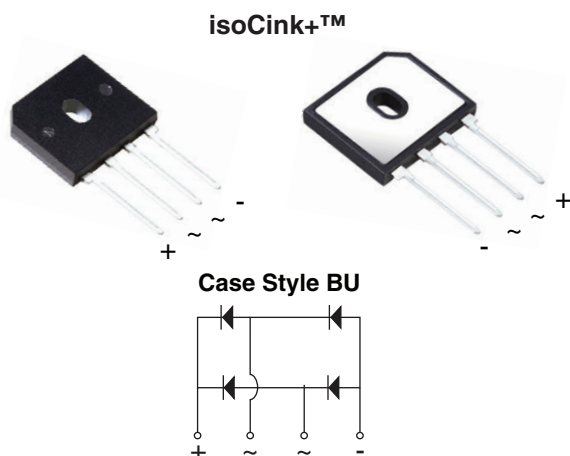


## Enhanced isoCink+™ Bridge Rectifiers



Case Style BU

### 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)

### LINKS TO ADDITIONAL RESOURCES



#### PRIMARY CHARACTERISTICS

|                        |                      |
|------------------------|----------------------|
| $I_{F(AV)}$            | 12 A                 |
| $V_{RRM}$              | 600 V, 800 V, 1000 V |
| $I_{FSM}$              | 150 A                |
| $I_R$                  | 5 $\mu$ A            |
| $V_F$ at $I_F = 6$ A   | 0.88 V               |
| $T_J$ max.             | 150 °C               |
| Package                | BU                   |
| Circuit configurations | In-line              |

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

| PARAMETER                                                                                                | SYMBOL         | BU1206                                 | BU1208 | BU1210 | UNIT               |
|----------------------------------------------------------------------------------------------------------|----------------|----------------------------------------|--------|--------|--------------------|
| Maximum repetitive peak reverse voltage                                                                  | $V_{RRM}$      | 600                                    | 800    | 1000   | V                  |
| Average rectified forward current (Fig. 1, 2)                                                            | $I_O$          | $T_C = 85\text{ }^{\circ}\text{C}$ (1) |        |        | A                  |
|                                                                                                          |                | $T_A = 25\text{ }^{\circ}\text{C}$ (2) |        |        |                    |
| Non-repetitive peak forward surge current<br>8.3 ms single sine-wave, $T_J = 25\text{ }^{\circ}\text{C}$ | $I_{FSM}$      | 150                                    |        |        | A                  |
| Rating for fusing ( $t < 8.3\text{ ms}$ ) $T_J = 25\text{ }^{\circ}\text{C}$                             | $I^2t$         | 93                                     |        |        | A <sup>2</sup> s   |
| Operating junction and storage temperature range                                                         | $T_J, T_{STG}$ | -55 to +150                            |        |        | $^{\circ}\text{C}$ |

#### Notes

(1) With 60 W air cooled heatsink

(2) 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> | $I_F = 6.0\text{ A}$ | $T_A = 25\text{ }^{\circ}\text{C}$  | 0.98 | 1.05 | V             |
|                                                                |                      | $T_A = 125\text{ }^{\circ}\text{C}$ | 0.88 | 0.95 |               |
| Maximum reverse current per diode                              | Rated $V_R$          | $T_A = 25\text{ }^{\circ}\text{C}$  | -    | 5.0  | $\mu\text{A}$ |
|                                                                |                      | $T_A = 125\text{ }^{\circ}\text{C}$ | 74   | 250  |               |
| Typical junction capacitance per diode                         | 4.0 V, 1 MHz         | $C_J$                               | 50   | -    | 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                          | BU1206 | BU1208 | BU1210 | UNIT |
|----------------------------|---------------------------------|--------|--------|--------|------|
| Typical thermal resistance | R <sub>θJC</sub> <sup>(1)</sup> | 2.7    |        |        | °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 |
|---------------|-----------------|------------------------|---------------|---------------|
| BU1206-E3/45  | 4.66            | 45                     | 20            | Tube          |
| BU1206-E3/51  | 4.66            | 51                     | 250           | Paper tray    |
| BU1206-M3/45  | 4.66            | 45                     | 20            | Tube          |

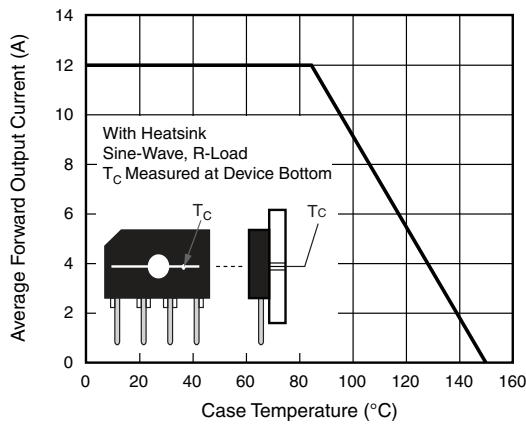
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise specified)


Fig. 1 - Derating Curve Output Rectified Current

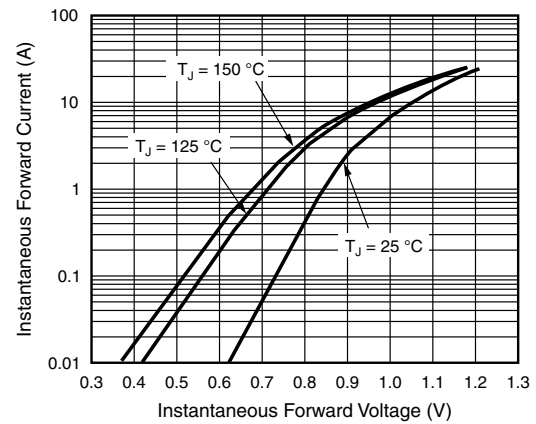


Fig. 4 - Typical Forward Characteristics Per Diode

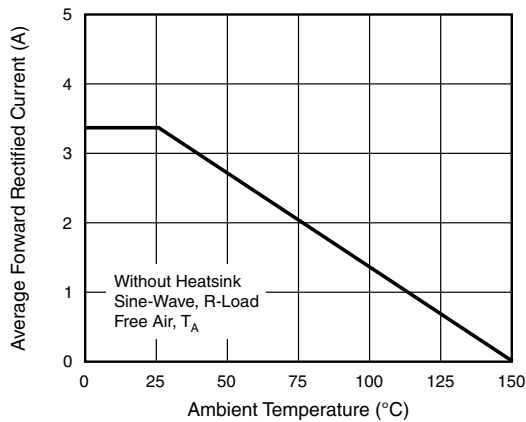


Fig. 2 - Forward Current Derating Curve

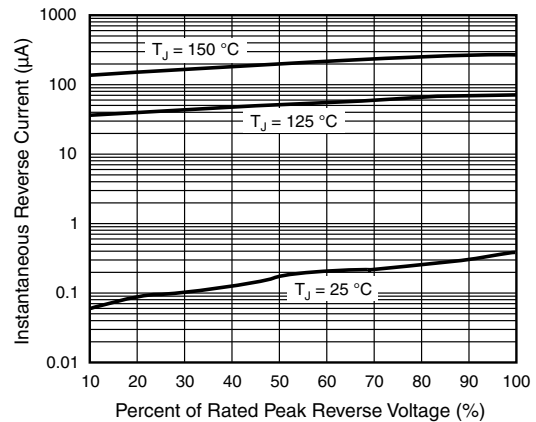


Fig. 5 - Typical Reverse Characteristics Per Diode

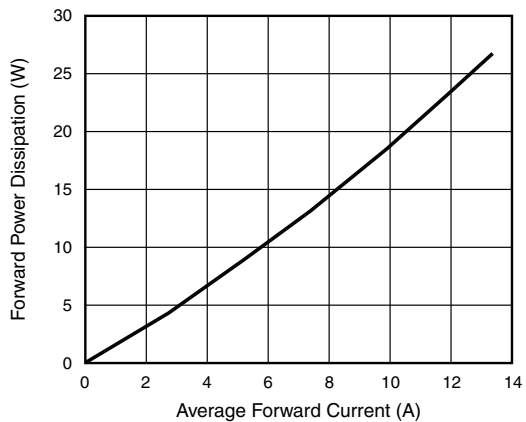


Fig. 3 - Forward Power Dissipation

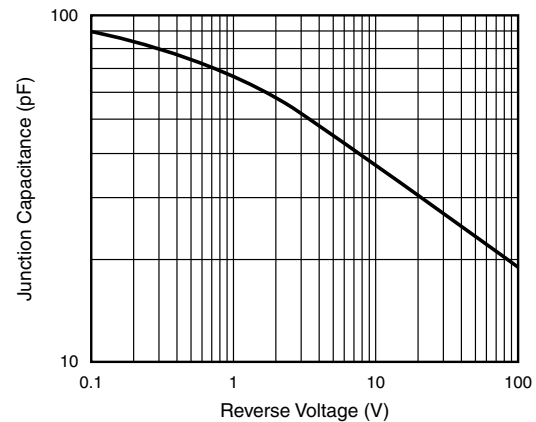
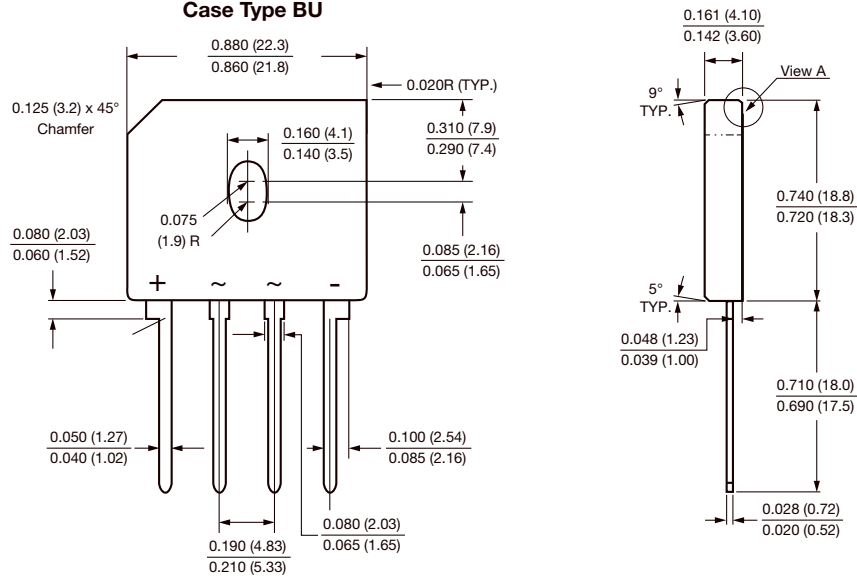


Fig. 6 - Typical Junction Capacitance Per Diode

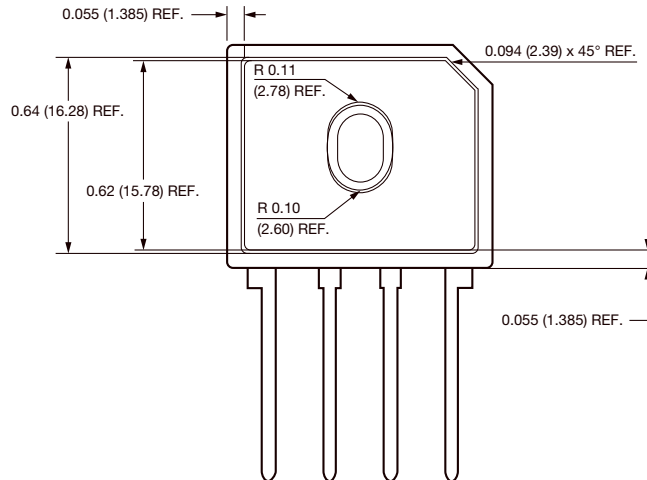


**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**Case Type BU**

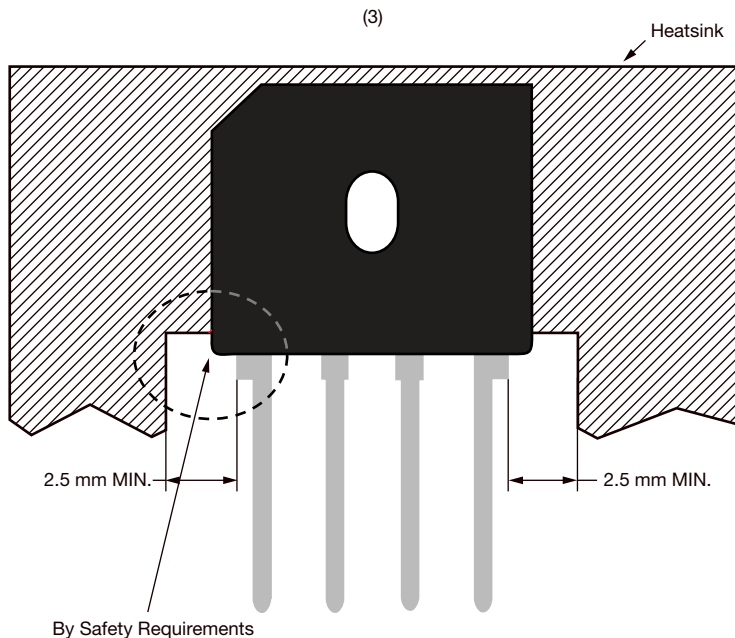


Polarity shown on front side of case, positive lead beveled corner



**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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