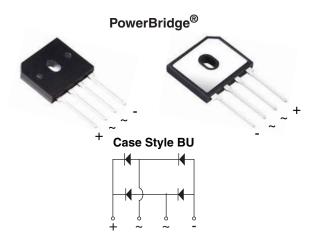
# **BU1006 thru BU1010**



Vishay General Semiconductor

# Enhanced PowerBridge® 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 <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 <sub>F</sub> at I <sub>F</sub> = 5 A	0.88 V				
T <sub>J</sub> 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. BU10065S)



- · Superior thermal conductivity
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

### **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.

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

(1) With 60 W air cooled heatsink

(2) Without heatsink, free air

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CO	ONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 5.0 A	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	V <sub>F</sub>	0.98 0.88	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>	- 64	5.0 250	μΑ
Typical junction capacitance per diode	4.0 V, 1 MHz		CJ	43	-	pF

### Note

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

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	BU1006	BU1008	BU1010	UNIT
Typical thermal resistance	$R_{\theta JC}^{(1)}$ $R_{\theta JA}^{(2)}$	3.0 20		°C/W	

### Notes

<sup>(2)</sup> 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			
BU10065S-E3/45	4.55	45	20	Tube			

### **RATINGS AND CHARACTERISTICS CURVES**

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

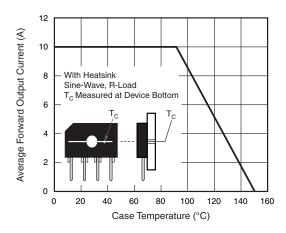


Figure 1. Derating Curve Output Rectified Current

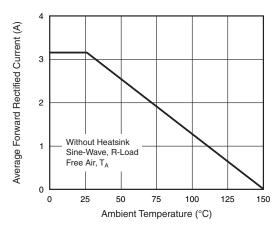


Figure 2. Forward Current Derating Curve

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





# Vishay General Semiconductor

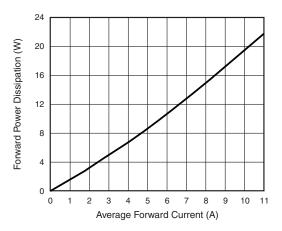


Figure 3. Forward Power Dissipation

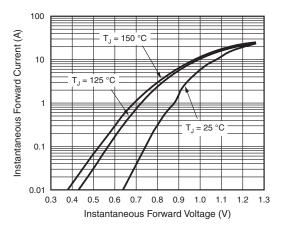


Figure 4. Typical Forward Characteristics Per Diode

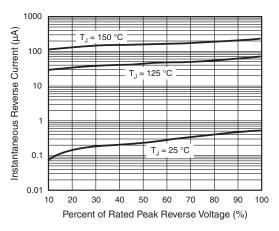


Figure 5. Typical Reverse Characteristics Per Diode

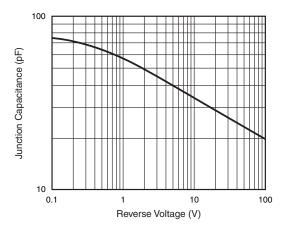


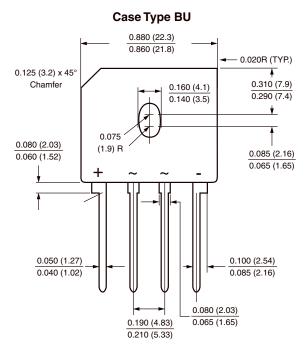
Figure 6. Typical Junction Capacitance Per Diode

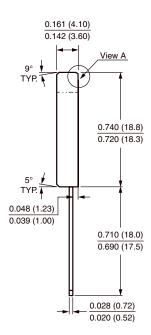
# **BU1006 thru BU1010**

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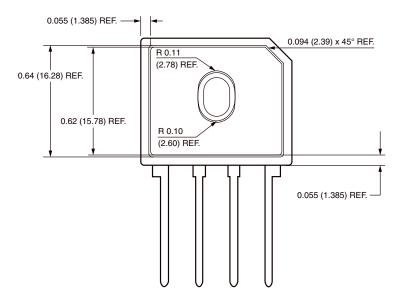


### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





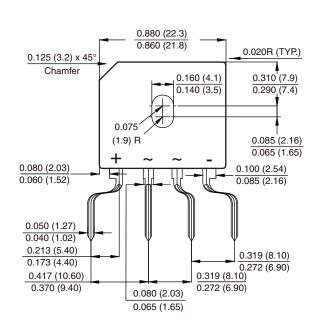
Polarity shown on front side of case, positive lead beveled corner

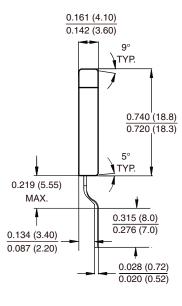




# Vishay General Semiconductor

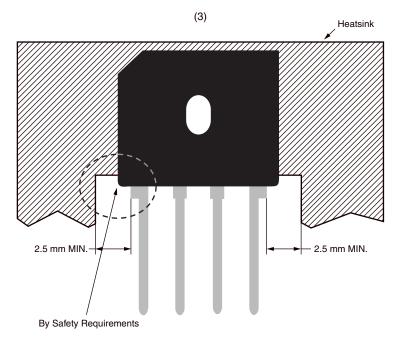
### FORMING SPECIFICATION: BU-5S in inches (millimeters)





### **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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Vishay

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