

## 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
- RoHS compliant


**RoHS  
COMPLIANT**

### PRODUCT SUMMARY

$I_o$	1.9 A
$V_{RRM}$	100 to 1000 V

### 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
$I_{FSM}$	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 $T_J = 15\text{ °C}$ (V)	$I_{RM}$ TYPICAL PEAK REVERSE CURRENT PER DIODE AT RATED $V_{RRM}$ ( $\mu$ A)		APPLICATION DATA (SEE FIGURE 3)		
PART NUMBER	DIN CODE		$T_J = 25\text{ °C}$	$T_J = 150\text{ °C}$	$V_{RMS}$ MAXIMUM RECOMMENDED AC SUPPLY VOLTAGE (V)	$C_{MAX}$ MAXIMUM LOAD CAPACITANCE ( $\mu$ F)	$R_{MIN}$ MINIMUM SOURCE RESISTANCE ( $\Omega$ )
2KBB10	B40C1500	100	10	500	40	5000	0.5
2KBB20	B80C1500	200	10	500	80	3300	0.8
2KBB40	B125C1500	400	10	500	125	1600	1.5
2KBB60	B250C1500	600	10	500	250	1200	2.5
2KBB80	B380C1500	800	10	500	380	800	3.0
2KBB100	B500C1500	1000	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 Apk)		1.1	V
Operating frequency range	$f$			40 to 2000	Hz

**Note**

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

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.

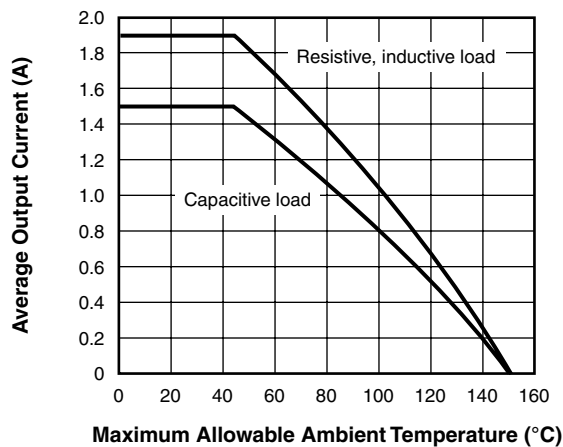


Fig. 1 - Average (DC) Output Current vs. Maximum Allowable Ambient Temperature

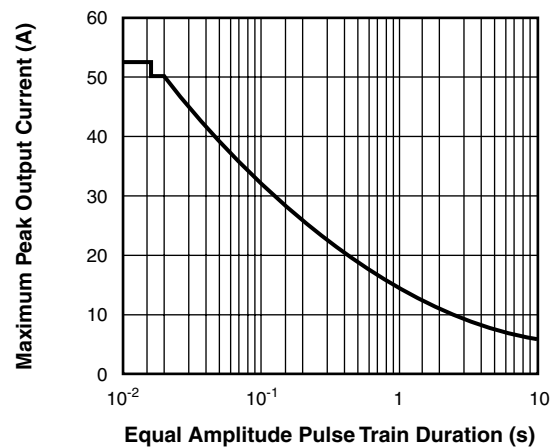


Fig. 2 - Maximum Non-Repetitive Surge Current vs. Pulse Train Duration ( $f = 50\text{ Hz}$ )

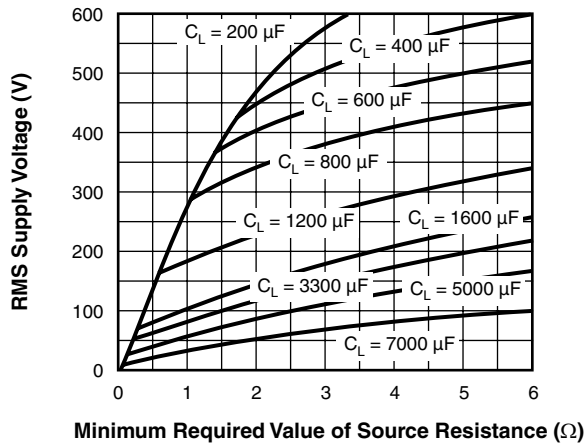


Fig. 3 - Minimum Required Source Resistance vs. RMS Supply Voltage and Load Capacitance

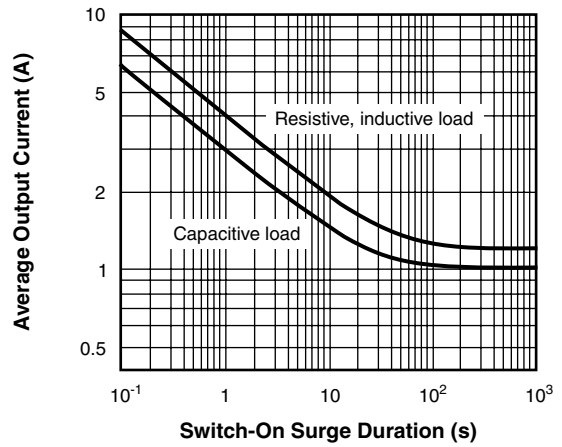
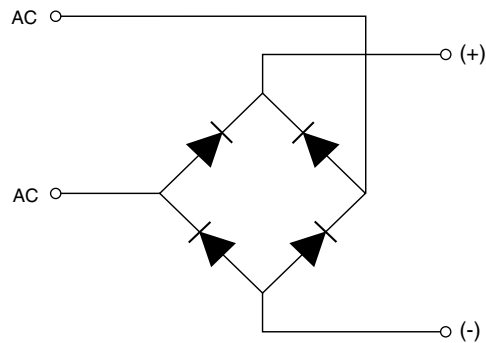


Fig. 4 - Maximum Switch-On Surge Current vs. Surge Duration

**CIRCUIT CONFIGURATION**



LINKS TO RELATED DOCUMENTS	
Dimensions	<a href="http://www.vishay.com/doc?95328">http://www.vishay.com/doc?95328</a>



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