

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


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 ² 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} (μA)		APPLICATION DATA (SEE FIGURE 3)		
PART NUMBER	DIN CODE		$T_J = 25^\circ\text{C}$	$T_J = 150^\circ\text{C}$	V_{RMS} MAXIMUM RECOMMENDE D AC SUPPLY VOLTAGE (V)	C_{MAX} MAXIMUM LOAD CAPACITANCE (μF)	R_{MIN} MINIMUM SOURCE RESISTANCE (Ω)
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 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	www.vishay.com/doc?95328

2KBB

DIMENSIONS in millimeters (inches)



Note

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



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