

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	
$I_{F(AV)}$	20 A
V_{RRM}	600 V, 800 V, 1000 V
I_{FSM}	240 A
I_R	5 μ A
V_F at $I_F = 10$ A	0.85 V
T_J max.	150 °C

FEATURES

- UL recognition file number E309391 (QQX2) UL 1557 (see *)
- Thin single in-line package
- Available for BU-5S lead forming option (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


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	BU2006	BU2008	BU2010	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	600	800	1000	V
Average rectified forward current (Fig. 1, 2)	I_O	$T_C = 61$ °C ⁽¹⁾		20	A
		$T_A = 25$ °C ⁽²⁾		3.5	
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25$ °C	I_{FSM}			240	A
Rating for fusing ($t < 8.3$ ms) $T_J = 25$ °C	I^2t			239	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

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage per diode ⁽¹⁾	$I_F = 10\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	V_F	0.95	1.05	V
		$T_A = 125\text{ }^\circ\text{C}$		0.85	0.95	
Maximum reverse current per diode	rated V_R	$T_A = 25\text{ }^\circ\text{C}$	I_R	-	5.0	μA
		$T_A = 125\text{ }^\circ\text{C}$		110	350	
Typical junction capacitance per diode	4.0 V, 1 MHz		C_J	95	-	pF

Note

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	BU2006	BU2008	BU2010	UNIT
Typical thermal resistance	$R_{\theta JC}$ ⁽¹⁾	2.4			$^\circ\text{C/W}$
	$R_{\theta JA}$ ⁽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
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

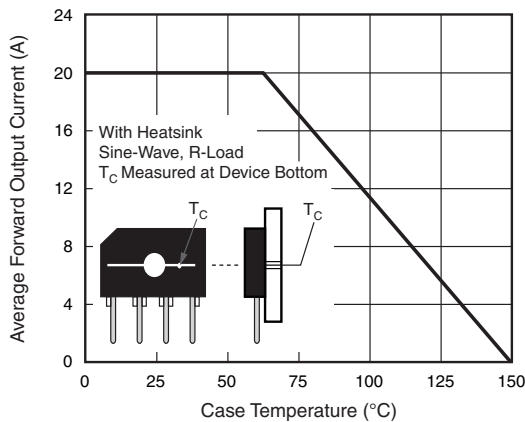
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)


Fig. 1 - Derating Curve Output Rectified Current

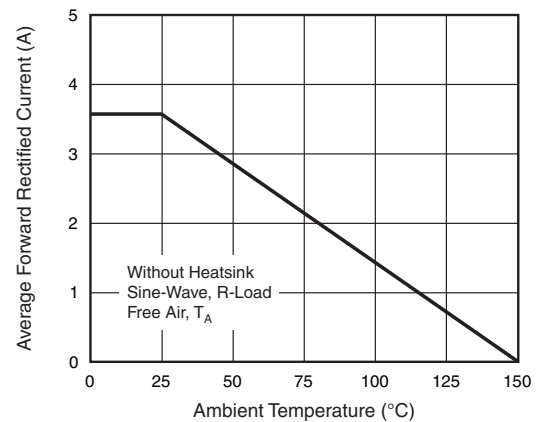


Fig. 2 - Forward Current Derating Curve

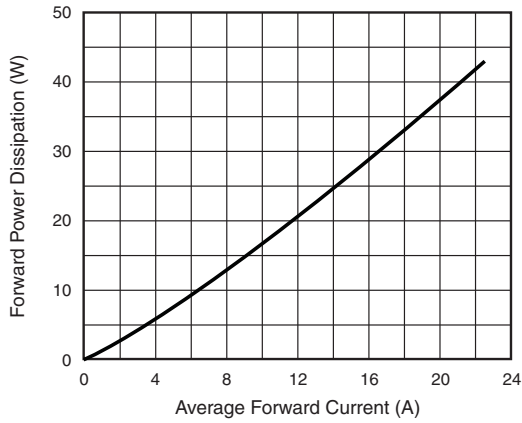


Fig. 3 - Forward Power Dissipation

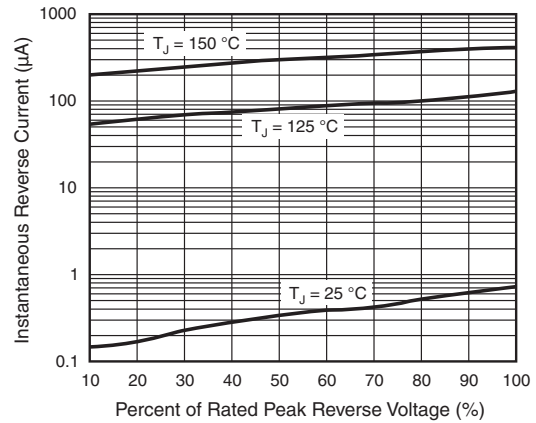


Fig. 5 - Typical Reverse Characteristics Per Diode

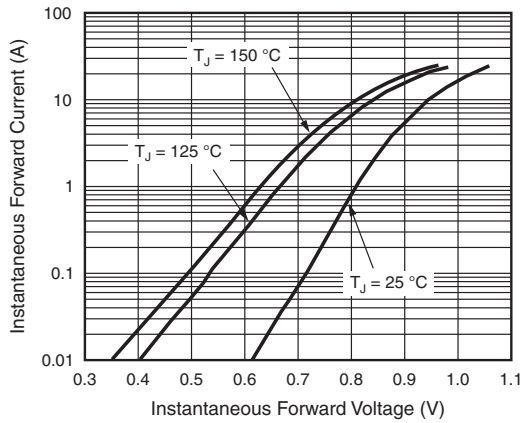


Fig. 4 - Typical Forward Characteristics Per Diode

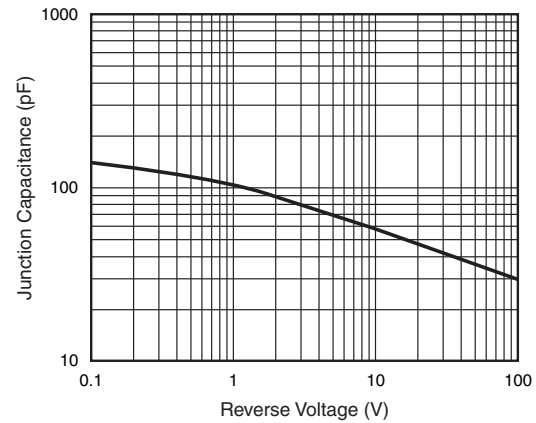
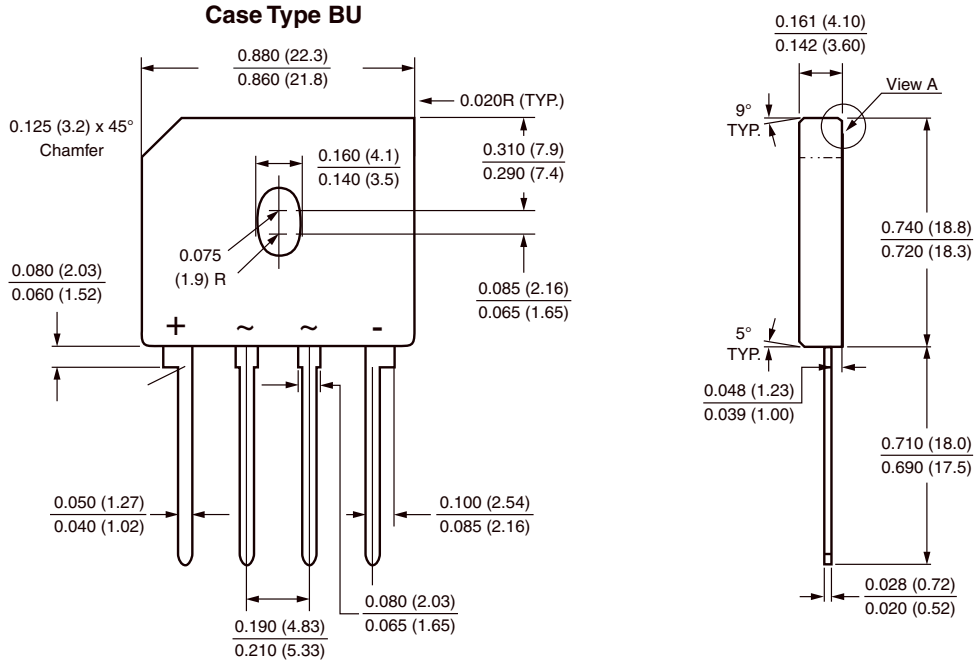


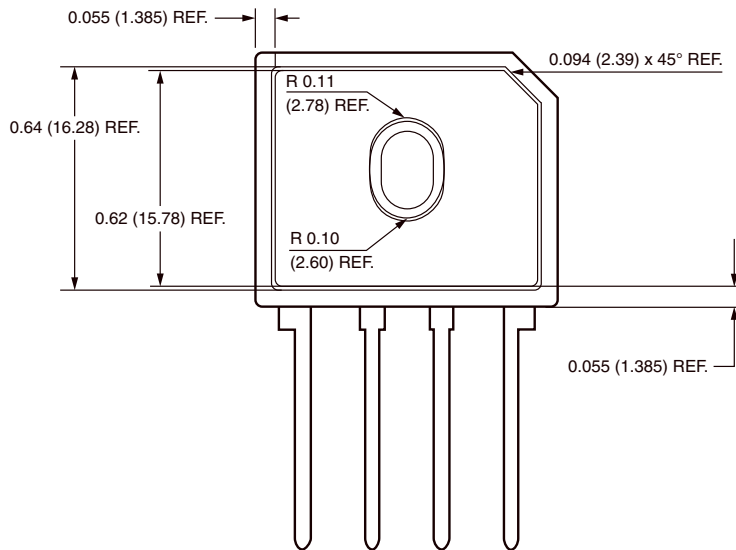
Fig. 6 - Typical Junction Capacitance Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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





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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