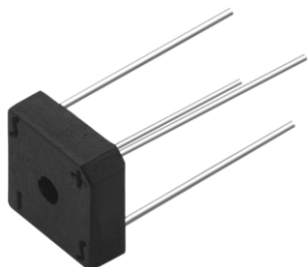


## Single Phase Rectifier Bridge, 3 A, 6 A



D-72

### FEATURES

- Suitable for printed circuit board or chassis mounting
- Compact construction
- High surge current capability
- Compliant to RoHS directive 2002/95/EC



**RoHS**  
COMPLIANT

### DESCRIPTION

The KBPC series of single phase rectifier bridge consists of four silicon junctions connected as a full bridge. These devices are intended for general use in industrial and consumer equipment.

### PRODUCT SUMMARY

|             |                |
|-------------|----------------|
| $I_{O(AV)}$ | 3.0 A, 6.0 A   |
| $V_{RRM}$   | 50 V to 1000 V |

### MAJOR RATINGS AND CHARACTERISTICS

| SYMBOL    | CHARACTERISTICS | KBPC1       | KBPC6 | UNITS            |
|-----------|-----------------|-------------|-------|------------------|
| $I_O$     |                 | 3           | 6     | A                |
| $I_{FSM}$ | 50 Hz           | 50          | 125   | A                |
|           | 60 Hz           | 55          | 137   |                  |
| $I^2t$    | 50 Hz           | 12.5        | 78    | A <sup>2</sup> s |
|           | 60 Hz           | 11.4        | 71    |                  |
| $V_{RRM}$ | Range           | 50 to 1000  |       | V                |
| $T_J$     |                 | - 40 to 150 |       | °C               |

### ELECTRICAL SPECIFICATIONS

#### VOLTAGE RATINGS

| PART NUMBER |          | $V_{RRM}$ , MAXIMUM REPETITIVE<br>PEAK REVERSE VOLTAGE<br>V | $V_{RSM}$ , MAXIMUM<br>NON-REPETITIVE<br>PEAK REVERSE VOLTAGE<br>V | $V_{RMS}$ , MAXIMUM<br>RECOMMENDED RMS<br>SUPPLY VOLTAGE<br>V |
|-------------|----------|-------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------|
| KBPC1005    | KBPC6005 | 50                                                          | 50                                                                 | 20                                                            |
| KBPC102     | KBPC602  | 200                                                         | 200                                                                | 80                                                            |
| KBPC104     | KBPC604  | 400                                                         | 400                                                                | 125                                                           |
| KBPC106     | KBPC606  | 600                                                         | 600                                                                | 250                                                           |
| KBPC108     | KBPC608  | 800                                                         | 800                                                                | 380                                                           |
| KBPC110     | KBPC610  | 1000                                                        | 1000                                                               | 500                                                           |

| FORWARD CONDUCTION                                   |                   |                                                                 |                                                                                     |            |       |                   |
|------------------------------------------------------|-------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------|------------|-------|-------------------|
| PARAMETER                                            | SYMBOL            | TEST CONDITIONS                                                 |                                                                                     | KBPC1      | KBPC6 | UNITS             |
| Maximum DC output current                            | I <sub>O</sub>    | T <sub>C</sub> = 50 °C, resistive or inductive load             |                                                                                     | 3.0        | 6.0   | A                 |
|                                                      |                   | T <sub>C</sub> = 50 °C, capacitive load                         |                                                                                     | 2.4        | 4.7   |                   |
| Maximum peak one cycle, non-repetitive surge current | I <sub>FSM</sub>  | t = 10 ms, 20 ms                                                | Following any rated load condition and with rated V <sub>RRM</sub> reapplied        | 50         | 125   |                   |
|                                                      |                   | t = 8.3 ms, 16.7 ms                                             |                                                                                     | 55         | 137   |                   |
| Maximum I <sup>2</sup> t capability for fusing       | I <sup>2</sup> t  | t = 10 ms                                                       | Initial T <sub>J</sub> = T <sub>J</sub> maximum<br>100 % V <sub>RRM</sub> reapplied | 12.5       | 78    | A <sup>2</sup> s  |
|                                                      |                   | t = 8.3 ms                                                      |                                                                                     | 11.4       | 71    |                   |
|                                                      |                   | t = 10 ms                                                       |                                                                                     | 17.7       | 110   |                   |
|                                                      |                   | t = 8.3 ms                                                      |                                                                                     | 16.1       | 1000  |                   |
| Maximum I <sup>2</sup> √t capability for fusing      | I <sup>2</sup> √t | t = 0.1 ms to 10 ms, no voltage reapplied                       |                                                                                     | 177        | 1105  | A <sup>2</sup> √s |
| Maximum peak forward voltage per diode               | V <sub>FM</sub>   | I <sub>FM</sub> = 0.5 x I <sub>O</sub> , T <sub>J</sub> = 25 °C |                                                                                     | 1.1        | 1.2   | V                 |
| Typical peak reverse leakage per diode               | I <sub>RM</sub>   | T <sub>J</sub> = 25 °C, 100 % V <sub>RRM</sub>                  |                                                                                     | 10         | 10    | mA                |
|                                                      |                   | T <sub>J</sub> = 150 °C, 100 % V <sub>RRM</sub>                 |                                                                                     | 1.0        | 1.0   |                   |
| Operating frequency range                            | f                 |                                                                 |                                                                                     | 40 to 1000 |       | Hz                |
| Maximum repetitive peak reverse voltage range        | V <sub>RRM</sub>  |                                                                 |                                                                                     | 50 to 1000 |       | V                 |

| THERMAL AND MECHANICAL SPECIFICATIONS   |                   |             |       |                    |
|-----------------------------------------|-------------------|-------------|-------|--------------------|
| PARAMETER                               | SYMBOL            | KBPC1       | KBPC6 | UNITS              |
| Operating and storage temperature range | $T_J$ , $T_{Stg}$ | - 40 to 150 |       | $^{\circ}\text{C}$ |
| Thermal resistance, junction to case    | $R_{thJC}$        | -           | -     | K/W                |
| Approximate weight                      |                   | 5           | 6     | g                  |
|                                         |                   | 0.18        | 0.21  | oz.                |

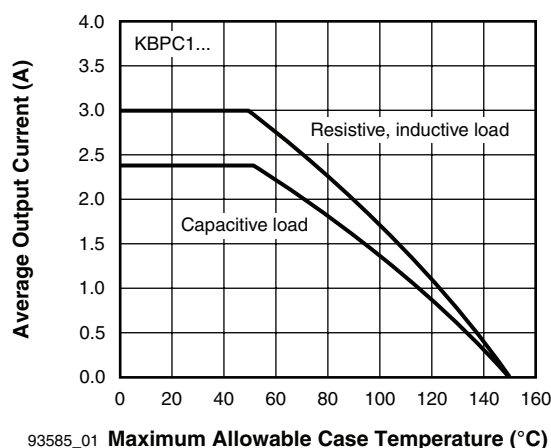


Fig. 1 - Case Temperature Ratings

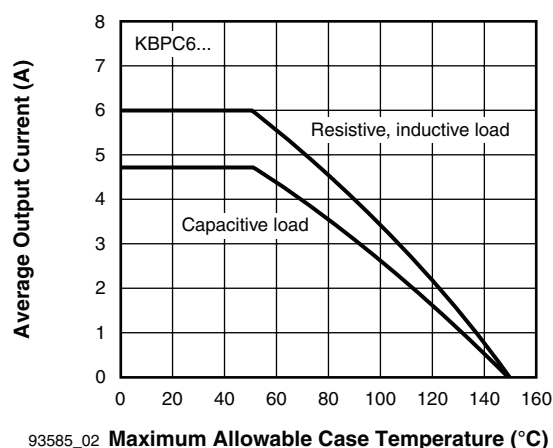


Fig. 2 - Case Temperature Ratings

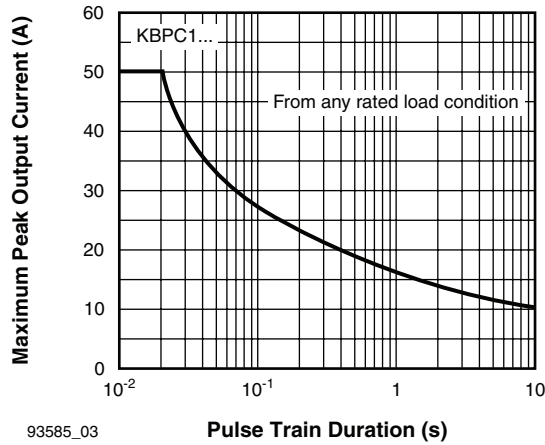


Fig. 3 - Non-Repetitive Surge Ratings

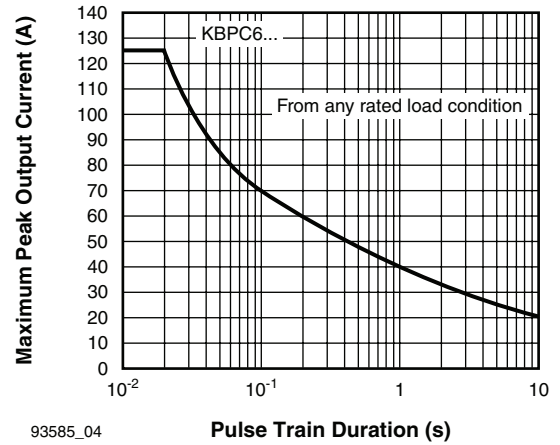
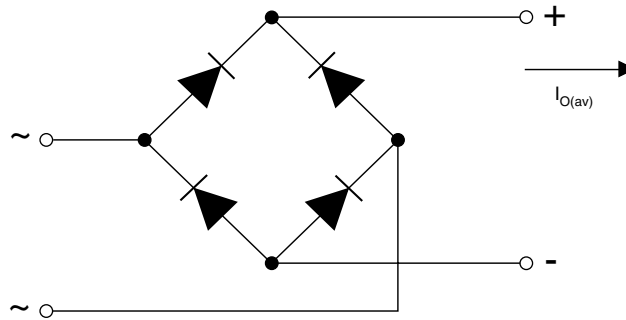


Fig. 4 - Non-Repetitive Surge Ratings

### CIRCUIT CONFIGURATION



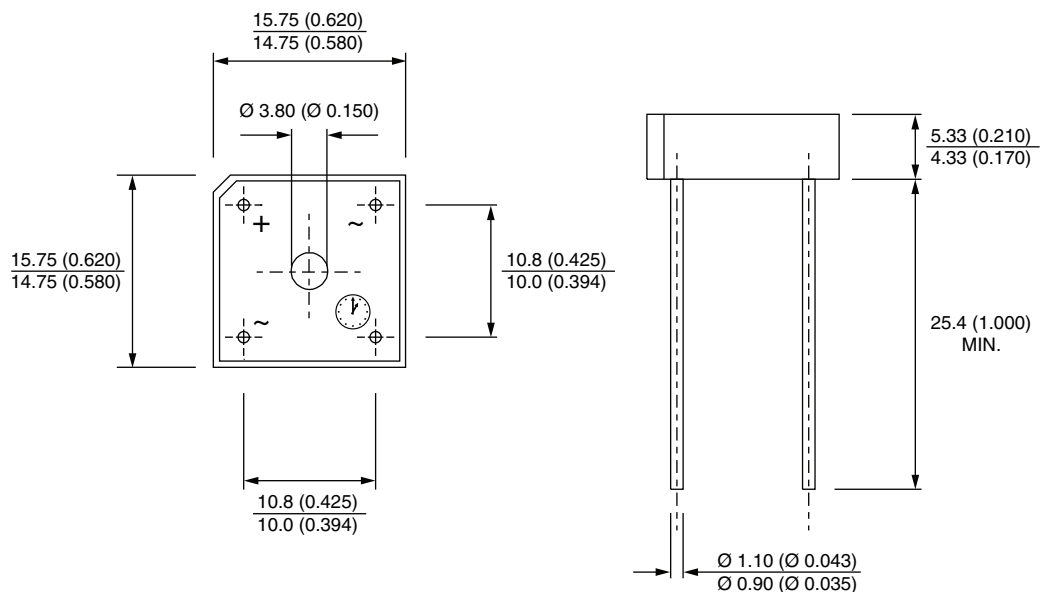
### LINKS TO RELATED DOCUMENTS

Dimensions

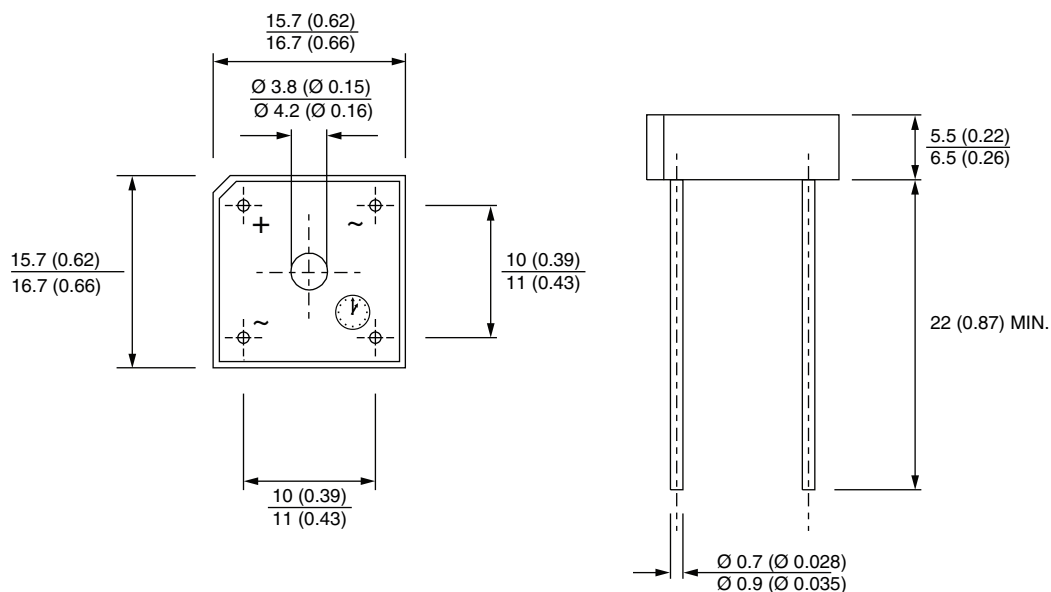
[www.vishay.com/doc?95250](http://www.vishay.com/doc?95250)

**D-72**

**DIMENSIONS** in millimeters (inches): **KBPC6, KBPC8**



**DIMENSIONS** in millimeters (inches): **KBPC1**





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