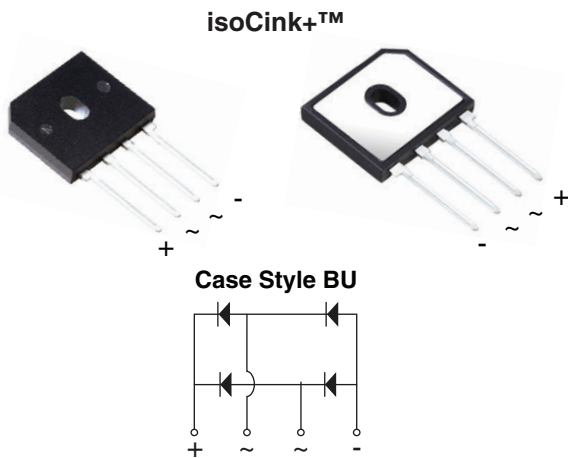




**THE DATASHEET OF
BU1010-M3/45**



Enhanced isoCink+™ Bridge Rectifiers



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



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.

LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	10 A
V_{RRM}	600 V, 800 V, 1000 V
I_{FSM}	120 A
I_R	5 μ A
V_F at $I_F = 5.0$ A	0.88 V
T_J max.	150 °C
Package	BU
Circuit configurations	In-line

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)						
PARAMETER	SYMBOL	BU1006	BU1008	BU1010	UNIT	
Maximum repetitive peak reverse voltage	V_{RRM}	600	800	1000	V	
Average rectified forward current (Fig. 1, 2)	I_O	$T_C = 92$ °C (1)			10	A
		$T_A = 25$ °C (2)			3.2	
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25$ °C	I_{FSM}	120			A	
Rating for fusing ($t < 8.3$ ms) $T_J = 25$ °C	I^2t	60			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⁾	$I_F = 5.0\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	V_F	0.98	1.05	V
		$T_A = 125\text{ }^\circ\text{C}$		0.88	0.95	
Maximum reverse current per diode	rated V_R	$T_A = 25\text{ }^\circ\text{C}$	I_R	-	5.0	μA
		$T_A = 125\text{ }^\circ\text{C}$		64	250	
Typical junction capacitance per diode	4.0 V, 1 MHz	C_J	43	-	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	BU1006	BU1008	BU1010	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
BU1006-E3/45	4.55	45	20	Tube
BU1006-E3/51	4.55	51	250	Paper tray
BU1006-M3/45	4.55	45	20	Tube

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

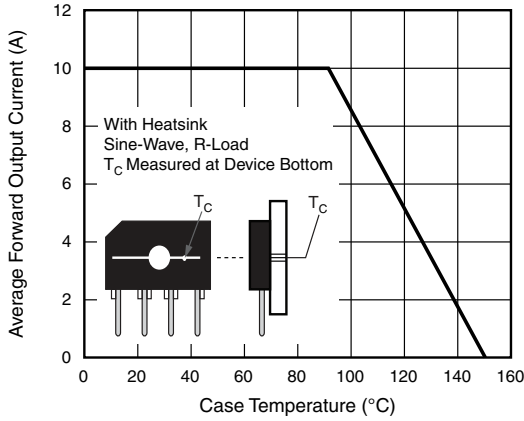


Fig. 1 - Derating Curve Output Rectified Current

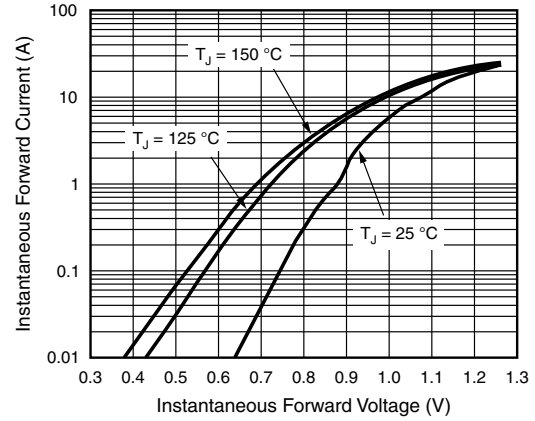


Fig. 4 - Typical Forward Characteristics Per Diode

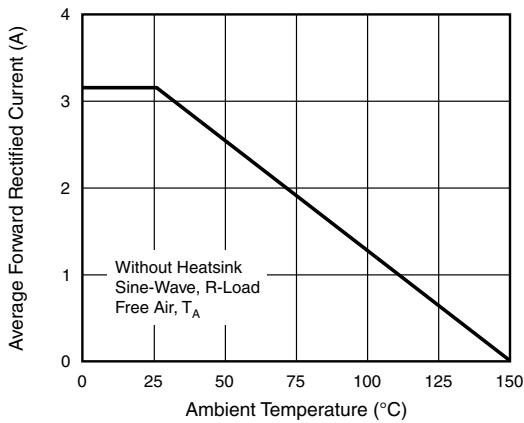


Fig. 2 - Forward Current Derating Curve

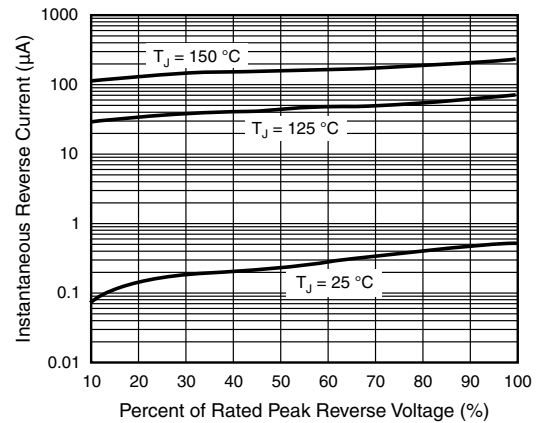


Fig. 5 - Typical Reverse Characteristics Per Diode

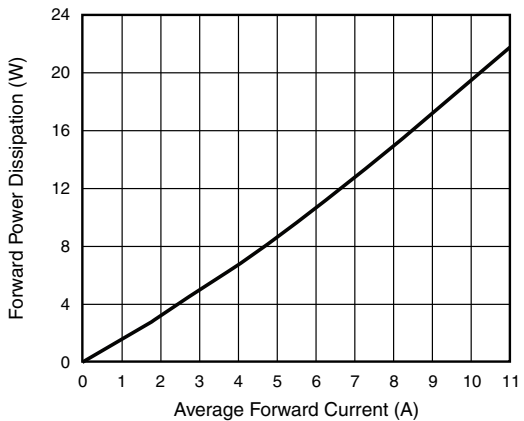


Fig. 3 - Forward Power Dissipation

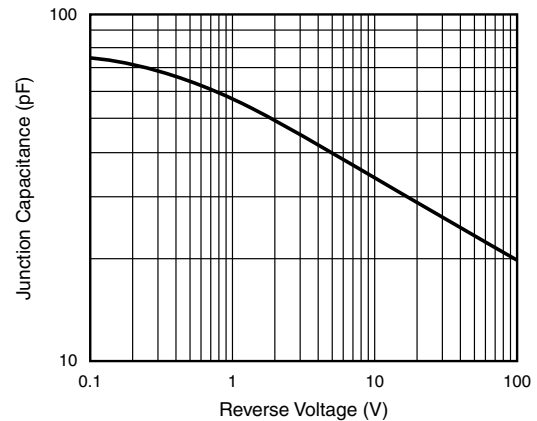
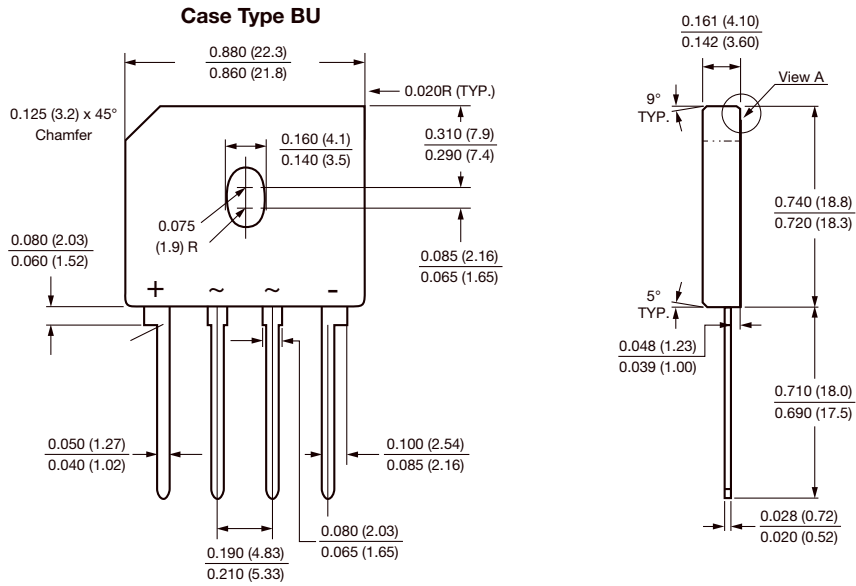


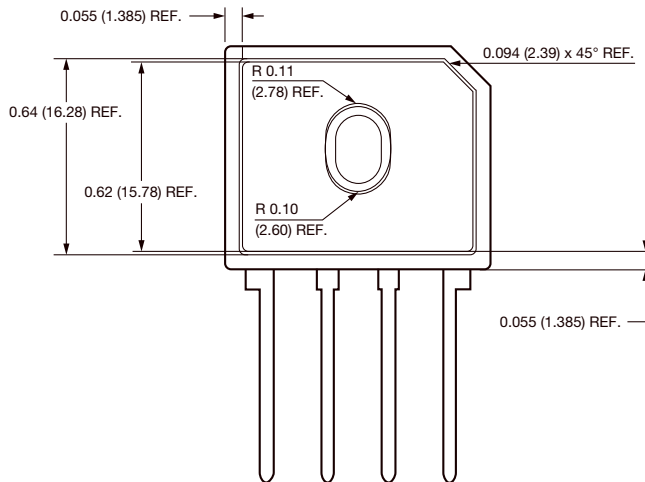
Fig. 6 - Typical Junction Capacitance Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



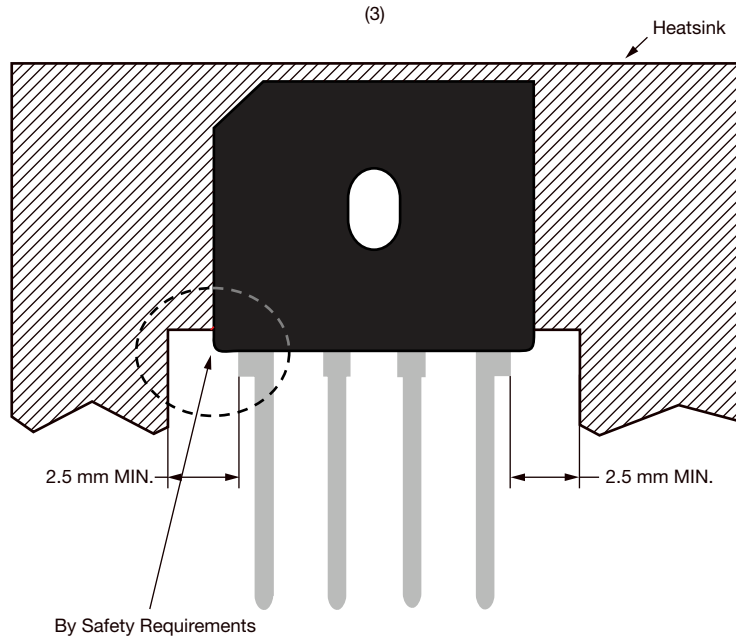
Polarity shown on front side of case, positive lead beveled corner





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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