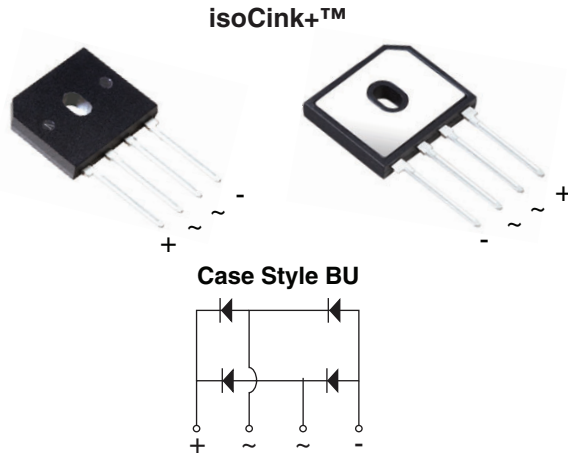


Enhanced isoCink+™ Bridge Rectifiers



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



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.

| 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 |
| Circuit configuration | 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 ($T_A = 25$ °C unless otherwise noted) | | | | | | |
|--|-----------------|--------|----------------|------|------|---------|
| PARAMETER | TEST CONDITIONS | SYMBOL | TYP. | MAX. | UNIT | |
| Maximum instantaneous forward voltage per diode ⁽¹⁾ | $I_F = 5.0$ A | V_F | $T_A = 25$ °C | 0.98 | 1.05 | V |
| | | | $T_A = 125$ °C | 0.88 | 0.95 | |
| Maximum reverse current per diode | rated V_R | I_R | $T_A = 25$ °C | - | 5.0 | μ A |
| | | | $T_A = 125$ °C | 64 | 250 | |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | C_J | 43 | - | pF | |

Note

⁽¹⁾ Pulse test: 300 μ 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 | $R_{\theta JC}$ ⁽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 |
| BU1006S-E3/45 | 4.55 | 45 | 20 | Tube |

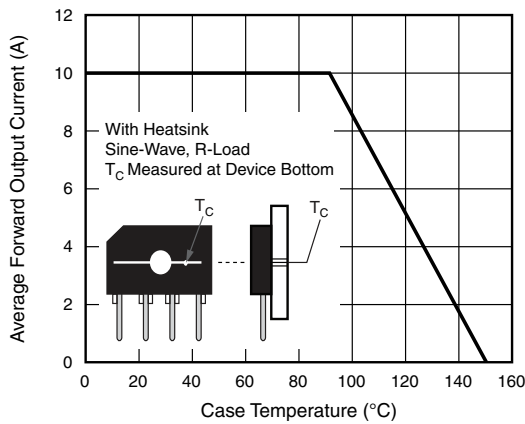
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)


Fig. 1 - Derating Curve Output Rectified Current

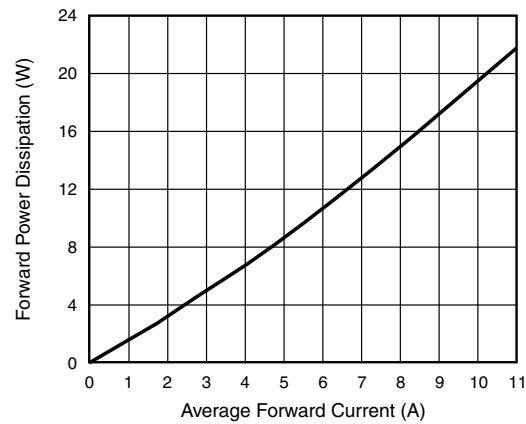


Fig. 3 - Forward Power Dissipation

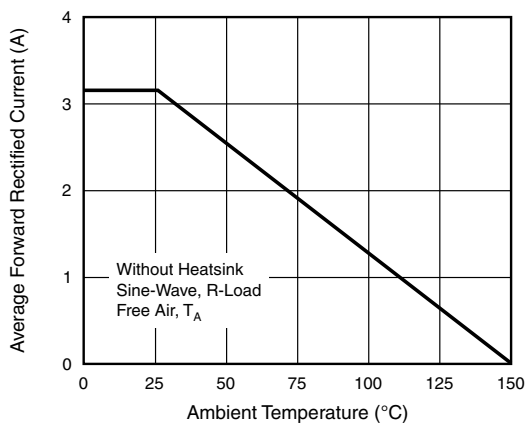


Fig. 2 - Forward Current Derating Curve

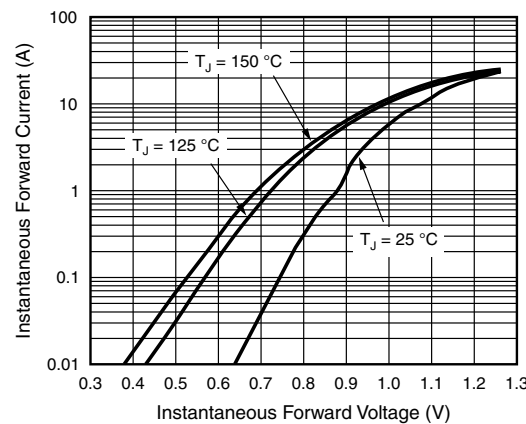


Fig. 4 - Typical Forward Characteristics Per Diode

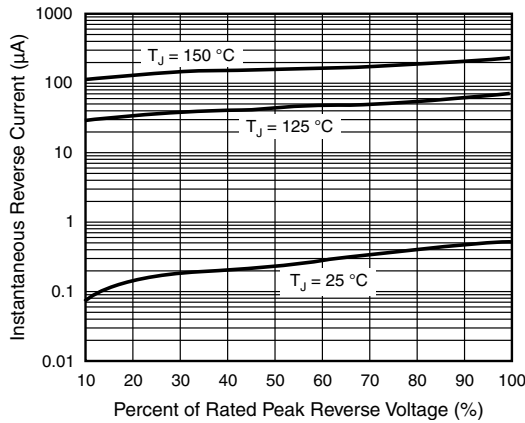


Fig. 5 - Typical Reverse Characteristics Per Diode

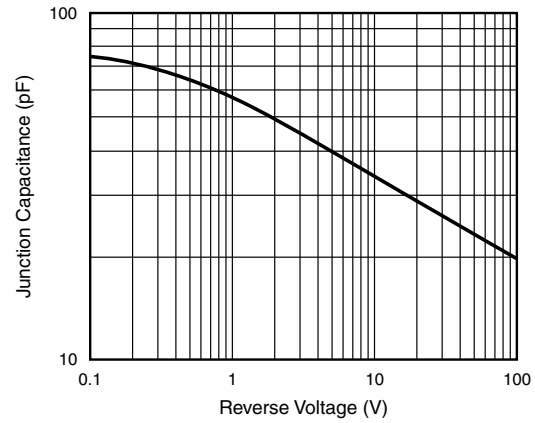
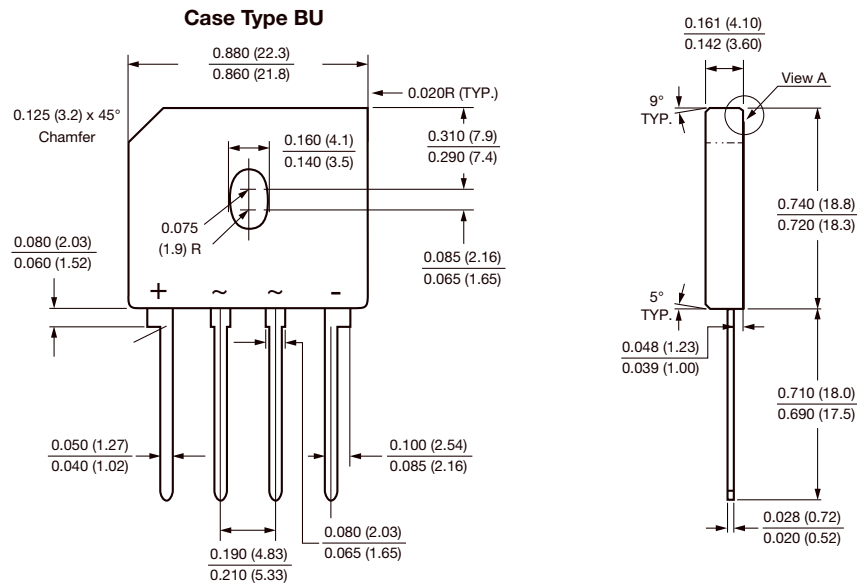
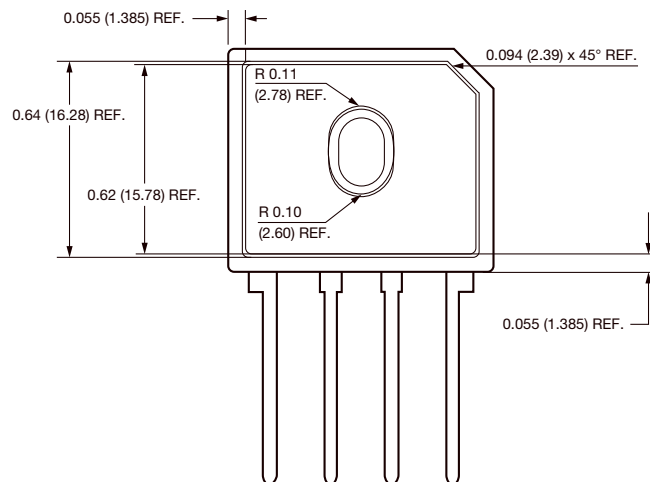


Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

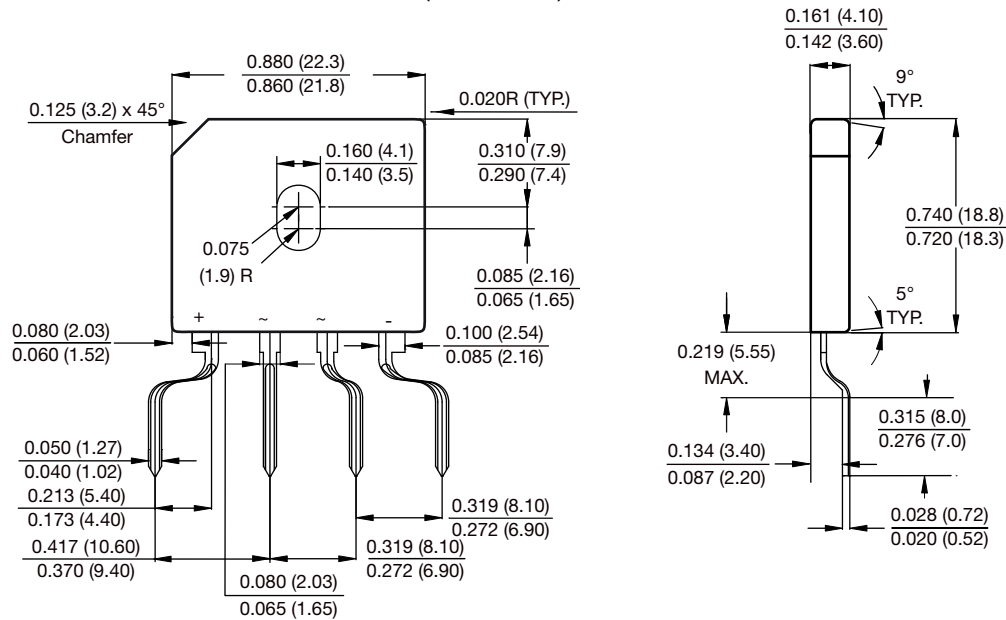


Polarity shown on front side of case, positive lead beveled corner



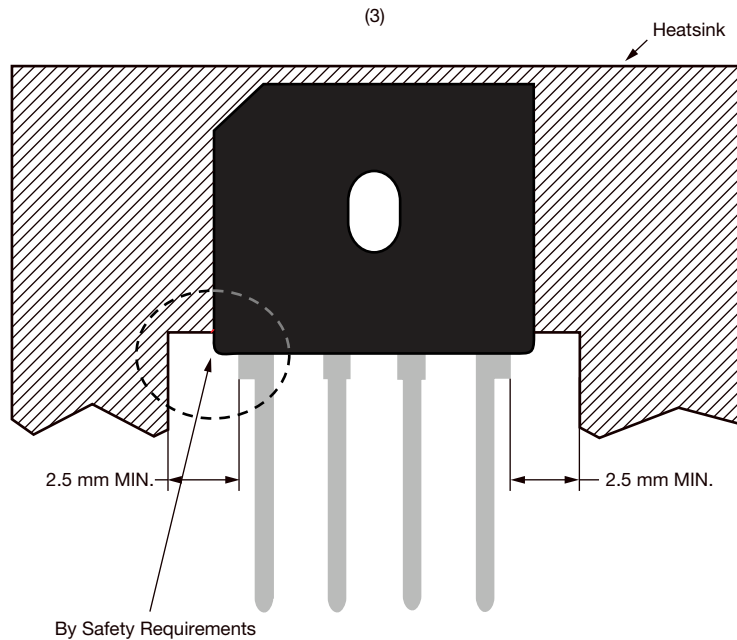


FORMING SPECIFICATION: BU-5S in inches (millimeters)



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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