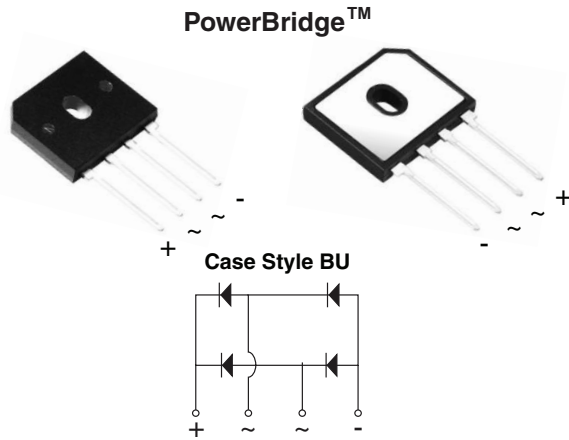


## Enhanced Power Bridge Rectifiers



\* 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 94V-0 flammability rating.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	10 A
$V_{RRM}$	600 V, 800 V, 1000 V
$I_{FSM}$	120 A
$I_R$	5 $\mu$ A
$V_F$ at $I_F = 5$ A	0.88 V
$T_J$ max.	150 °C

### 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. BU10065S)
- Superior thermal conductivity
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

General purpose use in ac-to-dc bridge full wave rectification for switching power supply, home appliances and white-goods applications.

### MECHANICAL DATA

Case: BU

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

**Polarity:** As marked on body

**Mounting Torque:** 10 cm·kg (8.8 inches·lbs) max.

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) $T_A = 25$ °C (2)		10 3.2	A
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 <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



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> = 5.0 A	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	V <sub>F</sub>	0.98 0.88	1.05 0.95	V
Maximum reverse current per diode	rated V <sub>R</sub>	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub>	- 64	5.0 250	μA
Typical junction capacitance per diode	4.0 V, 1 MHz		C <sub>J</sub>	43	-	pF

Note:

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

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	BU1006	BU1008	BU1010	UNIT
Typical thermal resistance	R <sub>θJC</sub> <sup>(1)</sup>	3.0			°C/W
	R <sub>θJA</sub> <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
BU1006-E3/45	4.55	45	20	Tube
BU1006-E3/51	4.55	51	250	Paper tray
BU1006S-E3/45	4.55	45	20	Tube

RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

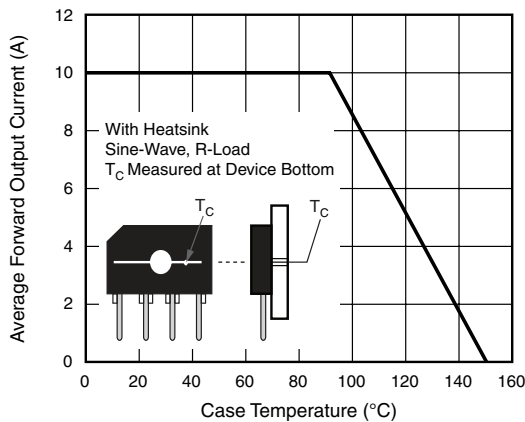


Figure 1. Derating Curve Output Rectified Current

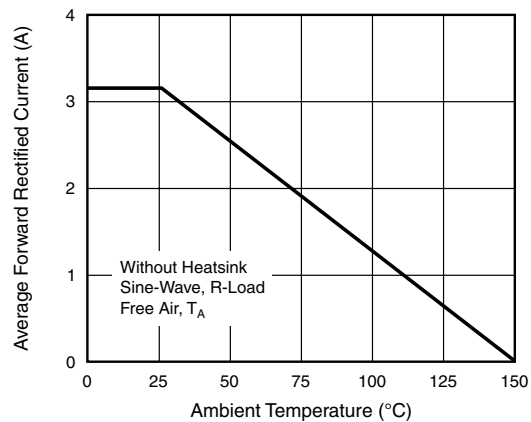


Figure 2. Forward Current Derating Curve

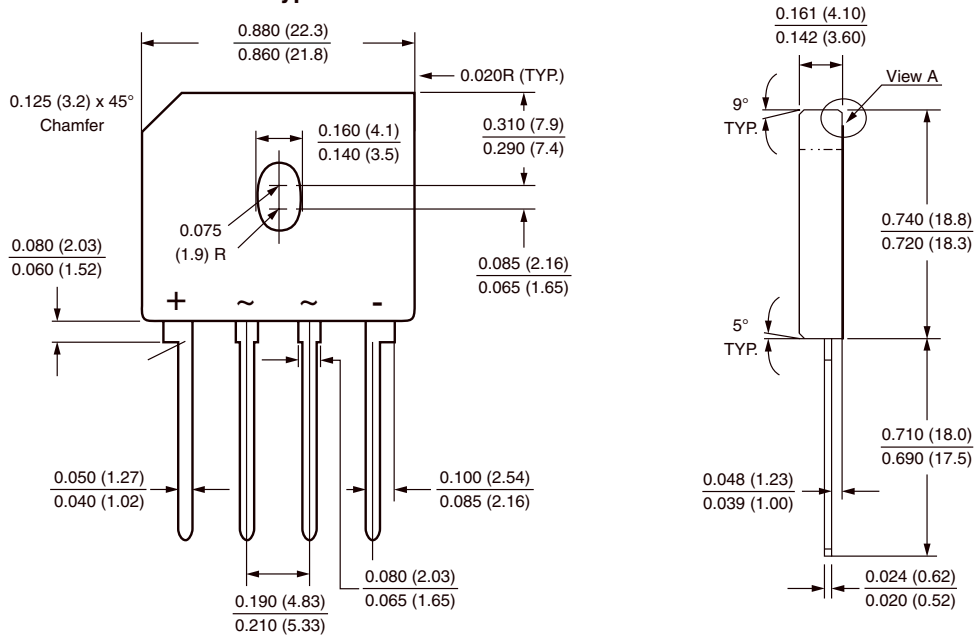
# BU1006 thru BU1010

Vishay General Semiconductor

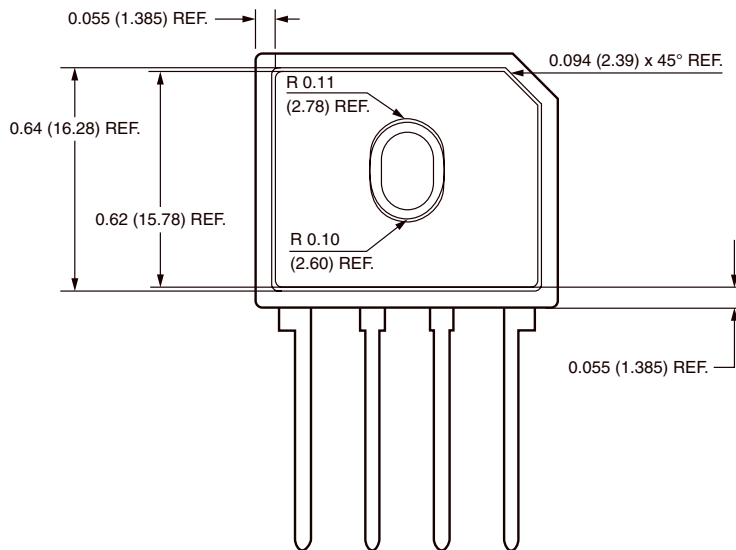


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

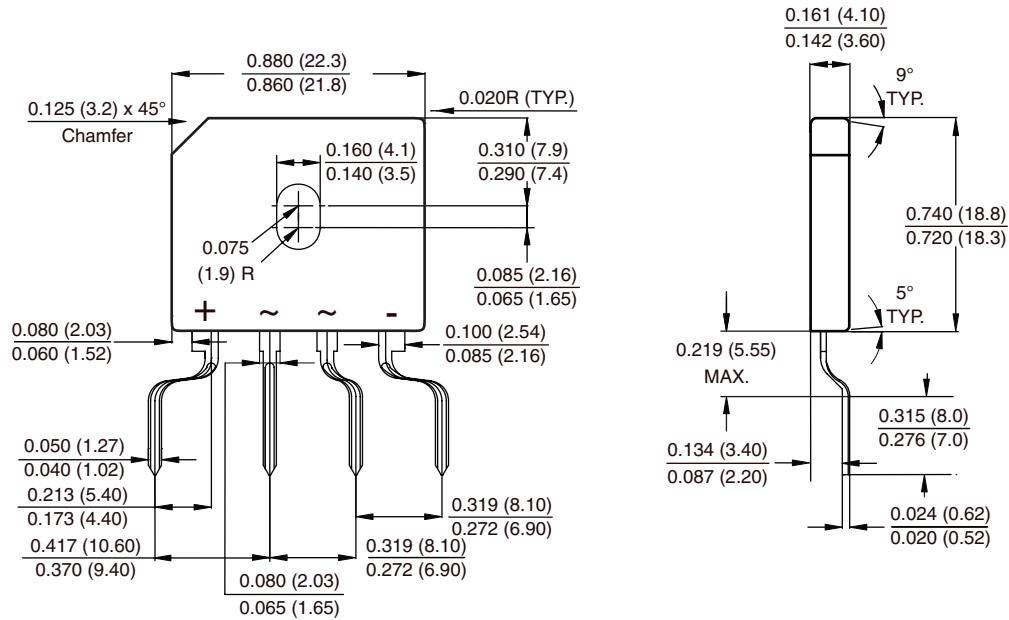
### Case Type BU



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:

