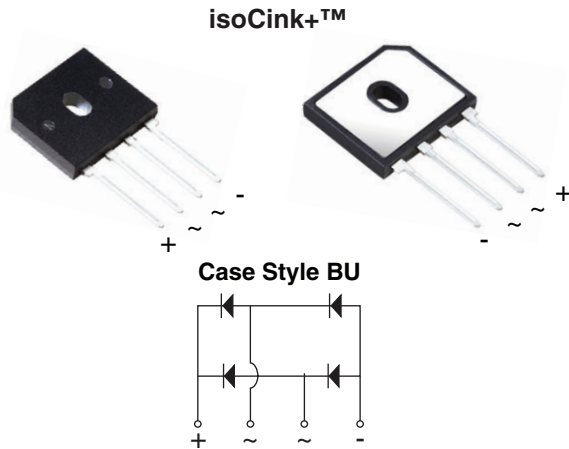




**THE DATASHEET OF
BU1006A-E3/45**



Enhanced isoCink+™ Bridge Rectifiers



FEATURES

- UL recognition file number E312394
- Thin single in-line package
- Glass passivated chip junction
- 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
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)

PRIMARY CHARACTERISTICS

Package	BU
$I_{F(AV)}$	10 A
V_{RRM}	600 V, 800 V, 1000 V
I_{FSM}	90 A
I_R	5 μ A
V_F at $I_F = 5.0$ A	0.94 V
T_J max.	150 °C
Circuit configuration	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 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 ($T_A = 25$ °C unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT	
Maximum instantaneous forward voltage per diode (1)	$I_F = 5.0$ A	V_F	$T_A = 25$ °C	1.02	1.10	V
			$T_A = 125$ °C	0.94	1.00	
Maximum reverse current per diode	rated V_R	I_R	$T_A = 25$ °C	-	5.0	μ A
			$T_A = 125$ °C	45	250	
Typical junction capacitance per diode	4.0 V, 1 MHz	C_J	30	-	pF	

Note

(1) Pulse test: 300 μ 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	$R_{\theta JC}$ (1)	3.0			$^\circ\text{C/W}$
	$R_{\theta JA}$ (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
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
BU1006A5S-E3/45	4.48	45	20	Tube

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

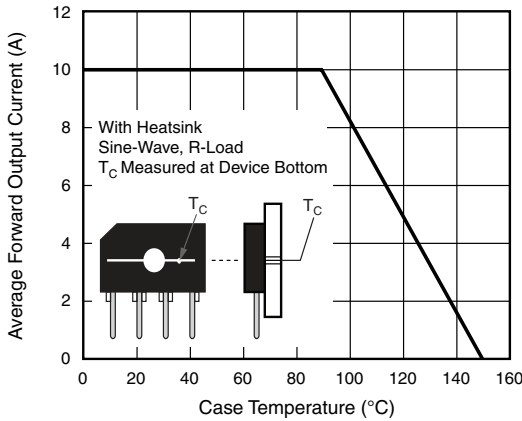


Fig. 1 - Derating Curve Output Rectified Current

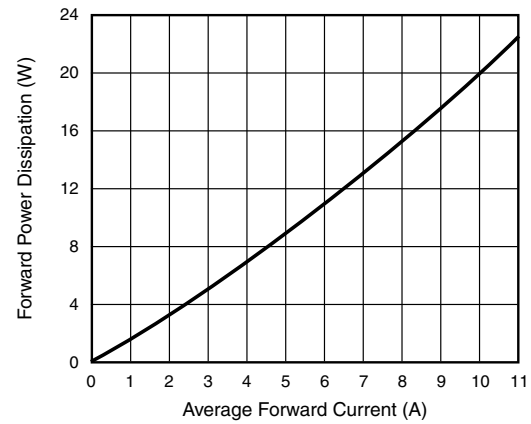


Fig. 3 - Forward Power Dissipation

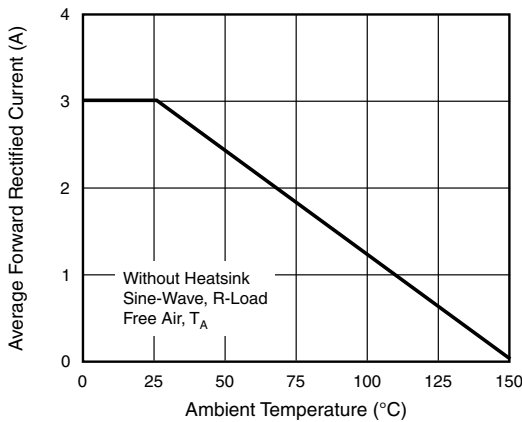


Fig. 2 - Forward Current Derating Curve

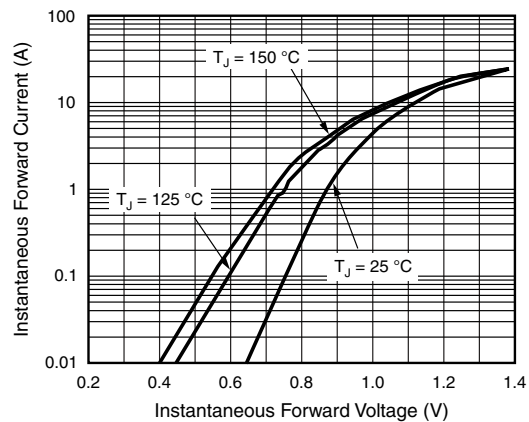


Fig. 4 - Typical Forward Characteristics Per Diode

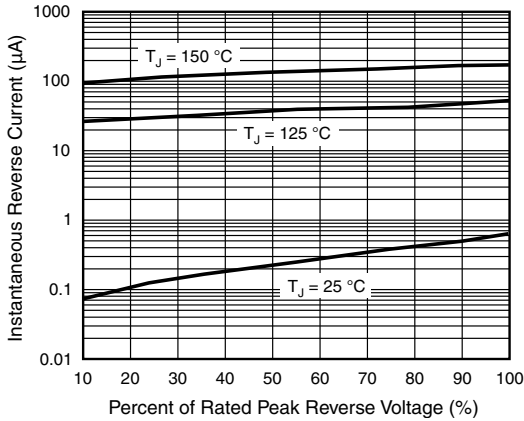


Fig. 5 - Typical Reverse Characteristics Per Diode

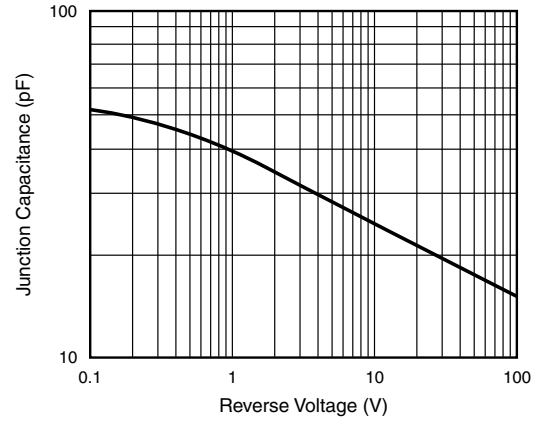
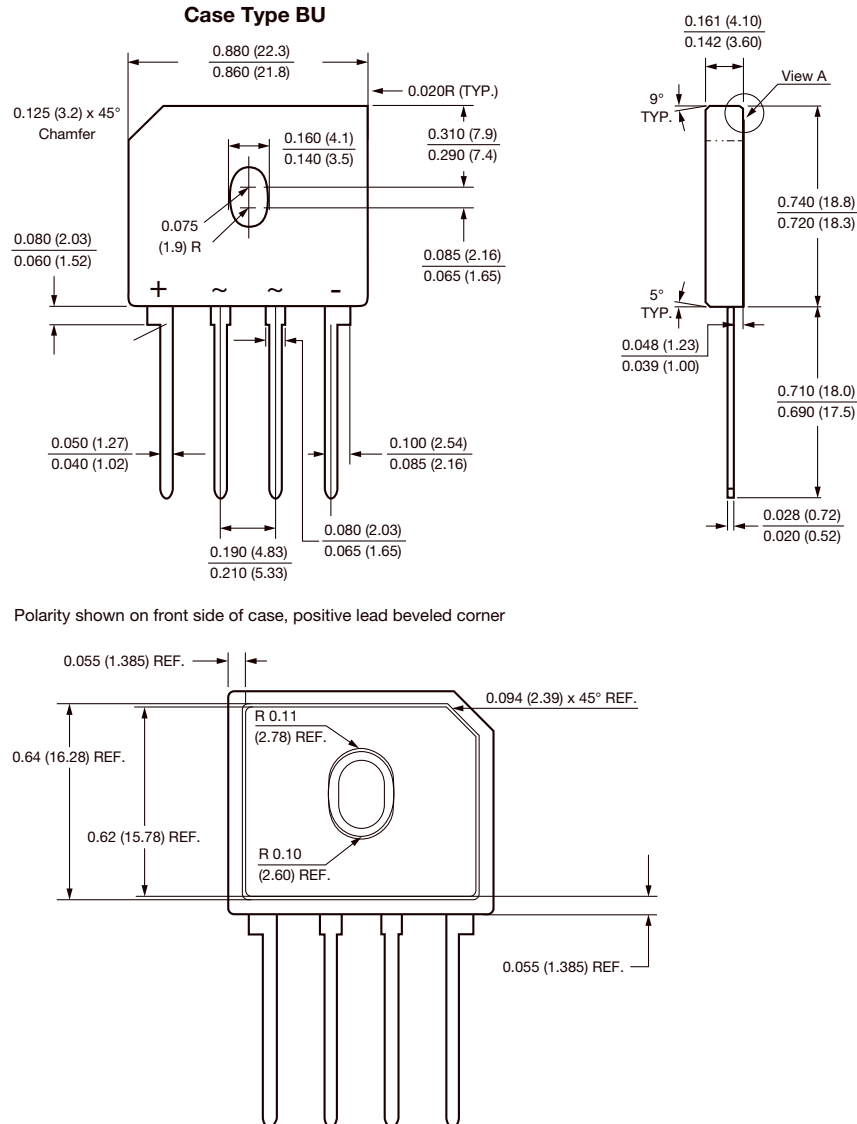


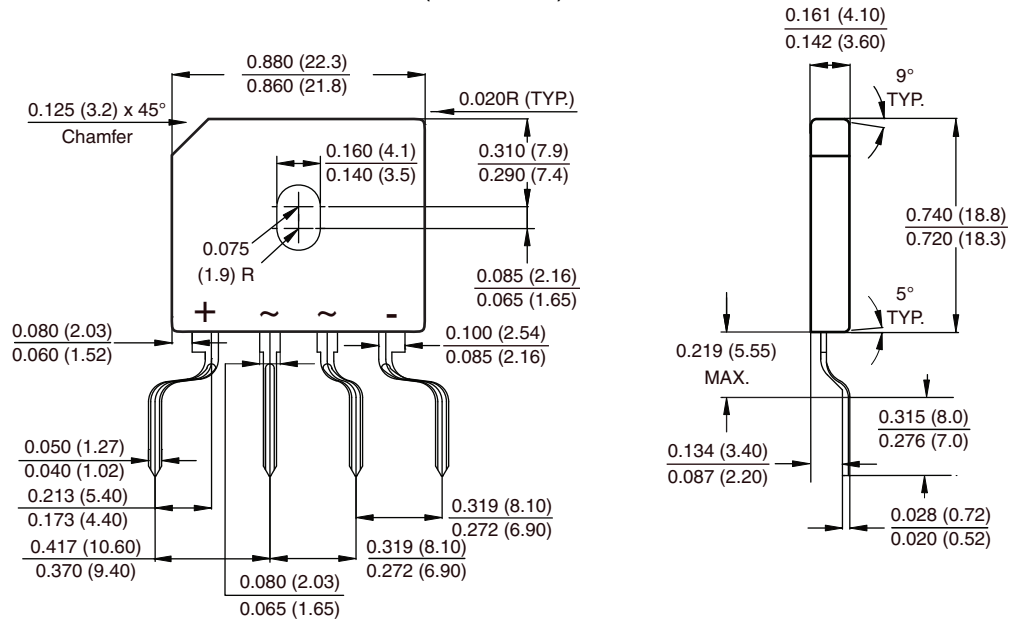
Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



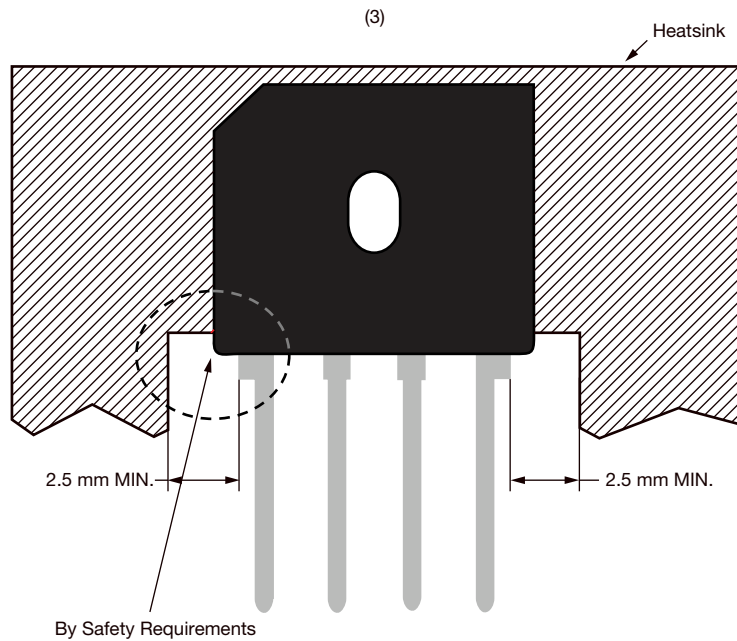


FORMING SPECIFICATION: BU-5S in inches (millimeters)



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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