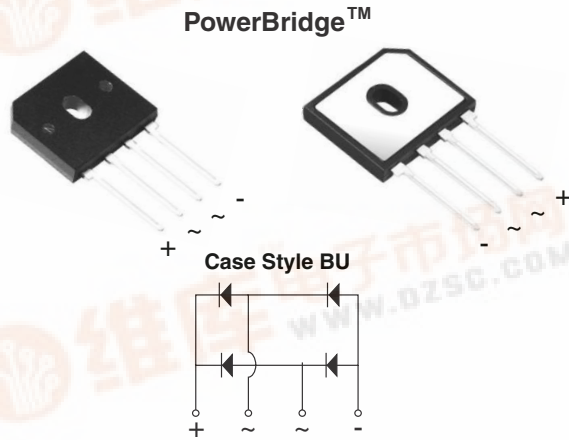


## Enhanced Power Bridge Rectifiers



\* 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

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)	$I_O$		25		A
			$T_C = 60$ °C (1)		
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:**

- (1) With 60 W air cooled heatsink
- (2) Without heatsink, free air

**FEATURES**

- UL recognition file number E309391 (QQX2) 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 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



**TYPICAL APPLICATIONS**

General purpose use in ac-to-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)



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 12.5 A	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	V <sub>F</sub>	0.97 0.87	1.05 0.95	V
Maximum reverse current per diode	rated V <sub>R</sub>	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub>	- 120	5.0 350	μA
Typical junction capacitance per diode	4.0 V, 1 MHz		C <sub>J</sub>	125	-	pF

Note:

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

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	BU2506	BU2508	BU2510	UNIT
Typical thermal resistance	R <sub>θJC</sub> <sup>(1)</sup>	2.0			°C/W
	R <sub>θJA</sub> <sup>(2)</sup>	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
BU2506-E3/45	4.84	45	20	Tube
BU2506-E3/51	4.84	51	250	Paper tray
BU2506S-E3/45	4.84	45	20	Tube

RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

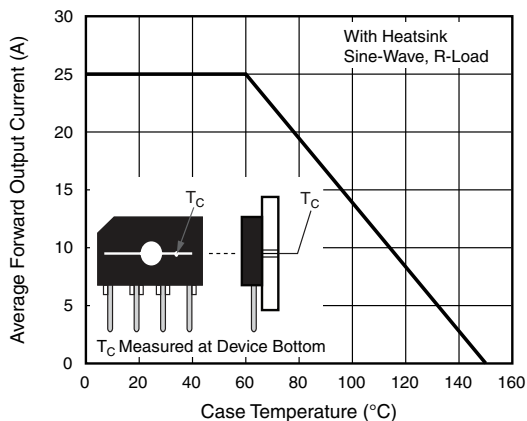


Figure 1. Derating Curve Output Rectified Current

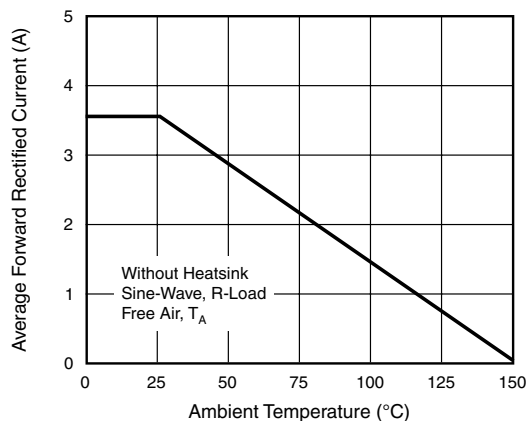


Figure 2. Forward Current Derating Curve

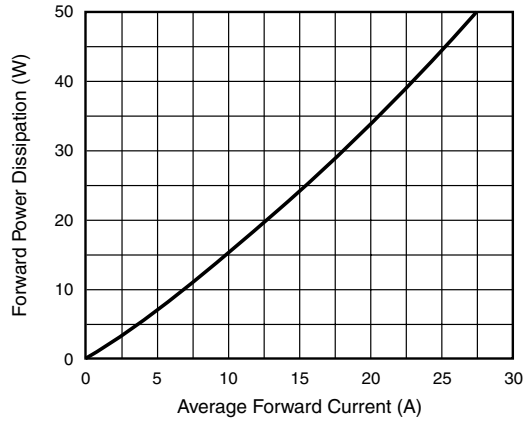


Figure 3. Forward Power Dissipation

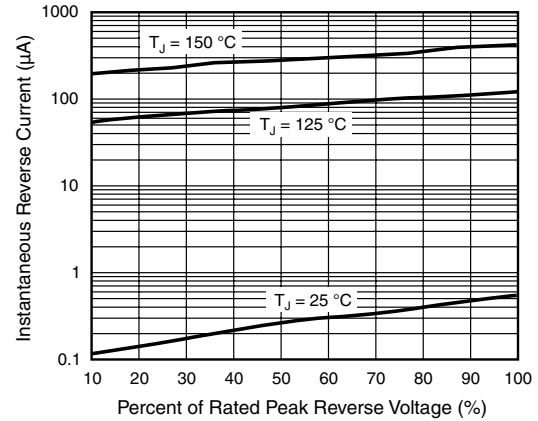


Figure 5. Typical Reverse Characteristics Per Diode

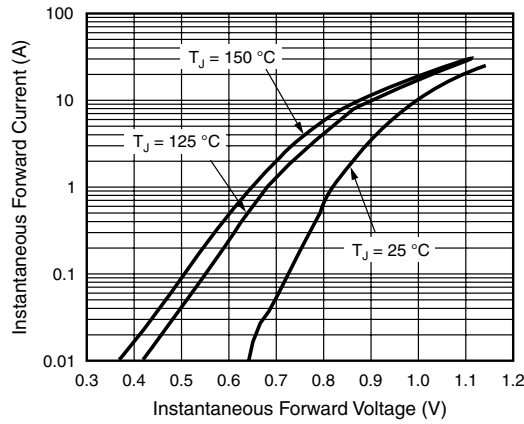


Figure 4. Typical Forward Characteristics Per Diode

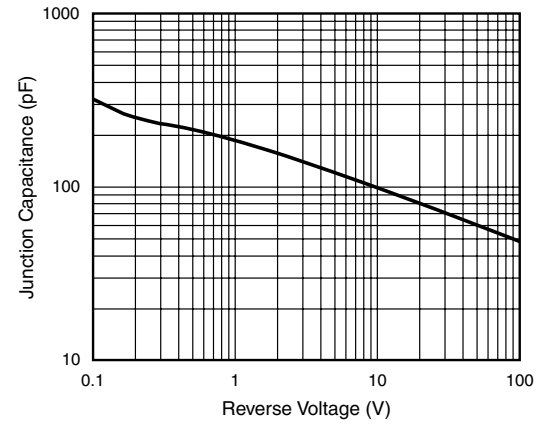


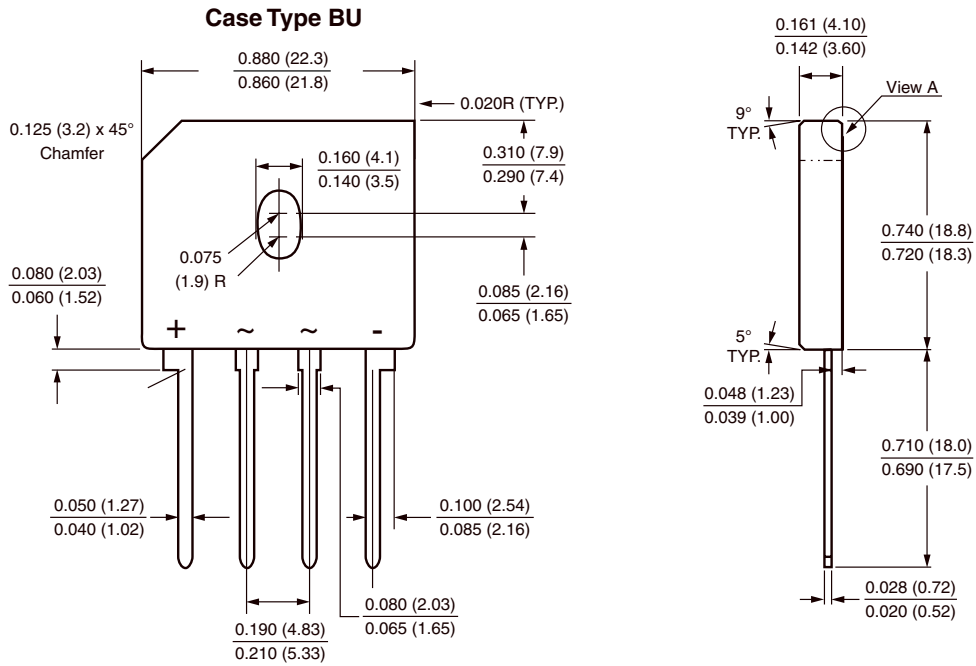
Figure 6. Typical Junction Capacitance Per Diode

# BU2506 thru BU2510

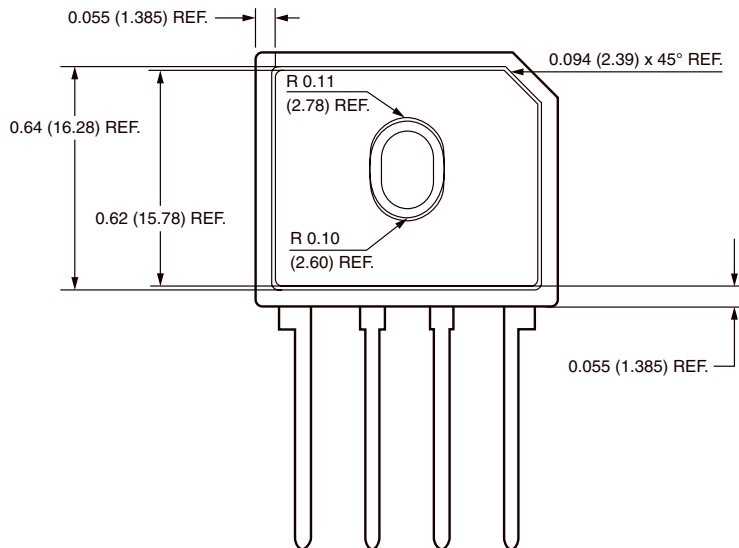
Vishay General Semiconductor



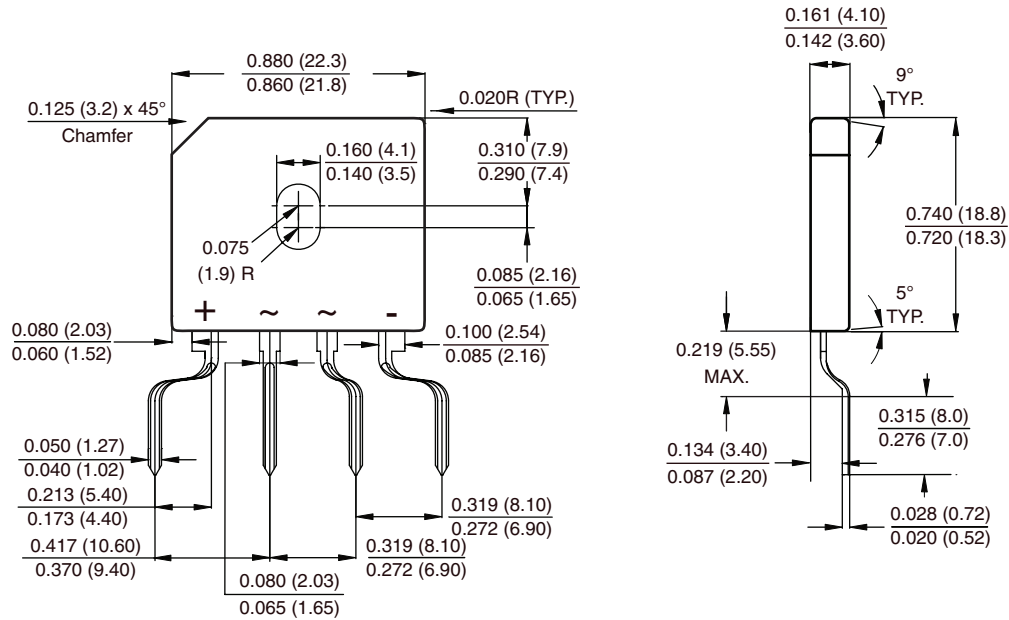
## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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

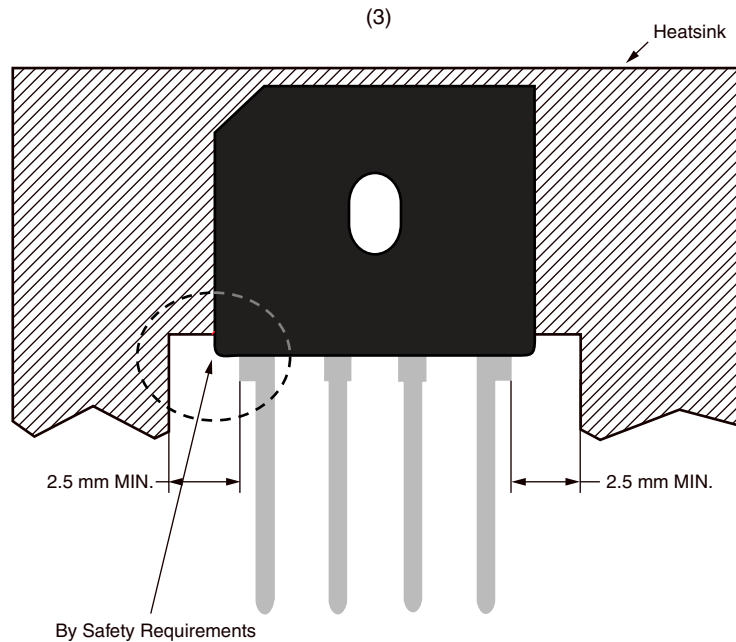


**FORMING SPECIFICATION: BU-5S** in inches (millimeters)



**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:



## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.