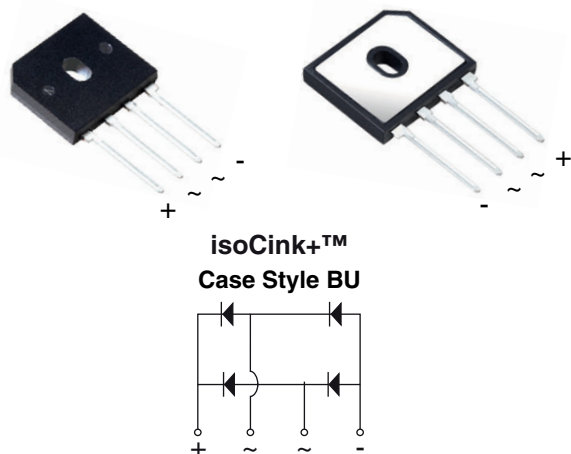


## Enhanced isoCink+™ Bridge Rectifiers



### FEATURES

- UL recognition file number E312394
- Thin single in-line package
- Glass passivated chip junction
- 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  
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)

| 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               |
| Circuit configuration   | In-line              |

| 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)                                                | T <sub>C</sub> = 60 °C <sup>(1)</sup> | I <sub>O</sub>                    | 25          |        |        | A                |
|                                                                                              | T <sub>A</sub> = 25 °C <sup>(2)</sup> |                                   | 3.5         |        |        |                  |
| 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 ( $T_A = 25$ °C unless otherwise noted) |                 |        |                |      |         |
|--------------------------------------------------------------------|-----------------|--------|----------------|------|---------|
| PARAMETER                                                          | TEST CONDITIONS | SYMBOL | TYP.           | MAX. | UNIT    |
| Maximum instantaneous forward voltage per diode <sup>(1)</sup>     | $I_F = 12.5$ A  | $V_F$  | $T_A = 25$ °C  | 0.97 | V       |
|                                                                    |                 |        | $T_A = 125$ °C | 0.87 |         |
| Maximum reverse current per diode                                  | rated $V_R$     | $I_R$  | $T_A = 25$ °C  | -    | $\mu$ A |
|                                                                    |                 |        | $T_A = 125$ °C | 120  |         |
| Typical junction capacitance per diode                             | 4.0 V, 1 MHz    | $C_J$  | 125            | -    | pF      |

#### Note

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



| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °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    |
| BU2506-M3/45                   | 4.84            | 45                     | 20            | Tube          |
| BU2506S-E3/45                  | 4.84            | 45                     | 20            | Tube          |

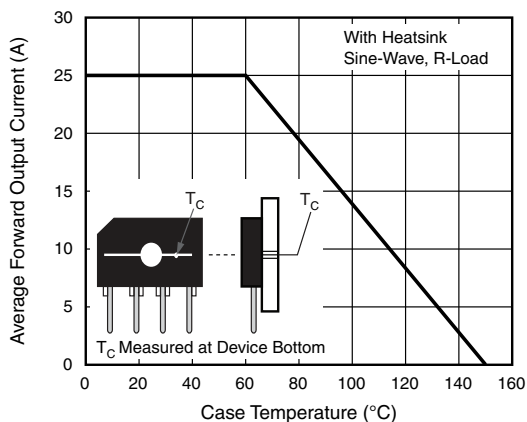
**RATINGS AND CHARACTERISTICS CURVES ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise specified)**


Fig. 1 - Derating Curve Output Rectified Current

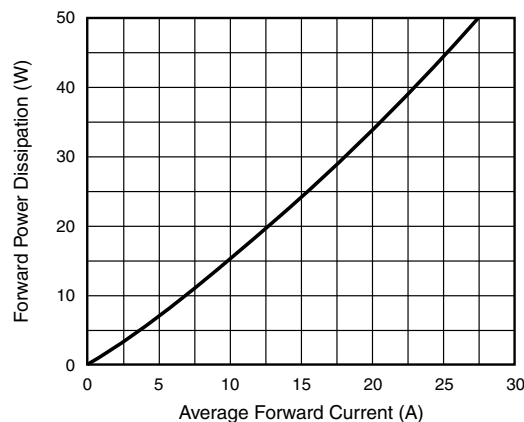


Fig. 3 - Forward Power Dissipation

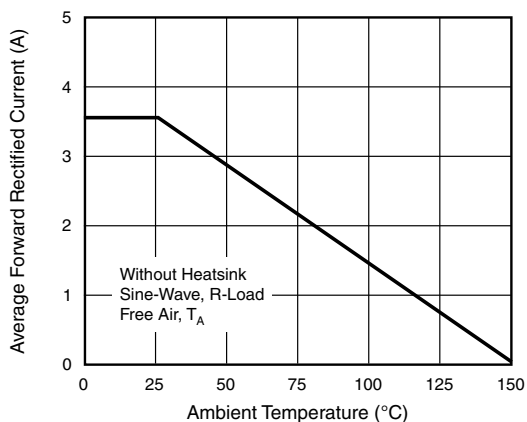


Fig. 2 - Forward Current Derating Curve

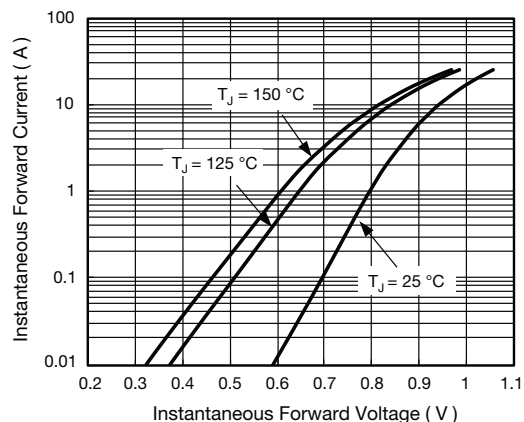


Fig. 4 - Typical Forward Characteristics Per Diode

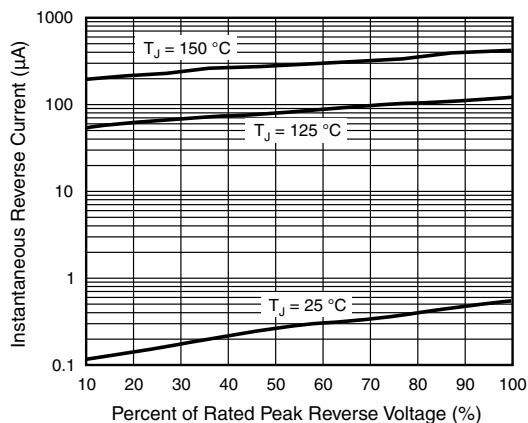


Fig. 5 - Typical Reverse Characteristics Per Diode

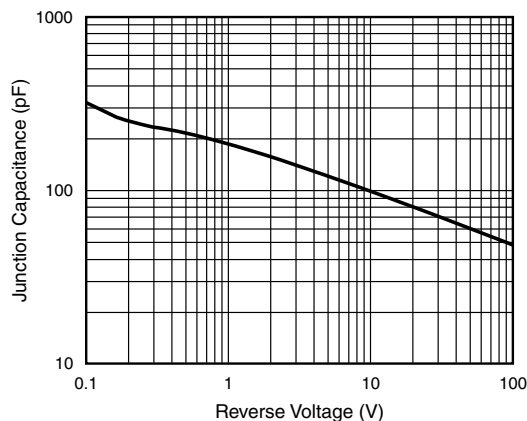
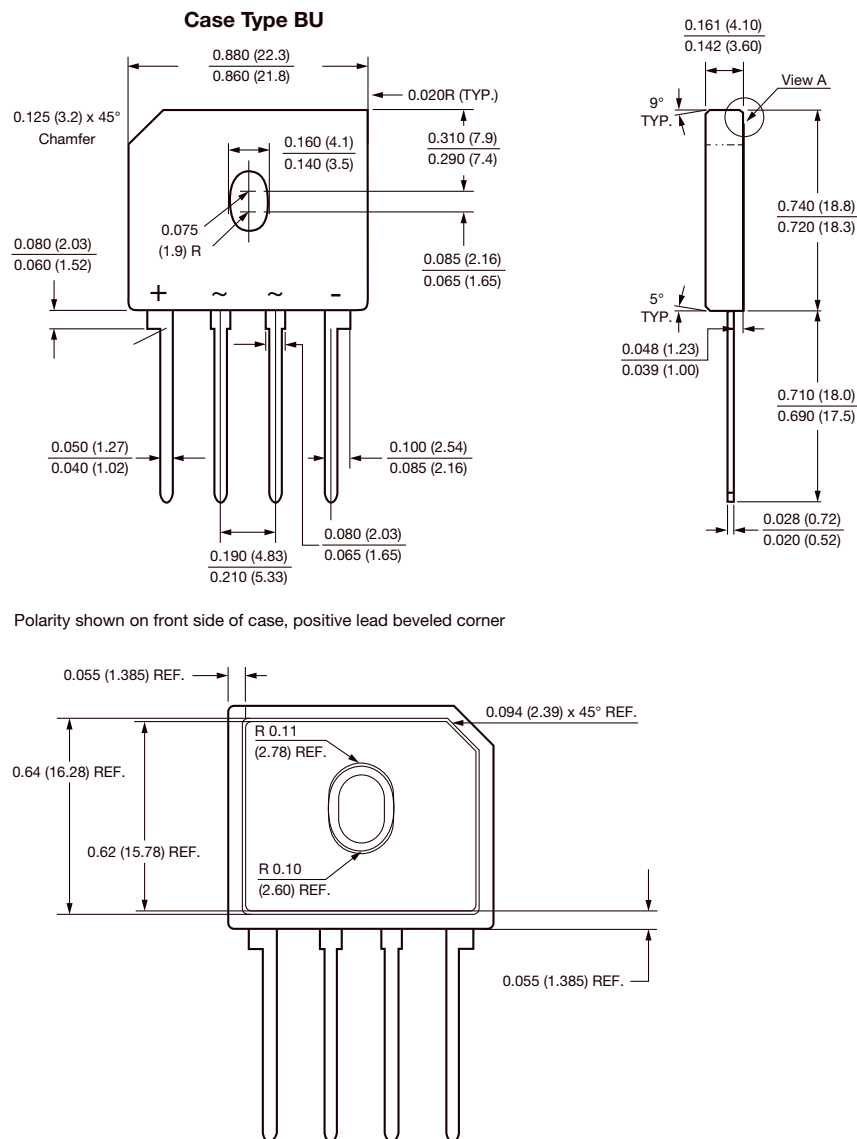
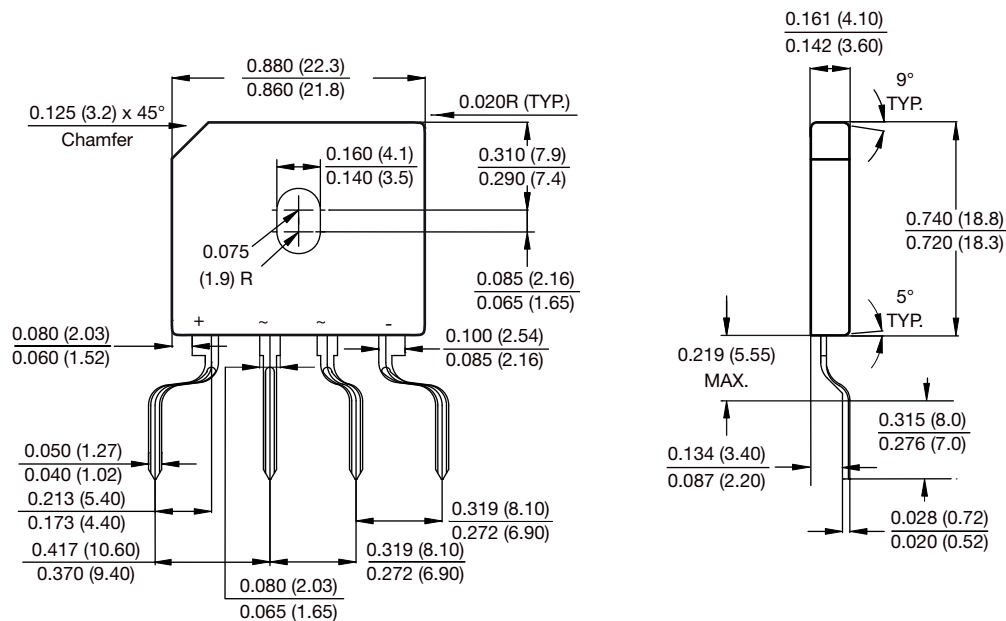


Fig. 6 - Typical Junction Capacitance Per Diode

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


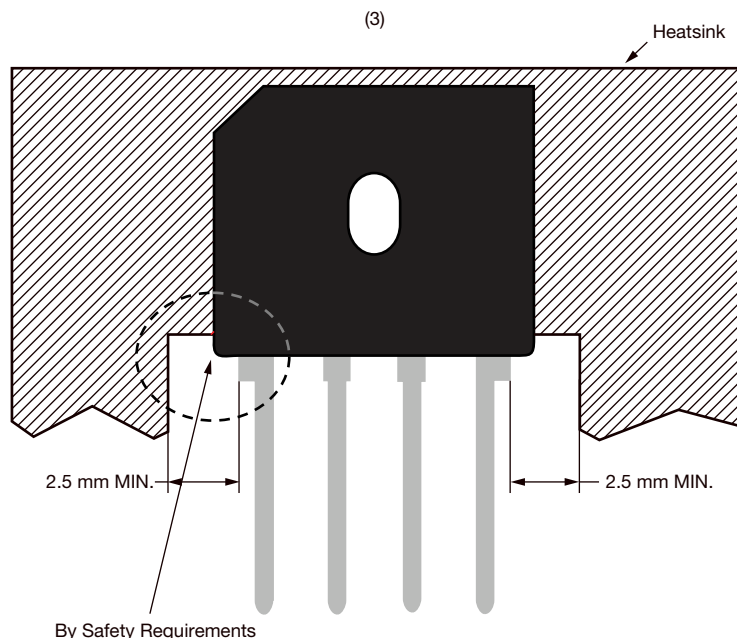


**FORMING SPECIFICATION: BU-5S** in inches (millimeters)



**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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