# 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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