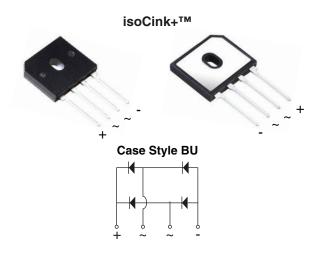
www.vishay.com

# BU1006, BU1008, BU1010

Vishay General Semiconductor

# Enhanced isoCink+<sup>™</sup> Bridge Rectifiers



## LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	10 A				
V <sub>RRM</sub>	600 V, 800 V, 1000 V				
I <sub>FSM</sub>	120 A				
I <sub>R</sub>	5 μΑ				
$V_F$ at $I_F = 5.0$ A	0.88 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 <u>www.vishay.com/doc?99912</u>

## **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.

<b>MAXIMUM RATINGS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER		SYMBOL	BU1006	BU1008	BU1010	UNIT
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	600	800	1000	V
Average rectified forward current (Fig. 1, 2)	$T_{C} = 92 \ ^{\circ}C \ ^{(1)}$		10		A	
	$T_A = 25 \ ^{\circ}C \ ^{(2)}$	I <sub>O</sub>	3.2			
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J$ = 25 °C		I <sub>FSM</sub>		120		А
Rating for fusing (t < 8.3 ms) $T_J = 25 \text{ °C}$		l <sup>2</sup> t	60		A <sup>2</sup> s	
Operating junction and storage temperature range	je	T <sub>J</sub> , T <sub>STG</sub>		-55 to +150		°C

Notes

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

(2) Without heatsink, free air

COMPLIANT HALOGEN

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ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Maximum instantaneous forward	I <sub>F</sub> = 5.0 A	T <sub>A</sub> = 25 °C	V	0.98	1.05	V	
voltage per diode <sup>(1)</sup>	$I_{\rm F} = 5.0 {\rm A}$	T <sub>A</sub> = 125 °C	V <sub>F</sub>	0.88	0.95	v	
Maximum reverse current per diode	rated V <sub>R</sub>	T <sub>A</sub> = 25 °C	I <sub>R</sub>	-	5.0	μA	
		T <sub>A</sub> = 125 °C		64	250		
Typical junction capacitance per diode	4.0 V, 1 MHz		CJ	43	-	pF	

#### Note

<sup>(1)</sup> Pulse test: 300 µs pulse width, 1 % duty cycle

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	BU1006 BU1008 BU1010		UNIT		
Typical thermal resistance	R <sub>θJC</sub> <sup>(1)</sup>	3.0			°C/W	
	R <sub>0JA</sub> <sup>(2)</sup>	20			0/10	

#### 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		



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

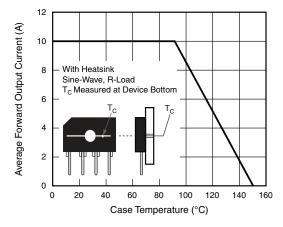


Fig. 1 - Derating Curve Output Rectified Current

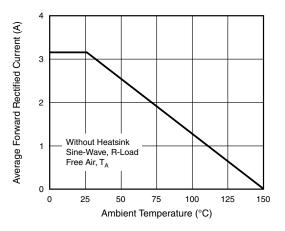


Fig. 2 - Forward Current Derating Curve

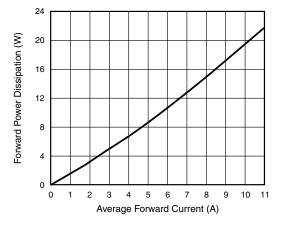


Fig. 3 - Forward Power Dissipation

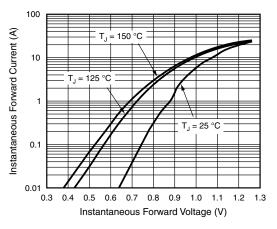


Fig. 4 - Typical Forward Characteristics Per Diode

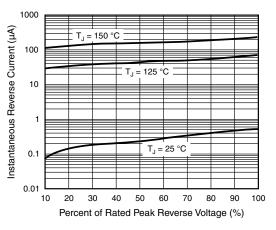


Fig. 5 - Typical Reverse Characteristics Per Diode

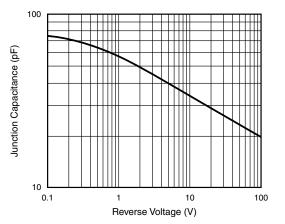


Fig. 6 - Typical Junction Capacitance Per Diode

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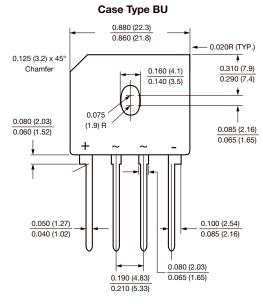
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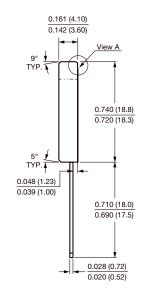


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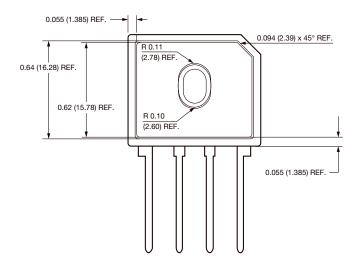
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## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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



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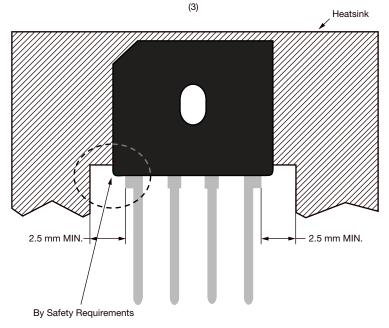
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## **APPLICATION NOTE**

- 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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