## Glass Passivated Single-Phase Bridge Rectifier, 10A KBJ1004 Thru KBJ1012



All dimensions in millimeters

## FEATURES

- UL recognition file number E320098
- Typical IR less than $2.0 \mu \mathrm{~A}$
- High surge current capability
- Low thermal resistance
- Compliant to RoHS
- Isolation voltage up to 2500 V

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## TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for big power supply, field supply for DC motor, industrial automation applications.

## ADVANTAGE

- International standard package

Epoxy meets UL 94 V-O flammability rating

- Small volume, light weight
- Small thermal resistance

| PRIMARY CHARACTERRISTICS |  |
| :---: | :---: |
| $\mathrm{I}_{\mathrm{F}(\mathrm{AV})}$ | 10 A |
| $\mathrm{~V}_{\text {RRM }}$ | 400 V to 1200 V |
| $\mathrm{I}_{\mathrm{FSM}}$ | 210 A |
| $\mathrm{I}_{\mathrm{R}}$ | $5 \mu \mathrm{~A}$ |
| $\mathrm{~V}_{\mathrm{F}}$ | 1.10 V |
| $\mathrm{~T}_{\text {Jmax. }}$ | $150^{\circ} \mathrm{C}$ |

- High heat-conduction rate
- Low temperature rise
- High temperature soldering guaranteed : $260^{\circ} \mathrm{C} / 10$ second, 2.3 kg tension force
- Weight: 4.0 g ( 0.14 ozs )

SEMICONDUCTOR

## MAJOR RATINGS AND CHARACTERISTICS $\left(\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}\right.$ unless otherwise noted)

| PARAMETER | SYMBOL | KBJ10 |  |  |  |  | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 04 | 06 | 08 | 10 | 12 |  |
| Maximum repetitive peak reverse voltage | $\mathrm{V}_{\text {RRM }}$ | 400 | 600 | 800 | 1000 | 1200 | V |
| Peak reverse non-repetitive voltage | $\mathrm{V}_{\text {RSM }}$ | 500 | 700 | 900 | 1100 | 1300 | V |
| Maximum DC blocking voltage | $V_{D C}$ | 400 | 600 | 800 | 1000 | 1200 | V |
| Maximum average forward rectified output current, $\mathrm{T}_{\mathrm{c}}=85^{\circ} \mathrm{C}$ | $\mathrm{I}_{\mathrm{F}(\mathrm{AV})}$ | 10 |  |  |  |  | A |
| Peak forward surge current single sine-wave superimposed on rated load | $\mathrm{I}_{\text {FSM }}$ | 210 |  |  |  |  | A |
| Rating (non-repetitive, for t greater than 1 ms and less than 8.3 ms ) for fusing | $1^{2} \mathrm{t}$ | 183 |  |  |  |  | $A^{2} \mathrm{~s}$ |
| RMS isolation voltage from case to leads | $\mathrm{V}_{\text {Iso }}$ | 2500 |  |  |  |  | V |
| Operating junction storage temperature range | TJ | -40 to 150 |  |  |  |  | ${ }^{\circ} \mathrm{C}$ |
| Storage temperature range | Tstg | -40 to 150 |  |  |  |  | ${ }^{\circ} \mathrm{C}$ |

## ELECTRICAL CHARACTERISTICS ( $\mathrm{T}_{\mathrm{A}}=\mathbf{2 5 ^ { \circ }} \mathbf{C}$ unless otherwise noted)

| PARAMETER | TEST CONDITIONS | SYMBOL | KBJ10 |  |  |  |  | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 04 | 06 | 08 | 10 | 12 |  |
| Maximum instantaneous forward drop per diode | $\mathrm{I}_{\mathrm{F}}=5 \mathrm{~A}$ | $V_{F}$ | 1.10 |  |  |  |  | V |
| Maximum reverse DC current at rated DC blocking voltage per diod | $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ | $\mathrm{I}_{\mathrm{R}}$ | 5 |  |  |  |  | $\mu \mathrm{A}$ |
|  | $\mathrm{T}_{\mathrm{A}}=150^{\circ} \mathrm{C}$ |  | 500 |  |  |  |  |  |


| PARAMETER | TEST CONDITIONS | SYMBOL | KBJ10 |  |  |  |  | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 04 | 06 | 08 | 10 | 12 |  |
| Typical thermal resistance junction to case | Single-side heat dissipation, sine half wave | $\mathrm{R}_{\text {өJc }}{ }^{(1)}$ | 5.0 |  |  |  |  | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |
| Mounting torque $\quad$ to heatsink M3 $\pm 10 \%$ | A mounting compound is recommended and the torque should be rechecked after a period of 3 hours to allow for the spread of the compound. |  | 0.8 |  |  |  |  | Nm |
| Approximate weight |  |  | 4.0 |  |  |  |  | g |

## Notes

(1) With heatsink, single side heat dissipation, half sine wave.


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- Product type : "KBJ" Package,1Ø Bridge

2 - $\mathrm{I}_{\mathrm{F}(\mathrm{AV})}$ rating : "10" for 10 A
3 - Voltage code : code $\times 100=V_{\text {RRM }}$

## Nell High Power Products

Fig. 1 Derating curve for output rectified current


Fig. 3 Typical reverse characteristics per bridge element


Fig. 2 Maximum non-repetitive peak forward surge current per bridge element


Fig. 4 Typical forward characteristics per bridge element


