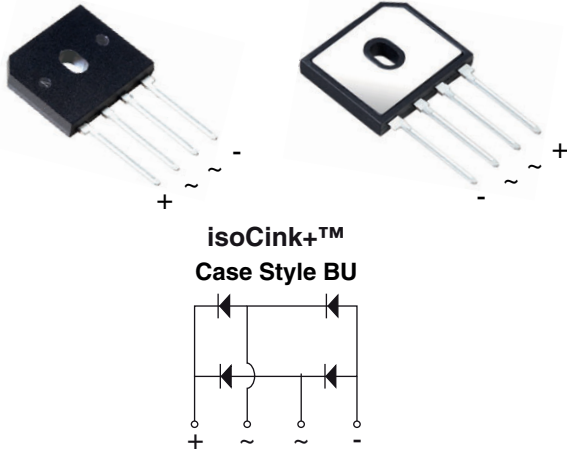




**THE DATASHEET OF  
BU2510-E3/51**



## 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](http://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.

**Recommended Torque:** 5.7 cm·kg (5 inches·lbs)

### LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	25 A
$V_{RRM}$	600 V, 800 V, 1000 V
$I_{FSM}$	300 A
$I_R$	5 $\mu$ A
$V_F$ at $I_F = 12.5$ A	0.87 V
$T_J$ max.	150 °C
Package	BU
Circuit configurations	In-line

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)						
PARAMETER	SYMBOL	BU2506	BU2508	BU2510	UNIT	
Maximum repetitive peak reverse voltage	$V_{RRM}$	600	800	1000	V	
Average rectified forward current (Fig. 1, 2)	$I_O$	$T_C = 60$ °C <sup>(1)</sup>			25	A
		$T_A = 25$ °C <sup>(2)</sup>			3.5	
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25$ °C	$I_{FSM}$		300		A	
Rating for fusing ( $t < 8.3$ ms) $T_J = 25$ °C	$I^2t$		373		A <sup>2</sup> s	
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150			°C	

#### Notes

<sup>(1)</sup> With 60 W air cooled heatsink

<sup>(2)</sup> Without heatsink, free air



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 12.5 A	T <sub>A</sub> = 25 °C	0.97	1.05	V
		T <sub>A</sub> = 125 °C	0.87	0.95	
Maximum reverse current per diode	rated V <sub>R</sub>	T <sub>A</sub> = 25 °C	-	5.0	μA
		T <sub>A</sub> = 125 °C	120	350	
Typical junction capacitance per diode	4.0 V, 1 MHz	C <sub>J</sub>	125	-	pF

**Note**

<sup>(1)</sup> Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	BU2506	BU2508	BU2510	UNIT
Typical thermal resistance	R <sub>θJC</sub> <sup>(1)</sup>	2.0			°C/W
	R <sub>θJA</sub> <sup>(2)</sup>	20			

**Notes**

<sup>(1)</sup> With 60 W air cooled heatsink

<sup>(2)</sup> Without heatsink, free air

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
BU2506-E3/45	4.84	45	20	Tube
BU2506-E3/51	4.84	51	250	Paper tray
BU2506-M3/45	4.84	45	20	Tube

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

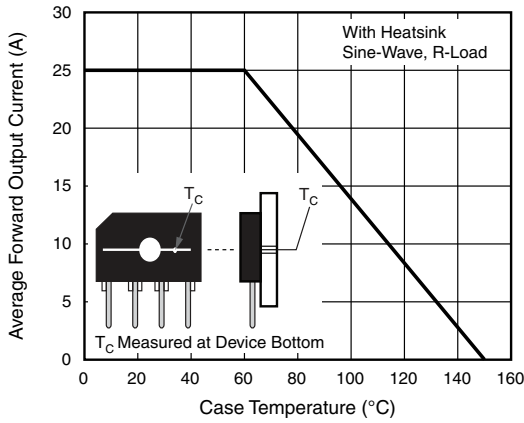


Fig. 1 - Derating Curve Output Rectified Current

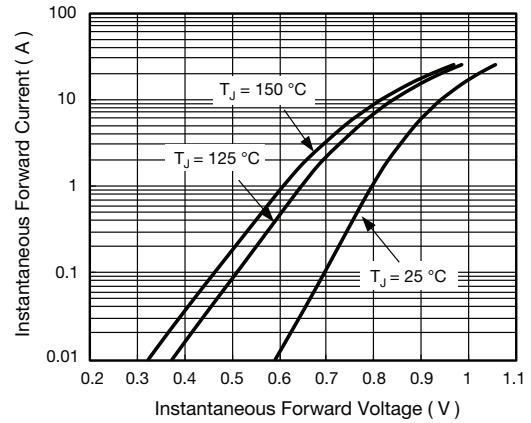


Fig. 4 - Typical Forward Characteristics Per Diode

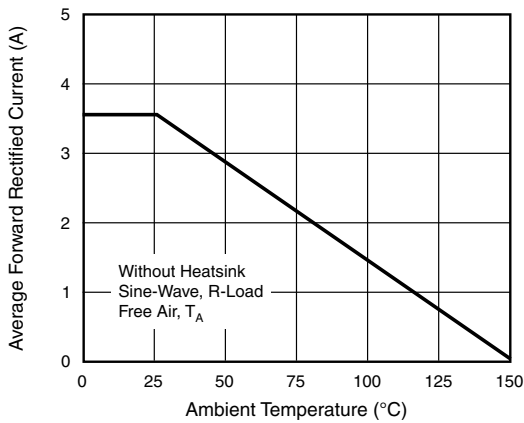


Fig. 2 - Forward Current Derating Curve

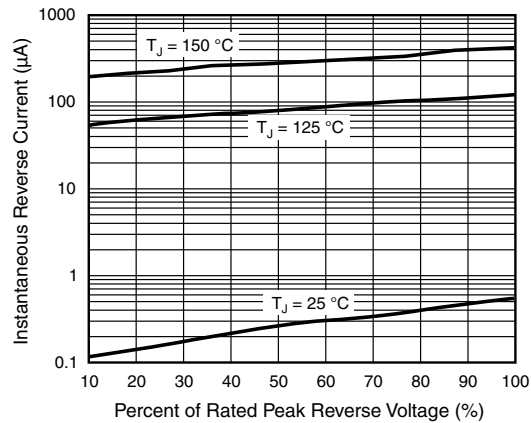


Fig. 5 - Typical Reverse Characteristics Per Diode

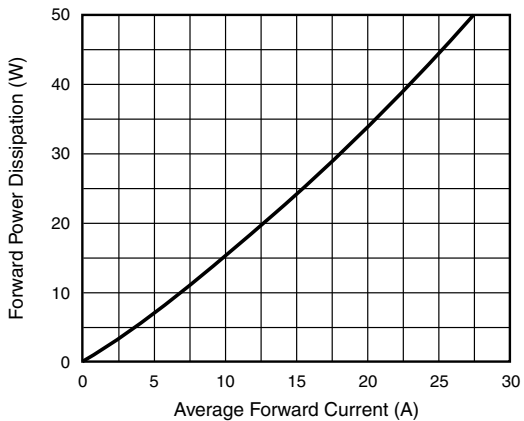


Fig. 3 - Forward Power Dissipation

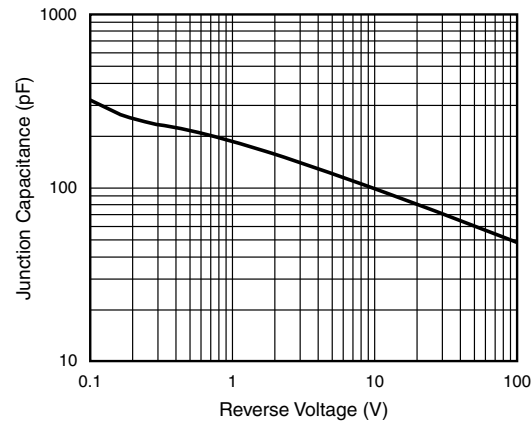
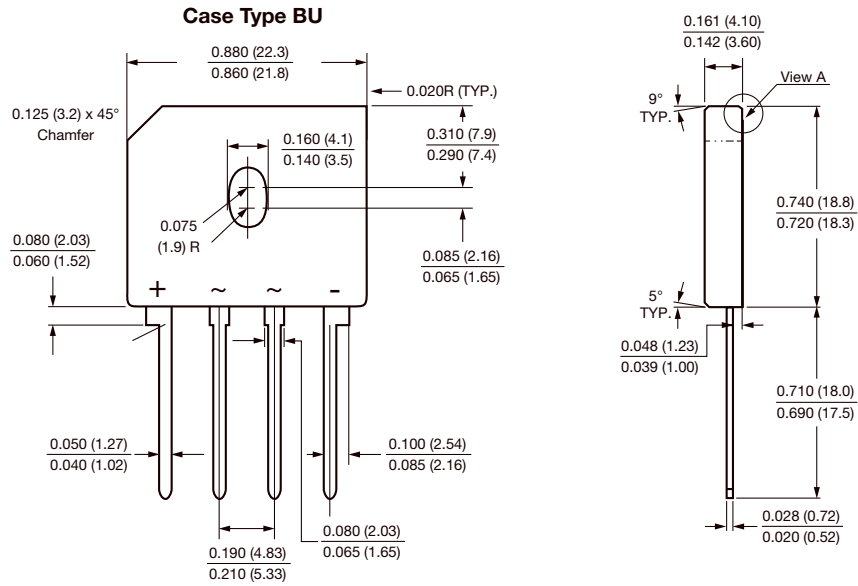


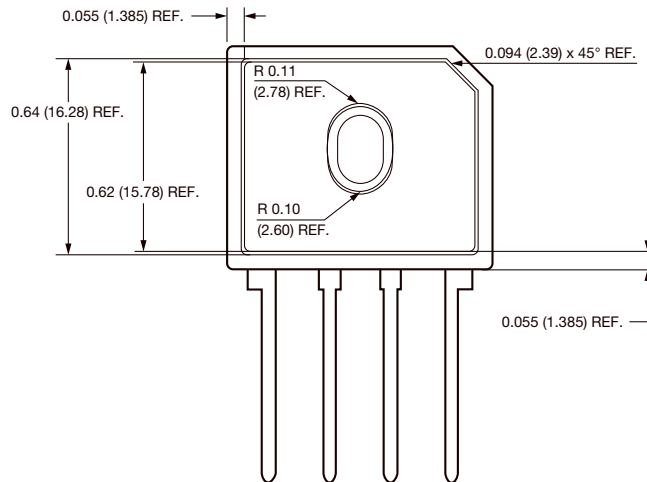
Fig. 6 - Typical Junction Capacitance Per Diode



### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



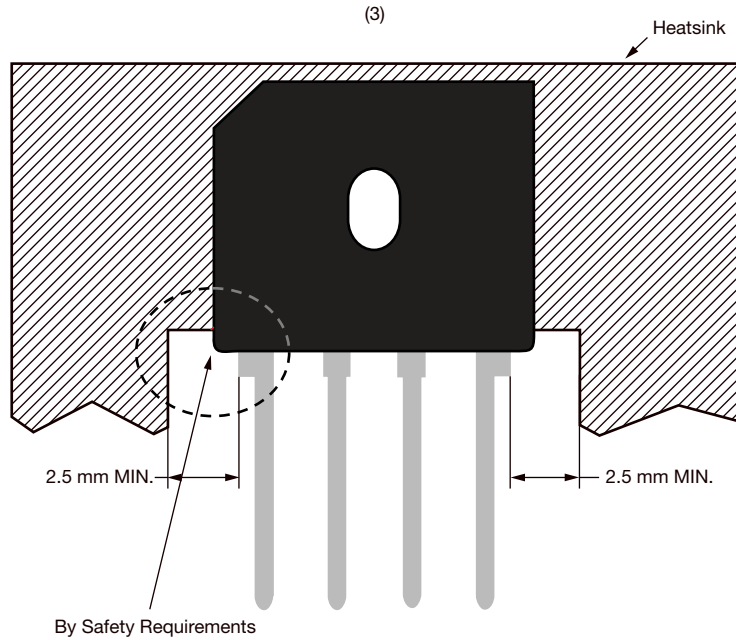
Polarity shown on front side of case, positive lead beveled corner





**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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