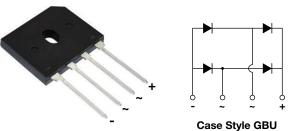


Vishay General Semiconductor

# Low V<sub>F</sub> Single-Phase Single In-Line Bridge Rectifier



**Case Style GBU** 

## LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	25 A			
V <sub>RRM</sub>	600 V			
I <sub>FSM</sub>	350 A			
V <sub>F</sub> at I <sub>F</sub> = 12.5 A (125 °C)	0.75 V			
T <sub>J</sub> max.	175 °C			
Package	GBU			
Circuit configuration	In-line			

## 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  $V_{\text{RMS}}$
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

## **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.

### **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)

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	GBUE2560	UNIT		
Device marking code			GBUE2560			
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	600	V		
Maximum RMS voltage		V <sub>RMS</sub>	420	V		
Maximum DC blocking voltage		V <sub>DC</sub>	600	V		
Maximum average forward rectified output current at	T <sub>C</sub> = 140 °C	I <sub>O</sub> <sup>(1)</sup>	25	— A		
	T <sub>A</sub> = 25 °C	I <sub>O</sub> <sup>(2)</sup>	4.9			
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J$ = 25 °C		I <sub>FSM</sub>	350	А		
Rating for fusing (t < 8.3 ms)		l <sup>2</sup> t	508	A <sup>2</sup> s		
Operating junction and storage temperature range		T <sub>J</sub> , T <sub>STG</sub>	-55 to +175	°C		

### Notes

<sup>(1)</sup> Unit case mounted on aluminum plate heatsink

<sup>(2)</sup> Units mounted on PCB without heatsink



COMPLIANT

HALOGEN

FREE

**GBUE2560** 



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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage drop	I <sub>F</sub> = 12.5 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.88	0.92	V
per diode	$I_{\rm F} = 12.5 {\rm A}$	T <sub>A</sub> = 125 °C	VF \''	0.75	-	v
Maximum DC reverse current at rated DC	V <sub>B</sub> = 600 V	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	0.1	10	
blocking voltage per diode	$v_{\rm R} = 000 v$	T <sub>A</sub> = 125 °C	'R \-/	27	-	μA
Typical reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$		t <sub>rr</sub>	280	-	ns
Typical junction capacitance per diode	4.0 V, 1 MHz		CJ	240	-	pF

#### Notes

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

<sup>(2)</sup> Pulse test: pulse width  $\leq$  40 ms

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL GBUE2560		UNIT	
Typical thermal resistance	R <sub>0JA</sub> <sup>(1)</sup>	23	°C/W	
Typical memainesistance	R <sub>0JC</sub> <sup>(2)</sup>	1.2	0/10	

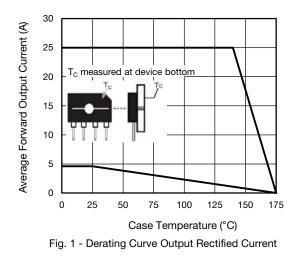
#### Notes

<sup>(1)</sup> 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	Р	20	Tube		
GBUE2560-M3/P	3.83	Р	20	Tube		

## RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)



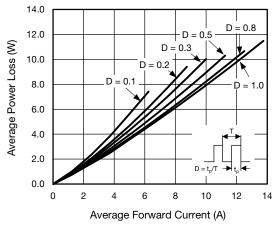
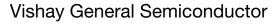
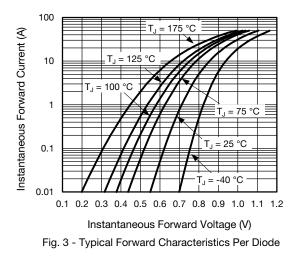


Fig. 2 - Forward Power Loss Characteristics Per Diode

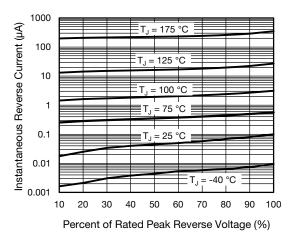
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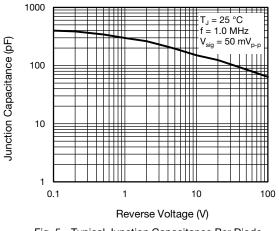


Fig. 5 - Typical Junction Capacitance Per Diode

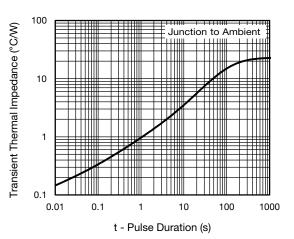
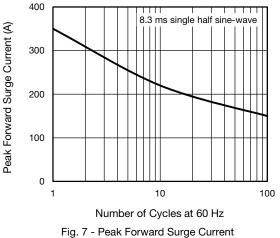


Fig. 6 - Typical Transient Thermal Impedance Per Diode



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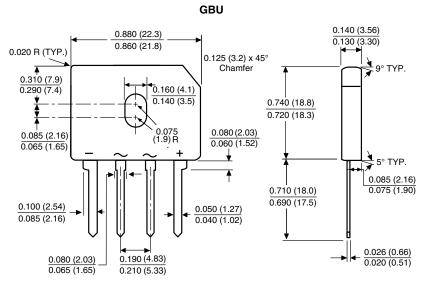
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## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)



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



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