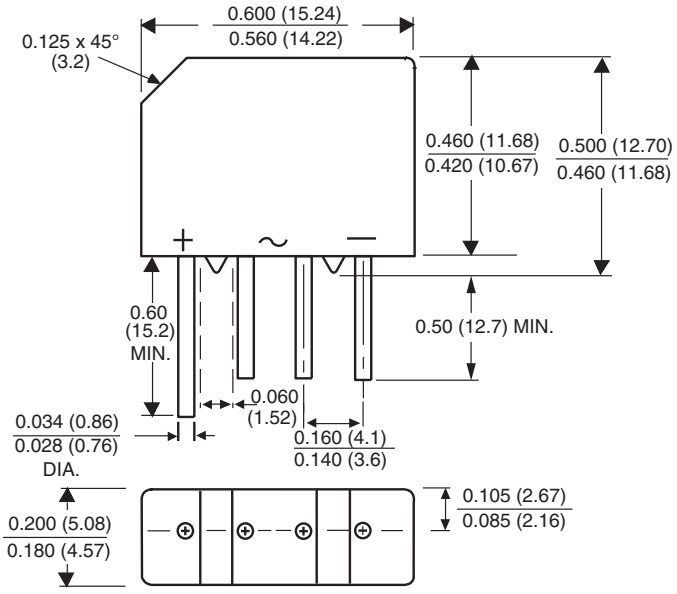


Fig. 5 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Style KBPM



Polarity shown on front side of case: positive lead by beveled corner

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.