## GSIB1520N, GSIB1540N, GSIB1560N, GSIB1580N

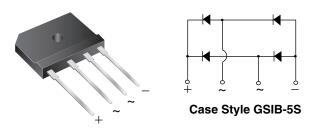
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## Vishay General Semiconductor

HALOGEN

FREE

# Single-Phase Single In-Line Bridge Rectifiers



### **LINKS TO ADDITIONAL RESOURCES**



PRIMARY CHARACTERISTICS					
$I_{F(AV)}$	15 A				
V <sub>RRM</sub>	200 V, 400 V, 600 V, 800 V				
I <sub>FSM</sub>	300 A				
I <sub>R</sub>	10 μΑ				
$V_F$ at $I_F = 7.5 A$	0.95 V				
T <sub>J</sub> max.	150 °C				
Package	GSIB-5S				
Circuit configuration	In-line				

#### **FEATURES**

- UL recognition file number E54214
- Thin single in-line package
- · Glass passivated chip junction
- High surge current capability
- High case dielectric strength of 2500 V<sub>RMS</sub>
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

#### TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for switching power supply, home appliances, office equipment, industrial automation applications.

#### **MECHANICAL DATA**

Case: GSIB-5S

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked on body

**Mounting Torque:** 10 cm-kg (8.8 in-lbs) maximum **Recommended Torque:** 5.7 cm-kg (5 in-lbs)

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER		SYMBOL	GSIB1520N	GSIB1540N	GSIB1560N	GSIB1580N	UNIT
Maximum repetitive peak reverse voltage		$V_{RRM}$	200	400	600	800	V
Maximum RMS voltage		V <sub>RMS</sub>	140	280	420	560	V
Maximum DC blocking voltage		$V_{DC}$	200	400	600	800	V
Maximum average forward rectified output current at	T <sub>C</sub> = 107 °C	I <sub>F(AV)</sub> (1)	15				Α
	T <sub>A</sub> = 25 °C	I <sub>F(AV)</sub> (2)	3.5				
Peak forward surge current single sine-wave superimposed on rated load		I <sub>FSM</sub>	300				Α
Rating for fusing (t < 8.3 ms)		I <sup>2</sup> t	240				A <sup>2</sup> s
Operating junction and storage temperature range		T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150			°C	

#### Notes

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

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS	SYMBOL	GSIB1520N	GSIB1540N	GSIB1560N	GSIB1580N	UNIT
Maximum instantaneous forward voltage drop per diode	I <sub>F</sub> = 7.5 A	$V_{F}$	0.95		V		
Maximum DC reverse current at	T <sub>A</sub> = 25 °C	1-		1	10		μA
rated DC blocking voltage per diode	T <sub>A</sub> = 125 °C		250				μΑ

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THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL GSIB1520N GSIB1540N GSIB1560N GSIB1580N UNIT				UNIT
Maximum thermal resistance	$R_{\theta JA}$ (2)	22			°C/W
waxiiiuiii tileiiilai resistance	R <sub>0</sub> JC (1)	1.5			C/VV

#### Notes

- (1) Unit case mounted on aluminum plate heatsink
- (2) Units mounted on PCB without heatsink
- (3) Recommended mounting position is to bolt down on heatsink with silicone thermal compound for maximum heat transfer with #6 screw

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g) PREFERRED PACKAGE CODE BASE QUANTITY DELI							
GSIB1560N-M3/45	7.0	45	20	Tube				

100

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

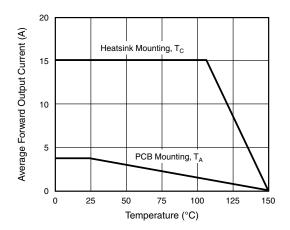


Fig. 1 - Derating Curve Output Rectified Current

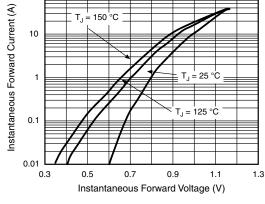


Fig. 3 - Typical Forward Characteristics Per Diode

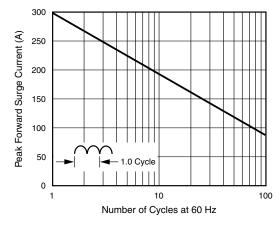


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

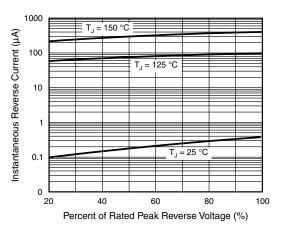


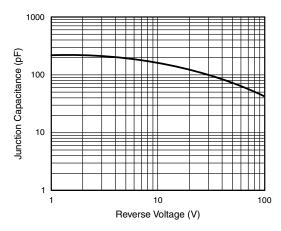
Fig. 4 - Typical Reverse Characteristics Per Diode

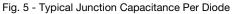


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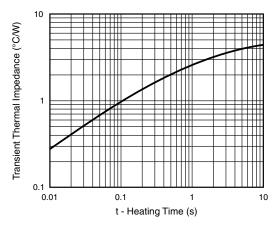


Fig. 6 - Typical Transient Thermal Impedance

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

### Case Style GSIB-5S $4.6 \pm 0.2$ $3.6 \pm 0.2$ $30 \pm 0.3$ $3.5 \pm 0.2$ $20 \pm 0.3$ $11 \pm 0.2$ $2.5 \pm 0.2$ **←** 2.7 ± 0.2 $17.5 \pm 0.5$ $4 \pm 0.2$ $2.2 \pm 0.2$ $1 \pm 0.1$ $0.7 \pm 0.1$ 7.5 7.5 $10 \pm 0.2$ ±0.2 ±0.2



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