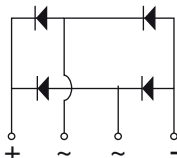


## Enhanced isoCink+™ Bridge Rectifiers



**isoCink+™**  
**Case Style BU**



### LINKS TO ADDITIONAL RESOURCES



| PRIMARY CHARACTERISTICS |                      |
|-------------------------|----------------------|
| $I_{F(AV)}$             | 15 A                 |
| $V_{RRM}$               | 600 V, 800 V, 1000 V |
| $I_{FSM}$               | 200 A                |
| $I_R$                   | 5 $\mu$ A            |
| $V_F$ at $I_F = 7.5$ A  | 0.87 V               |
| $T_J$ max.              | 150 °C               |
| Package                 | BU                   |
| Circuit configurations  | In-line              |

### FEATURES

- UL recognition file number E312394
- Thin single in-line package
- Glass passivated chip junction
- Superior thermal conductivity
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
Available

### TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for switching power supply, home appliances and white-goods applications.

### MECHANICAL DATA

**Case:** BU

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 and M3 suffix meet JESD 201 class 1A whisker test

**Polarity:** as marked on body

**Mounting Torque:** 10 cm·kg (8.8 inches·lbs) max.

**Recommended Torque:** 5.7 cm·kg (5 inches·lbs)

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

| PARAMETER                                                                                    | SYMBOL                            | BU1506                     | BU1508 | BU1510 | UNIT             |
|----------------------------------------------------------------------------------------------|-----------------------------------|----------------------------|--------|--------|------------------|
| Maximum repetitive peak reverse voltage                                                      | V <sub>RRM</sub>                  | 600                        | 800    | 1000   | V                |
| Average rectified forward current (Fig. 1, 2)                                                | I <sub>O</sub>                    | T <sub>C</sub> = 80 °C (1) |        |        | A                |
|                                                                                              |                                   | T <sub>A</sub> = 25 °C (2) |        |        |                  |
| Non-repetitive peak forward surge current<br>8.3 ms single sine-wave, T <sub>J</sub> = 25 °C | I <sub>FSM</sub>                  | 200                        |        |        | A                |
| Rating for fusing (t < 8.3 ms) T <sub>J</sub> = 25 °C                                        | I <sup>2</sup> t                  | 160                        |        |        | A <sup>2</sup> s |
| Operating junction and storage temperature range                                             | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150                |        |        | °C               |

#### Notes

<sup>(1)</sup> With 60 W air cooled heatsink

<sup>(2)</sup> Without heatsink, free air

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                                                      | TEST CONDITIONS      | SYMBOL                              | TYP. | MAX. | UNIT          |
|----------------------------------------------------------------|----------------------|-------------------------------------|------|------|---------------|
| Maximum instantaneous forward voltage per diode <sup>(1)</sup> | $I_F = 7.5\text{ A}$ | $T_A = 25\text{ }^{\circ}\text{C}$  | 0.97 | 1.05 | V             |
|                                                                |                      | $T_A = 125\text{ }^{\circ}\text{C}$ | 0.87 | 0.95 |               |
| Maximum reverse current per diode                              | rated $V_R$          | $T_A = 25\text{ }^{\circ}\text{C}$  | -    | 5.0  | $\mu\text{A}$ |
|                                                                |                      | $T_A = 125\text{ }^{\circ}\text{C}$ | 90   | 250  |               |
| Typical junction capacitance per diode                         | 4.0 V, 1 MHz         | $C_J$                               | 70   | -    | pF            |

**Note**

<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

**THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                  | SYMBOL                          | BU1506 | BU1508 | BU1510 | UNIT |
|----------------------------|---------------------------------|--------|--------|--------|------|
| Typical thermal resistance | R <sub>θJC</sub> <sup>(1)</sup> | 2.5    |        |        | °C/W |
|                            | R <sub>θJA</sub> <sup>(2)</sup> | 20     |        |        |      |

**Notes**

<sup>(1)</sup> With 60 W air cooled heatsink

<sup>(2)</sup> Without heatsink, free air

**ORDERING INFORMATION** (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|---------------|-----------------|------------------------|---------------|---------------|
| BU1506-E3/45  | 4.75            | 45                     | 20            | Tube          |
| BU1506-E3/51  | 4.75            | 51                     | 250           | Paper tray    |
| BU1506-M3/45  | 4.75            | 45                     | 20            | Tube          |

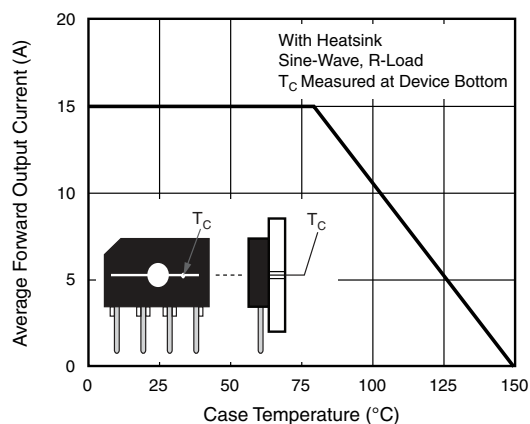
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise specified)


Fig. 1 - Derating Curve Output Rectified Current

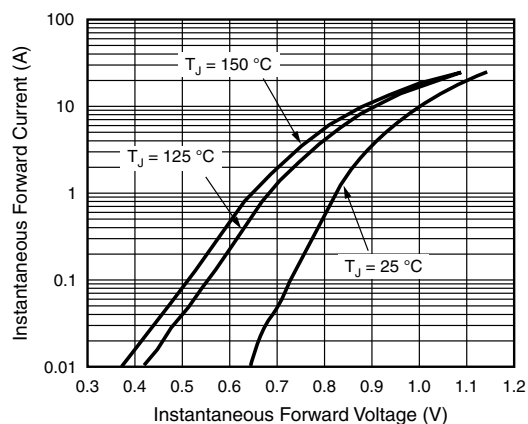


Fig. 4 - Typical Forward Characteristics Per Diode

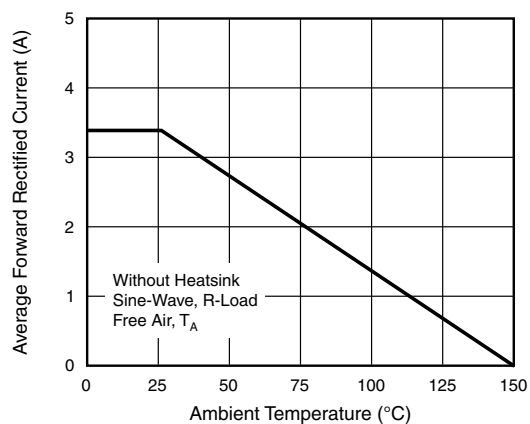


Fig. 2 - Forward Current Derating Curve

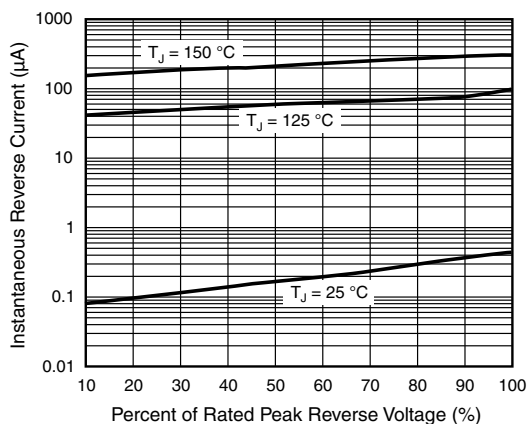


Fig. 5 - Typical Reverse Characteristics Per Diode

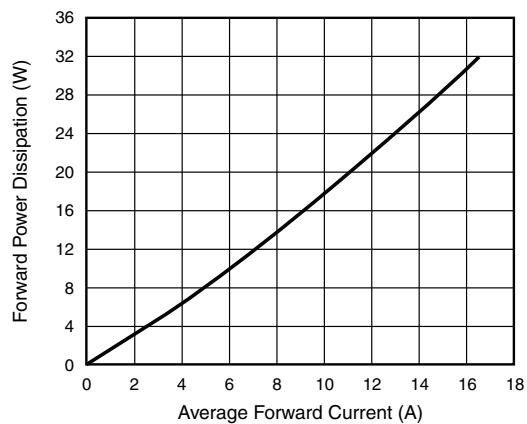


Fig. 3 - Forward Power Dissipation

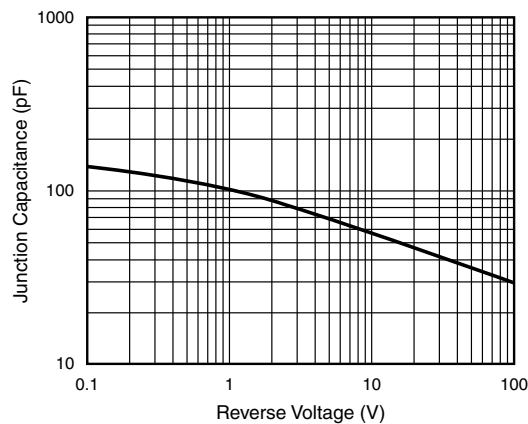
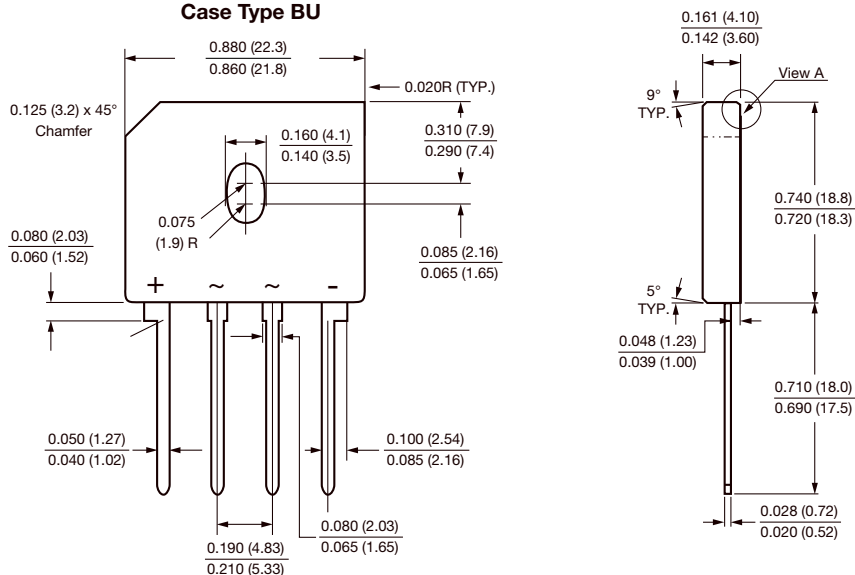


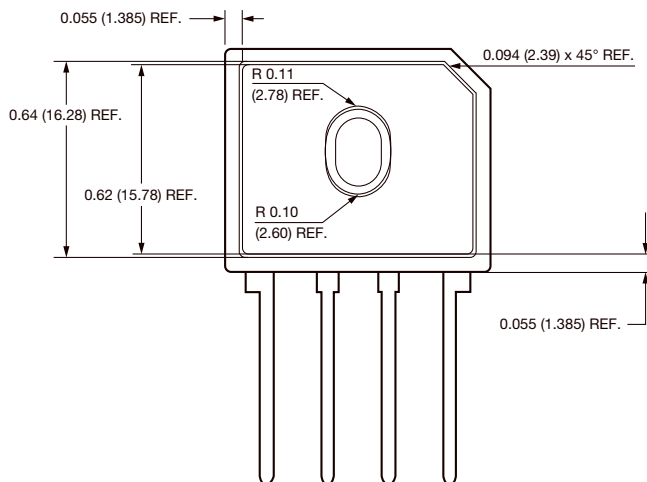
Fig. 6 - Typical Junction Capacitance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

### Case Type BU

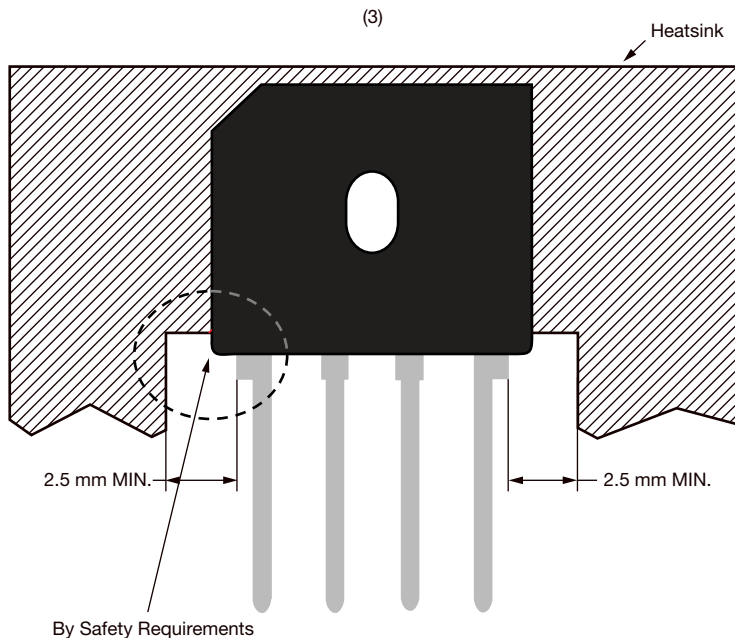


Polarity shown on front side of case, positive lead beveled corner



# APPLICATION NOTE

1. Device UL approved for safety use dielectric strength of 1500 V.
2. If device is mounted in Floating Ground (F. G.) application, insulator is recommended to use to meet safety requirement.
3. Heat sink shape recommendation:





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