

## 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](http://www.vishay.com/doc?99912)


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### 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 <sup>2</sup> 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 ( $\mu$ F) <sup>(1)</sup>	MINIMUM SOURCE RESISTANCE ( $\Omega$ ) <sup>(1)</sup>
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

<sup>(1)</sup> See figure 3



<b>FORWARD CONDUCTION</b>					
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	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 $T_J = 150\text{ }^\circ\text{C}$	A <sup>2</sup> s	
		$t = 8.3\text{ ms}$			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 $10\text{ ms}$ , $V_{RRM}$ following surge = 0	177	A <sup>2</sup> √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  $t_x = I^2\sqrt{t} \times \sqrt{t_x}$

<b>THERMAL AND MECHANICAL SPECIFICATIONS</b>			
PARAMETER	SYMBOL	VALUES	UNITS
Operating junction and storage temperature range	$T_J, T_{Stg}$	-40 to 150	°C
Approximate weight		3	g
		0.1	oz.

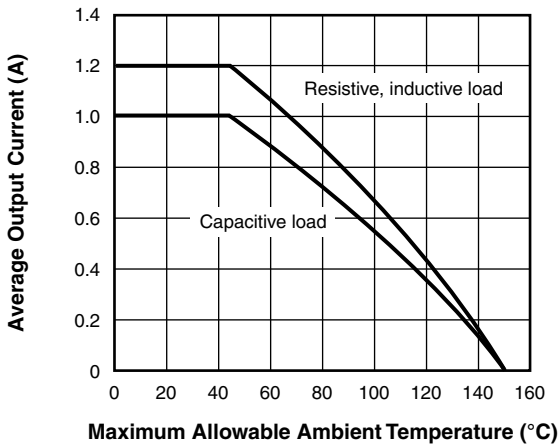


Fig. 1 - Average (DC) Output Current vs. Maximum Allowable Ambient Temperature

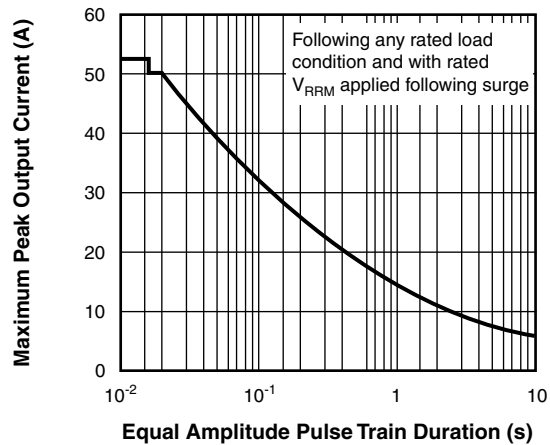


Fig. 2 - Maximum Non-Repetitive Surge Current vs. Pulse Train Duration ( $f = 50\text{ Hz}$ )



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



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

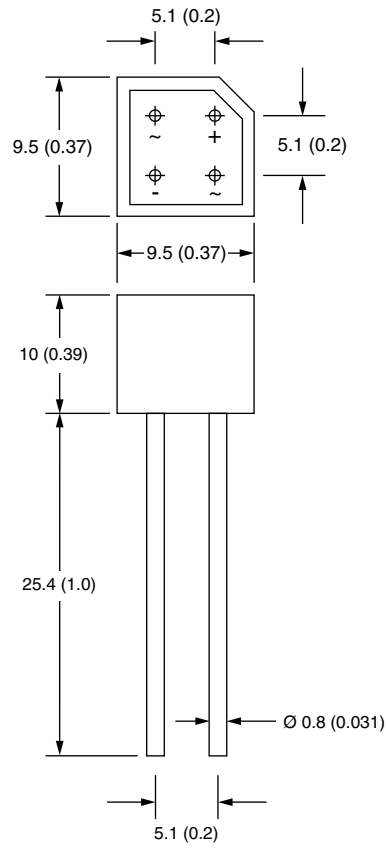
**CIRCUIT CONFIGURATION**



LINKS TO RELATED DOCUMENTS	
Dimensions	<a href="http://www.vishay.com/doc?95327">www.vishay.com/doc?95327</a>

### D-38

**DIMENSIONS** in millimeters (inches)





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