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^2s
	60 Hz	16.1	
V_{RRM}		100 to 1000	V
T_J		-40 to 150	°C

ELECTRIACL SPECIFICATIONS

VOLTAGE RATINGS AND APPLICATION DATA

CROSS REFERENCE		V_{RRM}, V_{RSM} MAXIMUM PEAK REVERSE VOLTAGE T_J = 15 °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 °C	T_J = 150 °C	V_{RMS} MAXIMUM RECOMMENDED AC SUPPLY VOLTAGE (V)	C_{MAX} MAXIMUM LOAD CAPACITANCE (µF)	R_{MIN} MINIMUM SOURCE RESISTANCE (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)

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FORWARD CONDUCTION					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum DC output current	I_O	T_C = 45 °C, resistive and inductive load		1.9	A
		T_C = 45 °C, capacitive load		1.5	
Maximum peak one cycle, non-repetitive surge current	I_{FSM}	t = 6 ms	Following any rated load condition, and with rated V_{RRM} applied following surge	50	A
		t = 5 ms		52	
Maximum I^2t for fusing, initial $T_J = T_J$ maximum	I^2t	t = 10 ms	Rated V_{RRM} applied following surge, initial T_J = 150 °C	12.5	A^2s
		t = 8.3 ms		11.3	
		t = 10 ms		17.7	
		t = 8.3 ms		16.1	
Maximum $I^2\sqrt{t}$ capability for fusing	$I^2\sqrt{t}$ (1)	t = 0.1 to 10 ms, V_{RRM} following surge = 0		177	$A^2\sqrt{s}$
Maximum peak forward voltage per diode	V_{FM}	I_O = 1.9 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	°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 Hz)

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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

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2KBB

DIMENSIONS in millimeters (inches)

Note

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

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