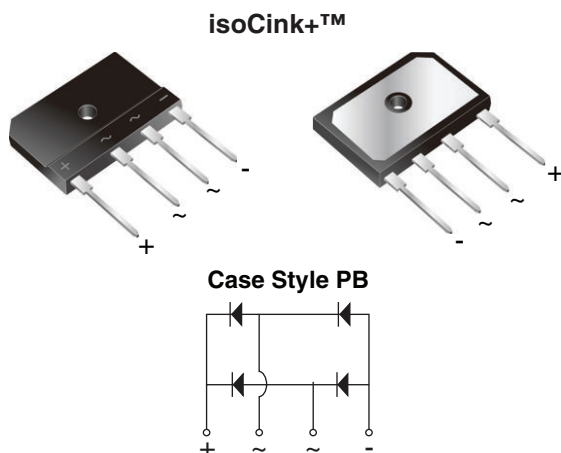


Enhanced isoCink+™ Bridge Rectifiers



*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.

LINKS TO ADDITIONAL RESOURCES



FEATURES

- UL recognition file number E312394 (QQXX2) UL 1557 (see *)
- Enhanced high-current density single in-line package
- Superior thermal conductivity
- Glass passivated chip junction
- 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: PB

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, industrial 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.

Recommended Torque: 5.7 cm·kg (5 inches·lbs)

PRIMARY CHARACTERISTICS

| | |
|-------------------------|----------------------|
| Package | PB |
| $I_{F(AV)}$ | 45 A |
| V_{RRM} | 600 V, 800 V, 1000 V |
| I_{FSM} | 450 A |
| I_R | 10 μ A |
| V_F at $I_F = 22.5$ A | 0.90 V |
| T_J max. | 150 °C |
| Circuit configuration | In-line |

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

| PARAMETER | SYMBOL | PB5006 | PB5008 | PB5010 | UNIT |
|--|-----------------------------------|---------------------------------------|--------|--------|------------------|
| Maximum repetitive peak reverse voltage | V _{RRM} | 600 | 800 | 1000 | V |
| Average rectified forward current (Fig. 1, 2) | I _O | T _C = 84 °C ⁽¹⁾ | | | A |
| | | T _A = 25 °C ⁽²⁾ | | | |
| Non-repetitive peak forward surge current 8.3 ms single sine-wave, T _J = 25 °C | I _{FSM} | 450 | | | A |
| Rating for fusing (t < 8.3 ms) T _J = 25 °C | I ² t | 840 | | | A ² s |
| Operating junction and storage temperature range | T _J , T _{STG} | -55 to +150 | | | °C |

Notes

⁽¹⁾ With 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⁾ | $I_F = 22.5\text{ A}$ | $T_A = 25\text{ }^{\circ}\text{C}$ | 1.00 | 1.10 | V |
| | | $T_A = 125\text{ }^{\circ}\text{C}$ | 0.90 | 1.00 | |
| Reverse current per diode ⁽²⁾ | rated V_R | $T_A = 25\text{ }^{\circ}\text{C}$ | - | 10 | μA |
| | | $T_A = 125\text{ }^{\circ}\text{C}$ | 170 | 500 | |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | C_J | 162 | - | pF |

Notes⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle⁽²⁾ Pulse test: 10 ms pulse width**THERMAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER | SYMBOL | PB5006 | PB5008 | PB5010 | UNIT |
|----------------------------|---------------------------------|--------|--------|--------|------|
| Typical thermal resistance | R _{θJC} ⁽¹⁾ | 0.7 | | | °C/W |
| | R _{θJA} ⁽²⁾ | 18 | | | |

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 |
|---------------|-----------------|------------------------|---------------|---------------|
| PB5006-E3/45 | 7.62 | 45 | 20 | Tube |

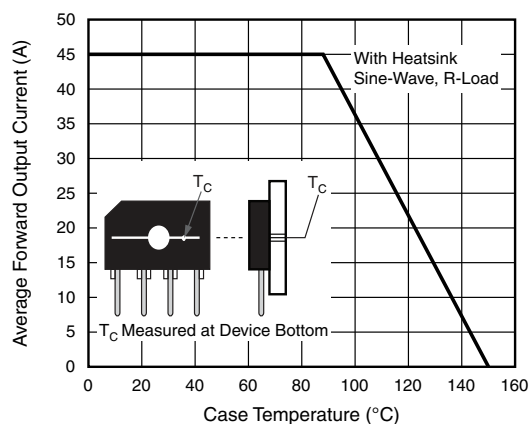
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Derating Curve Output Rectified Current

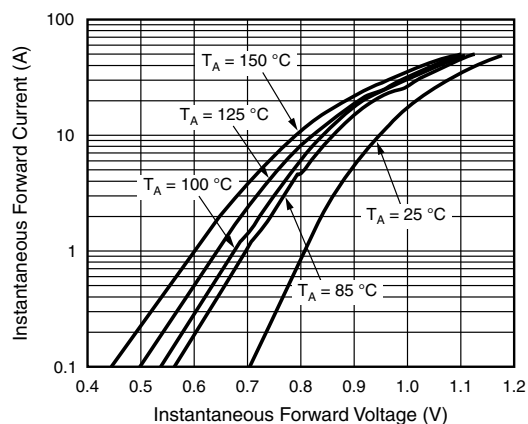


Fig. 4 - Typical Forward Characteristics Per Diode

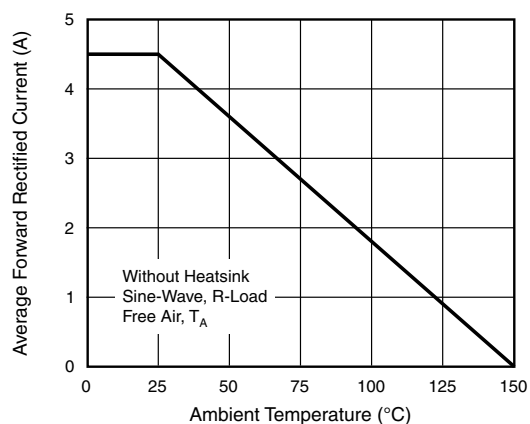


Fig. 2 - Forward Current Derating Curve

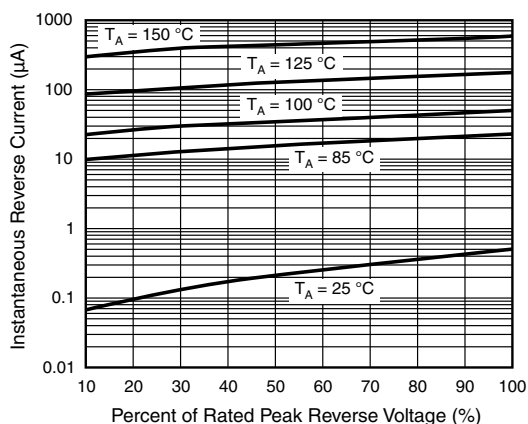


Fig. 5 - Typical Reverse Characteristics Per Diode

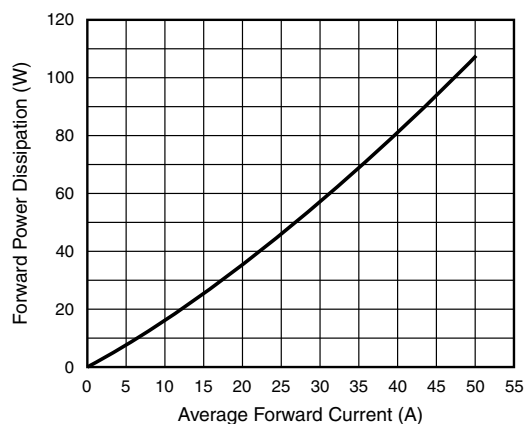


Fig. 3 - Forward Power Dissipation

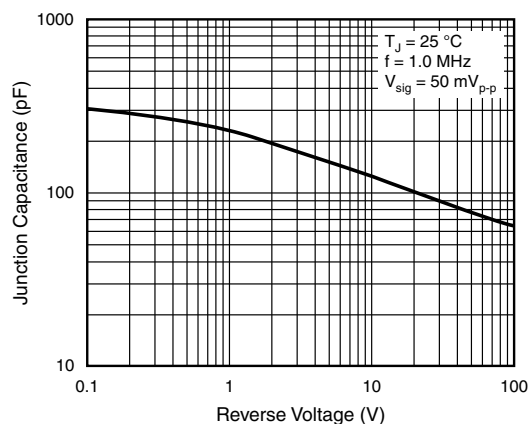
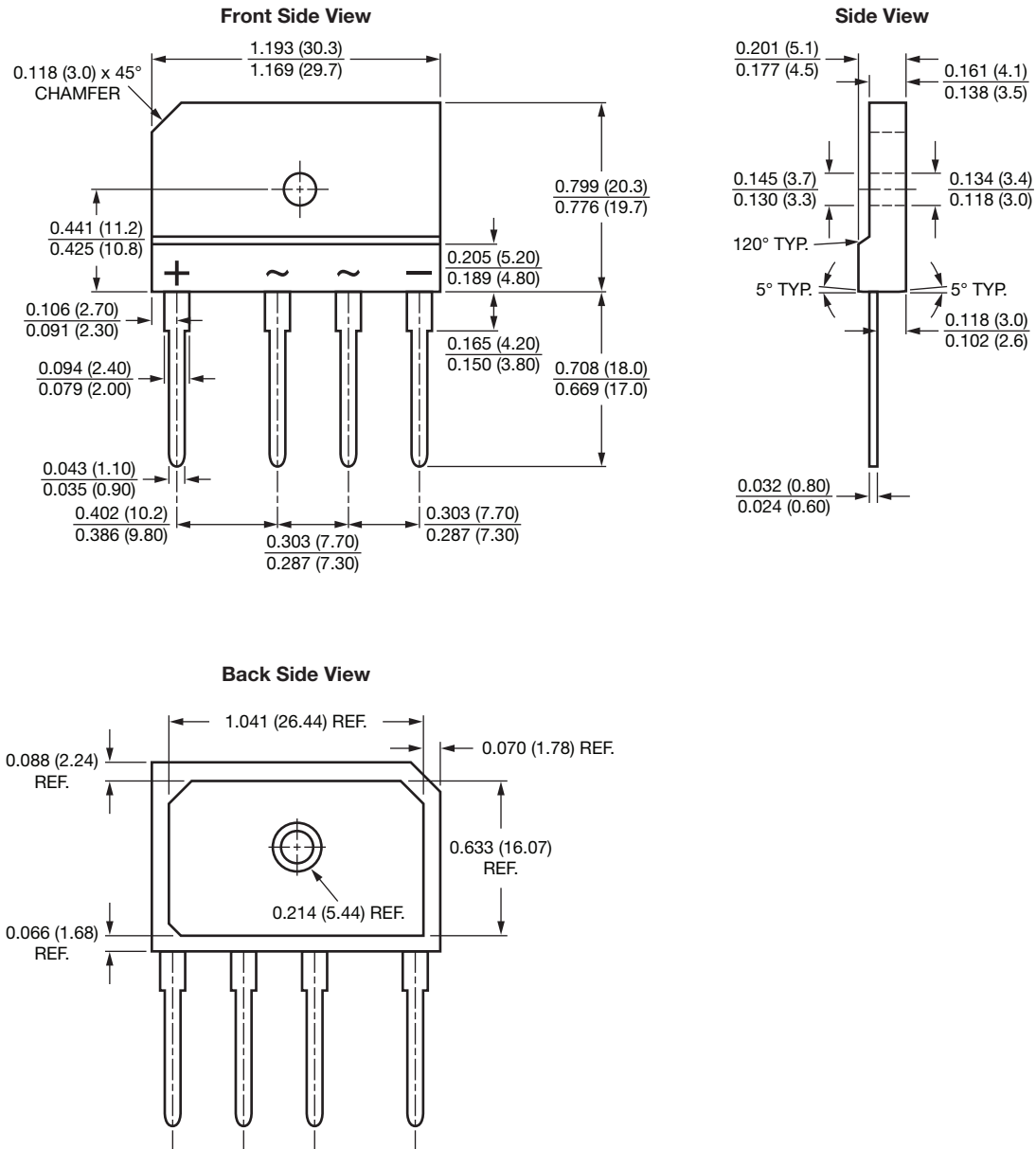


Fig. 6 - Typical Junction Capacitance Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Type PB





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