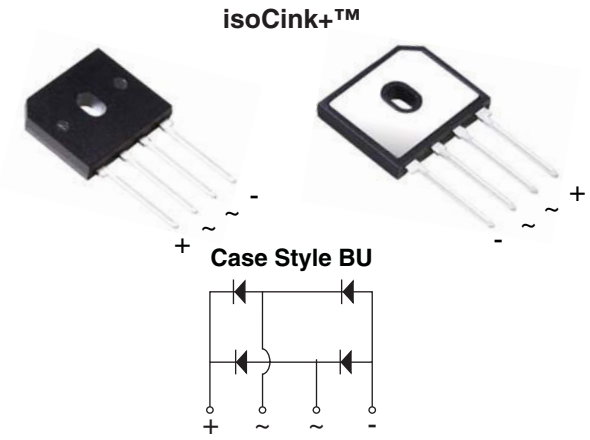
Enhanced isoCink+™ Bridge Rectifiers



* 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	
$I_{F(AV)}$	10 A
V_{RRM}	600 V, 800 V, 1000 V
I_{FSM}	90 A
I_R	5 µA
V_F at I_F = 5 A	0.94 V
T_J 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. BU1006A5S)
- 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

RoHS COMPLIANT

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.

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

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	BU1006A	BU1008A	BU1010A	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	600	800	1000	V
Average rectified forward current (Fig. 1, 2)	T_C = 90 °C (1)	I_O	10			A
	T_A = 25 °C (2)		3.0			
Non-repetitive peak forward surge current 8.3 ms single sine-wave, T_J = 25 °C		I_{FSM}	90			A
Rating for fusing (t < 8.3 ms) T_J = 25 °C		I^2t	33			A^2s
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

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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 = 5.0 A	T_A = 25 °C	V_F	1.02	1.10	V
		T_A = 125 °C		0.94	1.00	
Maximum reverse current per diode	rated V_R	T_A = 25 °C	I_R	-	5.0	μA
		T_A = 125 °C		45	250	
Typical junction capacitance per diode	4.0 V, 1 MHz		C_J	30	-	pF

Note

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	BU1006A	BU1008A	BU1010A	UNIT
Typical thermal resistance	$R_{\theta JC}$ (1)	3.0			°C/W
	$R_{\theta JA}$ (2)	20			

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
BU1006A-E3/45	4.48	45	20	Tube
BU1006A-E3/51	4.48	51	250	Paper tray
BU1006A5S-E3/45	4.48	45	20	Tube

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

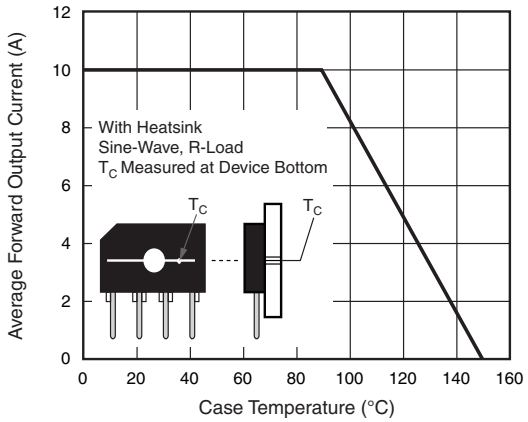

Fig. 1 - Derating Curve Output Rectified Current

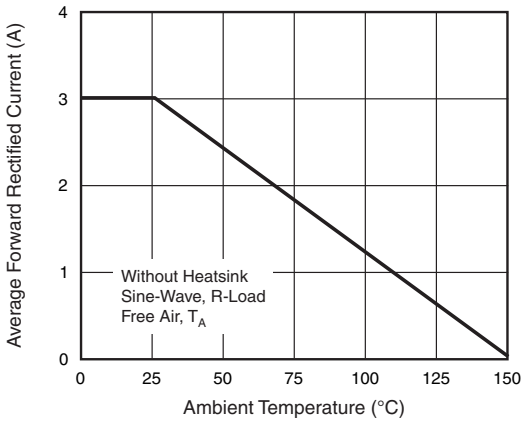

Fig. 2 - Forward Current Derating Curve

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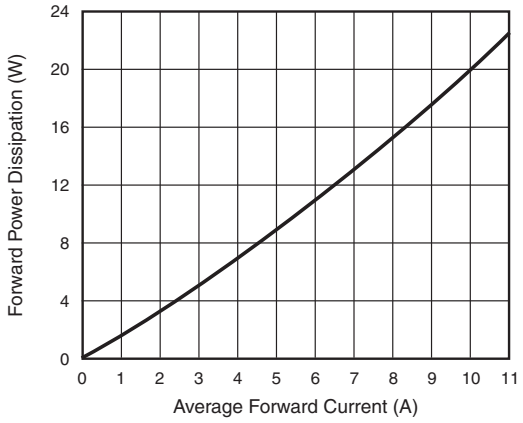

Fig. 3 - Forward Power Dissipation

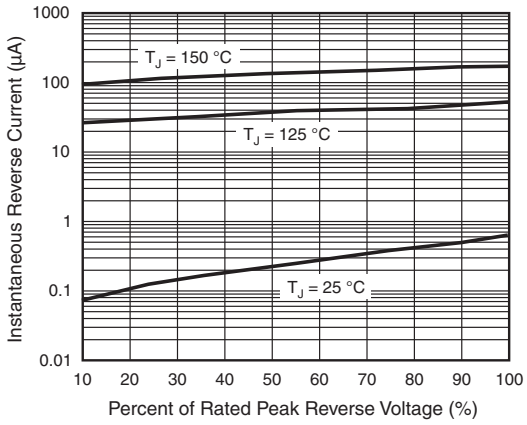

Fig. 5 - Typical Reverse Characteristics Per Diode

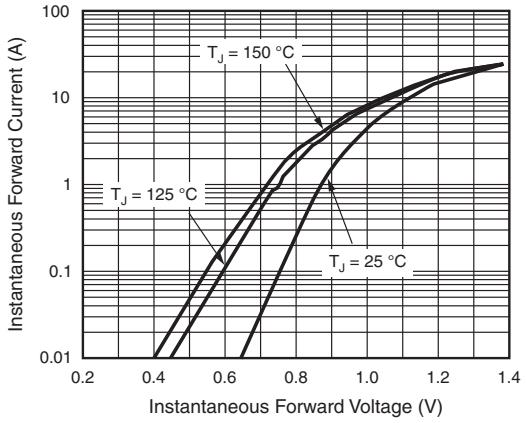

Fig. 4 - Typical Forward Characteristics Per Diode

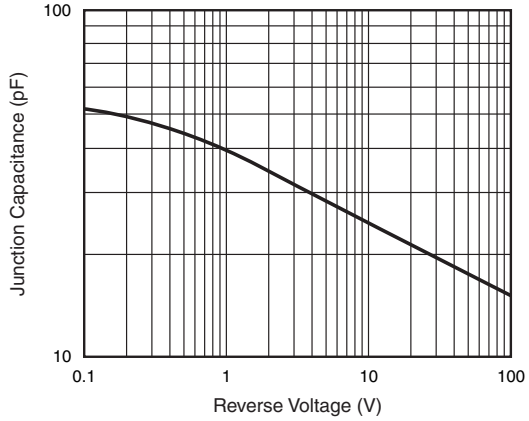

Fig. 6 - Typical Junction Capacitance Per Diode

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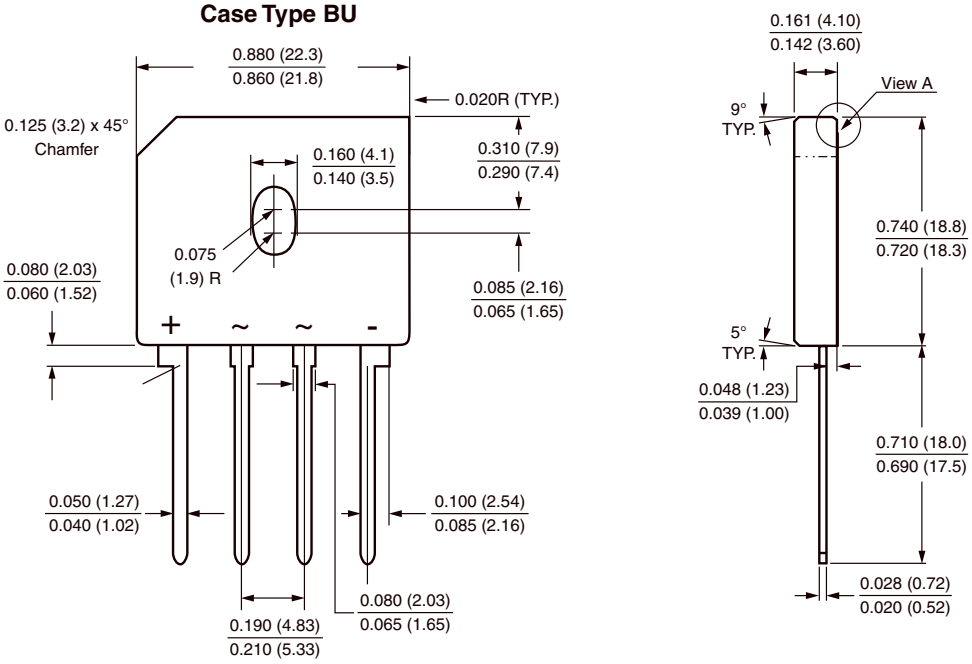
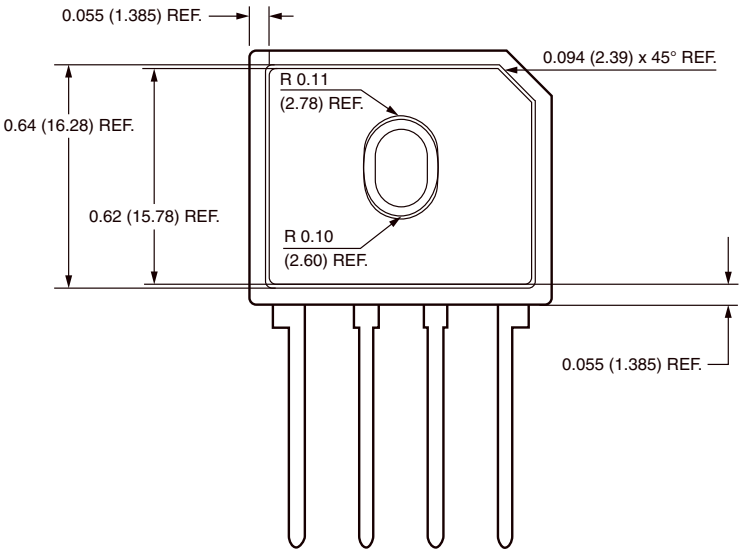
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Type BU



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



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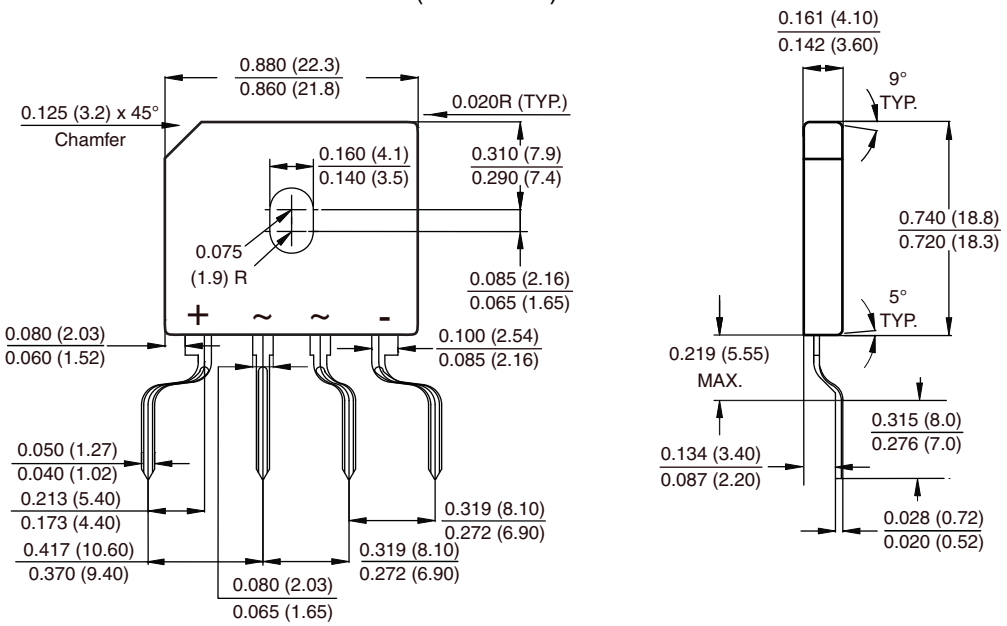
FORMING SPECIFICATION: BU-5S in inches (millimeters)

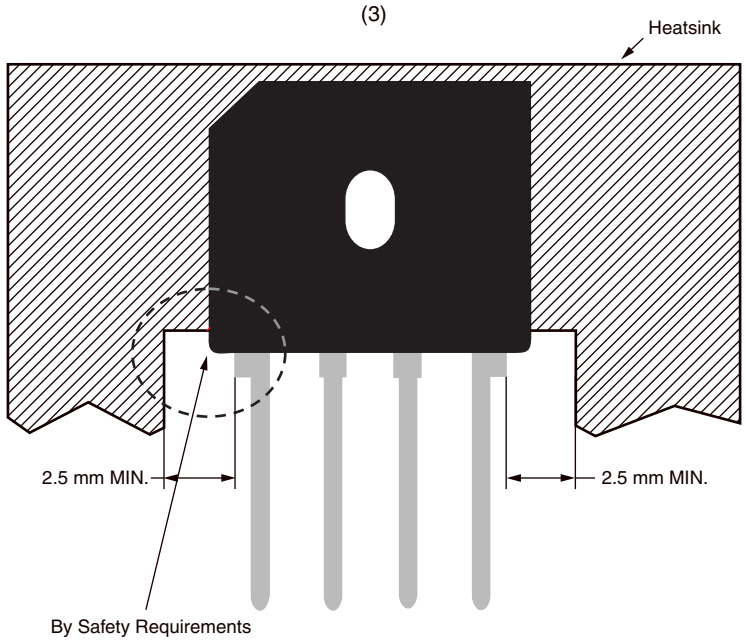


APPLICATION NOTE

(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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