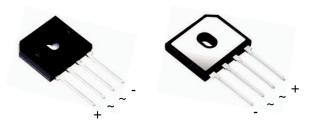
www.vishay.com

BU2006-E3, BU2008-E3, BU2010-E3

Vishay General Semiconductor

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



isoCink+™ Case Style BU



\* 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					
Package	BU				
I <sub>F(AV)</sub>	20 A				
V <sub>RRM</sub>	600 V, 800 V, 1000 V				
I <sub>FSM</sub>	240 A				
I <sub>R</sub>	5 µA				
$V_F$ at $I_F = 10$ A	0.85 V				
T <sub>J</sub> max.	150 °C				
Diode variations	In-Line				

### **FEATURES**

- UL recognition file number E309391 (QQQX2) UL 1557 (see \*)
- Thin single in-line package
- Available for BU-5S lead forming option RoHS (part number with "5S" suffix, e.g. BU20065S)
- · 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

### 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

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix 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)

<b>MAXIMUM RATINGS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER		SYMBOL	BU2006	BU2008	BU2010	UNIT	
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	600	800	1000	V	
Average rectified forward current (Fig. 1, 2)	$T_{C} = 61 \ ^{\circ}C \ ^{(1)}$	L.	20			А	
	T <sub>A</sub> = 25 °C <sup>(2)</sup>	I <sub>O</sub>	3.5				
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25 ^{\circ}\text{C}$		I <sub>FSM</sub>		240		А	
Rating for fusing (t < 8.3 ms) $T_J = 25 \ ^\circ C$		l <sup>2</sup> t		239		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



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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25$ °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Maximum instantaneous forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 10 A	T <sub>A</sub> = 25 °C	V <sub>F</sub>	0.95	1.05	V	
	$I_F = 10 A$	T <sub>A</sub> = 125 °C		0.85	0.95		
Maximum reverse current per diode	rated V <sub>R</sub>	T <sub>A</sub> = 25 °C	- I <sub>R</sub>	-	5.0		
		T <sub>A</sub> = 125 °C		110	350	μΑ	
Typical junction capacitance per diode	4.0 V, 1 MHz		CJ	95	-	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	BU2006	BU2008	BU2010	UNIT	
Typical thermal resistance	R <sub>0JC</sub> <sup>(1)</sup>	2.4			°C/W	
	R <sub>0JA</sub> <sup>(2)</sup>	20			0/10	

#### Notes

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

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

ORDERING INFORMATION (Example)							
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
BU2006-E3/45	4.76	45	20	Tube			
BU2006-E3/51	4.76	51	250	Paper tray			
BU20065S-E3/45	4.76	45	20	Tube			

### **RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25$ °C unless otherwise specified)

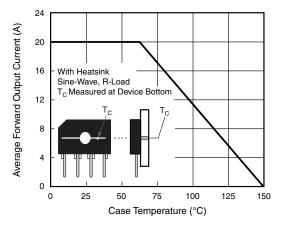


Fig. 1 - Derating Curve Output Rectified Current

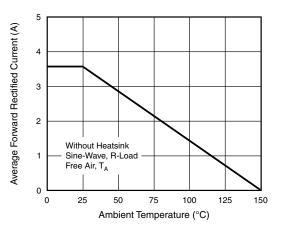


Fig. 2 - Forward Current Derating Curve

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## BU2006-E3, BU2008-E3, BU2010-E3

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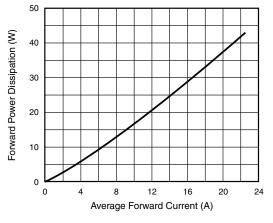


Fig. 3 - Forward Power Dissipation

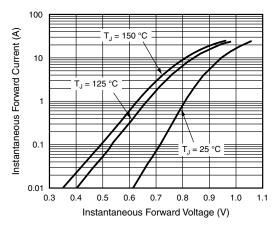
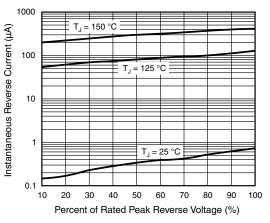
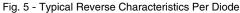


Fig. 4 - Typical Forward Characteristics Per Diode





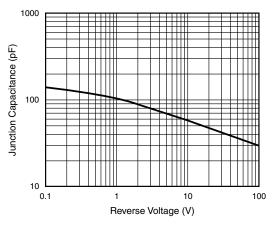
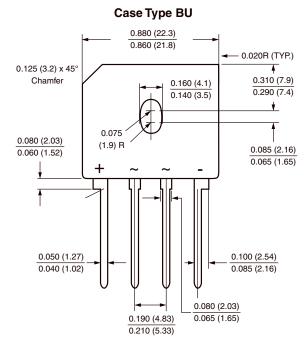


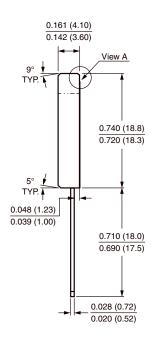
Fig. 6 - Typical Junction Capacitance Per Diode



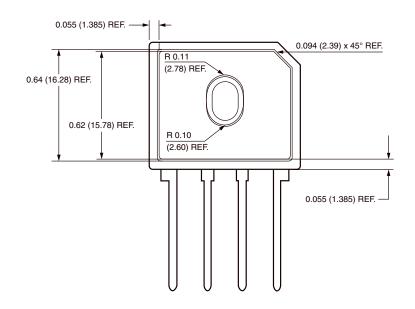
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### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





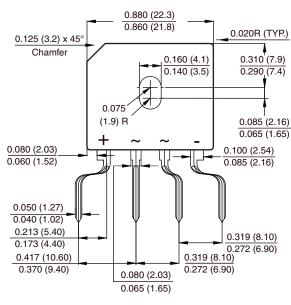
Polarity shown on front side of case, positive lead beveled corner

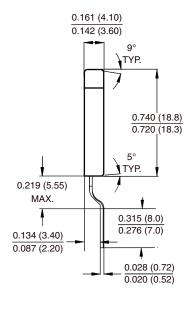




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### FORMING SPECIFICATION: BU-5S in inches (millimeters)



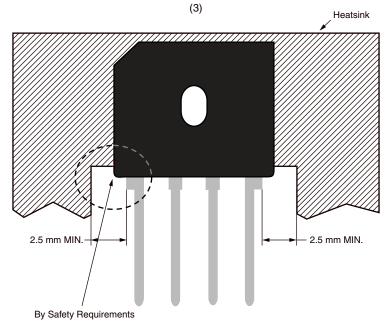


### **APPLICATION NOTE**

(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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