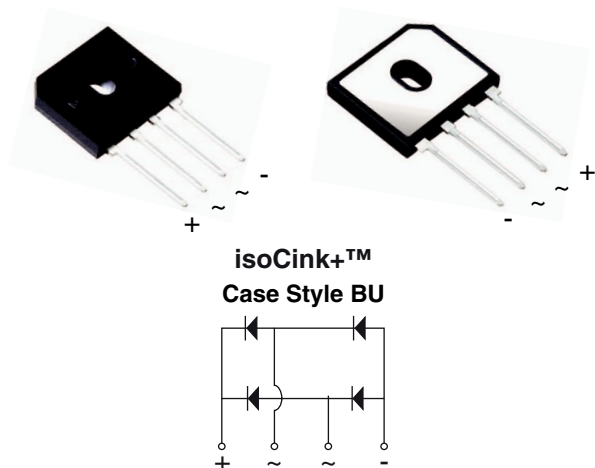


## Enhanced isoCink+™ Bridge Rectifiers



\* 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                   |
| $I_{F(AV)}$             | 25 A                 |
| $V_{RRM}$               | 600 V, 800 V, 1000 V |
| $I_{FSM}$               | 300 A                |
| $I_R$                   | 5 $\mu$ A            |
| $V_F$ at $I_F = 12.5$ A | 0.87 V               |
| $T_J$ max.              | 150 °C               |
| Diode variations        | In-Line              |

### FEATURES

- UL recognition file number E309391 (QQXX2) UL 1557 (see \*)
- Thin single in-line package
- Available for BU-5S lead forming option (part number with "5S" suffix, e.g. BU25065S)
- 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 <sub>A</sub> = 25 °C unless otherwise noted)                              |                                   |                                       |        |        |                  |
|----------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------|--------|--------|------------------|
| PARAMETER                                                                                    | SYMBOL                            | BU2506                                | BU2508 | BU2510 | 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> = 60 °C <sup>(1)</sup> |        |        | A                |
|                                                                                              |                                   | T <sub>A</sub> = 25 °C <sup>(2)</sup> |        |        |                  |
| Non-repetitive peak forward surge current<br>8.3 ms single sine-wave, T <sub>J</sub> = 25 °C | I <sub>FSM</sub>                  | 300                                   |        |        | A                |
| Rating for fusing (t < 8.3 ms) T <sub>J</sub> = 25 °C                                        | I <sup>2</sup> t                  | 373                                   |        |        | 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> | $I_F = 12.5\text{ A}$ | $T_A = 25\text{ }^{\circ}\text{C}$ | $V_F$ | 0.97 | V             |
|                                                                |                       |                                    |       | 0.87 |               |
| Maximum reverse current per diode                              | rated $V_R$           | $T_A = 25\text{ }^{\circ}\text{C}$ | $I_R$ | -    | $\mu\text{A}$ |
|                                                                |                       |                                    |       | 120  |               |
| Typical junction capacitance per diode                         | 4.0 V, 1 MHz          | $C_J$                              | 125   | -    | 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                          | BU2506 | BU2508 | BU2510 | UNIT |
|----------------------------|---------------------------------|--------|--------|--------|------|
| Typical thermal resistance | R <sub>θJC</sub> <sup>(1)</sup> | 2.0    |        |        | °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 |
|---------------|-----------------|------------------------|---------------|---------------|
| BU2506-E3/45  | 4.84            | 45                     | 20            | Tube          |
| BU2506-E3/51  | 4.84            | 51                     | 250           | Paper tray    |
| BU2506S-E3/45 | 4.84            | 45                     | 20            | Tube          |

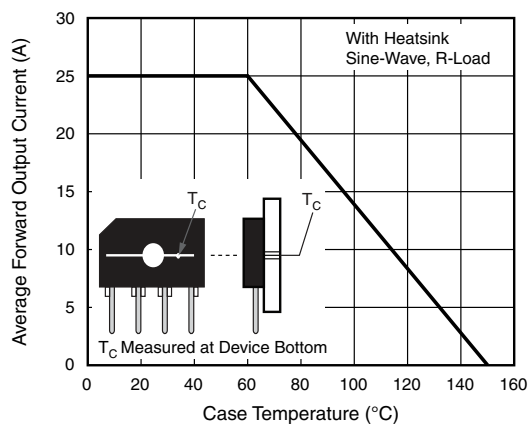
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise specified)


Fig. 1 - Derating Curve Output Rectified Current

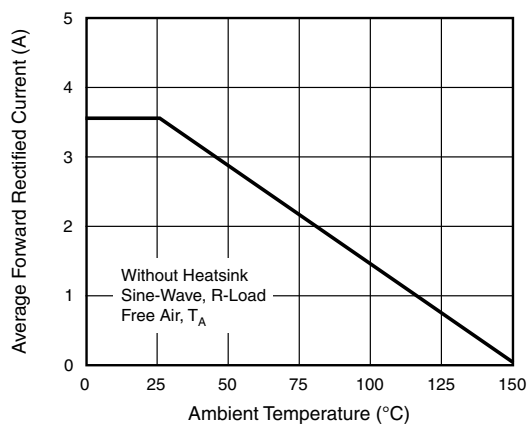


Fig. 2 - Forward Current Derating Curve

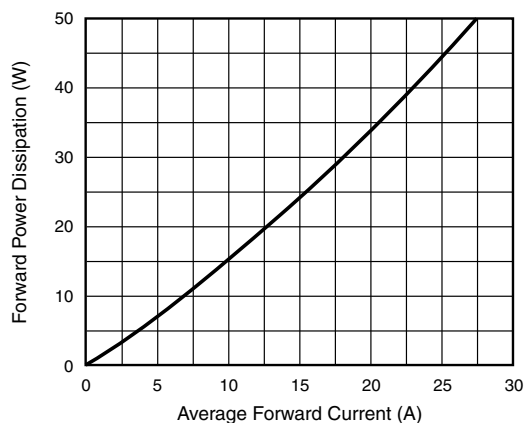


Fig. 3 - Forward Power Dissipation

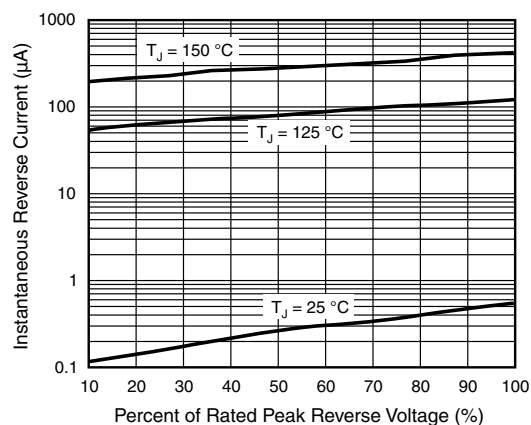


Fig. 5 - Typical Reverse Characteristics Per Diode

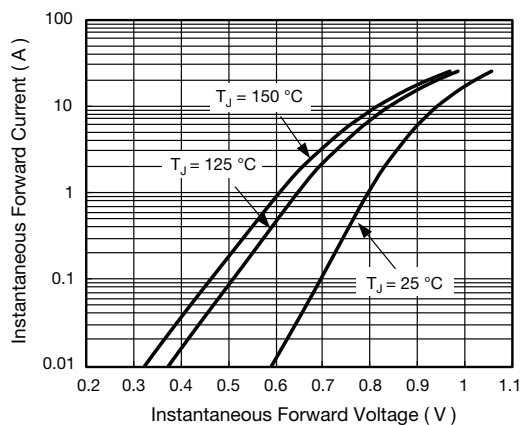


Fig. 4 - Typical Forward Characteristics Per Diode

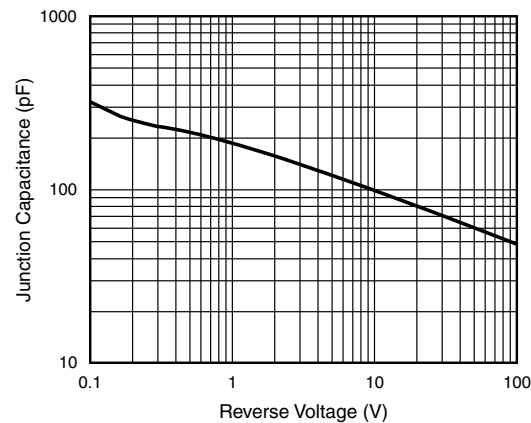
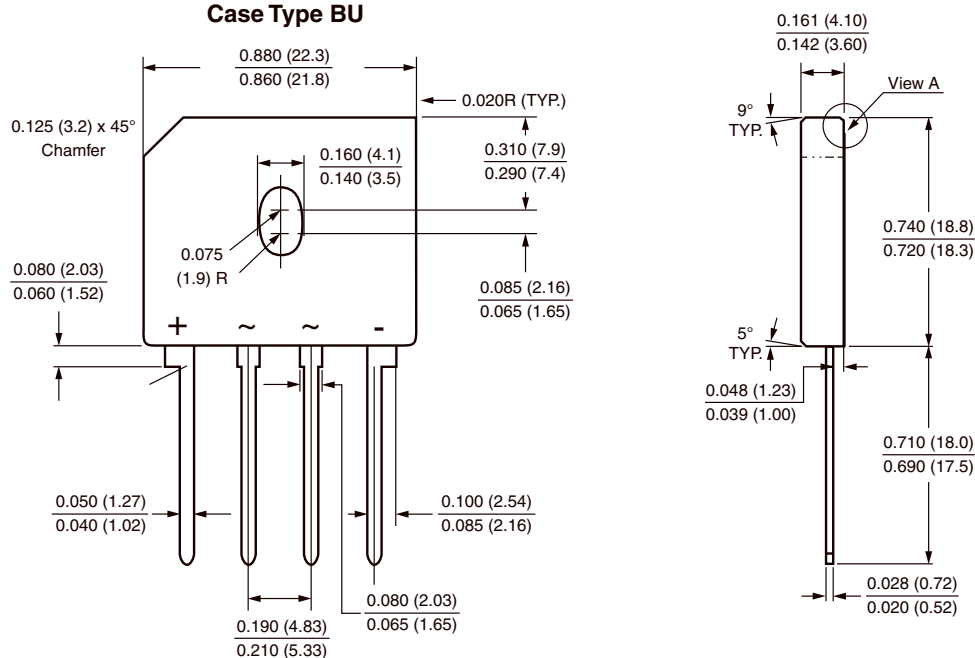


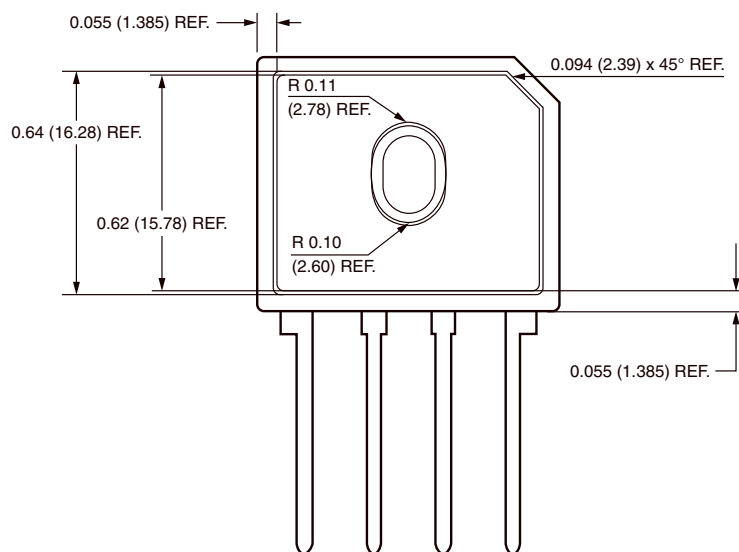
Fig. 6 - Typical Junction Capacitance Per Diode

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

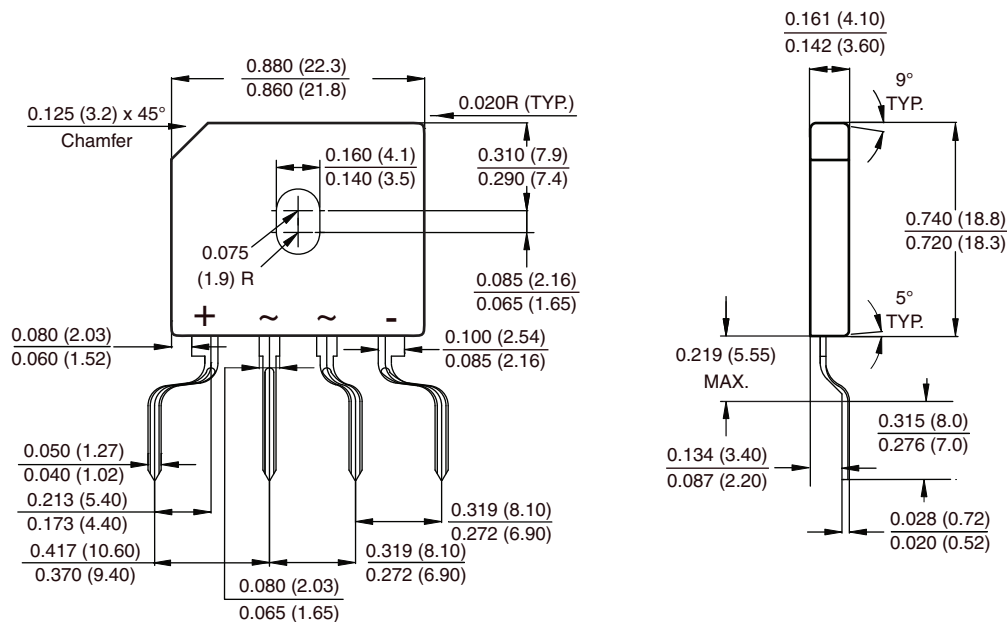
### Case Type BU



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



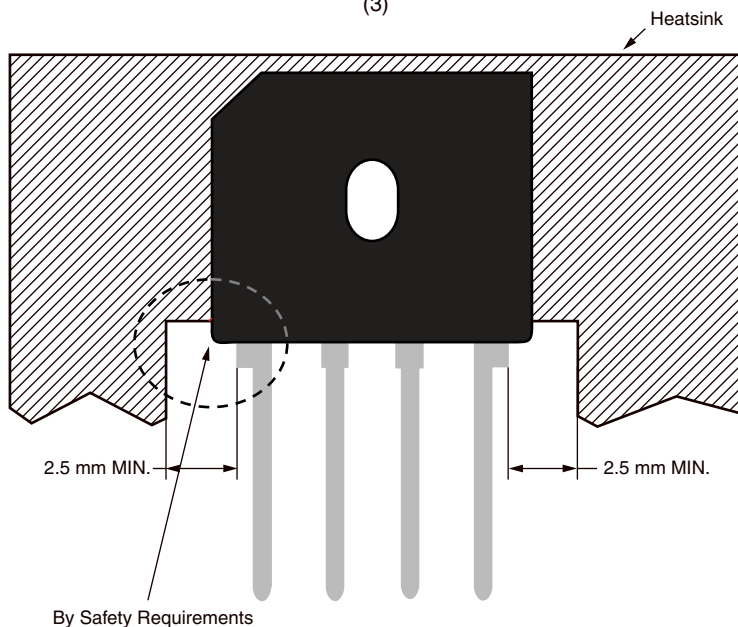
**FORMING SPECIFICATION: BU-5S** in inches (millimeters)



## 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:

(3)





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