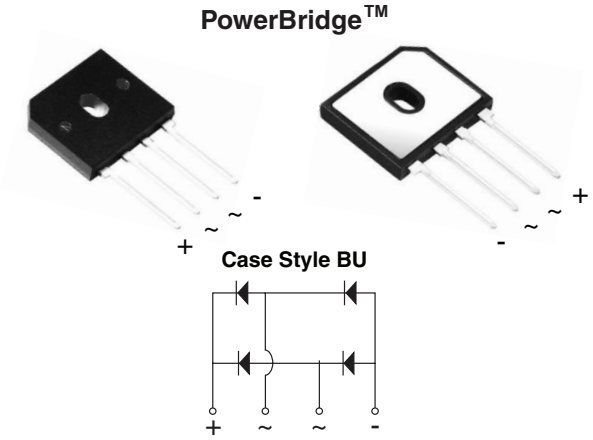
Enhanced Power Bridge Rectifiers



* 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	
$I_{F(AV)}$	12 A
V_{RRM}	600 V, 800 V, 1000 V
I_{FSM}	150 A
I_R	5 µA
V_F at I_F = 6 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. BU12065S)
- 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.

Recommended Torque: 5.7 cm-kg (5 inches-lbs)

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER		SYMBOL	BU1206	BU1208	BU1210	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	600	800	1000	V
Average rectified forward current (Fig. 1, 2)	T_C = 85 °C (1) T_A = 25 °C (2)	I_O	12 3.4			A
Non-repetitive peak forward surge current 8.3 ms single sine-wave, T_J = 25 °C		I_{FSM}	150			A
Rating for fusing (t < 8.3 ms) T_J = 25 °C		I^2t	93			A^2s
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 = 6.0 A	T_A = 25 °C T_A = 125 °C	V_F	0.98 0.88	1.05 0.95	V
Maximum reverse current per diode	rated V_R	T_A = 25 °C T_A = 125 °C	I_R	- 74	5.0 250	µA
Typical junction capacitance per diode	4.0 V, 1 MHz		C_J	50	-	pF

Note:

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

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)					
PARAMETER	**SYMBOL**	**BU1206**	**BU1208**	**BU1210**	**UNIT**
Typical thermal resistance	$R_{\theta JC}$ (1) $R_{\theta JA}$ (2)	2.7 20			°C/W

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**
BU1206-E3/45	4.66	45	20	Tube
BU1206-E3/51	4.66	51	250	Paper tray
BU12065S-E3/45	4.66	45	20	Tube

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

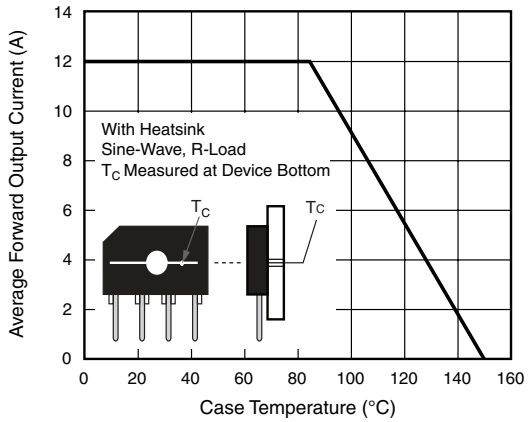


Figure 1. Derating Curve Output Rectified Current

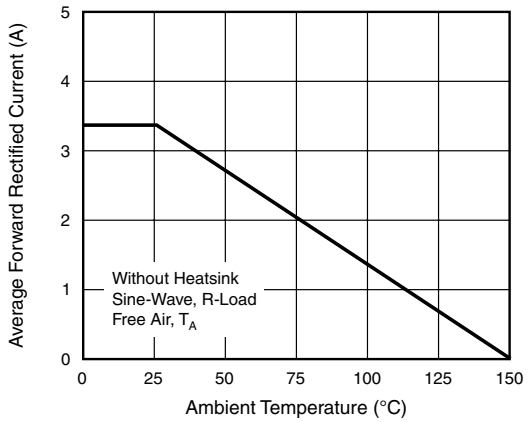
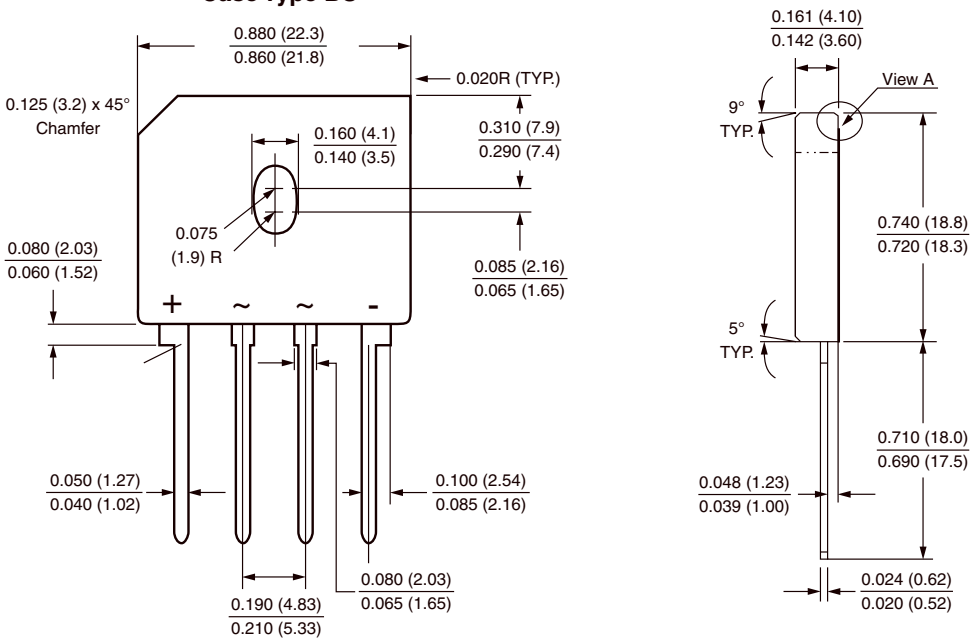


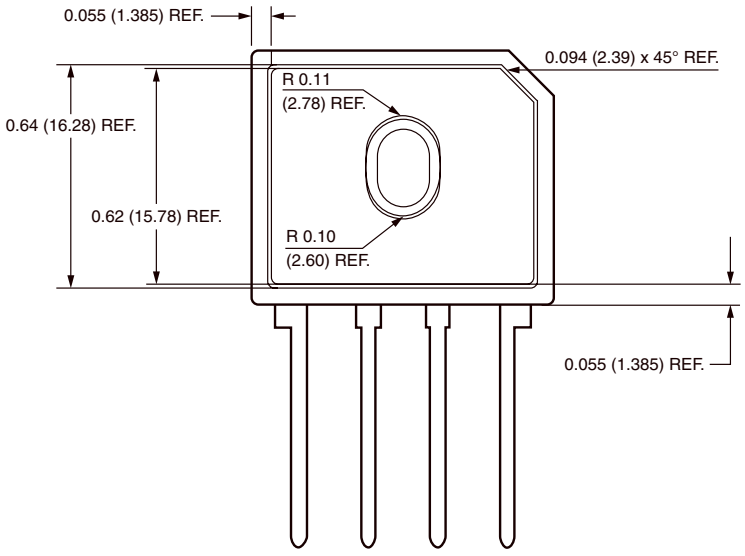
Figure 2. Forward Current Derating Curve

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

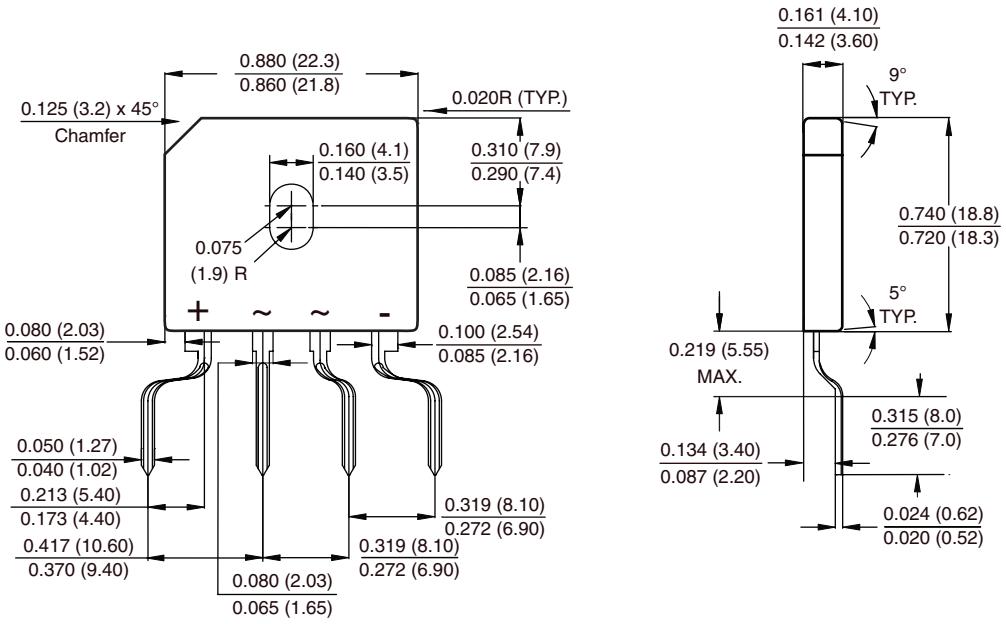
Case Type BU



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: