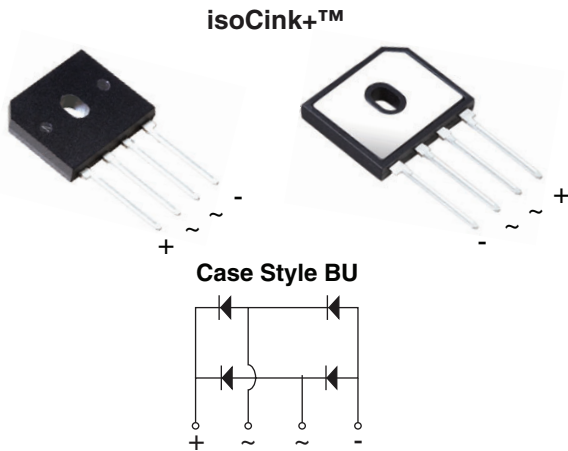




**THE DATASHEET OF  
BU1008A-E3/45**



## Enhanced isoCink+™ Bridge Rectifiers


**Case Style BU**

### LINKS TO ADDITIONAL RESOURCES



#### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	10 A
$V_{RRM}$	600 V, 800 V, 1000 V
$I_{FSM}$	90 A
$I_R$	5 $\mu$ A
$V_F$ at $I_F = 5.0$ A	0.94 V
$T_J$ max.	150 °C
Package	BU
Circuit configurations	In-line

#### 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)	$I_O$	$T_C = 90$ °C (1)			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 <sup>2</sup> 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

### FEATURES

- UL recognition file number E312394
- Thin single in-line package
- Glass passivated chip junction
- 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](http://www.vishay.com/doc?99912)



**RoHS**  
 COMPLIANT  
 HALOGEN  
**FREE**  
 Available

### 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  
 Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102  
 E3 and M3 suffix meet 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)

**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 <sup>(1)</sup>	$I_F = 5.0\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	1.02	1.10	V
		$T_A = 125\text{ }^\circ\text{C}$	0.94	1.00	
Maximum reverse current per diode	rated $V_R$	$T_A = 25\text{ }^\circ\text{C}$	-	5.0	$\mu\text{A}$
		$T_A = 125\text{ }^\circ\text{C}$	45	250	
Typical junction capacitance per diode	4.0 V, 1 MHz	$C_J$	30	-	pF

**Note**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle**THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

PARAMETER	SYMBOL	BU1006A	BU1008A	BU1010A	UNIT
Typical thermal resistance	$R_{\theta JC}$ <sup>(1)</sup>	3.0			$^\circ\text{C/W}$
	$R_{\theta JA}$ <sup>(2)</sup>	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
BU1006A-M3/45	4.48	45	20	Tube

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

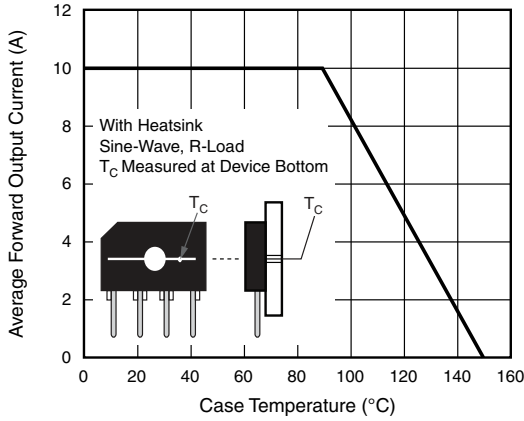


Fig. 1 - Derating Curve Output Rectified Current

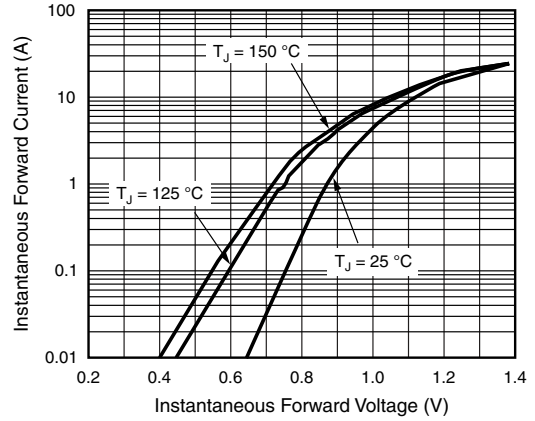


Fig. 4 - Typical Forward Characteristics Per Diode

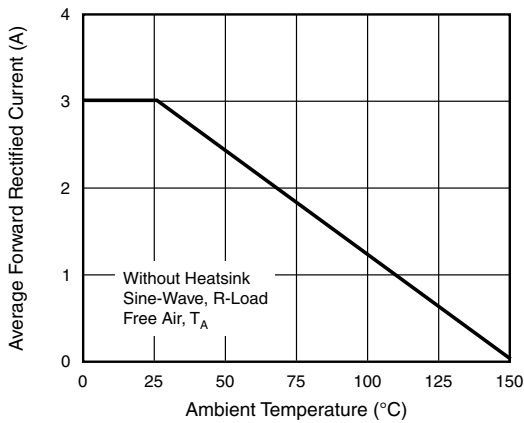


Fig. 2 - Forward Current Derating Curve

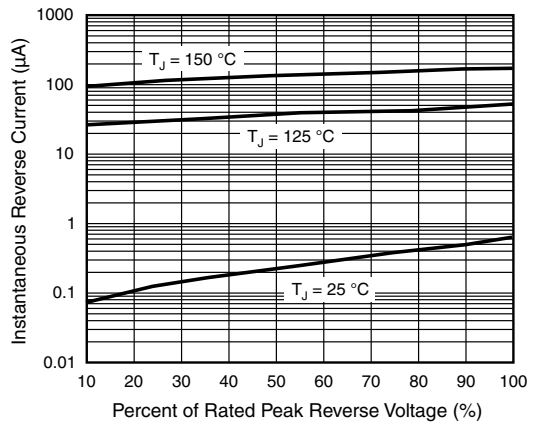


Fig. 5 - Typical Reverse Characteristics Per Diode

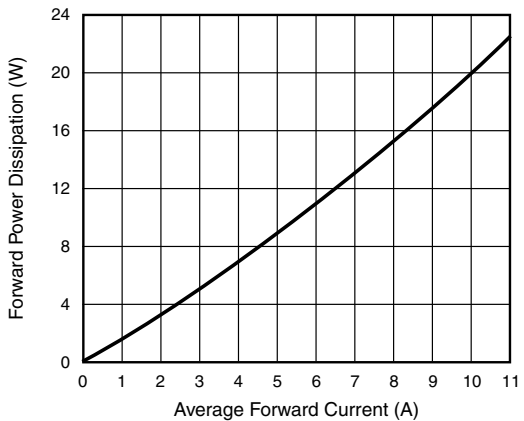


Fig. 3 - Forward Power Dissipation

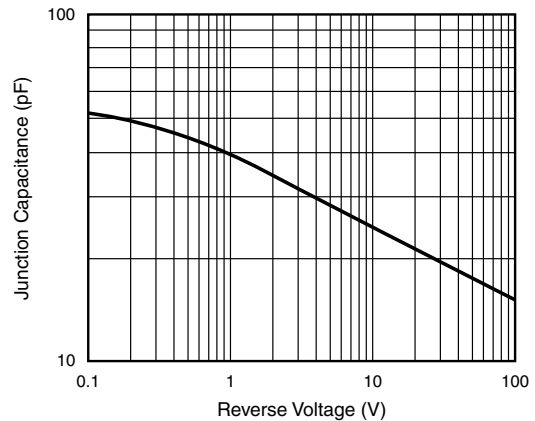
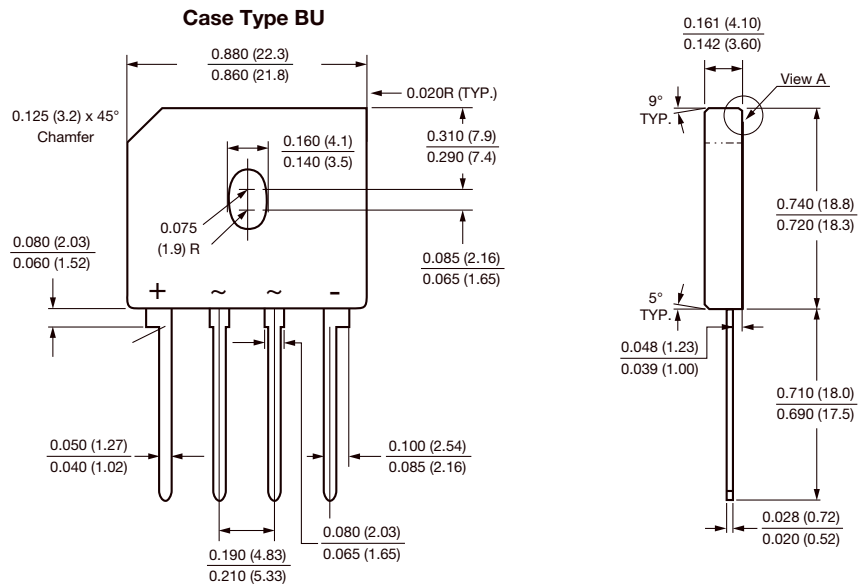


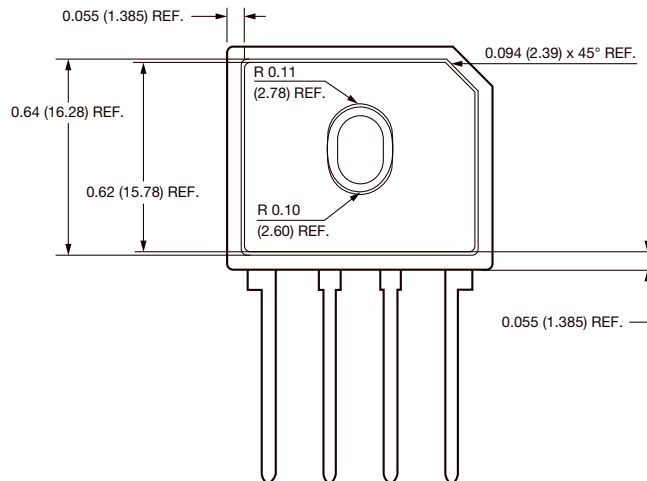
Fig. 6 - Typical Junction Capacitance Per Diode



## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



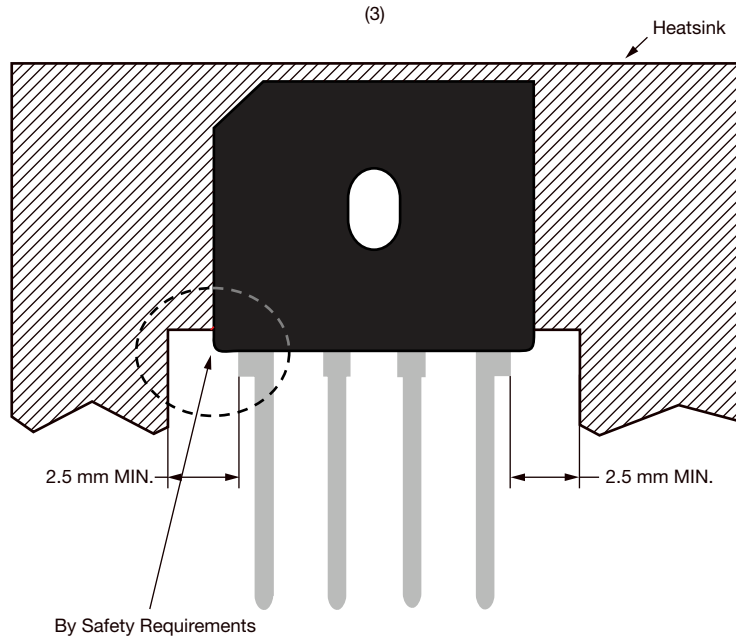
Polarity shown on front side of case, positive lead beveled corner





**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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