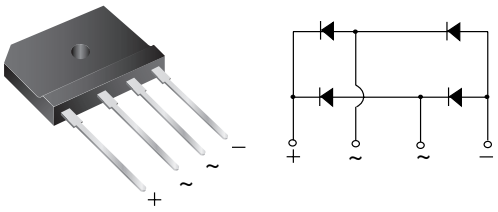
Single-Phase Single In-Line Bridge Rectifiers



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 2500 V_{RMS}
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

TYPICAL APPLICATIONS

General purpose use in ac-to-dc bridge full wave rectification for switching power supply, home appliances, office equipment, industrial automation applications.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	15 A
V_{RRM}	200 V to 800 V
I_{FSM}	200 A
I_R	10 µA
V_F	1.0 V
T_J max.	150 °C

MECHANICAL DATA

Case: GSIB-5S

Epoxy meets UL 94 V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-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)

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

PARAMETER	SYMBOL	VSIB15A20	VSIB15A40	VSIB15A60	VSIB15A80	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 = 107 °C (1) / T_A = 25 °C (2)	$I_{F(AV)}$	15 / 3.5				A
Peak forward surge current single sine-wave superimposed on rated load	I_{FSM}	200				A
Rating for fusing (t < 8.3 ms)	I^2t	166				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 P.C.B. without heatsink

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**VSIB15A20**	**VSIB15A40**	**VSIB15A60**	**VSIB15A80**	**UNIT**
Maximum instantaneous forward voltage drop per diode	7.5 A	V_F	1.00				V
Maximum DC reverse current at rated DC blocking voltage per diode	T_A = 25 °C T_A = 125 °C	I_R	10 250				µA

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	**SYMBOL**	**VSIB15A20**	**VSIB15A40**	**VSIB15A60**	**VSIB15A80**	**UNIT**	
Typical thermal resistance	$R_{\theta JA}$ $R_{\theta JC}$	22 (2) 1.5 (1)				°C/W	

Notes:

(1) Unit case mounted on aluminum plate heatsink

(2) Units mounted on P.C.B. 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**	**DELIVERY MODE**
VSIB15A60-E3/45	7.0	45	20	Tube

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

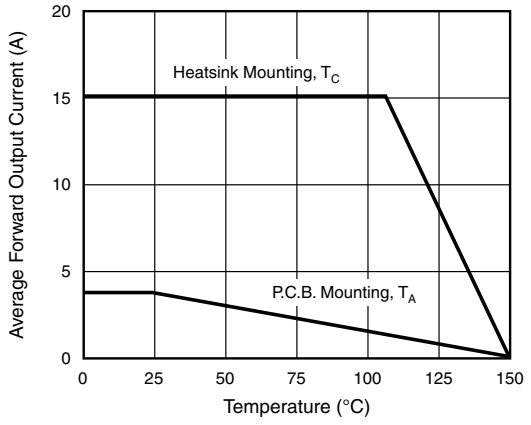


Figure 1. Derating Curve Output Rectified Current

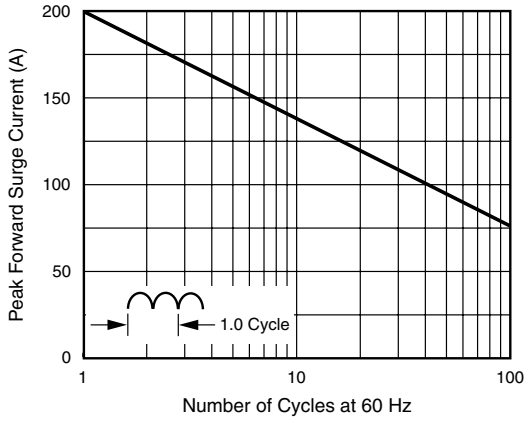


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

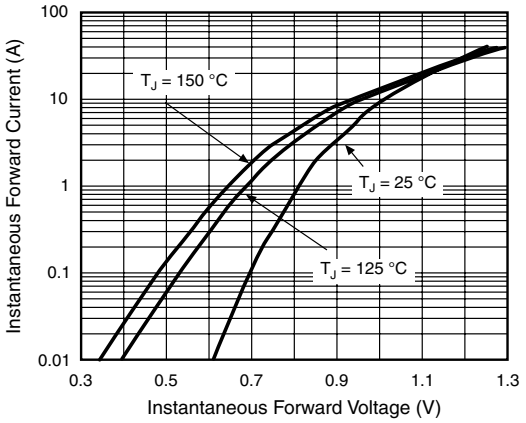


Figure 3. Typical Forward Characteristics Per Diode

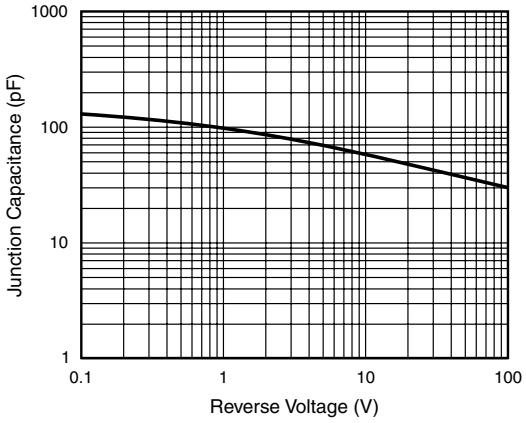


Figure 5. Typical Junction Capacitance Per Diode

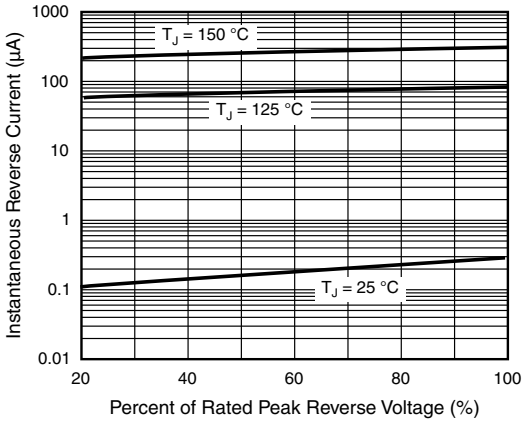


Figure 4. Typical Reverse Characteristics Per Diode

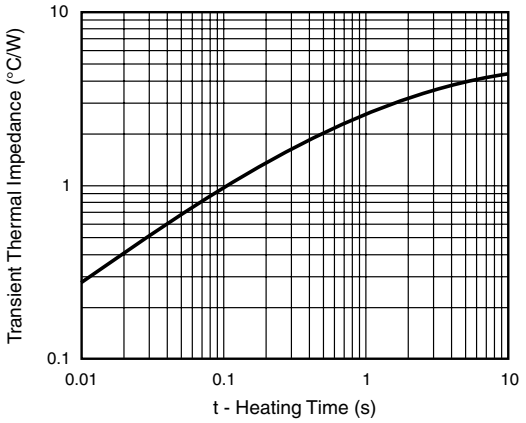
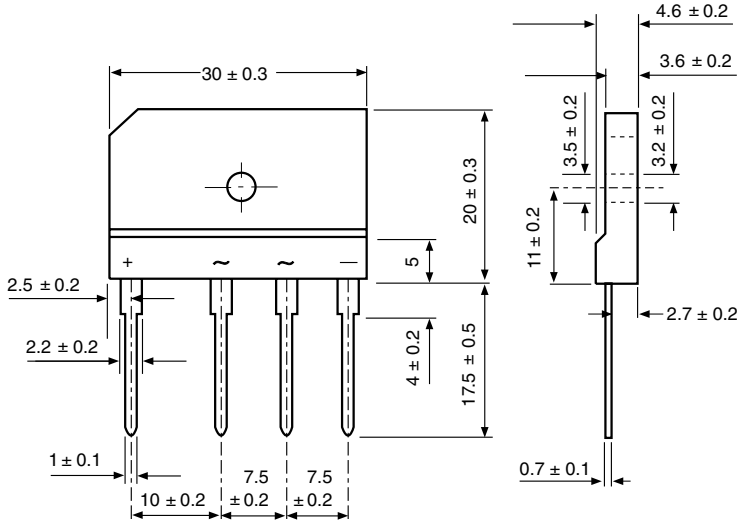


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in millimeters

Case Style GSIB-5S



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