

## Single Phase Rectifier Bridge, 1.9 A


**2KBB**

### FEATURES

- Suitable for printed circuit board mounting
- Leads on standard 2.54 mm (0.1") grid
- Compact construction
- High surge current capability
- Polarized package
- Equivalent to standard DIN parts
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### PRODUCT SUMMARY

$I_O$	1.9 A
$V_{RRM}$	50 V to 1000 V
Package	2KBB
Circuit	Single phase bridge

### DESCRIPTION

A 1.9 A single phase diode bridge rectifier assembly consisting of four silicon diodes in a plastic encapsulation, intended for general applications in industrial and consumer equipment.

### MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_O$		1.9	A
	$T_C$	45	°C
$I_{FSM}$	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
$T_J$		-40 to 150	°C

### ELECTRICAL SPECIFICATIONS

#### VOLTAGE RATINGS AND APPLICATION DATA

CROSS REFERENCE		$V_{RRM}, V_{RSM}$ MAXIMUM PEAK REVERSE VOLTAGE $T_J = 15^\circ\text{C}$ (V)	$I_{RM}$ TYPICAL PEAK REVERSE CURRENT PER DIODE AT RATED $V_{RRM}$ ( $\mu\text{A}$ )		APPLICATION DATA (SEE FIGURE 3)		
PART NUMBER	DIN CODE		$T_J = 25^\circ\text{C}$	$T_J = 150^\circ\text{C}$	$V_{RMS}$ MAXIMUM RECOMMENDED AC SUPPLY VOLTAGE (V)	$C_{MAX}$ MAXIMUM LOAD CAPACITANCE ( $\mu\text{F}$ )	$R_{MIN}$ MINIMUM SOURCE RESISTANCE ( $\Omega$ )
VS-2KBB10	B40C1500	10	500	40	5000	0.5	
VS-2KBB20	B80C1500	10	500	80	3300	0.8	
VS-2KBB40	B125C1500	10	500	125	1600	1.5	
VS-2KBB60	B250C1500	10	500	250	1200	2.5	
VS-2KBB80	B380C1500	10	500	380	800	3.0	
VS-2KBB100	B500C1500	10	500	500	600	5.0	

#### Note

- For PIN configuration - ~ ~ + add "R" to end of part number, e.g. 2KBB05R (see also dimensions for details - link at the end of datasheet)



FORWARD CONDUCTION					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum DC output current	$I_O$	$T_C = 45\text{ }^\circ\text{C}$ , resistive and inductive load		1.9	A
		$T_C = 45\text{ }^\circ\text{C}$ , capacitive load		1.5	
Maximum peak one cycle, non-repetitive surge current	$I_{FSM}$	$t = 6\text{ ms}$	Following any rated load condition, and with rated $V_{RRM}$ applied following surge	50	A
		$t = 5\text{ ms}$		52	
Maximum $I^2t$ for fusing, initial $T_J = T_J$ maximum	$I^2t$	$t = 10\text{ ms}$	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	
		$t = 10\text{ ms}$		17.7	
		$t = 8.3\text{ ms}$		16.1	
Maximum $I^2\sqrt{t}$ capability for fusing	$I^2\sqrt{t}^{(1)}$	$t = 0.1\text{ to }10\text{ ms}$ , $V_{RRM}$ following surge = 0		177	$A^2\sqrt{s}$
Maximum peak forward voltage per diode	$V_{FM}$	$I_O = 1.9\text{ A}$ ( $3.0\text{ A}_{pk}$ )		1.1	V
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		4	g
		0.14	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?95328">www.vishay.com/doc?95328</a>

## 2KBB

**DIMENSIONS** in millimeters (inches)



**Note**

- For PIN configuration - ~ ~ + add "R" to end of part number



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