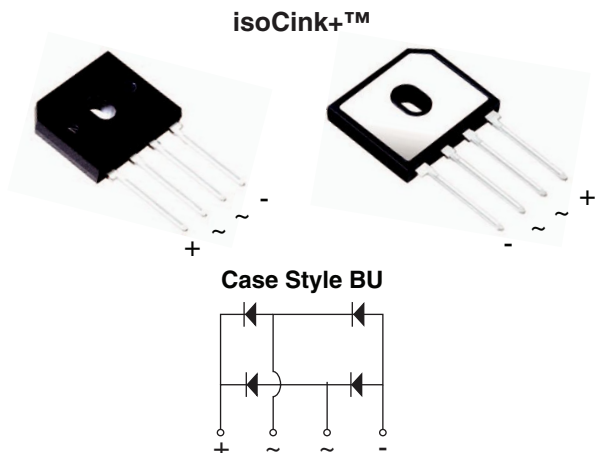


Enhanced isoCink+™ Bridge Rectifiers



* 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 |
| $I_{F(AV)}$ | 10 A |
| V_{RRM} | 600 V, 800 V, 1000 V |
| I_{FSM} | 120 A |
| I_R | 5 μ A |
| V_F at $I_F = 5.0$ A | 0.88 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. 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


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.

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) | $T_C = 92\text{ }^{\circ}\text{C}^{(1)}$ $T_A = 25\text{ }^{\circ}\text{C}^{(2)}$ | I _O | 10 | | A |
| | | | 3.2 | | |
| Non-repetitive peak forward surge current 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 ² t | 60 | | | A ² 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 °C unless otherwise noted) | | | | | | |
|--|------------------------|-------------------------|----------------|------|------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | TYP. | MAX. | UNIT |
| Maximum instantaneous forward voltage per diode ⁽¹⁾ | I _F = 5.0 A | T _A = 25 °C | V _F | 0.98 | 1.05 | V |
| | | T _A = 125 °C | | 0.88 | 0.95 | |
| Maximum reverse current per diode | rated V _R | T _A = 25 °C | I _R | - | 5.0 | μA |
| | | T _A = 125 °C | | 64 | 250 | |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | | C _J | 43 | - | pF |

Note

⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | |
|---|---------------------------------|--------|--------|--------|------|
| PARAMETER | SYMBOL | BU1006 | BU1008 | BU1010 | UNIT |
| Typical thermal resistance | R _{θJC} ⁽¹⁾ | 3.0 | | | °C/W |
| | R _{θJA} ⁽²⁾ | 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 |
| BU1006S-E3/45 | 4.55 | 45 | 20 | Tube |

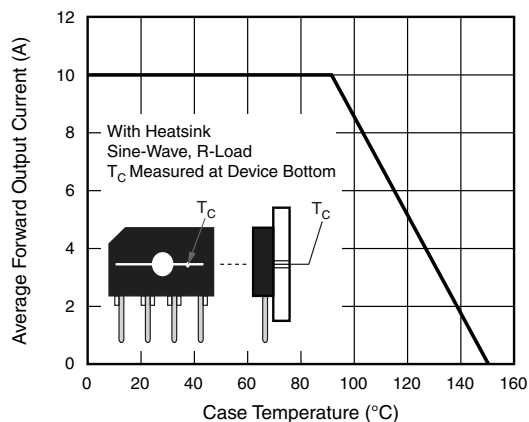
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)


Fig. 1 - Derating Curve Output Rectified Current

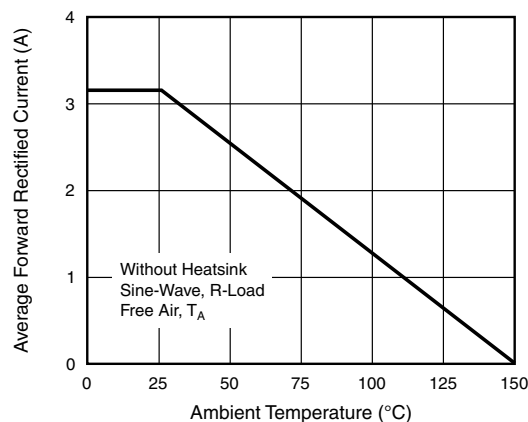


Fig. 2 - Forward Current Derating Curve

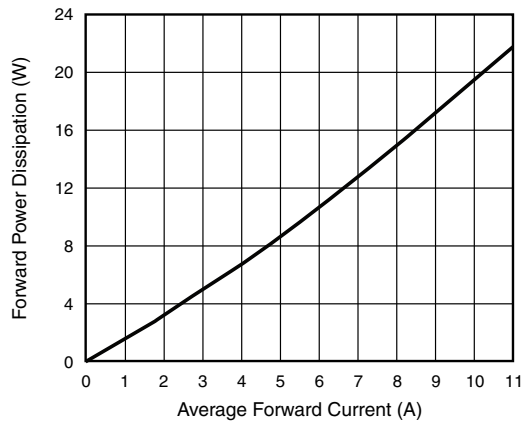


Fig. 3 - Forward Power Dissipation

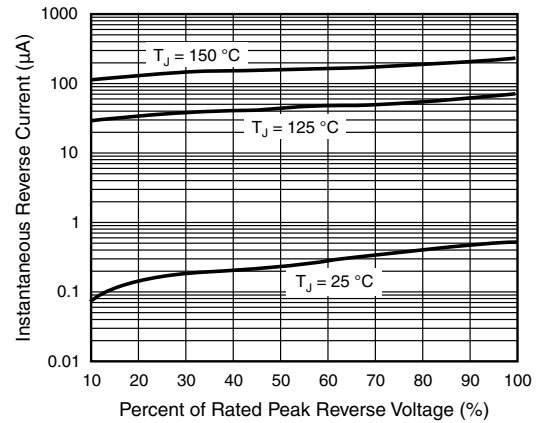


Fig. 5 - Typical Reverse Characteristics Per Diode

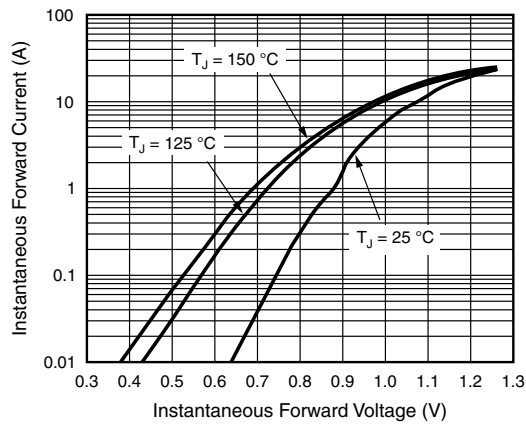


Fig. 4 - Typical Forward Characteristics Per Diode

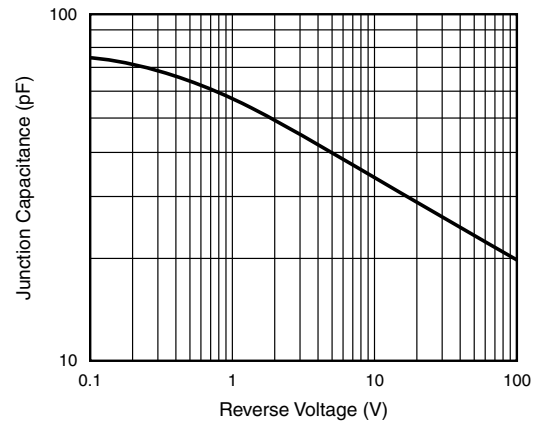
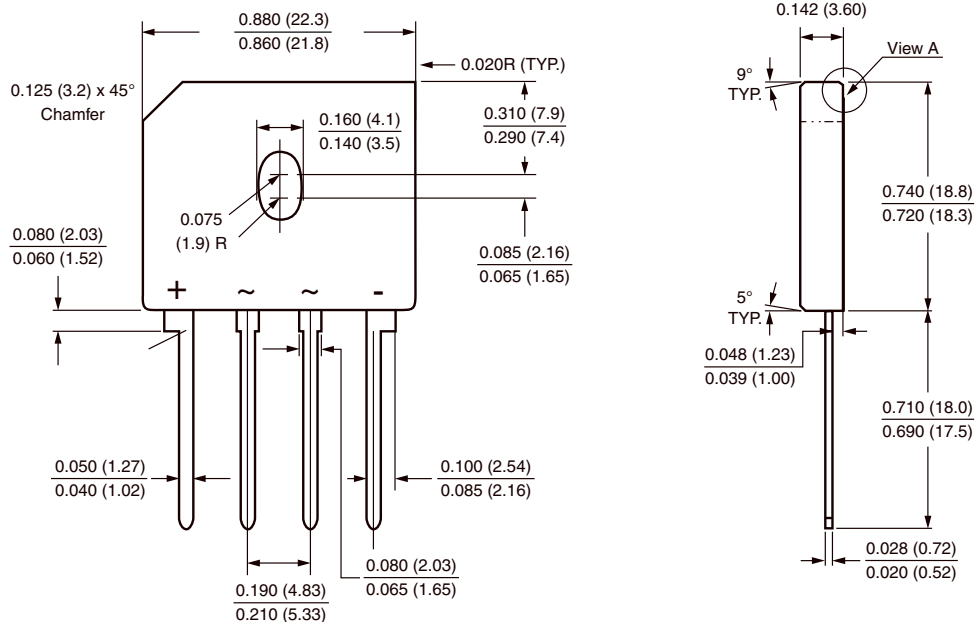


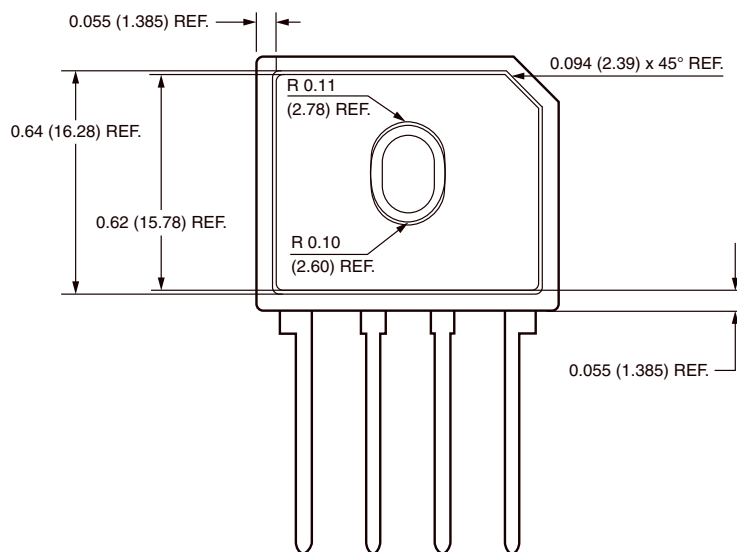
Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

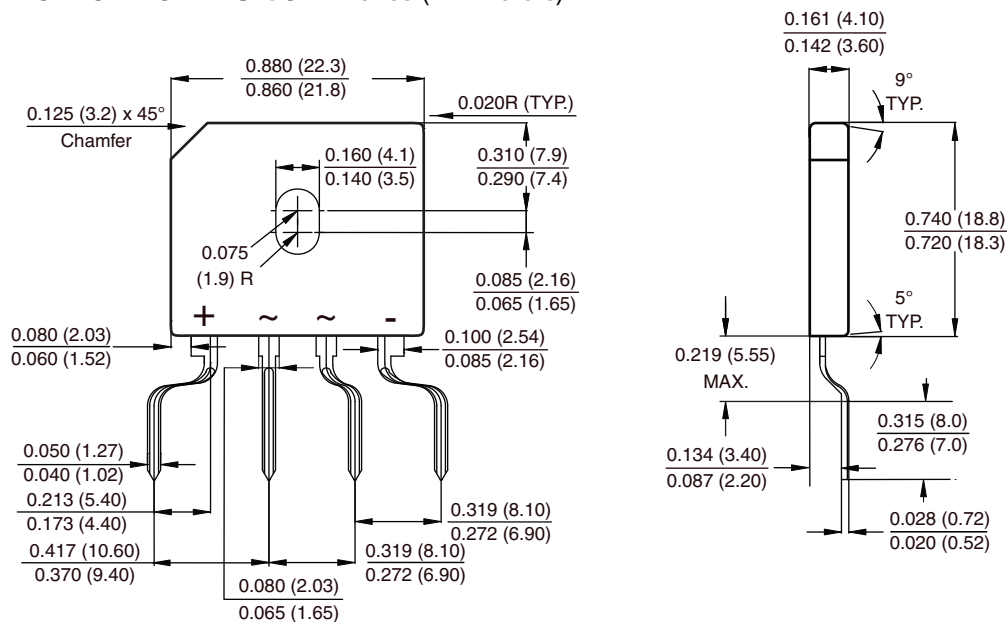
Case Type BU



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



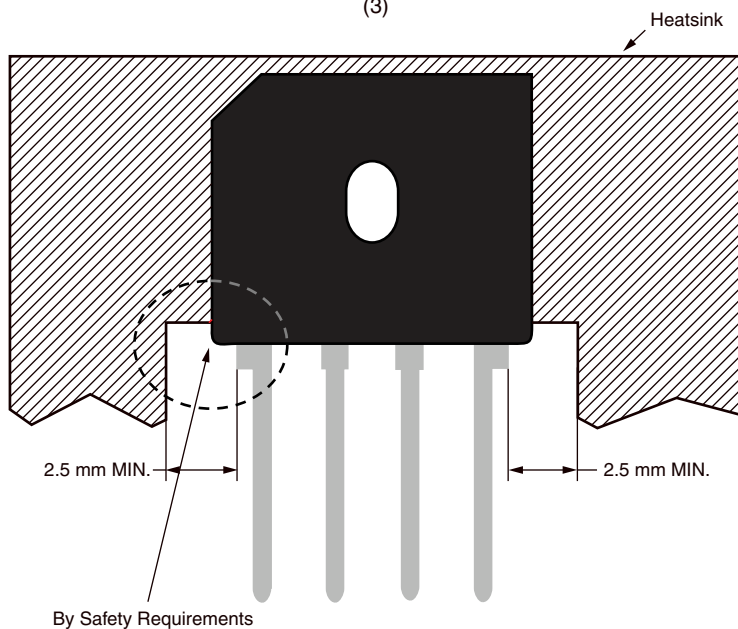
FORMING SPECIFICATION: BU-5S in inches (millimeters)



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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