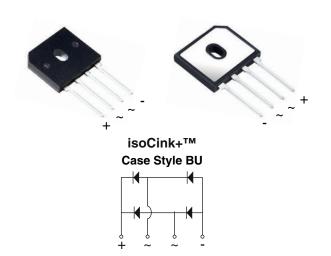


## Vishay General Semiconductor

HALOGEN

FREE

# Enhanced isoCink+™ Bridge Rectifiers



#### **LINKS TO ADDITIONAL RESOURCES**



PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	15 A				
V <sub>RRM</sub> 600 V, 800 V, 1000 V					
I <sub>FSM</sub>	200 A				
I <sub>R</sub>	5 μΑ				
$V_F$ at $I_F = 7.5 A$	0.87 V				
T <sub>J</sub> max.	150 °C				
Package	BU				
Circuit configurations	In-line				

#### **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 <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

## **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. **Recommended Torque:** 5.7 cm-kg (5 inches-lbs)

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	BU1506	BU1508	BU1510	UNIT
Maximum repetitive peak reverse voltage		$V_{RRM}$	600	800	1000	V
Average rectified forward current (Fig. 1, 2)	$T_C = 80  ^{\circ}C^{(1)}$	-	15 3.4		- A	
	$T_A = 25  ^{\circ}C^{(2)}$	IO				
Non-repetitive peak forward surge current 8.3 ms single sine-wave, T <sub>J</sub> = 25 °C		I <sub>FSM</sub>		200		А
Rating for fusing (t < 8.3 ms) T <sub>J</sub> = 25 °C		I <sup>2</sup> t	160		A <sup>2</sup> s	
Operating junction and storage temperature ran	ge	T <sub>J</sub> , T <sub>STG</sub>		-55 to +150		°C

#### **Notes**

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

# BU1506, BU1508, BU1510

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Maximum instantaneous forward voltage per diode (1)	I <sub>F</sub> = 7.5 A	T <sub>A</sub> = 25 °C	V <sub>F</sub>	0.97	1.05	V	
		T <sub>A</sub> = 125 °C		0.87	0.95		
Maximum reverse current per diode	rated V <sub>R</sub>	T <sub>A</sub> = 25 °C	I <sub>R</sub>	-	5.0	μА	
		T <sub>A</sub> = 125 °C		90	250		
Typical junction capacitance per diode	4.0 V, 1 MHz		CJ	70	-	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	BU1506 BU1508 BU1510				
Typical thermal resistance	R <sub>0</sub> JC (1)	2.5			°C/W	
	R <sub>0JA</sub> (2)		20		C/VV	

#### 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			
BU1506-E3/45	4.75	45	20	Tube			
BU1506-E3/51	4.75	51	250	Paper tray			
BU1506-M3/45	4.75	45	20	Tube			

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## RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise specified)

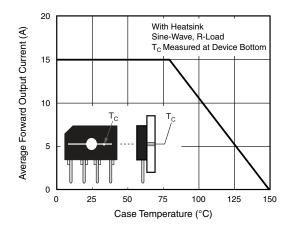


Fig. 1 - Derating Curve Output Rectified Current

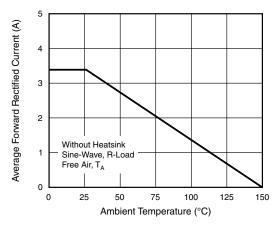


Fig. 2 - Forward Current Derating Curve

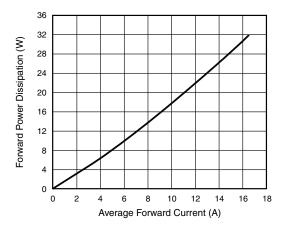


Fig. 3 - Forward Power Dissipation

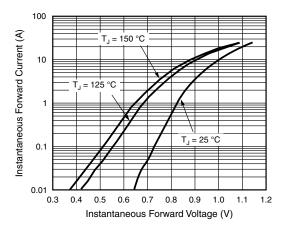


Fig. 4 - Typical Forward Characteristics Per Diode

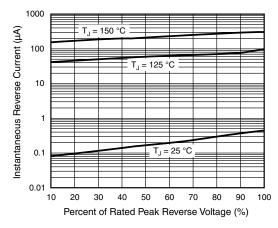


Fig. 5 - Typical Reverse Characteristics Per Diode

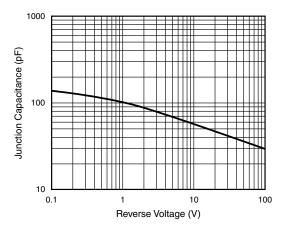


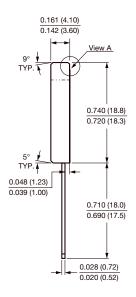
Fig. 6 - Typical Junction Capacitance Per Diode



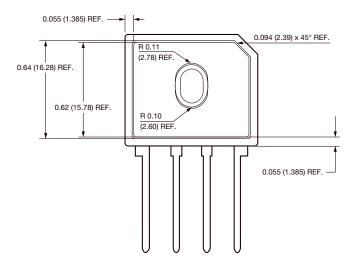
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## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### Case Type BU 0.880 (22.3) 0.860 (21.8) 0.020R (TYP.) 0.125 (3.2) x 45 Chamfer 0.310 (7.9) 0.160 (4.1) 0.290 (7.4) 0.140 (3.5) 0.075 0.080 (2.03) (1.9) R 0.085 (2.16) 0.060 (1.52) 0.065 (1.65) 0.100 (2.54) 0.050 (1.27) 0.040 (1.02) 0.085 (2.16) 0.080 (2.03) 0.190 (4.83) 0.210 (5.33)



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



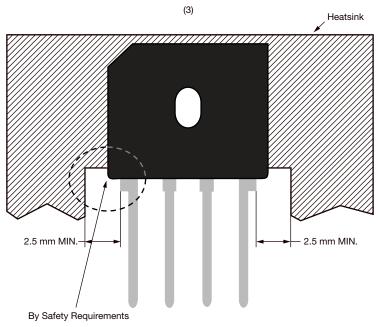


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## **APPLICATION NOTE**

- 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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