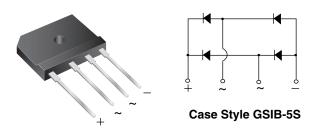
## GSIB620N, GSIB640N, GSIB660N, GSIB680N

Vishay General Semiconductor

HALOGEN

FREE

# Single-Phase Single In-Line Bridge Rectifiers



### **LINKS TO ADDITIONAL RESOURCES**



PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub> 6.0 A					
V <sub>RRM</sub>	200 V, 400 V, 600 V, 800 V				
I <sub>FSM</sub>	180 A				
I <sub>R</sub>	10 μA				
V <sub>F</sub>	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 1500 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	GSIB620N	GSIB640N	GSIB660N	GSIB680N	UNIT
Maximum repetitive peak reverse voltage		$V_{RRM}$	200	400	600	800	V
Maximum RMS voltage		$V_{RMS}$	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> = 100 °C	I <sub>F(AV)</sub> (1)	6.0			А	
	T <sub>A</sub> = 25 °C	I <sub>F(AV)</sub> (2)	2.8				
Peak forward surge current single sine-wave superimposed on rated load (JEDEC® method)		I <sub>FSM</sub>	180				Α
Rating for fusing (t < 8.3 ms)		l <sup>2</sup> t	120				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 with 0.5" x 0.5" (12 mm x 12 mm) copper pads and 0.375" (9.5 mm) lead length

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS	SYMBOL	GSIB620N	GSIB640N	GSIB660N	GSIB680N	UNIT
Maximum instantaneous forward voltage drop per diode	I <sub>F</sub> = 3.0 A	V <sub>F</sub>	0.95			V	
Maximum DC reverse current at	T <sub>A</sub> = 25 °C	I_	10				
rated DC blocking voltage per diode	T <sub>A</sub> = 125 °C	IR	250				μΑ

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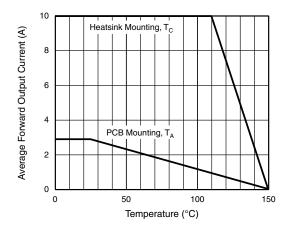
THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL GSIB620N GSIB640N GSIB660N GSIB680N UNIT					UNIT
Maximum thermal resistance	R <sub>0JA</sub> (2)	22				°C/W
waximum thermal resistance	R <sub>0</sub> JC (1)	3.4				C/VV

#### Notes

- (1) Unit case mounted on aluminum plate heatsink
- (2) Units mounted on PCB with 0.5" x 0.5" (12 mm x 12 mm) copper pads and 0.375" (9.5 mm) lead length
- (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 DELIVERY MODE								
GSIB660N-M3/45	7.0	45	20	Tube				

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



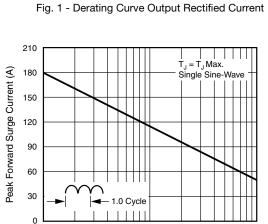


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

10

Number of Cycles at 60 Hz

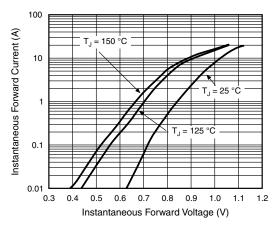


Fig. 3 - Typical Forward Characteristics Per Diode

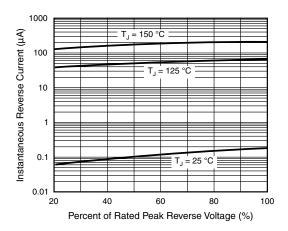


Fig. 4 - Typical Reverse Characteristics Per Diode

100

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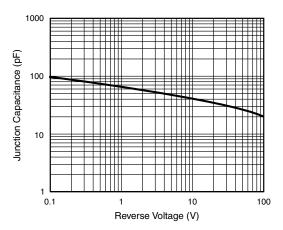


Fig. 5 - Typical Junction Capacitance Per Diode

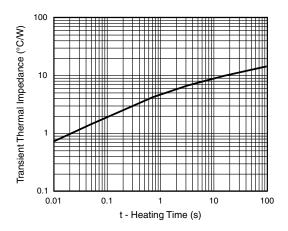
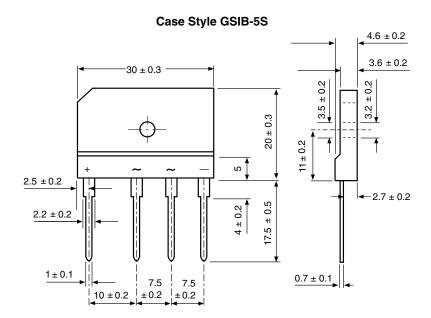


Fig. 6 - Typical Transient Thermal Impedance Per Diode

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





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