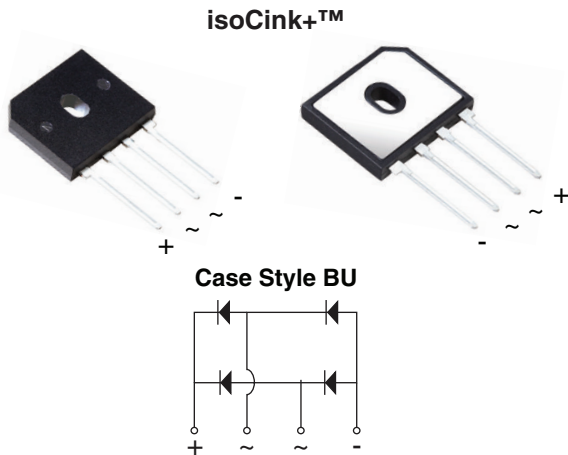




## Enhanced isoCink+™ Bridge Rectifiers



### 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. BU10065S)
- 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.

### LINKS TO ADDITIONAL RESOURCES



#### PRIMARY CHARACTERISTICS

|                        |                      |
|------------------------|----------------------|
| $I_{F(AV)}$            | 10 A                 |
| $V_{RRM}$              | 600 V, 800 V, 1000 V |
| $I_{FSM}$              | 120 A                |
| $I_R$                  | 5 $\mu$ A            |
| $V_F$ at $I_F = 5.0$ 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         | BU1006            | BU1008 | BU1010 | UNIT             |   |
|---|----------------|-------------------|--------|--------|------------------|---|
| Maximum repetitive peak reverse voltage   | $V_{RRM}$      | 600               | 800    | 1000   | V                |   |
| Average rectified forward current (Fig. 1, 2)                                       |                | $T_C = 92$ °C (1) |        |        | 10               | A |
|   |                | $T_A = 25$ °C (2) |        |        | 3.2              |   |
| Non-repetitive peak forward surge current<br>8.3 ms single sine-wave, $T_J = 25$ °C | $I_{FSM}$      | 120               |        |        | A                |   |
| Rating for fusing ( $t < 8.3$ ms) $T_J = 25$ °C                                     | $I^2t$         | 60                |        |        | 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

**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> | $I_F = 5.0\text{ A}$ | $V_F$  | $T_A = 25\text{ }^\circ\text{C}$  | 0.98 | 1.05 | V             |
|  |                      |        | $T_A = 125\text{ }^\circ\text{C}$ | 0.88 | 0.95 |               |
| Maximum reverse current per diode                              | rated $V_R$          | $I_R$  | $T_A = 25\text{ }^\circ\text{C}$  | -    | 5.0  | $\mu\text{A}$ |
|  |                      |        | $T_A = 125\text{ }^\circ\text{C}$ | 64   | 250  |               |
| Typical junction capacitance per diode                         | 4.0 V, 1 MHz         | $C_J$  | 43                                | -    | pF   |               |

**Note**

(1) 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                         | BU1006 | BU1008 | BU1010 | UNIT               |
|----------------------------|--------------------------------|--------|--------|--------|--------------------|
| Typical thermal resistance | $R_{\theta JC}$ <sup>(1)</sup> | 3.0    |        |        | $^\circ\text{C/W}$ |
|                            | $R_{\theta JA}$ <sup>(2)</sup> | 20     |        |        |                    |

**Notes**

(1) With 60 W air cooled heatsink

(2) Without heatsink, free air

**ORDERING INFORMATION** (Example)

| PREFERRED P/N  | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|----------------|-----------------|------------------------|---------------|---------------|
| BU1006-E3/45   | 4.55            | 45                     | 20            | Tube          |
| BU1006-E3/51   | 4.55            | 51                     | 250           | Paper tray    |
| BU1006-M3/45   | 4.55            | 45                     | 20            | Tube          |
| BU10065S-E3/45 | 4.55            | 45                     | 20            | Tube          |



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

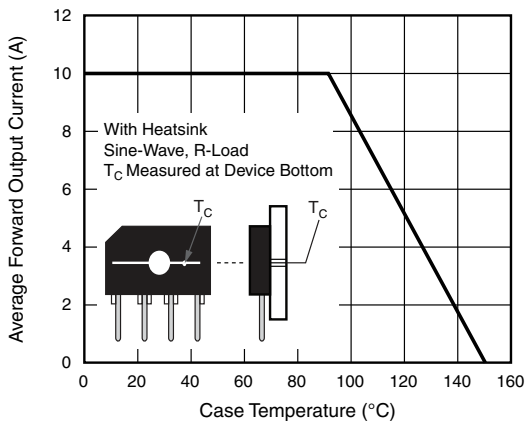


Fig. 1 - Derating Curve Output Rectified Current

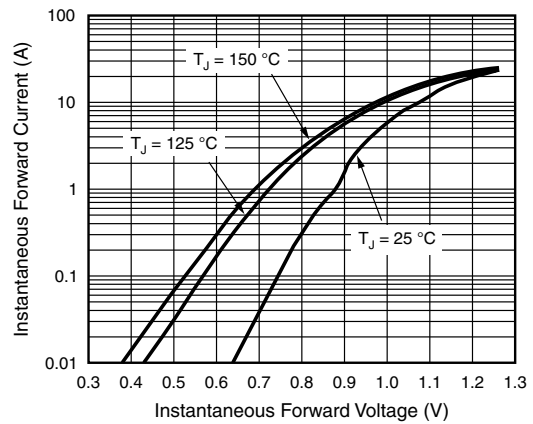


Fig. 4 - Typical Forward Characteristics Per Diode

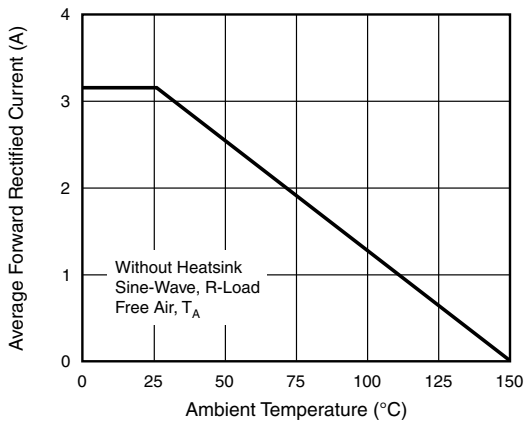


Fig. 2 - Forward Current Derating Curve

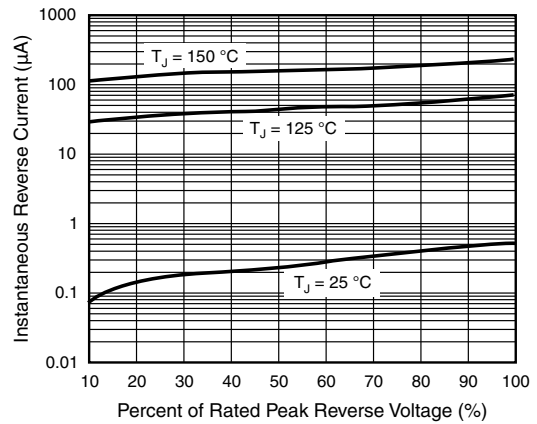


Fig. 5 - Typical Reverse Characteristics Per Diode

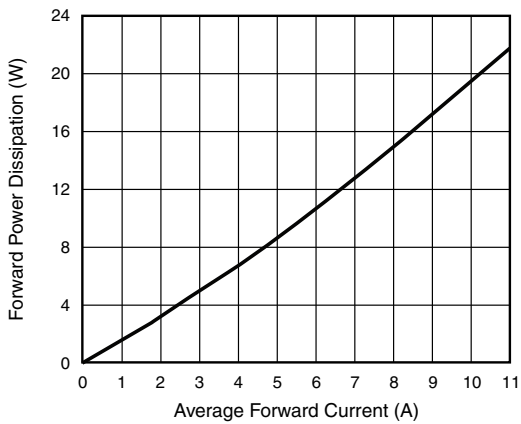


Fig. 3 - Forward Power Dissipation

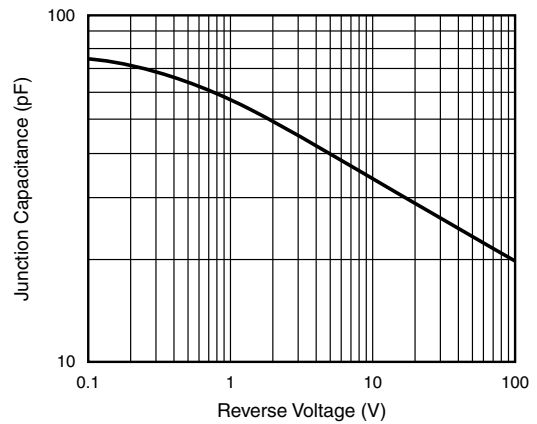
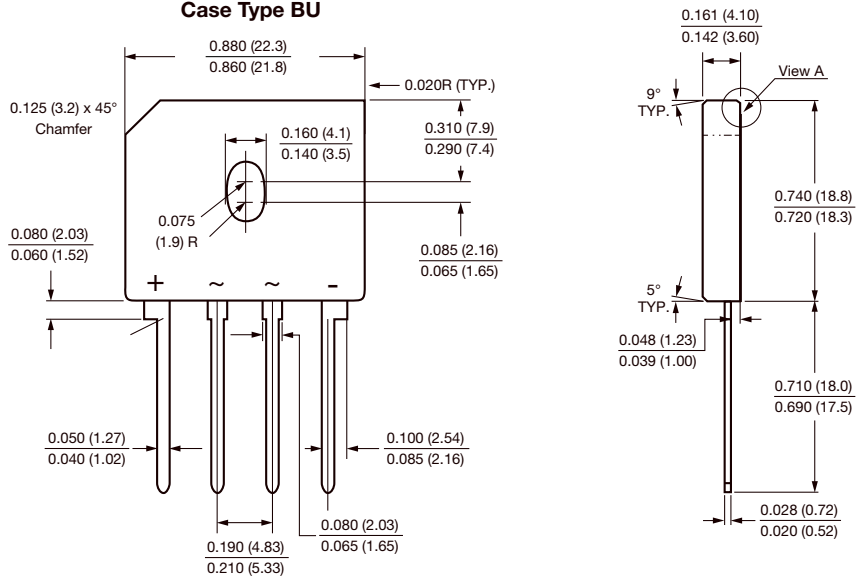


Fig. 6 - Typical Junction Capacitance Per Diode

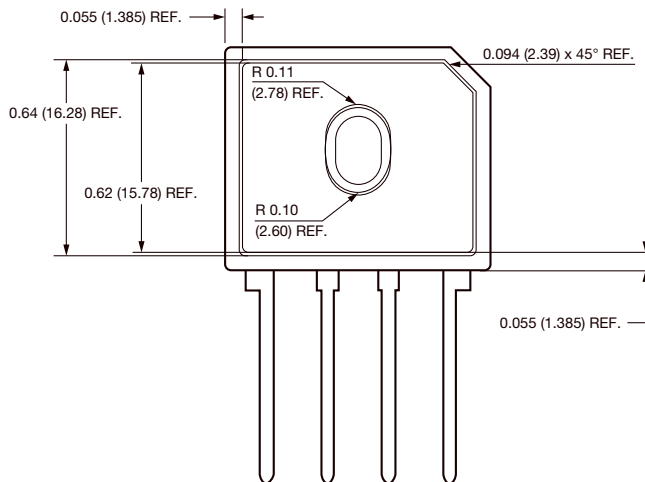


**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**Case Type BU**

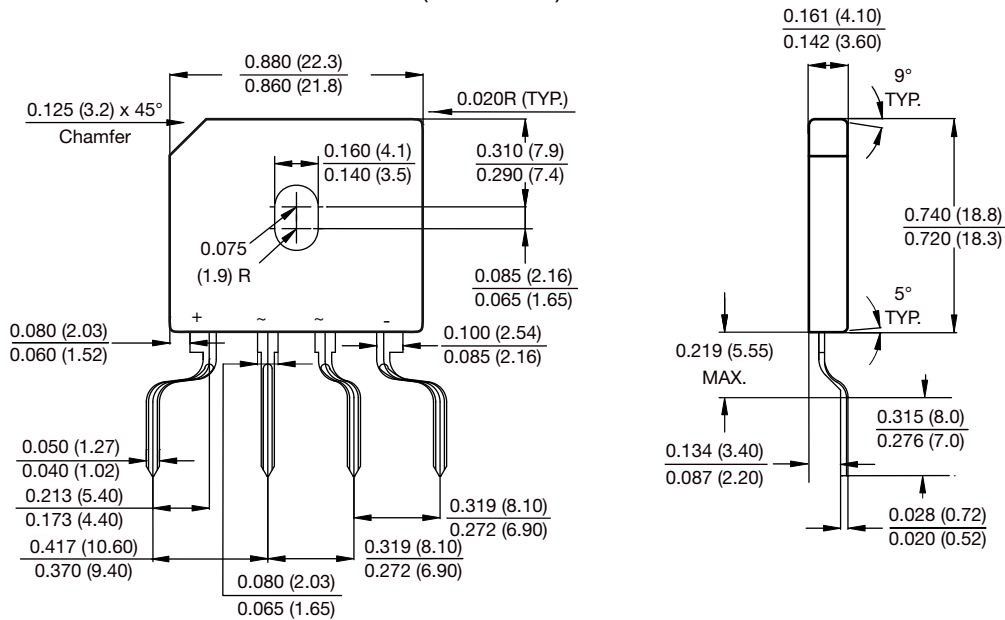


Polarity shown on front side of case, positive lead beveled corner



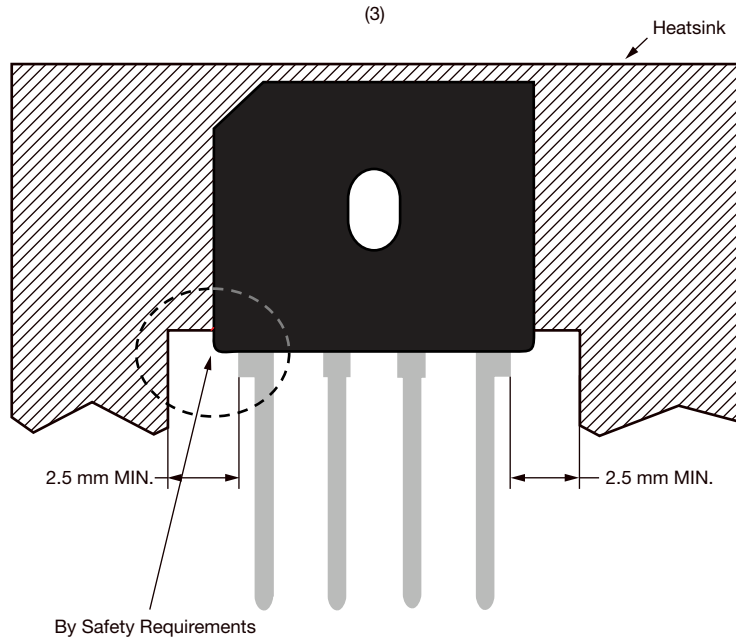


**FORMING SPECIFICATION: BU-5S** in inches (millimeters)



**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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