**Vishay Semiconductors** 

www.vishay.com





PRODUCT SUMMARY			
Ι <sub>Ο</sub>	1.9 A		
V <sub>RRM</sub>	50 V to 1000 V		
Package	2KBB		
Circuit	Single phase bridge		

## 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 <u>www.vishay.com/doc?99912</u>

### 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		1.9	A	
I <sub>O</sub>	T <sub>C</sub>	45	°C	
I <sub>FSM</sub>	50 Hz	50	Δ.	
	60 Hz	52	A	
l <sup>2</sup> t	50 Hz	17.7	- A <sup>2</sup> s	
	60 Hz	16.1	A-S	
V <sub>RRM</sub>		100 to 1000	V	
TJ		-40 to 150	°C	

### **ELECTRIACL SPECIFICATIONS**

VOLTAGE RATINGS AND APPLICATION DATA							
CROSS RE	FERENCE	V <sub>BBM</sub> , V <sub>BSM</sub>			APPLICATION DATA (SEE FIGURE 3)		
PART NUMBER DIN CODE	DIN CODE	MAXIMUM PEAK REVERSE VOLTAGE T <sub>J</sub> = 15 °C (V)	TYPICAL PEAK REVERSE CURRENT PER DIODE AT RATED V <sub>RRM</sub> (μA)		V <sub>RMS</sub> MAXIMUM RECOMMENDE D AC SUPPLY VOLTAGE	C <sub>MAX</sub> MAXIMUM LOAD CAPACITANCE	R <sub>MIN</sub> MINIMUM SOURCE RESISTANCE
			T <sub>J</sub> = 25 °C	T <sub>J</sub> = 150 °C	(V)	(μF)	(Ω)
VS-2KBB05	B20C1500	50	10	500	20	7000	0.3
VS-2KBB10	B40C1500	100	10	500	40	5000	0.5
VS-2KBB20	B80C1500	200	10	500	80	3300	0.8
VS-2KBB40	B125C1500	400	10	500	125	1600	1.5
VS-2KBB60	B250C1500	600	10	500	250	1200	2.5
VS-2KBB80	B380C1500	800	10	500	380	800	3.0
VS-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)

Revision: 26-Aug-14 1 Document Number: 93561 For technical questions within your region: <u>DiodesAmericas@vishay.com</u>, <u>DiodesAsia@vishay.com</u>, <u>DiodesEurope@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u>



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## **VS-2KBB Series**

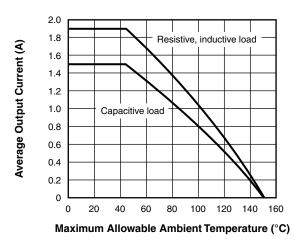
## **Vishay Semiconductors**

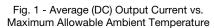
FORWARD CONDUCTION						
PARAMETER	SYMBOL	т	EST CONDITIONS	VALUES	UNITS	
Maximum DC output current	Ι <sub>Ο</sub>	T <sub>C</sub> = 45 °C, resi	stive and inductive load	1.9	^	
		T <sub>C</sub> = 45 °C, capacitive load		1.5	A	
Maximum peak one cycle, non-repetitive surge current	I <sub>FSM</sub>	t = 6 ms	Following any rated load condition, and with rated V <sub>RRM</sub> – applied following surge	50	- A	
		t = 5 ms		52		
Maximum l <sup>2</sup> t for fusing, initial $T_J = T_J$ maximum	l <sup>2</sup> t	t = 10 ms	Rated V <sub>RRM</sub> applied following	12.5	A <sup>2</sup> s	
		t = 8.3 ms	surge, initial T <sub>J</sub> = 150 °C	11.3		
		t = 10 ms		17.7	- A-S	
		t = 8.3 ms		16.1		
Maximum I <sup>2</sup> $\sqrt{t}$ capability for fusing	l²√t (1)	t = 0.1 to 10 ms, $V_{RRM}$ following surge = 0		177	A²√s	
Maximum peak forward voltage per diode	$V_{FM}$	I <sub>O</sub> = 1.9 A (3.0 A <sub>pk</sub> )		1.1	V	
Operating frequency range	f			40 to 2000	Hz	

#### Note

<sup>(1)</sup> I<sup>2</sup>t for time  $t_x = I^2 \sqrt{t} x \sqrt{t_x}$ 

THERMAL AND MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	VALUES	UNITS	
Operating junction and storage temperature range	TJ, T <sub>Stg</sub>	-40 to 150	°C	
Approximate weight		4	g	
Approximate weight		0.14	oz.	





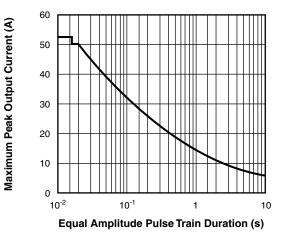


Fig. 2 - Maximum Non-Repetitive Surge Current vs. Pulse Train Duration (f = 50 Hz)

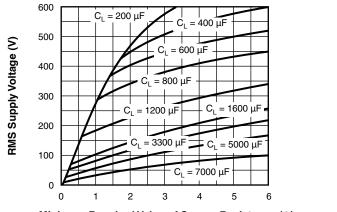
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## **VS-2KBB Series**

## **Vishay Semiconductors**



Minimum Required Value of Source Resistance (Ω)

### **CIRCUIT CONFIGURATION**

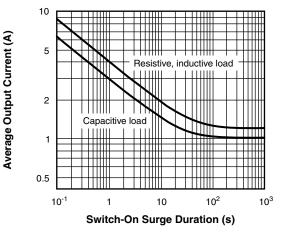
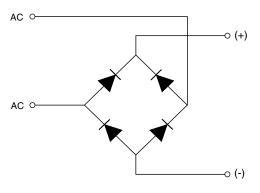


Fig. 4 - Maximum Switch-On Surge Current vs. Surge Duration



LINKS TO RELATED DOCUMENTS				
Dimensions	www.vishay.com/doc?95328			

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

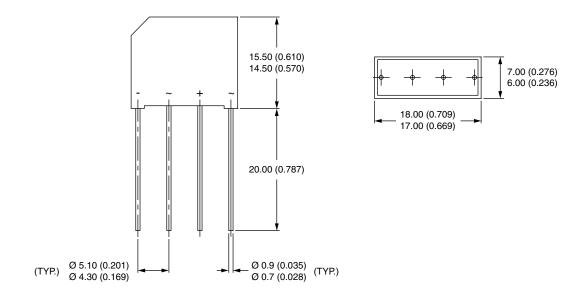


# **Outline Dimensions**

Vishay Semiconductors

2KBB

### **DIMENSIONS** in millimeters (inches)



### Note

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



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