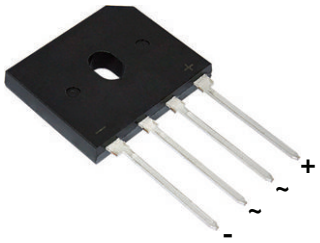
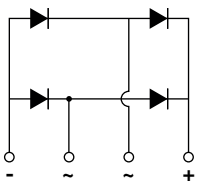
Low V_F Single-Phase Single In-Line Bridge Rectifier



Case Style GBU



Case Style GBU

FEATURES

- UL recognition file number E312394
- Oxide planar chip junction
- Low forward voltage drop
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Ideal for printed circuit boards
- High surge current capability
- High case dielectric strength of 1500 V_{RMS}
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for switching power supply, home applications, and white-goods applications specially or telecom power supply, high efficiency desktop PC and server SMPS.

LINKS TO ADDITIONAL RESOURCES

3D Models

MECHANICAL DATA

Case: GBU
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, industrial grade
Base P/N-M3 - halogen-free, RoHS-compliant, and industrial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD22-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	
$I_{F(AV)}$	25 A
V_{RRM}	600 V
I_{FSM}	350 A
V_F at I_F = 12.5 A (125 °C)	0.75 V
T_J max.	175 °C
Package	GBU
Circuit configuration	In-line

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)				
PARAMETER		SYMBOL	GBUE2560	UNIT
Device marking code			GBUE2560	
Maximum repetitive peak reverse voltage		V_{RRM}	600	V
Maximum RMS voltage		V_{RMS}	420	V
Maximum DC blocking voltage		V_{DC}	600	V
Maximum average forward rectified output current at	T_C = 140 °C	I_O (1)	25	A
	T_A = 25 °C	I_O (2)	4.9	
Non-repetitive peak forward surge current 8.3 ms single sine-wave, T_J = 25 °C		I_{FSM}	350	A
Rating for fusing (t < 8.3 ms)		I^2t	508	A^2s
Operating junction and storage temperature range		T_J, T_{STG}	-55 to +175	°C

Notes
(1) Unit case mounted on aluminum plate heatsink
(2) Units mounted on PCB without heatsink

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Maximum instantaneous forward voltage drop per diode	I_F = 12.5 A	T_A = 25 °C	V_F (1)	0.88	0.92	V
		T_A = 125 °C		0.75	-	
Maximum DC reverse current at rated DC blocking voltage per diode	V_R = 600 V	T_A = 25 °C	I_R (2)	0.1	10	µA
		T_A = 125 °C		27	-	
Typical reverse recovery time	I_F = 0.5 A, I_R =1.0 A, I_{rr} = 0.25 A		t_{rr}	280	-	ns
Typical junction capacitance per diode	4.0 V, 1 MHz		C_J	240	-	pF

Notes
(1) Pulse test: 300 µs pulse width, 1 % duty cycle
(2) Pulse test: pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**GBUE2560**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)	23	°C/W
	$R_{\theta JC}$ (2)	1.2	

Notes
(1) Without heatsink, free air
(2) With heatsink

ORDERING INFORMATION				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
GBUE2560-E3/P	3.83	P	20	Tube
GBUE2560-M3/P	3.83	P	20	Tube

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

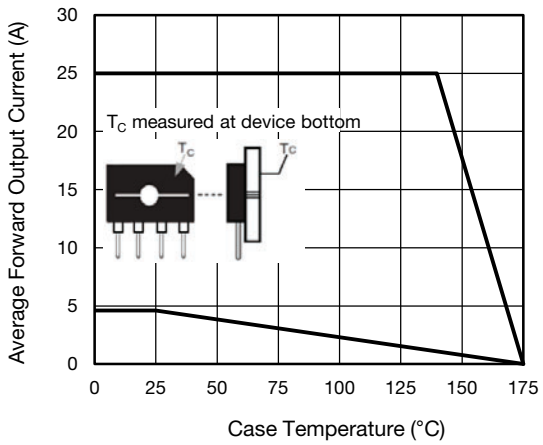


Fig. 1 - Derating Curve Output Rectified Current

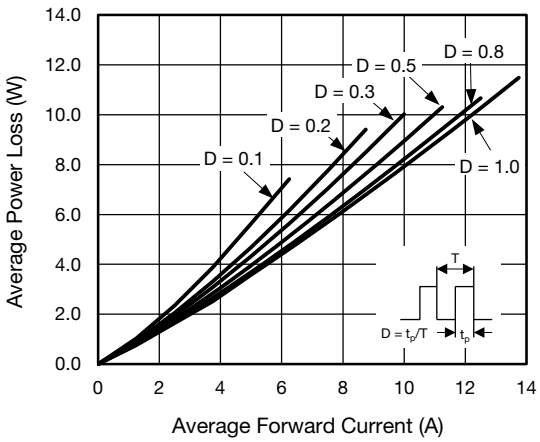


Fig. 2 - Forward Power Loss Characteristics Per Diode

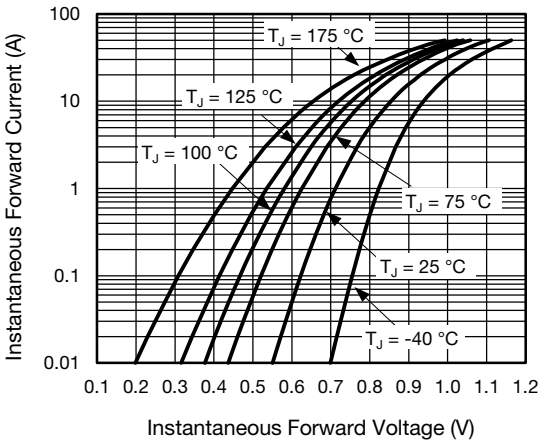


Fig. 3 - Typical Forward Characteristics Per Diode

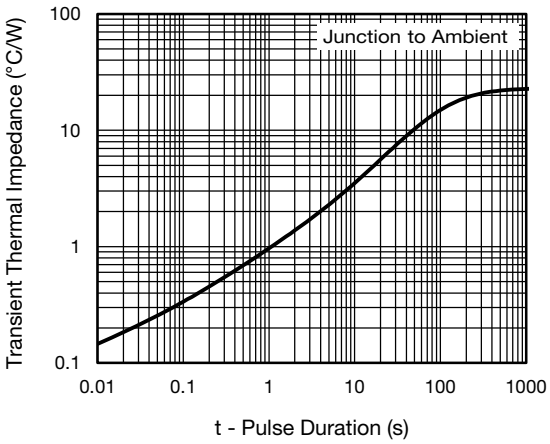


Fig. 6 - Typical Transient Thermal Impedance Per Diode

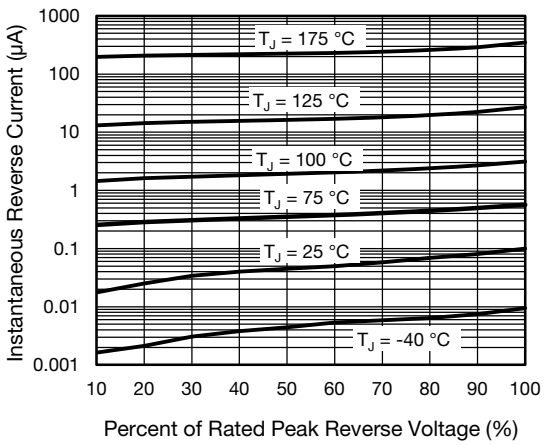


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

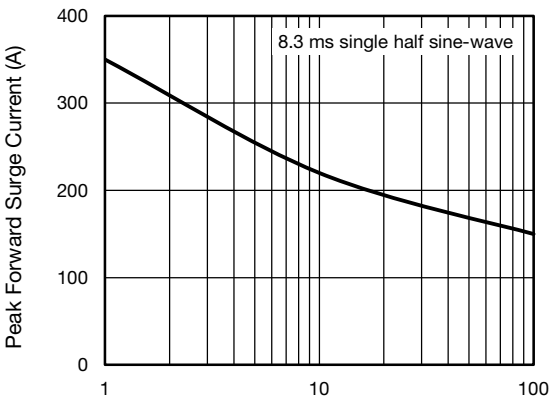


Fig. 7 - Peak Forward Surge Current

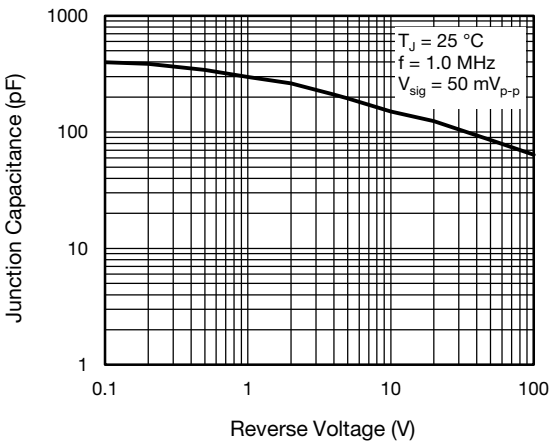
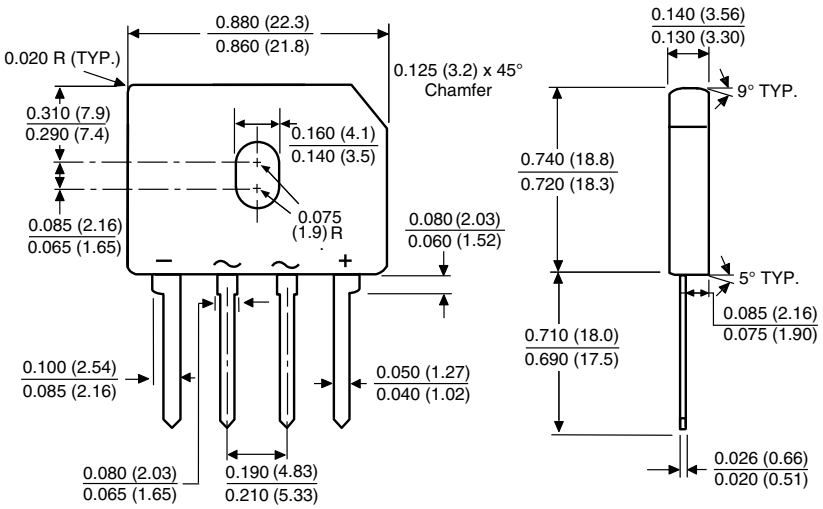


Fig. 5 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

GBU



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

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