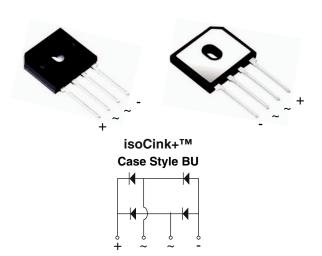


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Vishay General Semiconductor

Enhanced isoCink+™ 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					
Package	BU				
I _{F(AV)}	25 A				
V_{RRM}	600 V, 800 V, 1000 V				
I _{FSM}	300 A				
I _R	5 μΑ				
V _F at I _F = 12.5 A	0.87 V				
T _J 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 (part number with "5S" suffix, e.g. BU25065S)



· 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

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)

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)	$T_C = 60 ^{\circ}C^{(1)}$		25		А	
	T _A = 25 °C ⁽²⁾	IO	3.5			
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25$ °C		I _{FSM}		300		Α
Rating for fusing (t < 8.3 ms) T _J = 25 °C		I ² t		373		A ² 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

BU2506-E3, BU2508-E3, BU2510-E3

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Maximum instantaneous forward voltage per diode (1)	I _F = 12.5 A	$T_A = 25 ^{\circ}\text{C}$ $T_A = 125 ^{\circ}\text{C}$	V _F	0.97	1.05	V	
		T _A = 125 °C		0.87	0.95	V	
Maximum reverse current per diode		T _A = 25 °C	I _R	-	5.0	μA	
		T _A = 125 °C		120	350	μΑ	
Typical junction capacitance per diode	4.0 V, 1 MHz		CJ	125	-	pF	

Note

 $^{^{(1)}\,}$ Pulse test: 300 μs pulse width, 1 % duty cycle

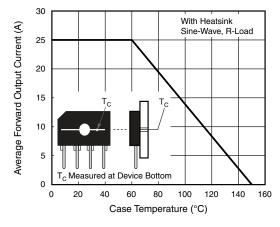
THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	BU2506	BU2508	BU2510	UNIT	
Typical thermal resistance	R ₀ JC (1)	2.0			°C/W	
	R _{0JA} (2)	20			C/VV	

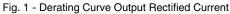
Notes

- (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		
BU2506-E3/45	4.84	45	20	Tube		
BU2506-E3/51	4.84	51	250	Paper tray		
BU25065S-E3/45	4.84	45	20	Tube		

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





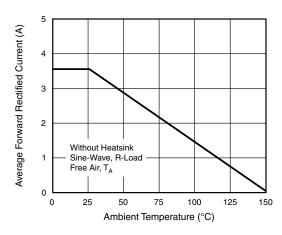


Fig. 2 - Forward Current Derating Curve





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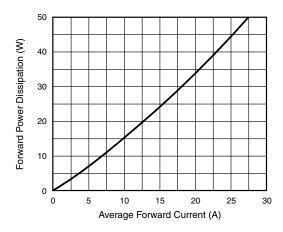


Fig. 3 - Forward Power Dissipation

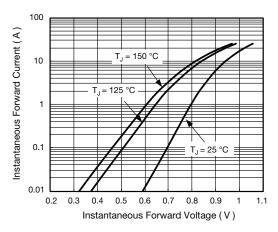


Fig. 4 - Typical Forward Characteristics Per Diode

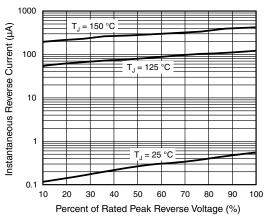


Fig. 5 - Typical Reverse Characteristics Per Diode

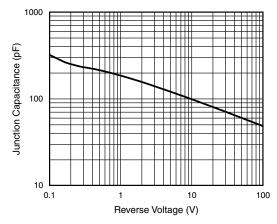


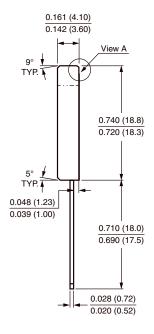
Fig. 6 - Typical Junction Capacitance Per Diode



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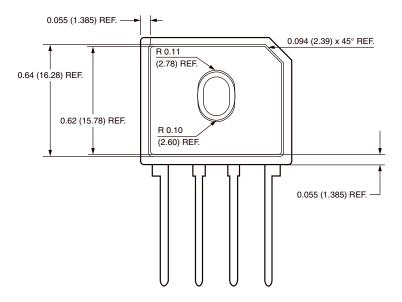
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

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



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

0.190 (4.83)

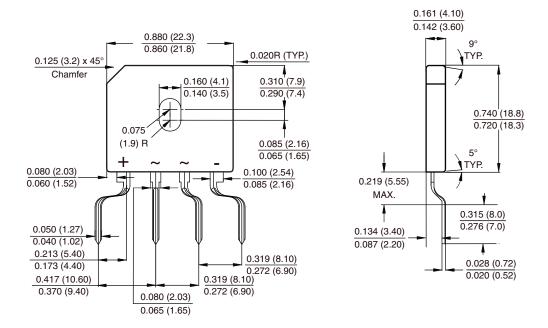


0.065 (1.65)



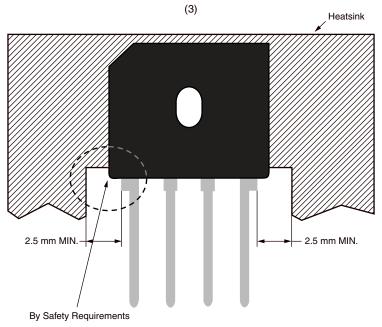
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FORMING SPECIFICATION: BU-5S in inches (millimeters)



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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Revision: 02-Oct-12 Document Number: 91000