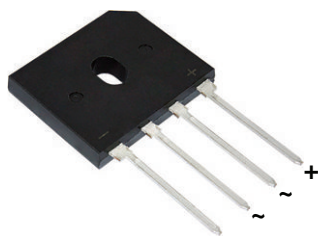
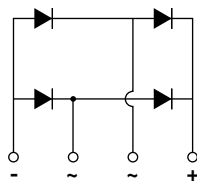


# Low $V_F$ Single-Phase Single In-Line Bridge Rectifier



Case Style GBU



Case Style GBU



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

## 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<sub>RMS</sub>
- 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 applications, and white-goods applications specially or telecom power supply, high efficiency desktop PC and server SMPS.

## LINKS TO ADDITIONAL RESOURCES



3D Models

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

## MECHANICAL DATA

**Case:** GBU

Molding compound meets UL 94 V-0 flammability rating

Base P/N-M3 - halogen-free, RoHS-compliant, and industrial grade

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

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)

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	$I_O^{(1)}$	A
	$T_A = 25$ °C	$I_O^{(2)}$	
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 <sup>2</sup> s
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

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

**Notes**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

(2) Pulse test: pulse width  $\leq 40\text{ ms}$

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

**Notes**

(1) Without heatsink, free air

(2) With heatsink

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

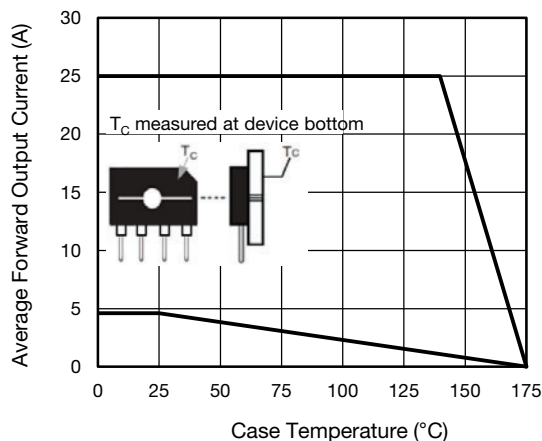
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Derating Curve Output Rectified Current

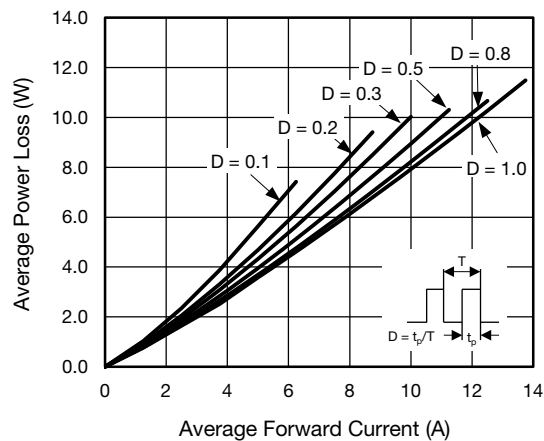


Fig. 2 - Forward Power Loss Characteristics Per Diode

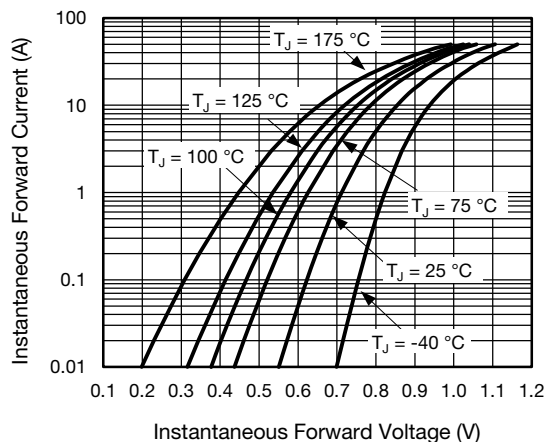


Fig. 3 - Typical Forward Characteristics Per Diode

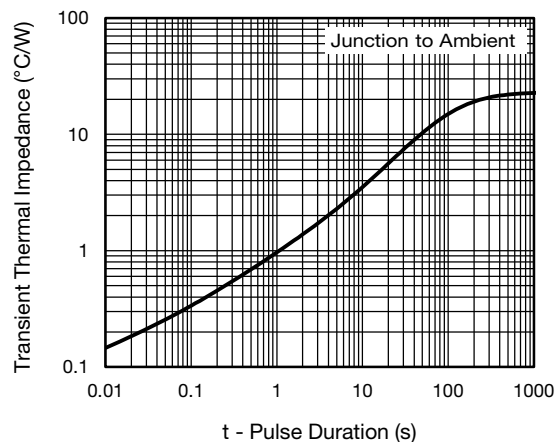


Fig. 6 - Typical Transient Thermal Impedance Per Diode

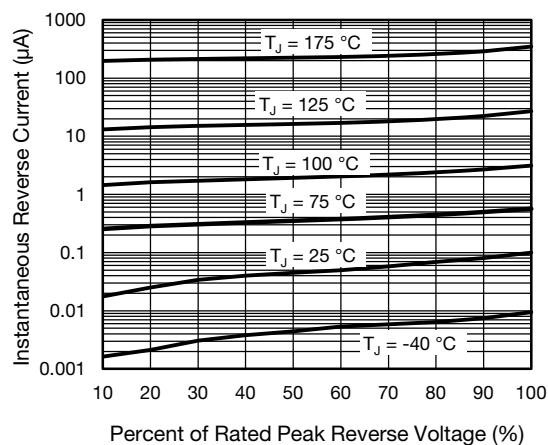


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

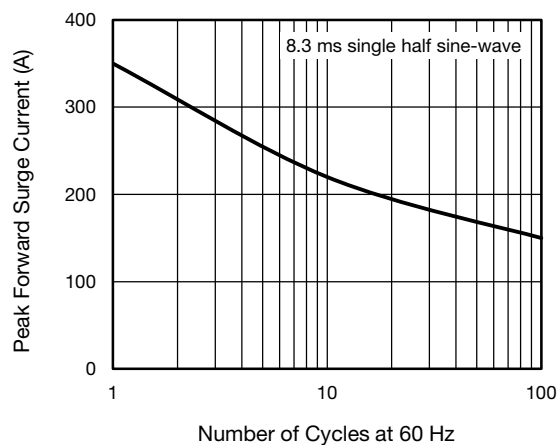


Fig. 7 - Peak Forward Surge Current

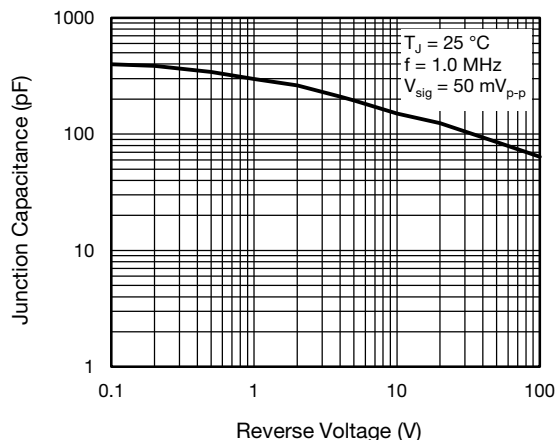
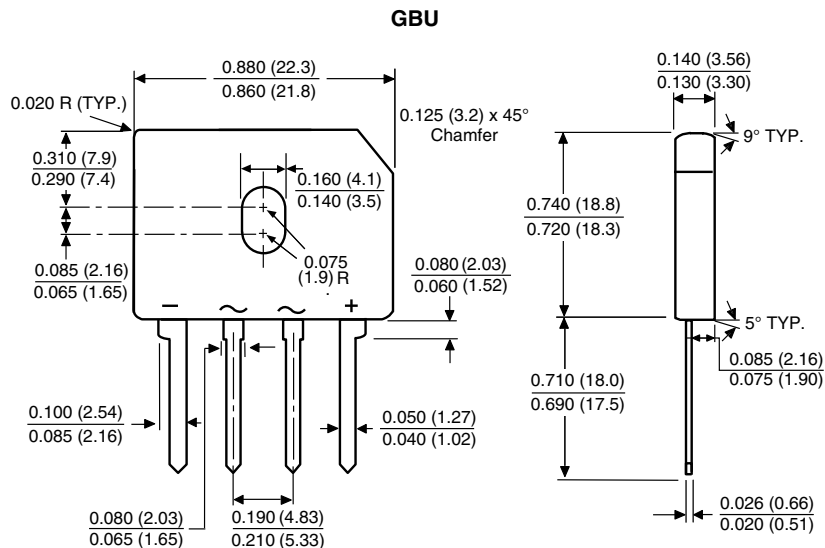


Fig. 5 - Typical Junction Capacitance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)


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



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