

INTERNATIONAL RECTIFIER



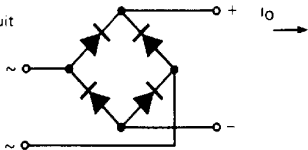
## KBPC1, KBPC6 SERIES

### 3A, 6A single phase rectifier bridges

#### Maximum Ratings

|           | KBPC1      | KBPC6 | Units            |
|-----------|------------|-------|------------------|
| $I_O$     | 3          | 6     | A                |
| $I_{FSM}$ | 50Hz       | 50    | A                |
|           | 60Hz       | 55    | A                |
| $I^2t$    | 50Hz       | 12.5  | A <sup>2</sup> s |
|           | 60Hz       | 11.4  | A <sup>2</sup> s |
| $V_{RRM}$ | 50 to 1000 |       | V                |

Circuit



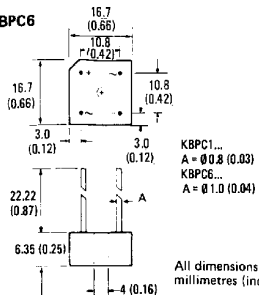
#### Description

3A and 6A single phase encapsulated bridge rectifiers consisting of four single diodes connected as a full bridge. They are suitable for general applications in industrial and consumer equipment.

#### Features

- Suitable for printed circuit board or chassis mounting
- Compact construction
- High surge current capability

#### KBPC1, KBPC6



## Electrical Specifications

|               |  | KBPC1      | KBPC6 | Units         | Conditions   |
|---------------|--|------------|-------|---------------|--|
| $I_O$         | Maximum DC Output current                            | 3.0        | 6.0   | A             | $T_C = 50^\circ\text{C}$ , Resistive and inductive load  |
|               |  | 2.4        | 4.7   | A             | $T_C = 50^\circ\text{C}$ , capacitive load   |
| $I_{FSM}$     | Maximum peak one cycle, non-repetitive surge current | 50         | 125   | A             | $t = 10\text{ms}, 20\text{ms}$ Following any rated load condition and with rated $V_{RRM}$ reapplied |
|               |  | 55         | 137   | A             | $t = 8.3\text{ms}, 16.7\text{ms}$  |
| $I^2t$        | Maximum $I^2t$ capability for fusing                 | 12.5       | 78    | $A^2s$        | $t = 10\text{ms}$ Initial $T_J = T_J \text{ max}$<br>100% $V_{RRM}$ reapplied                        |
|               |  | 11.4       | 71    | $A^2s$        | $t = 8.3\text{ms}$   |
|               |  | 17.7       | 110   | $A^2s$        | $t = 10\text{ms}$ Initial $T_J = T_J \text{ max}$<br>No voltage reapplied                            |
|               |  | 16.1       | 100   | $A^2s$        | $t = 8.3\text{ms}$   |
| $I^2\sqrt{t}$ | Maximum $I^2\sqrt{t}$ capability for fusing          | 177        | 1105  | $A^2\sqrt{s}$ | $t = 0.1$ to $10\text{ms}$ , No voltage reapplied  |
| $V_{FM}$      | Maximum peak forward voltage per diode               | 1.1        | 1.2   | V             | $I_{FM} = 0.5 \times I_O$ , $T_J = 25^\circ\text{C}$   |
| $I_{RM}$      | Typical peak reverse leakage current per diode       | 10         | 10    | $\mu\text{A}$ | $T_J = 25^\circ\text{C}$   |
|               |  | 1.0        | 1.0   | mA            | $T_J = 150^\circ\text{C}$ 100% $V_{RRM}$   |
| f             | Operating frequency range                            | 40 to 1000 |       | Hz            |  |

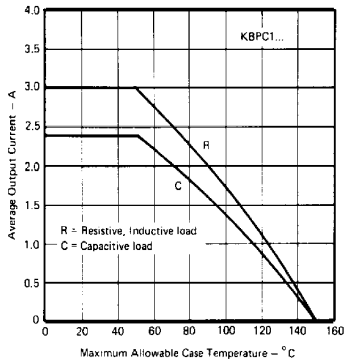
## Thermal and Mechanical Specifications

|           |                             | KBPC1      | KBPC6    | Units            | Conditions |
|-----------|-----------------------------|------------|----------|------------------|------------|
| $T_J$     | Operating temperature range | -40 to 150 |          | $^\circ\text{C}$ |            |
| $T_{stg}$ | Storage temperature range   | -40 to 150 |          | $^\circ\text{C}$ |            |
| W         | Approximate weight          | 5 (0.18)   | 6 (0.21) | g (oz)           |            |

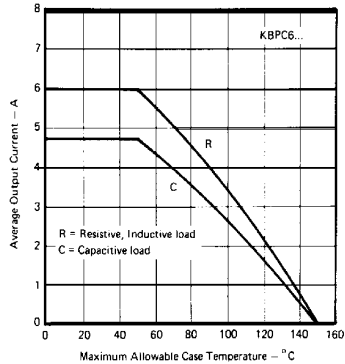
## Voltage Specifications

| Part number       | $V_{RRM}$ Maximum repetitive peak reverse voltage | $V_{RSM}$ Maximum non-repetitive peak reverse voltage | $V_{RMS}$ Maximum recommended RMS supply voltage |
|-------------------|---|---|--|
|                   | V   | V   | 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  |

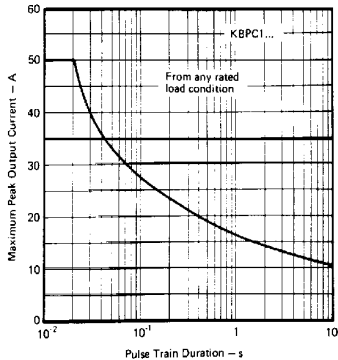
**Fig. 1 – Case Temperature Ratings**



**Fig. 2 – Case Temperature Ratings**



**Fig. 3 – Non-Repetitive Surge Ratings**



**Fig. 4 – Non-Repetitive Surge Ratings**

