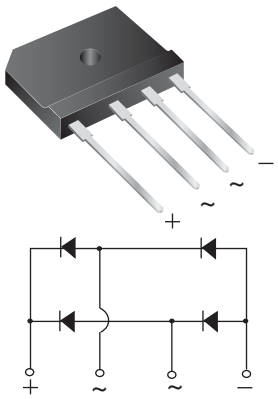
VSIB620, VSIB640, VSIB660, VSIB680

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 260 °C, 40 s
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb e3 RoHS COMPLIANT

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
Epoxy meets UL 94 V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix for consumer grade, 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)

PRIMARY CHARACTERISTICS	
Package	GSIB-5S
$I_{F(AV)}$	6 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 A	0.95 V
T_J max.	150 °C
Diode variations	In-Line

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER		SYMBOL	VSIB620	VSIB640	VSIB660	VSIB680	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
	T_A = 25 °C (2)		2.8				
Peak forward surge current single sine-wave superimposed on rated load		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	VSIB620	VSIB640	VSIB660	VSIB680	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				

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**SYMBOL**	**VSIB620**	**VSIB640**	**VSIB660**	**VSIB680**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$	22 (2)				°C/W
	$R_{\theta JC}$	3.4 (1)				

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**
VSIB660-E3/45	7.0	45	20	Tube

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

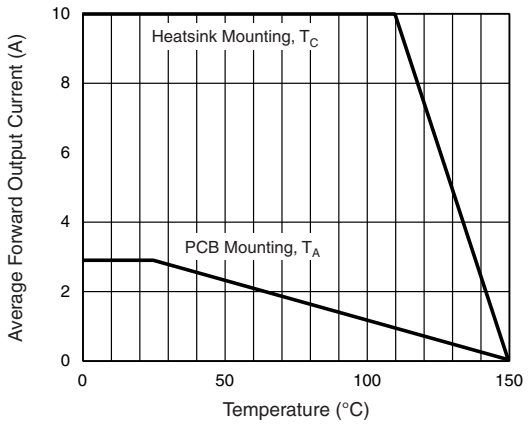


Fig. 1 - Derating Curve Output Rectified Current

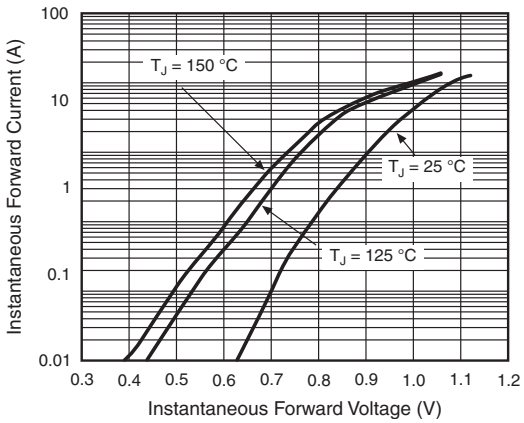


Fig. 3 - Typical Forward Characteristics Per Diode

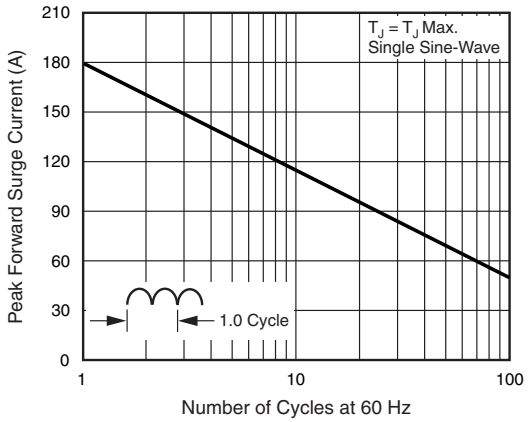


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

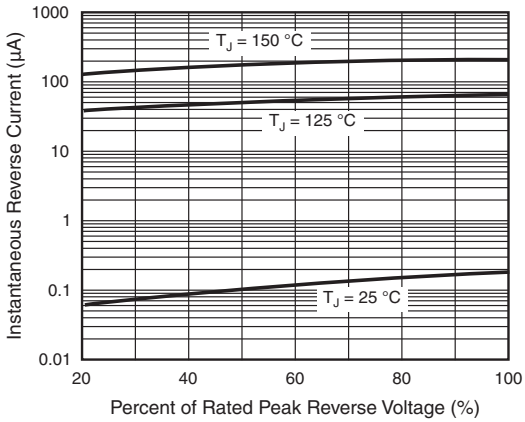


Fig. 4 - Typical Reverse Characteristics Per Diode

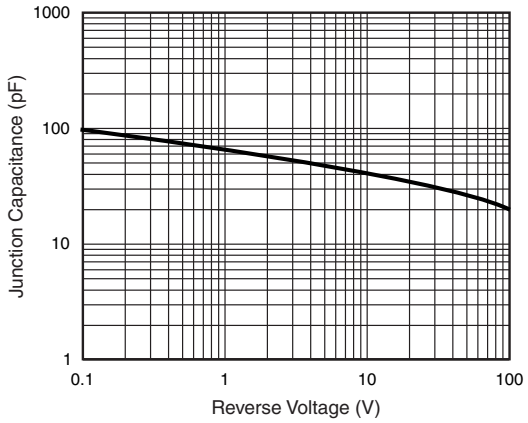


Fig. 5 - Typical Junction Capacitance Per Diode

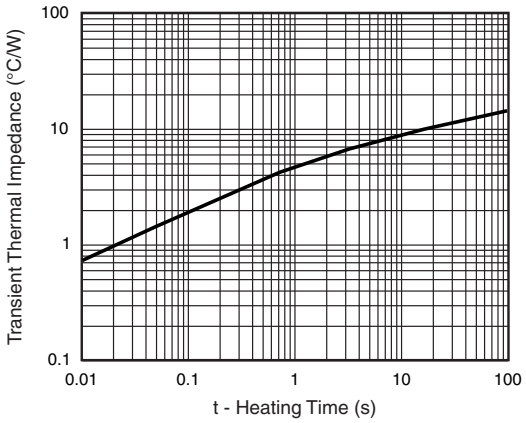
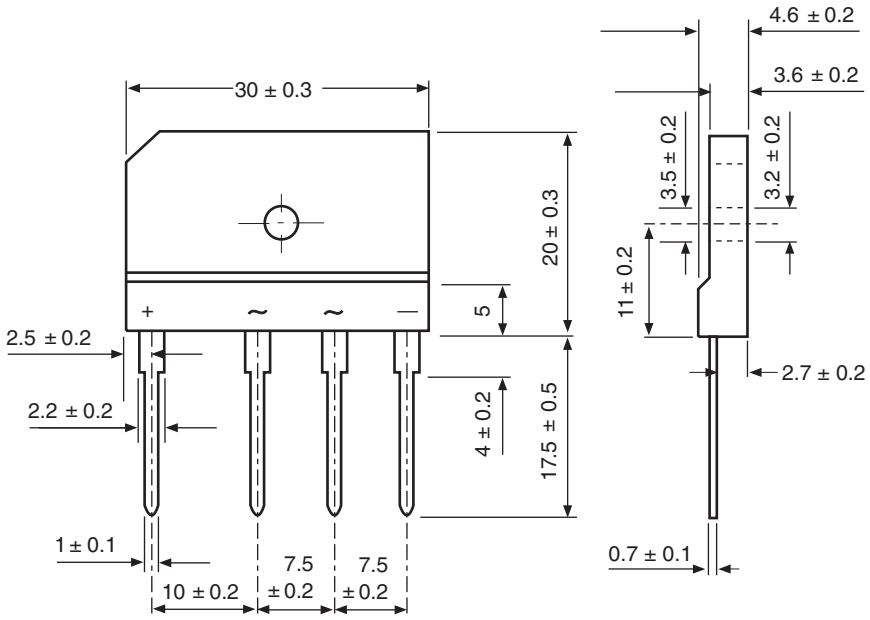


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in millimeters

Case Style GSIB-5S



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