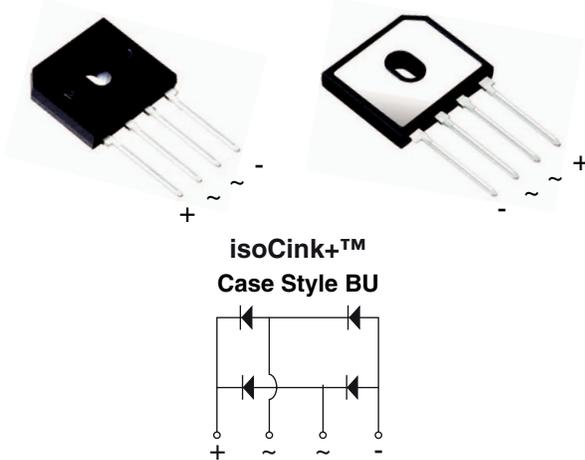


## Enhanced isoCink+™ Bridge Rectifiers



\* Tested to UL standard for safety electrically isolated semiconductor devices. UL 1557 4th edition. Dielectric tested to maximum case, storage and junction temperature to 150 °C to withstand 1500 V. Epoxy meets UL 94 V-0 flammability rating.

| PRIMARY CHARACTERISTICS |                      |
|-------------------------|----------------------|
| Package                 | BU                   |
| $I_{F(AV)}$             | 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               |
| Diode variations        | In-Line              |

### FEATURES

- UL recognition file number E309391 (QQQX2) UL 1557 (see \*)
- Thin single in-line package
- Available for BU-5S lead forming option (part number with "5S" suffix, e.g. BU15065S)
- 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**

### 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

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

E3 suffix meets 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   | $V_{RRM}$      | 600               | 800    | 1000             | V    |
| Average rectified forward current (Fig. 1, 2)                                       | $I_O$          | $T_C = 80$ °C (1) |        | 15               | A    |
|   |                | $T_A = 25$ °C (2) |        | 3.4              |      |
| Non-repetitive peak forward surge current<br>8.3 ms single sine-wave, $T_J = 25$ °C | $I_{FSM}$      | 200               |        | A                |      |
| Rating for fusing ( $t < 8.3$ ms) $T_J = 25$ °C                                     | $I^2t$         | 160               |        | A <sup>2</sup> s |      |
| Operating junction and storage temperature range                                    | $T_J, T_{STG}$ | - 55 to + 150     |        | °C               |      |

#### Notes

(1) With 60 W air cooled heatsink

(2) Without heatsink, free air

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                      |                                   |       |      |      |               |
|--|----------------------|-----------------------------------|-------|------|------|---------------|
| PARAMETER  | TEST CONDITIONS      | SYMBOL                            | TYP.  | MAX. | UNIT |               |
| Maximum instantaneous forward voltage per diode <sup>(1)</sup>                               | $I_F = 7.5\text{ A}$ | $T_A = 25\text{ }^\circ\text{C}$  | $V_F$ | 0.97 | 1.05 | V             |
|  |                      | $T_A = 125\text{ }^\circ\text{C}$ |       | 0.87 |      |               |
| Maximum reverse current per diode  | rated $V_R$          | $T_A = 25\text{ }^\circ\text{C}$  | $I_R$ | -    | 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

| <b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                                |        |        |        |                    |
|---|--------------------------------|--------|--------|--------|--------------------|
| PARAMETER   | SYMBOL                         | BU1506 | BU1508 | BU1510 | UNIT               |
| Typical thermal resistance  | $R_{\theta JC}$ <sup>(1)</sup> | 2.5    |        |        | $^\circ\text{C/W}$ |
|   | $R_{\theta JA}$ <sup>(2)</sup> | 20     |        |        |                    |

**Notes**

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

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

| <b>ORDERING INFORMATION</b> (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    |
| BU15065S-E3/45                        | 4.75            | 45                     | 20            | Tube          |

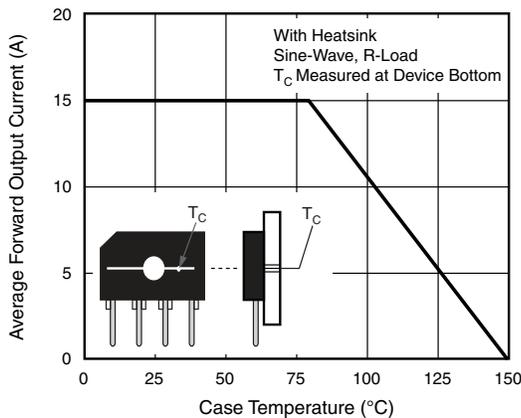
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified)


Fig. 1 - Derating Curve Output Rectified Current

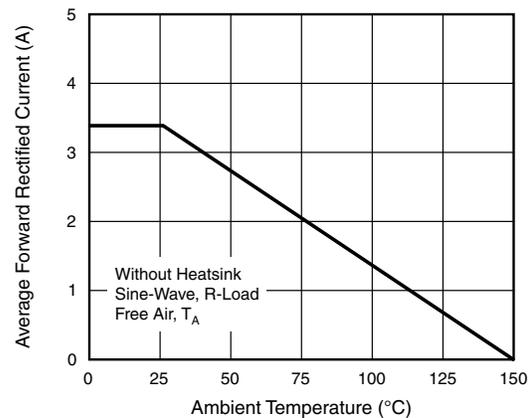


Fig. 2 - Forward Current Derating Curve

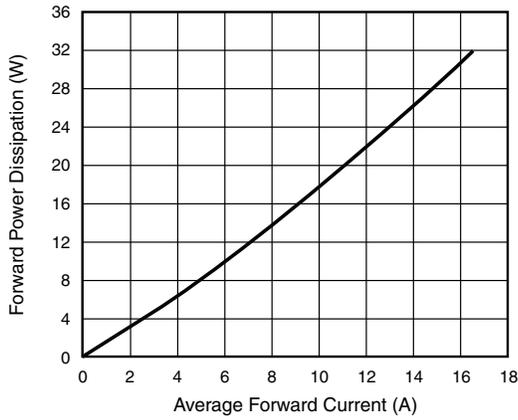


Fig. 3 - Forward Power Dissipation

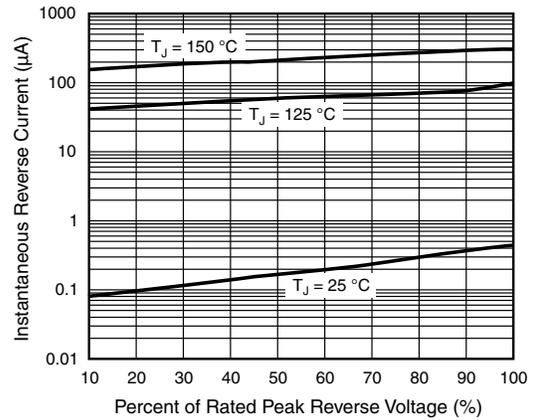


Fig. 5 - Typical Reverse Characteristics Per Diode

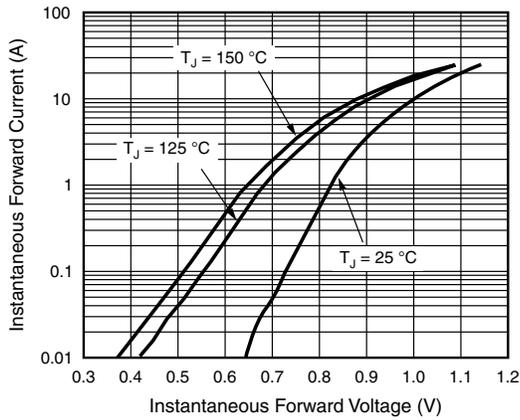


Fig. 4 - Typical Forward Characteristics Per Diode

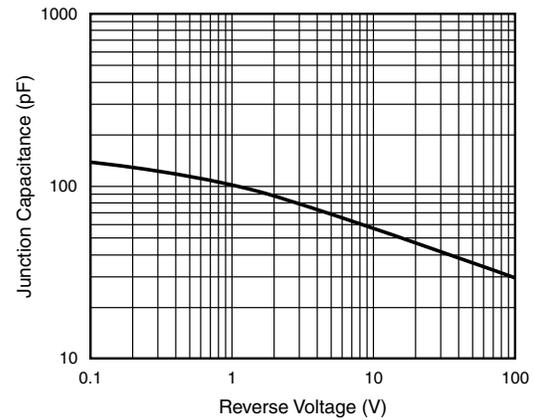
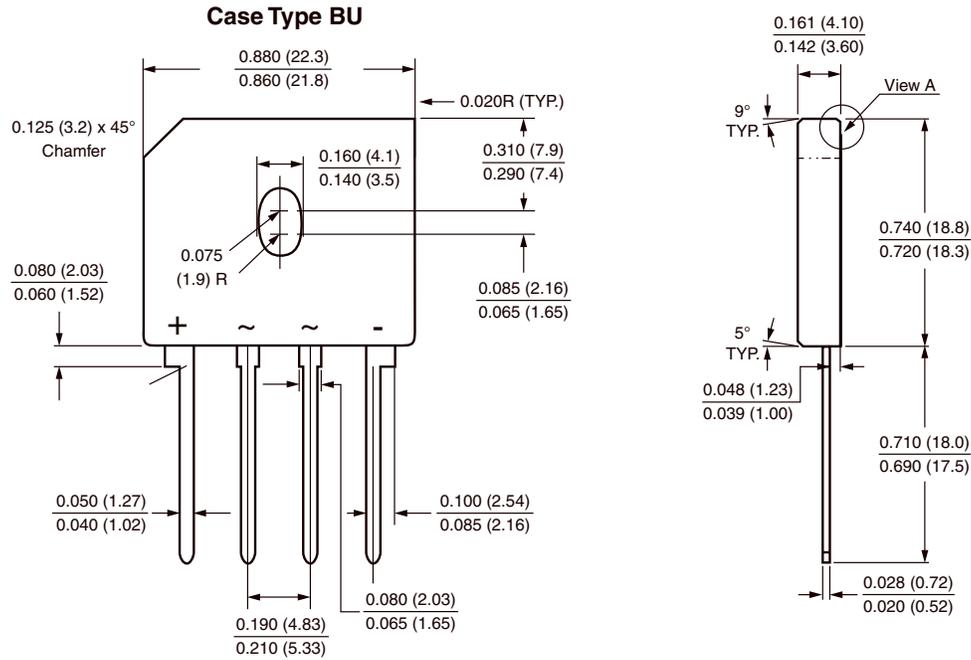


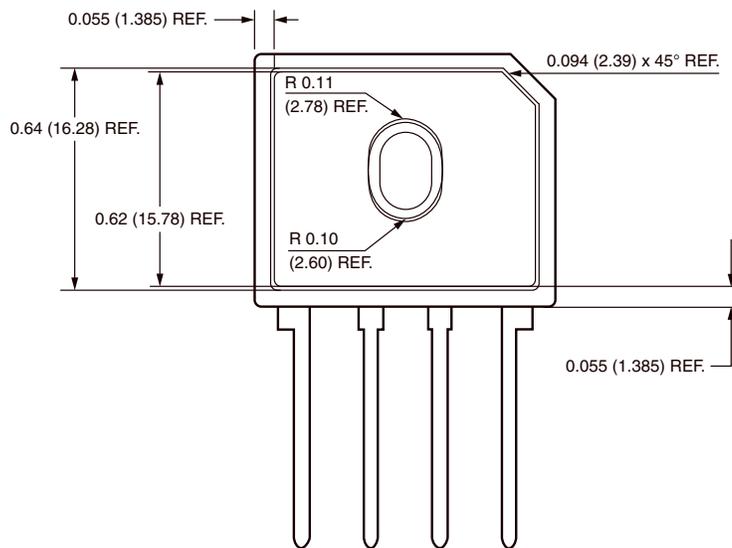
Fig. 6 - Typical Junction Capacitance Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

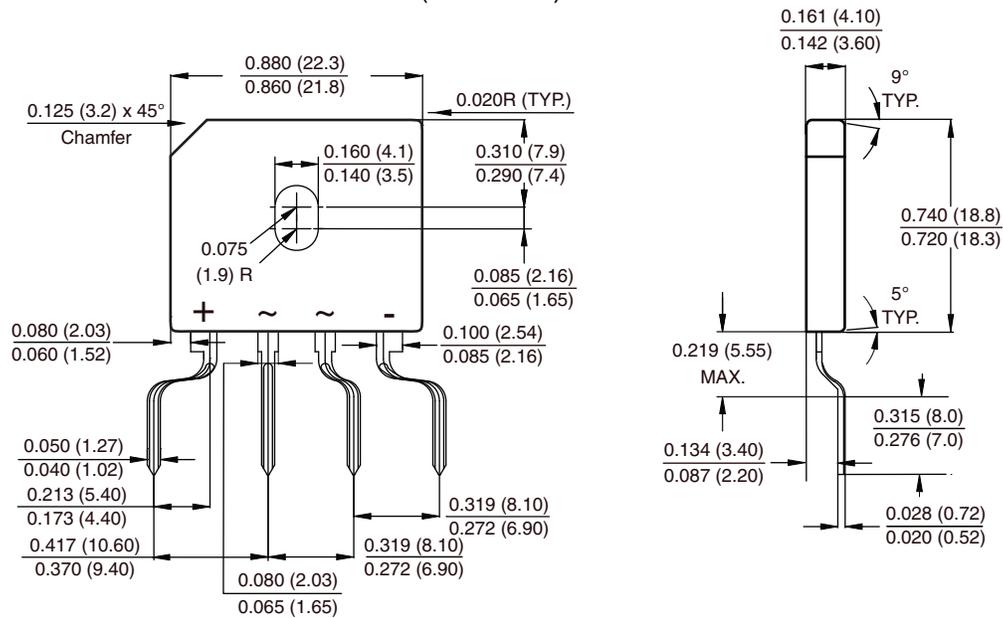


Polarity shown on front side of case, positive lead beveled corner



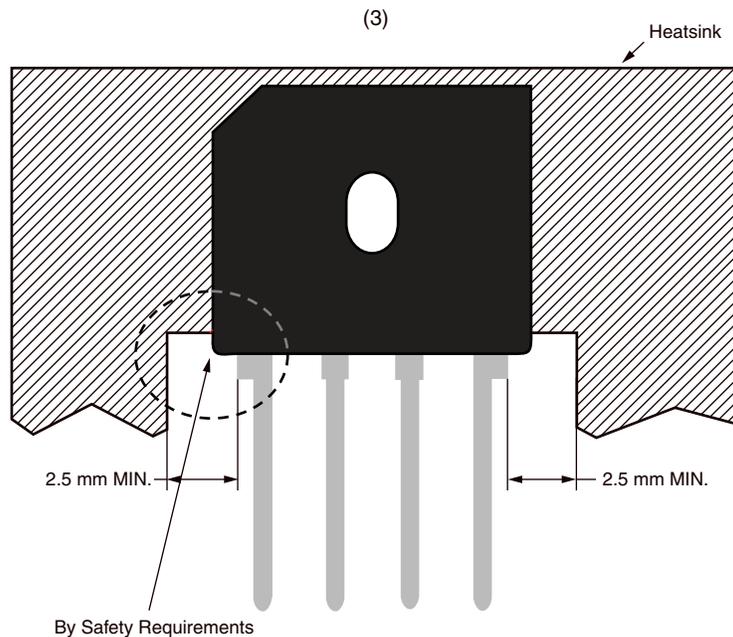


FORMING SPECIFICATION: BU-5S in inches (millimeters)



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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