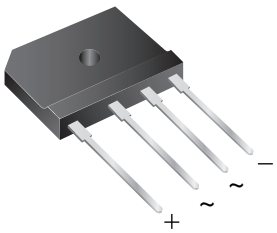
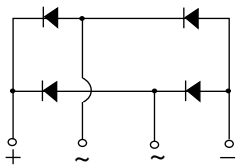
Single-Phase Single In-Line Bridge Rectifiers





Case Style GSIB-5S

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_{RMS}
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

3D Models

TYPICAL APPLICATIONS

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	6.0 A
V_{RRM}	200 V, 400 V, 600 V, 800 V
I_{FSM}	180 A
I_R	10 µA
V_F at I_F = 3.0 V	0.95 V
T_J max.	150 °C
Package	GSIB-5S
Circuit configuration	In-line

MECHANICAL DATA

Case: GSIB-5S
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets 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 specified)

PARAMETER	SYMBOL	GSIB620	GSIB640	GSIB660	GSIB680	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_C = 100 °C (1)	$I_{F(AV)}$	6.0				A
Maximum average forward rectified output current at T_A = 25 °C (2)	$I_{F(AV)}$	2.8				A
Peak forward surge current single sine-wave superimposed on rated load (JEDEC® method)	I_{FSM}	180				A
Rating for fusing (t < 8.3 ms)	I^2t	120				A^2s
Operating junction and storage temperature range	T_J, T_{STG}	-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

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	GSIB620	GSIB640	GSIB660	GSIB680	UNIT
Maximum instantaneous forward voltage drop per diode	3.0 A	V_F	0.95				V
Maximum DC reverse current at rated DC blocking voltage per diode	T_A = 25 °C	I_R	10				µA
	T_A = 125 °C		250				

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THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	GSIB620	GSIB640	GSIB660	GSIB680	UNIT
Typical thermal resistance	$R_{\theta JA}$ (2)	22				
	$R_{\theta JC}$ (1)	3.4				

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
GSIB660-E3/45	7.0	45	20	Tube

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

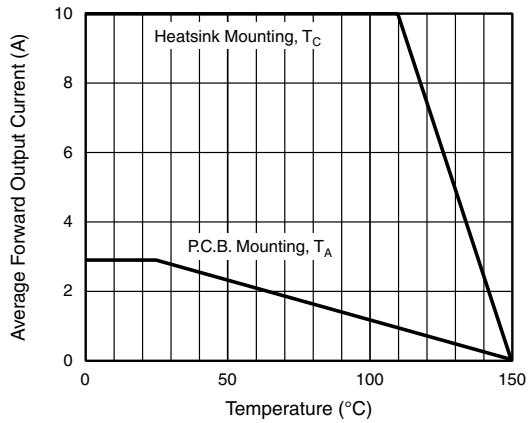

Fig. 1 - Derating Curve Output Rectified Current

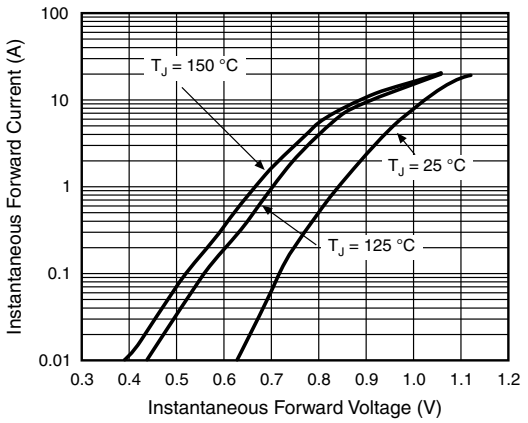

Fig. 3 - Typical Forward Characteristics Per Diode

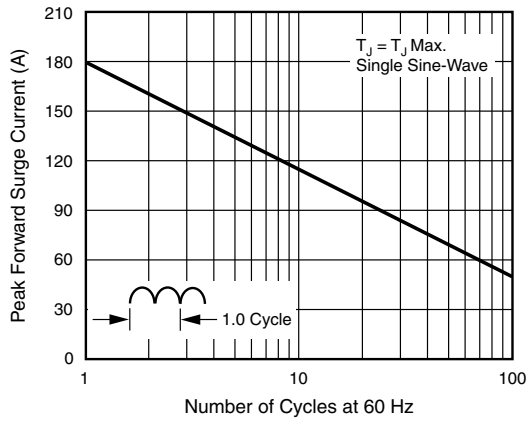

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

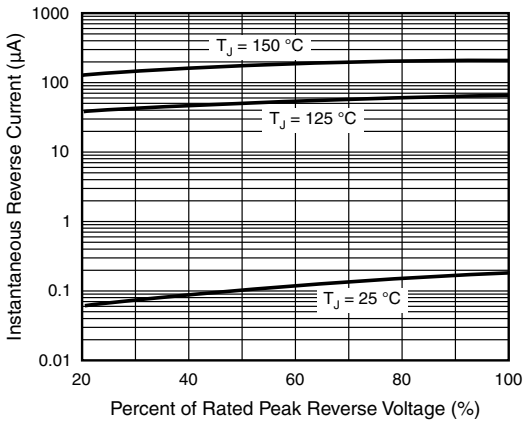

Fig. 4 - Typical Reverse Characteristics Per Diode

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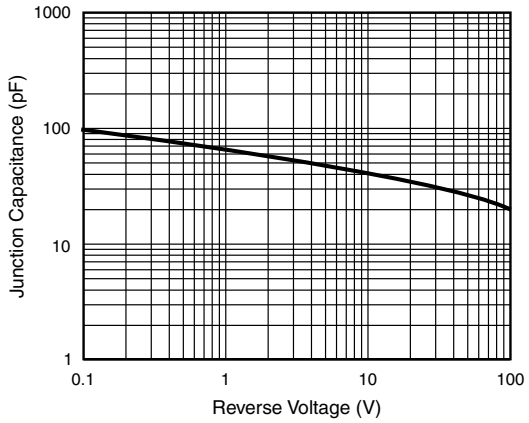


Fig. 5 - Typical Junction Capacitance Per Diode

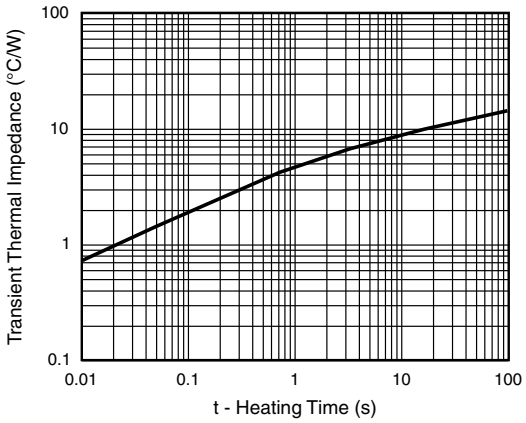
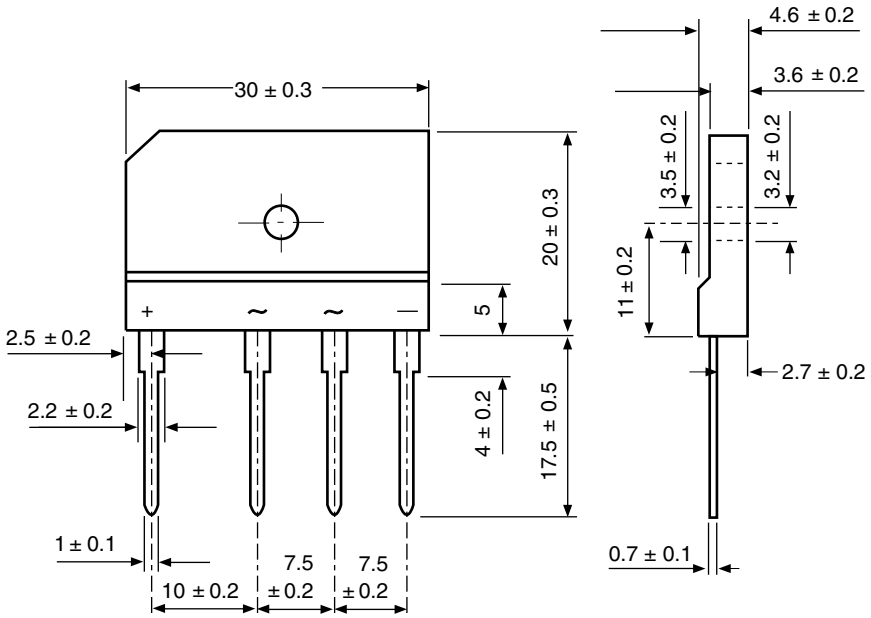


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Style GSIB-5S



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