

## 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	
$I_{F(AV)}$	25 A
$V_{RRM}$	600 V, 800 V, 1000 V
$I_{FSM}$	300 A
$I_R$	5 $\mu$ A
$V_F$ at $I_F = 12.5$ A	0.87 V
$T_J$ max.	150 °C

### FEATURES

- UL recognition file number E309391 (QQQX2) UL 1557 (see \*)
- Thin single in-line package
- Available for BU-5S lead forming option (part number with "5S" suffix, e.g. BU25065S)
- 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

### 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

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102  
E3 suffix for consumer grade, 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)

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)					
PARAMETER	SYMBOL	BU2506	BU2508	BU2510	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	600	800	1000	V
Average rectified forward current (Fig. 1, 2)	$I_O$	$T_C = 60$ °C <sup>(1)</sup>		25	A
		$T_A = 25$ °C <sup>(2)</sup>		3.5	
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25$ °C	$I_{FSM}$			300	A
Rating for fusing ( $t < 8.3$ ms) $T_J = 25$ °C	$I^2t$			373	A <sup>2</sup> s
Operating junction and storage temperature range	$T_J, T_{STG}$			- 55 to + 150	°C

#### Notes

<sup>(1)</sup> With 60 W air cooled heatsink

<sup>(2)</sup> Without heatsink, free air

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT	
Maximum instantaneous forward voltage per diode <sup>(1)</sup>	$I_F = 12.5\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	$V_F$	0.97	1.05	V
		$T_A = 125\text{ }^\circ\text{C}$		0.87		
Maximum reverse current per diode	rated $V_R$	$T_A = 25\text{ }^\circ\text{C}$	$I_R$	-	5.0	$\mu\text{A}$
		$T_A = 125\text{ }^\circ\text{C}$		120		
Typical junction capacitance per diode	4.0 V, 1 MHz	$C_J$	125	-	pF	

**Note**

<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	BU2506	BU2508	BU2510	UNIT
Typical thermal resistance	$R_{\theta JC}$ <sup>(1)</sup>	2.0			$^\circ\text{C/W}$
	$R_{\theta JA}$ <sup>(2)</sup>	20			

**Notes**

<sup>(1)</sup> With 60 W air cooled heatsink

<sup>(2)</sup> Without heatsink, free air

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
BU2506-E3/45	4.84	45	20	Tube
BU2506-E3/51	4.84	51	250	Paper tray
BU25065S-E3/45	4.84	45	20	Tube

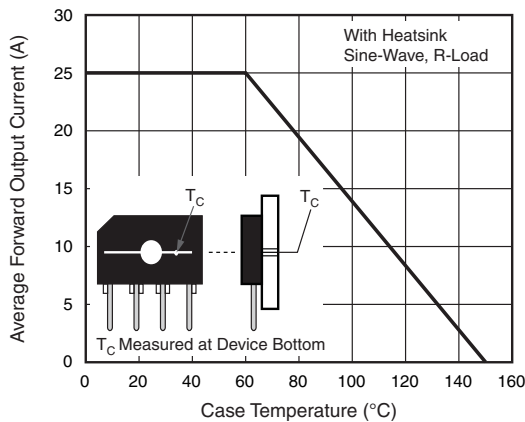
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified)


Fig. 1 - Derating Curve Output Rectified Current

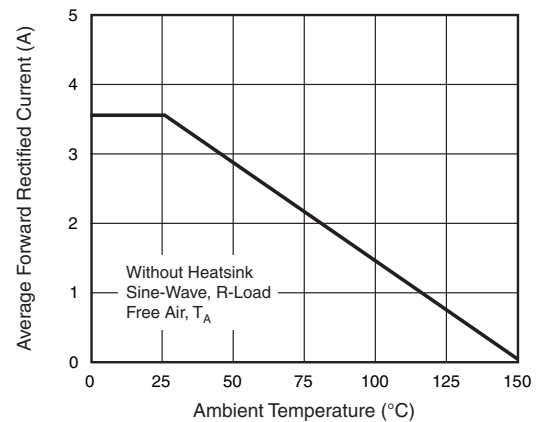


Fig. 2 - Forward Current Derating Curve

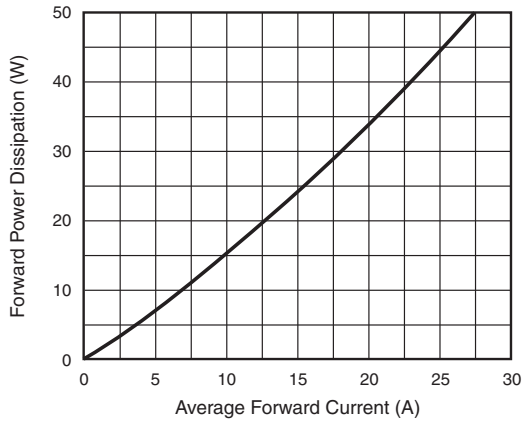


Fig. 3 - Forward Power Dissipation

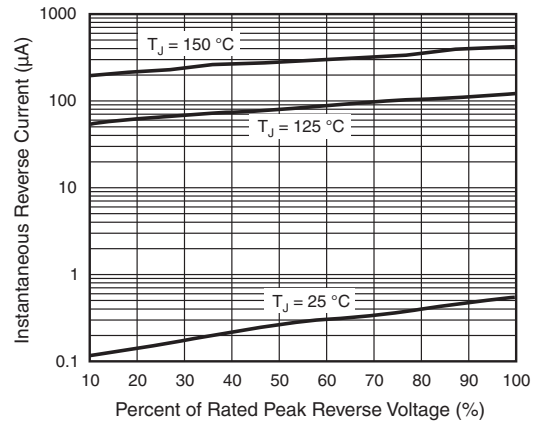


Fig. 5 - Typical Reverse Characteristics Per Diode

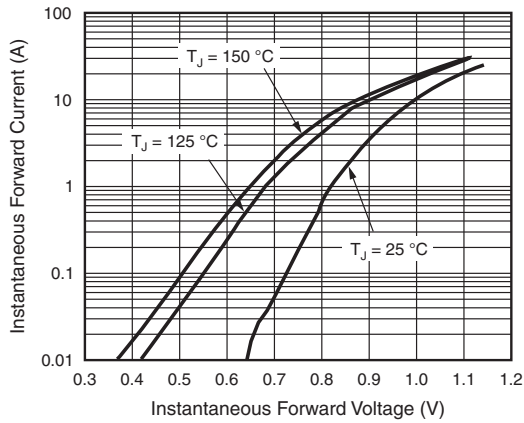


Fig. 4 - Typical Forward Characteristics Per Diode

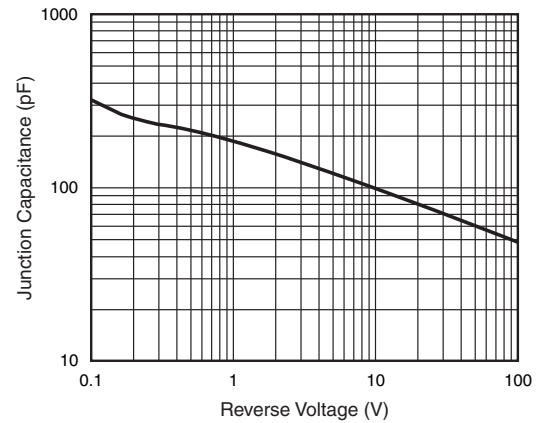
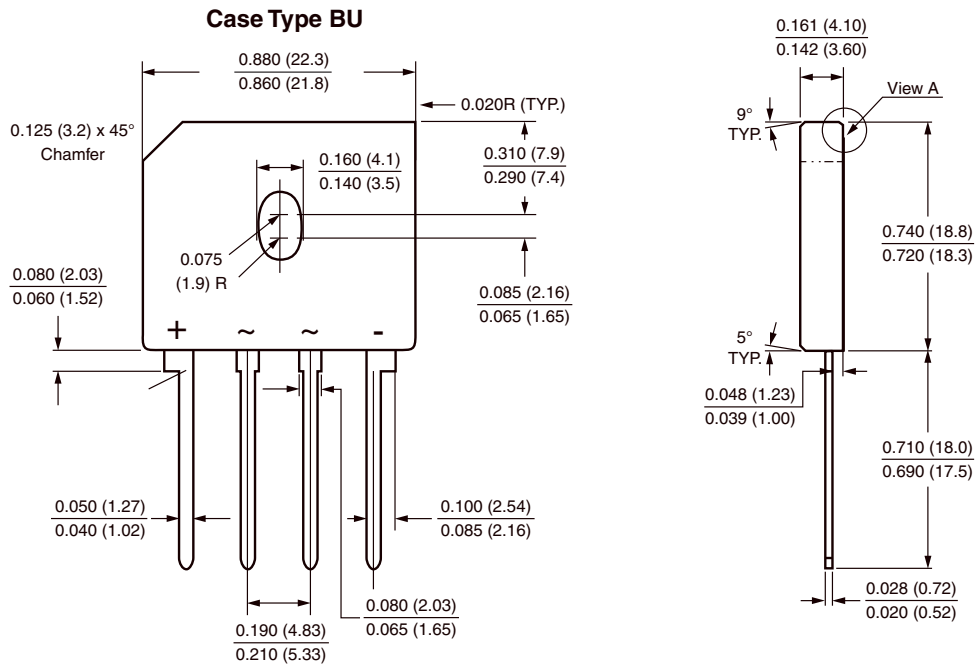


Fig. 6 - Typical Junction Capacitance Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

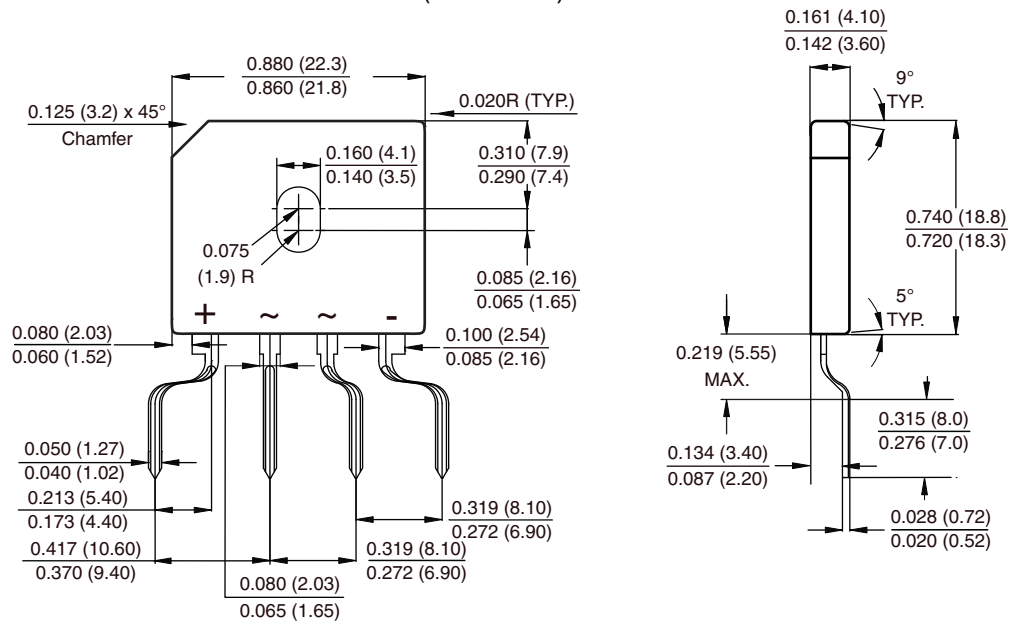


Polarity shown on front side of case, positive lead beveled corner





### 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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