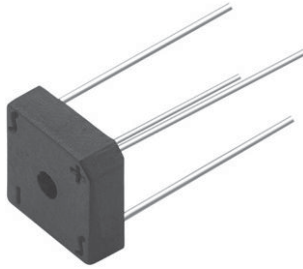


## Single Phase Rectifier Bridge, 3 A, 6 A



D-72

### FEATURES

- Suitable for printed circuit board or chassis mounting
- Compact construction
- High surge current capability
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### DESCRIPTION

The VS-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.

### PRIMARY CHARACTERISTICS

|                       |                     |
|-----------------------|---------------------|
| $I_{O(AV)}$           | 3.0 A to 6.0 A      |
| $V_{RRM}$             | 50 V to 1000 V      |
| Package               | D-72                |
| Circuit configuration | Single phase bridge |

### MAJOR RATINGS AND CHARACTERISTICS

| SYMBOL    | CHARACTERISTICS | VALUES<br>KBPC1 | VALUES<br>KBPC6 | UNITS            |
|-----------|-----------------|-----------------|-----------------|------------------|
| $I_O$     |                 | 3               | 6               | A                |
|           | $T_C$           | 50              | 50              | °C               |
| $I_{FSM}$ | 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 NON-REPETITIVE<br>PEAK REVERSE VOLTAGE<br>V | $V_{RMS}$ , MAXIMUM RECOMMENDED<br>RMS SUPPLY VOLTAGE<br>V |
|-------------|-------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------|
| VS-KBPC1005 | 50                                                          | 50                                                              | 20                                                         |
| VS-KBPC101  | 100                                                         | 100                                                             | 40                                                         |
| VS-KBPC102  | 200                                                         | 200                                                             | 80                                                         |
| VS-KBPC104  | 400                                                         | 400                                                             | 125                                                        |
| VS-KBPC106  | 600                                                         | 600                                                             | 250                                                        |
| VS-KBPC108  | 800                                                         | 800                                                             | 380                                                        |
| VS-KBPC110  | 1000                                                        | 1000                                                            | 500                                                        |
| VS-KBPC6005 | 50                                                          | 50                                                              | 20                                                         |
| VS-KBPC601  | 100                                                         | 100                                                             | 40                                                         |
| VS-KBPC602  | 200                                                         | 200                                                             | 80                                                         |
| VS-KBPC604  | 400                                                         | 400                                                             | 125                                                        |
| VS-KBPC606  | 600                                                         | 600                                                             | 250                                                        |
| VS-KBPC608  | 800                                                         | 800                                                             | 380                                                        |
| VS-KBPC610  | 1000                                                        | 1000                                                            | 500                                                        |

**FORWARD CONDUCTION**

| PARAMETER                                            | SYMBOL        | TEST CONDITIONS                                                  | VALUES KBPC1 | VALUES KBPC6 | UNITS         |
|------------------------------------------------------|---------------|------------------------------------------------------------------|--------------|--------------|---------------|
| Maximum DC output current                            | $I_O$         | $T_C = 50\text{ }^{\circ}\text{C}$ , resistive or inductive load | 3.0          | 6.0          | A             |
|                                                      |               | $T_C = 50\text{ }^{\circ}\text{C}$ , capacitive load             | 2.4          | 4.7          |               |
| Maximum peak one cycle, non-repetitive surge current | $I_{FSM}$     | $t = 10\text{ ms}$ , 20 ms                                       | 50           | 125          |               |
|                                                      |               | $t = 8.3\text{ ms}$ , 16.7 ms                                    | 55           | 137          |               |
| Maximum $I^2t$ capability for fusing                 | $I^2t$        | $t = 10\text{ ms}$                                               | 12.5         | 78           | $A^2s$        |
|                                                      |               | $t = 8.3\text{ ms}$                                              | 11.4         | 71           |               |
|                                                      |               | $t = 10\text{ ms}$                                               | 17.7         | 110          |               |
|                                                      |               | $t = 8.3\text{ ms}$                                              | 16.1         | 1000         |               |
| Maximum $I^2\sqrt{t}$ capability for fusing          | $I^2\sqrt{t}$ | $t = 0.1\text{ ms to }10\text{ ms}$ , no voltage reapplied       | 177          | 1105         | $A^2\sqrt{s}$ |
| Maximum peak forward voltage per diode               | $V_{FM}$      | $I_{FM} = 0.5 \times I_O$ , $T_J = 25\text{ }^{\circ}\text{C}$   | 1.1          | 1.2          | V             |
| Typical peak reverse leakage per diode               | $I_{RM}$      | $T_J = 25\text{ }^{\circ}\text{C}$ , 100 % $V_{RRM}$             | 10           | 10           | $\mu A$       |
|                                                      |               | $T_J = 150\text{ }^{\circ}\text{C}$ , 100 % $V_{RRM}$            | 1.0          | 1.0          | mA            |
| Operating frequency range                            | f             |                                                                  | 40 to 1000   |              | Hz            |
| Maximum repetitive peak reverse voltage range        | $V_{RRM}$     |                                                                  | 50 to 1000   |              | V             |

**THERMAL AND MECHANICAL SPECIFICATIONS**

| PARAMETER                               | SYMBOL         | VALUES KBPC1 | VALUES 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.                |

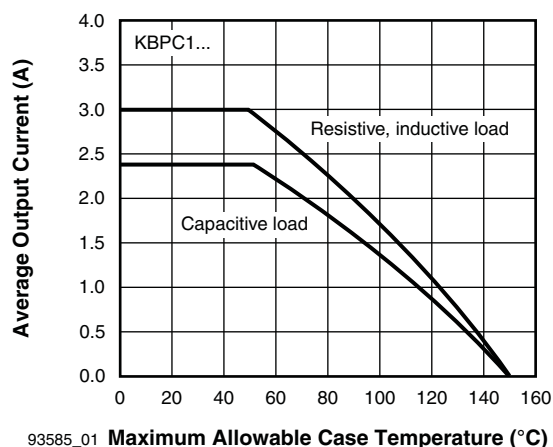


Fig. 1 - Case Temperature Ratings

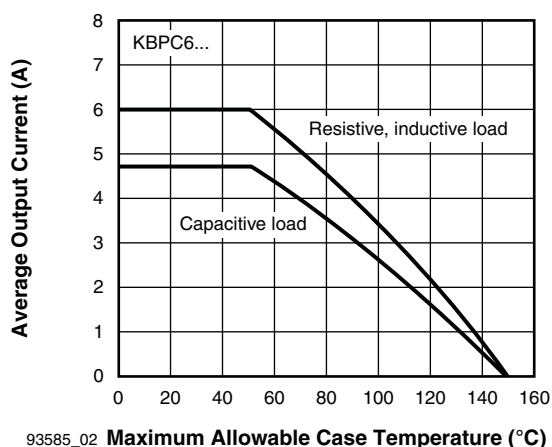


Fig. 2 - Case Temperature Ratings

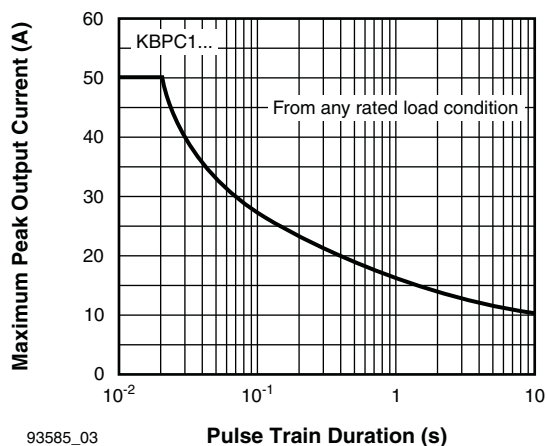


Fig. 3 - Non-Repetitive Surge Ratings

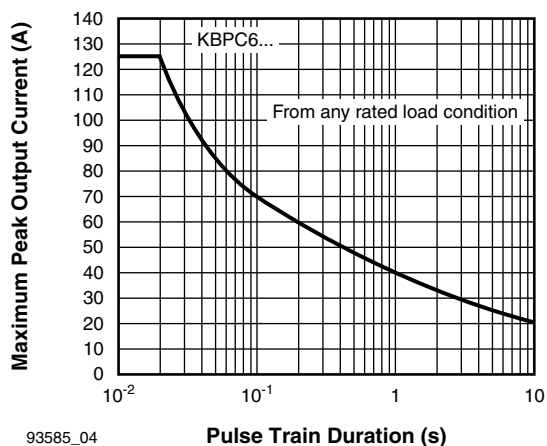
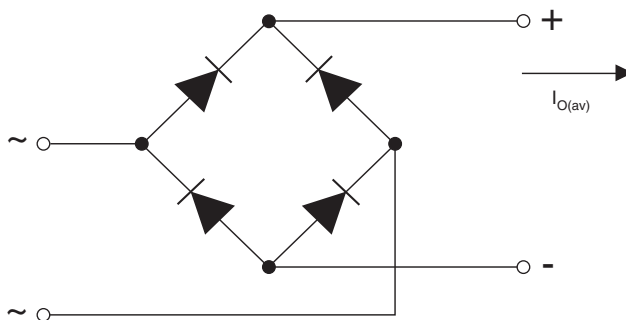


Fig. 4 - Non-Repetitive Surge Ratings

## CIRCUIT CONFIGURATION



### LINKS TO RELATED DOCUMENTS

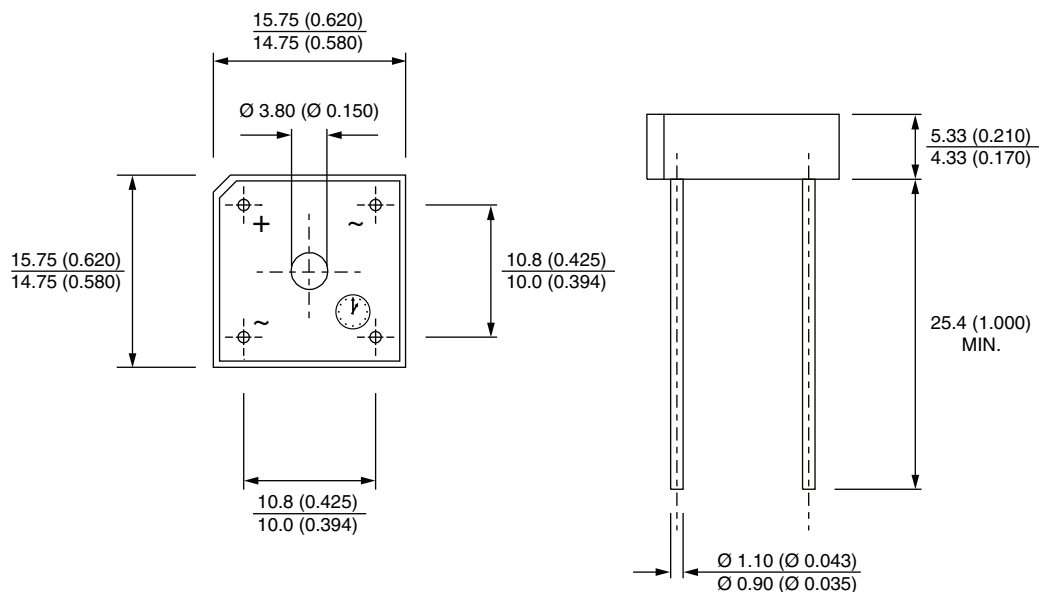
Dimensions

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

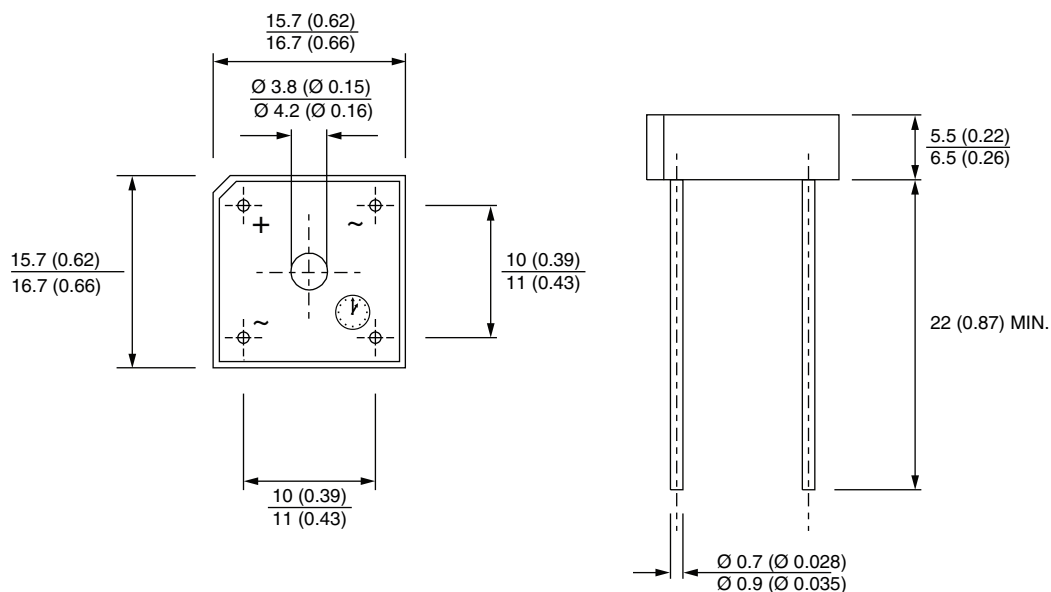


## D-72

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



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





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