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[Vishay Semiconductor/Diodes Division](#)
[BU12065S-E3/45](#)

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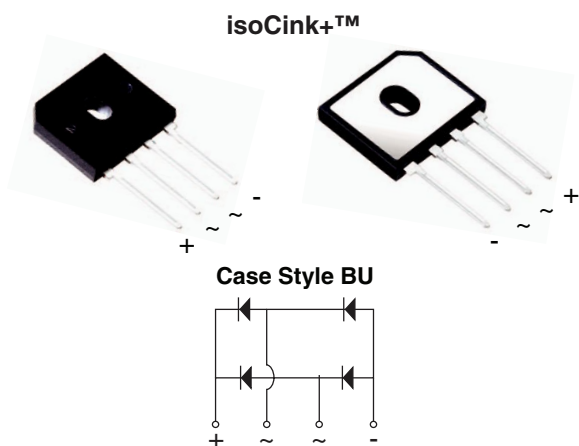


www.vishay.com

BU1206-E3, BU1208-E3, BU1210-E3

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
$I_{F(AV)}$	12 A
V_{RRM}	600 V, 800 V, 1000 V
I_{FSM}	150 A
I_R	5 μ A
V_F at $I_F = 6$ A	0.88 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. BU12065S)
- 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

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	BU1206	BU1208	BU1210	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	600	800	1000	V
Average rectified forward current (Fig. 1, 2)	$\frac{T_C = 85\text{ }^{\circ}\text{C}\text{ (1)}}{T_A = 25\text{ }^{\circ}\text{C}\text{ (2)}}$ I _O	12			A
		3.4			
Non-repetitive peak forward surge current 8.3 ms single sine-wave, T _J = 25 °C	I _{FSM}	150			A
Rating for fusing (t < 8.3 ms) T _J = 25 °C	I ² t	93			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



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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⁾	$I_F = 6.0\text{ A}$	$T_A = 25\text{ }^{\circ}\text{C}$	0.98	1.05	V
		$T_A = 125\text{ }^{\circ}\text{C}$	0.88	0.95	
Maximum reverse current per diode	rated V_R	$T_A = 25\text{ }^{\circ}\text{C}$	-	5.0	μA
		$T_A = 125\text{ }^{\circ}\text{C}$	74	250	
Typical junction capacitance per diode	4.0 V, 1 MHz	C_J	50	-	pF

Note

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	BU1206	BU1208	BU1210	UNIT
Typical thermal resistance	R _{θJC} ⁽¹⁾	2.7			°C/W
	R _{θJA} ⁽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
BU1206-E3/45	4.66	45	20	Tube
BU1206-E3/51	4.66	51	250	Paper tray
BU1206S-E3/45	4.66	45	20	Tube

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

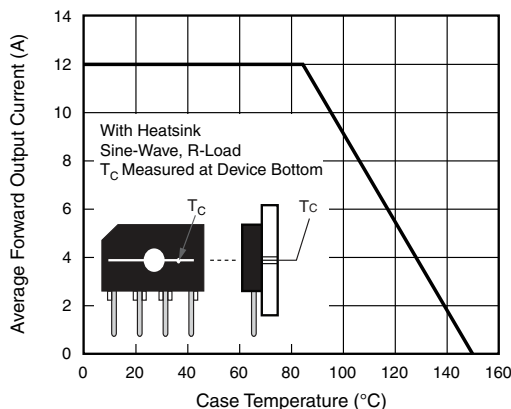


Fig. 1 - Derating Curve Output Rectified Current

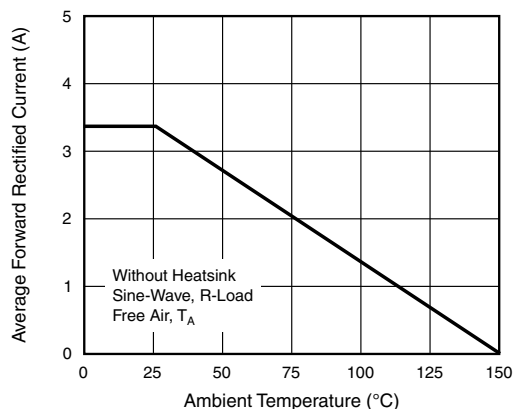


Fig. 2 - Forward Current Derating Curve



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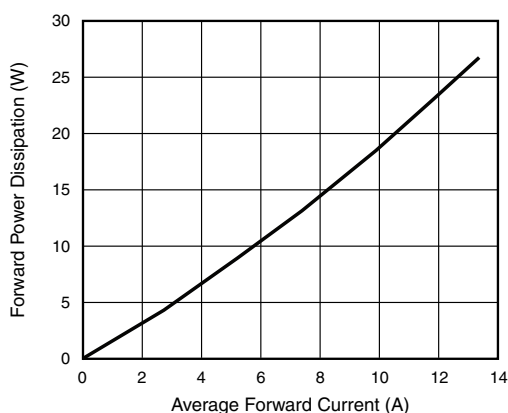


Fig. 3 - Forward Power Dissipation

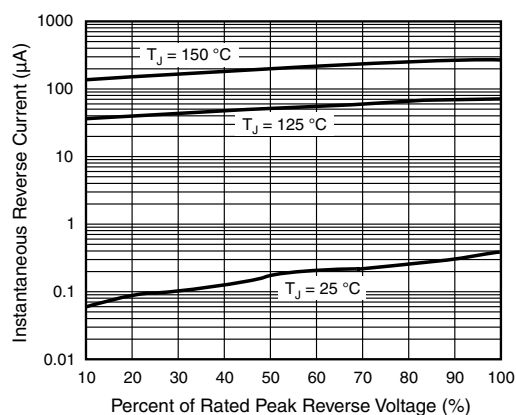


Fig. 5 - Typical Reverse Characteristics Per Diode

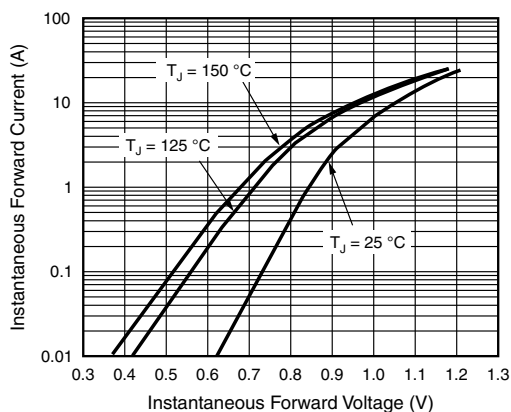


Fig. 4 - Typical Forward Characteristics Per Diode

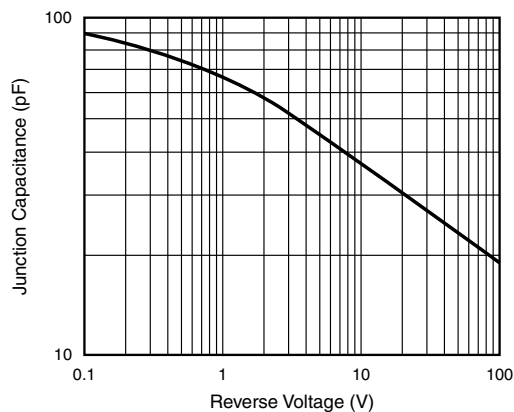


Fig. 6 - Typical Junction Capacitance Per Diode



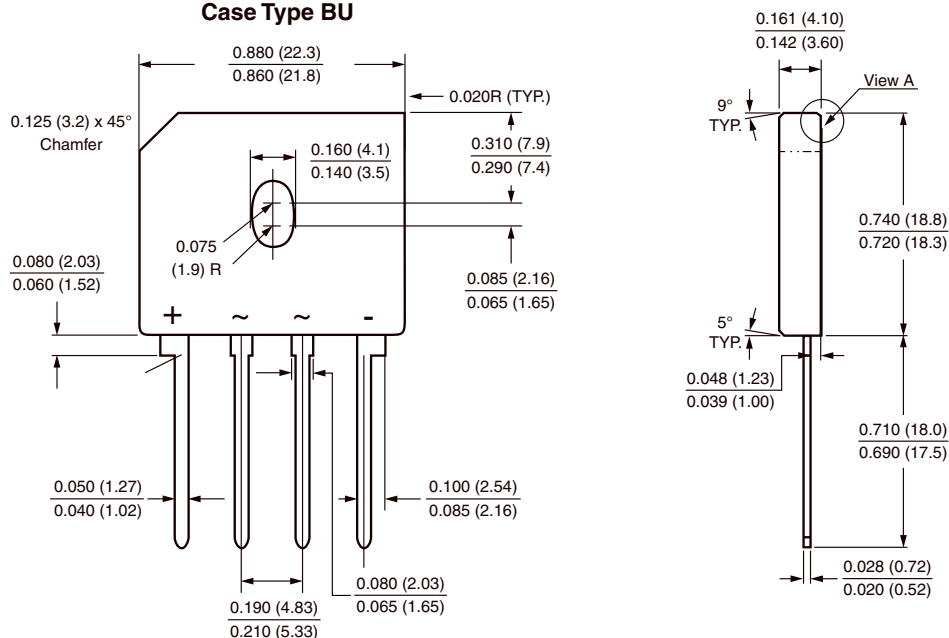
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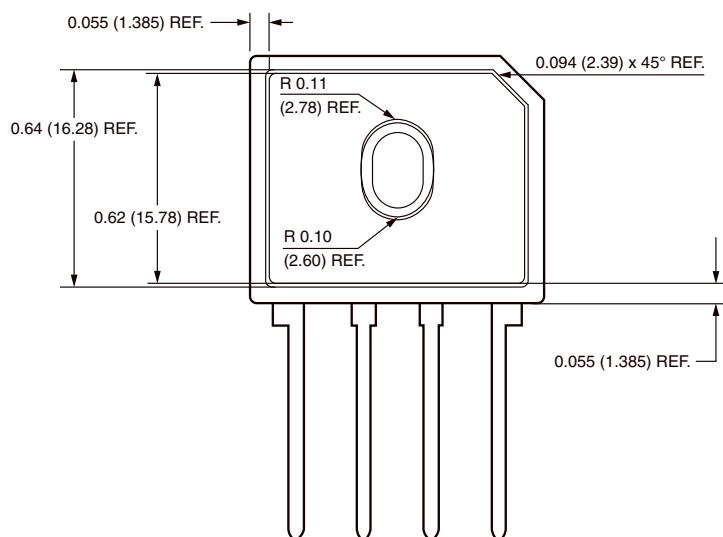
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

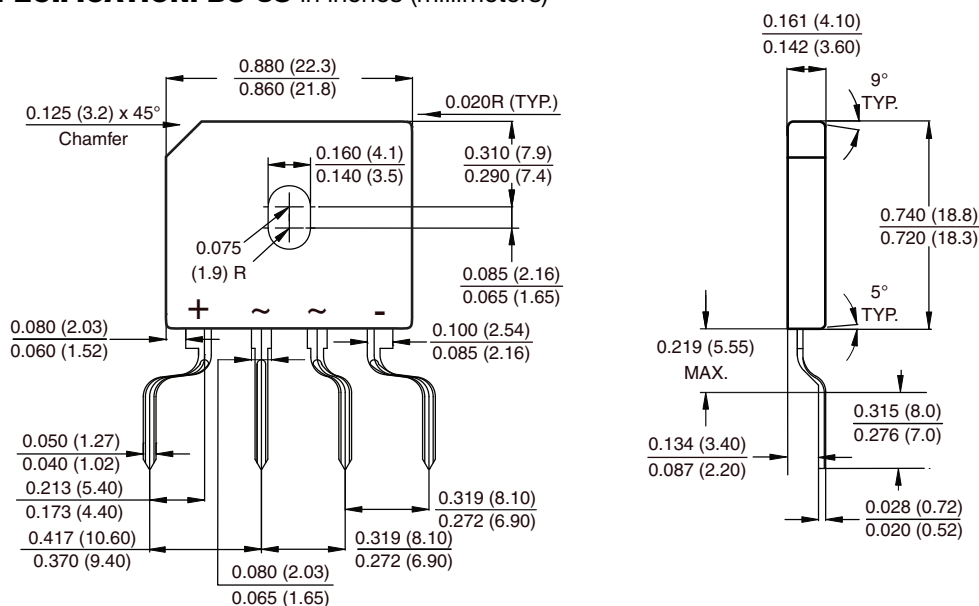
Case Type BU



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



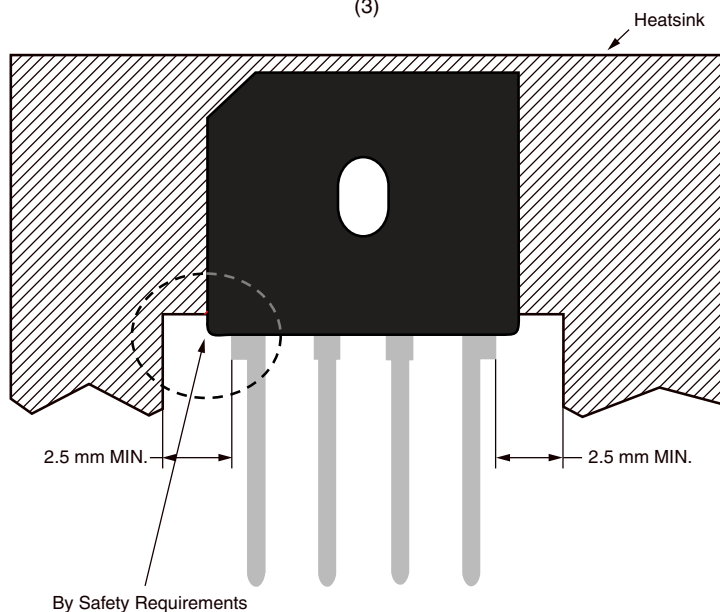
FORMING SPECIFICATION: BU-5S in inches (millimeters)



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:

(3)





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