

Single Phase Rectifier Bridge, 1.2 A



D-38

FEATURES

- Ease of assembly, installation, inventory
- High surge rating
- Compact
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

DESCRIPTION

A 1.2 A diode bridge rectifier assembly designed for new circuits and for replacement service. For printed circuit board applications.

PRIMARY CHARACTERISTICS	
I_o	1.2 A
V_{RRM}	100 V to 1000 V
Package	D-38
Circuit configuration	Single phase bridge

MAJOR RATINGS AND CHARACTERISTICS			
SYMBOL	CHARACTERISTICS	VALUES	UNITS
I_o		1.2	A
I_{FSM}	50 Hz	50	A
	60 Hz	52	
I^2t	50 Hz	17.7	A ² s
	60 Hz	16.1	
V_{RRM}		100 to 1000	V
T_J		-55 to 150	°C

ELECTRICAL SPECIFICATIONS

VOLTAGE RATINGS					
CROSS REFERENCE		V_{RRM}, V_{RSM} (V)	V_{RMS} (RECOMMENDED) (V)	MAXIMUM LOAD CAPACITANCE (μ F) ⁽¹⁾	MINIMUM SOURCE RESISTANCE (Ω) ⁽¹⁾
PART NUMBER	DIN CODE				
VS-1KAB05E		50	20	7000	0.5
VS-1KAB10E	B40C1000	100	40	5000	0.5
VS-1KAB20E	B80C1000	200	80	3300	0.8
VS-1KAB40E	B125C1000	400	125	1600	1.5
VS-1KAB60E	B250C1000	600	250	1200	2.6
VS-1KAB80E	B380C1000	800	380	800	3.0
VS-1KAB100E	B500C1000	1000	500	600	5.0

Note

⁽¹⁾ See figure 3



FORWARD CONDUCTION					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum DC output current	I_O	$T_A = 45\text{ }^\circ\text{C}$, resistive or inductive load		1.2	A
		$T_A = 45\text{ }^\circ\text{C}$, capacitive load		1.0	
Maximum peak one cycle, non-repetitive surge current	I_{FSM}	50 Hz half cycle sine wave or 6 ms rectangular pulse	Following any rated load condition, and with rated V_{RRM} applied following surge	50	A
		60 Hz half cycle sine wave or 5 ms rectangular pulse		52	
Maximum I^2t capability for fusing	I^2t	$t = 10\text{ ms}$	Rated V_{RRM} applied following surge, initial $T_J = 150\text{ }^\circ\text{C}$	12.5	A^2s
		$t = 8.3\text{ ms}$		11.3	
		$t = 10\text{ ms}$	$V_{RRM} = 0$ following surge, initial $T_J = 150\text{ }^\circ\text{C}$	17.7	
		$t = 8.3\text{ ms}$		16.1	
Maximum $I^2\sqrt{t}$ capability for fusing	$I^2\sqrt{t}$ (1)	$t = 0.1$ to 10 ms , V_{RRM} following surge = 0		177	$A^2\sqrt{s}$
Maximum peak forward voltage per leg	V_{FM}	$I_O = 1.2\text{ A}$ (1.88 A_{pk})		1.1	V
Typical peak reverse current per leg	I_{RM}	$T_J = 25\text{ }^\circ\text{C}$, at rated V_{RRM}		10	μA
		$T_J = 150\text{ }^\circ\text{C}$, at rated V_{RRM}		500	
Operating frequency range	f			40 to 2000	Hz

Note

(1) I^2t for time $t_x = I^2\sqrt{t} \times \sqrt{t_x}$

THERMAL AND MECHANICAL SPECIFICATIONS			
PARAMETER	SYMBOL	VALUES	UNITS
Operating junction and storage temperature range	T_J, T_{Stg}	-40 to 150	$^\circ\text{C}$
Approximate weight		3	g
		0.1	oz.

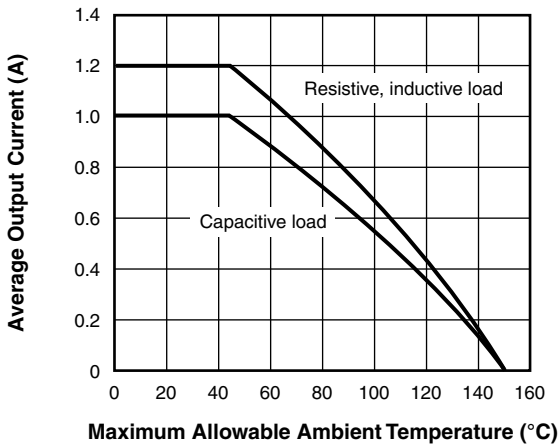


Fig. 1 - Average (DC) Output Current vs. Maximum Allowable Ambient Temperature

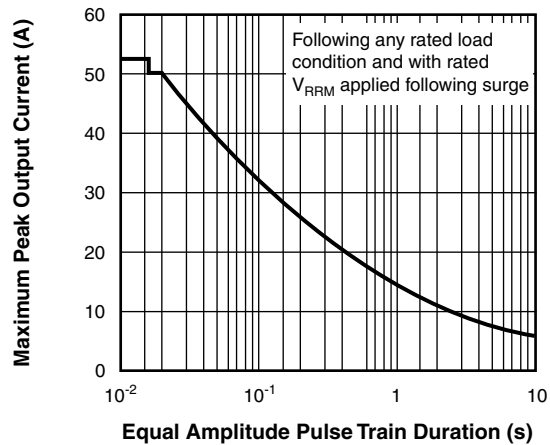


Fig. 2 - Maximum Non-Repetitive Surge Current vs. Pulse Train Duration ($f = 50\text{ Hz}$)



Fig. 3 - Minimum Required Source Resistance vs. RMS Supply Voltage and Load Capacitance



Fig. 4 - Maximum Switch-On Surge Current vs. Surge Duration

CIRCUIT CONFIGURATION



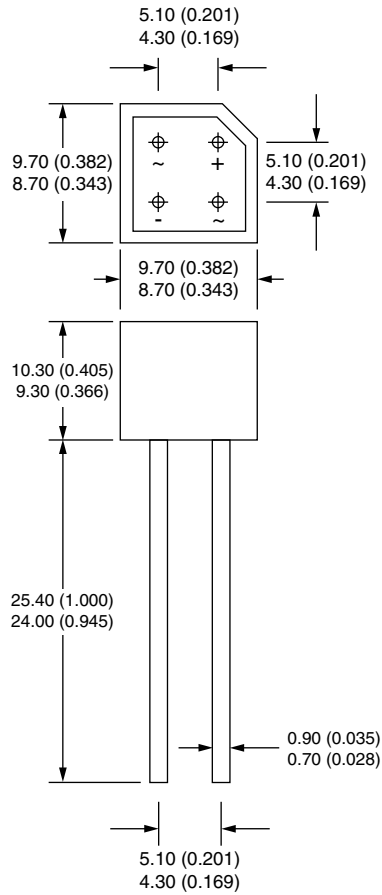
LINKS TO RELATED DOCUMENTS

Dimensions	www.vishay.com/doc?95327
------------	--



D-38

DIMENSIONS in millimeters (inches)





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.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

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.