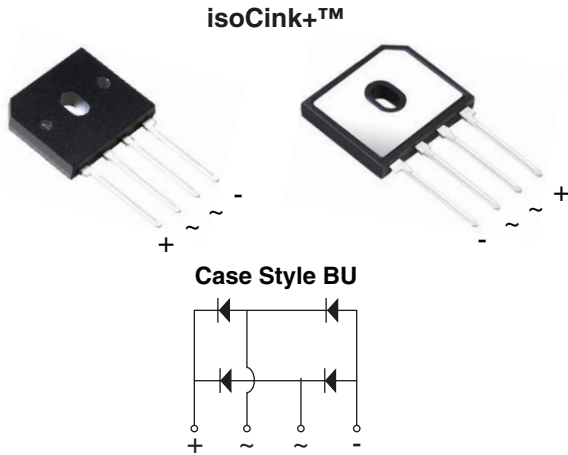


Enhanced isoCink+™ Bridge Rectifiers



FEATURES

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



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 μ 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) | I_O | $T_C = 92$ °C (1) | | | 10 | A |
| | | $T_A = 25$ °C (2) | | | 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^2t | 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** ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

| PARAMETER | TEST CONDITIONS | SYMBOL | TYP. | MAX. | UNIT |
|--|----------------------|-----------------------------------|------|------|---------------|
| Maximum instantaneous forward voltage per diode ⁽¹⁾ | $I_F = 5.0\text{ A}$ | $T_A = 25\text{ }^\circ\text{C}$ | 0.98 | 1.05 | V |
| | | $T_A = 125\text{ }^\circ\text{C}$ | 0.88 | 0.95 | |
| Maximum reverse current per diode | rated V_R | $T_A = 25\text{ }^\circ\text{C}$ | - | 5.0 | μA |
| | | $T_A = 125\text{ }^\circ\text{C}$ | 64 | 250 | |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | C_J | 43 | - | pF |

Note(1) Pulse test: 300 μs 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 | $R_{\theta JC}$ ⁽¹⁾ | 3.0 | | | $^\circ\text{C/W}$ |
| | $R_{\theta JA}$ ⁽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 |
| BU1006-M3/45 | 4.55 | 45 | 20 | Tube |

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

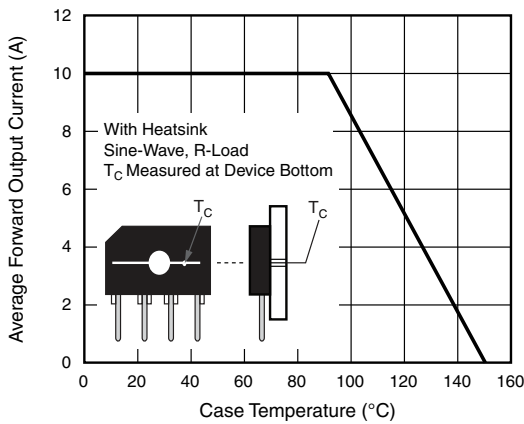


Fig. 1 - Derating Curve Output Rectified Current

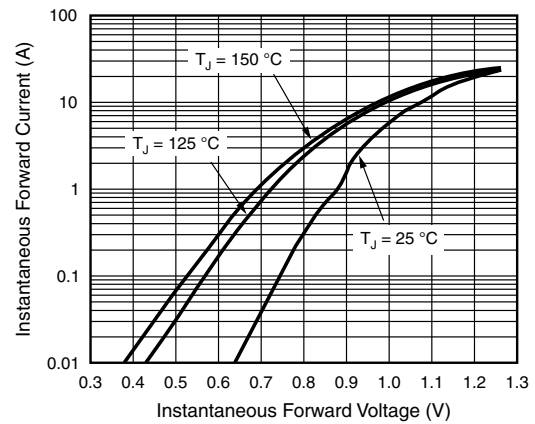


Fig. 4 - Typical Forward Characteristics Per Diode

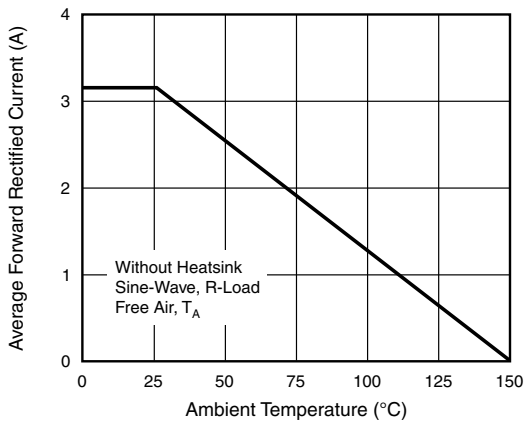


Fig. 2 - Forward Current Derating Curve

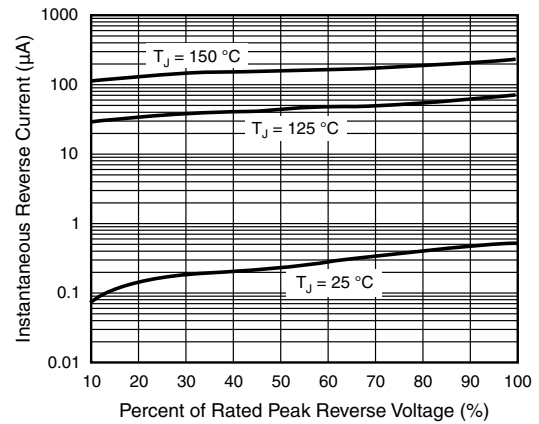


Fig. 5 - Typical Reverse Characteristics Per Diode

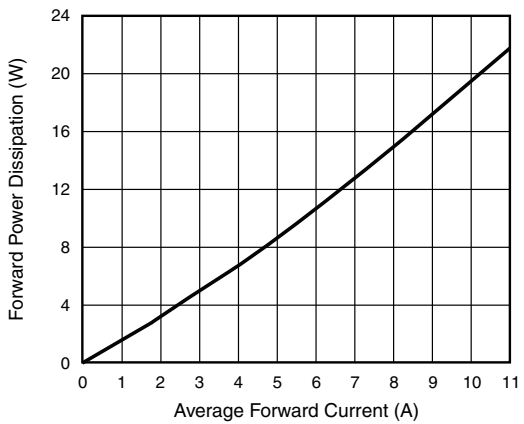


Fig. 3 - Forward Power Dissipation

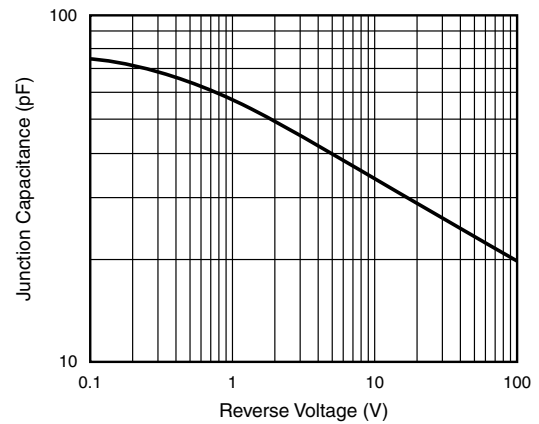
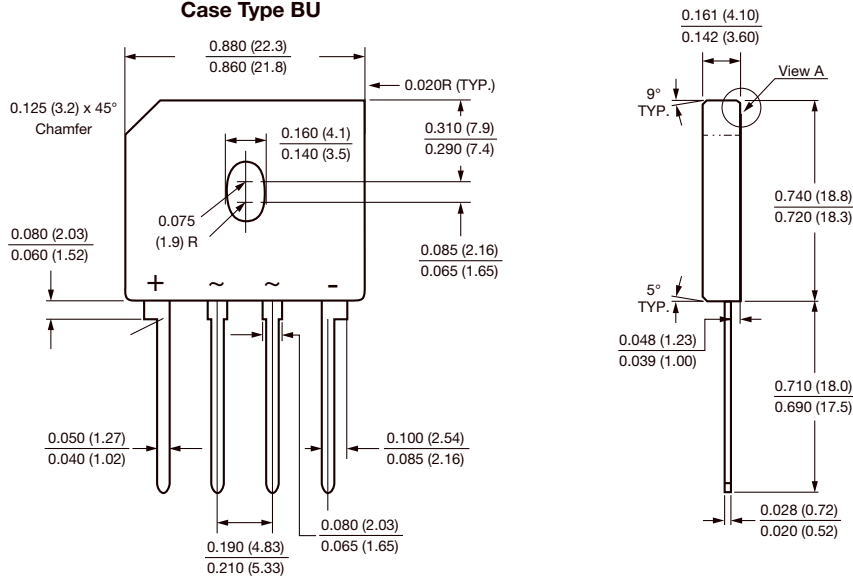


Fig. 6 - Typical Junction Capacitance Per Diode

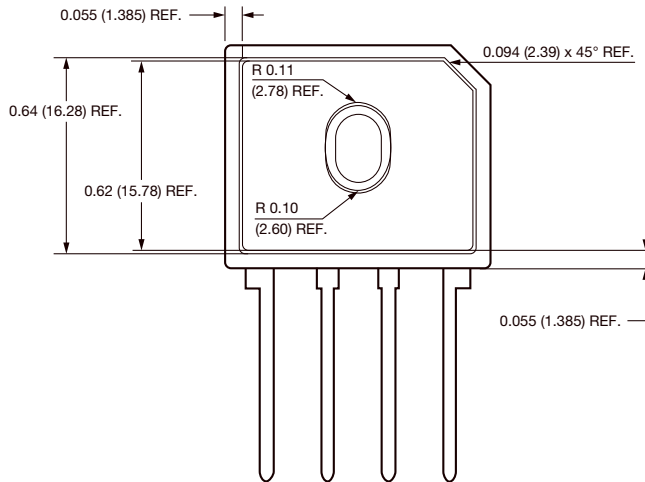


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Type BU



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



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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