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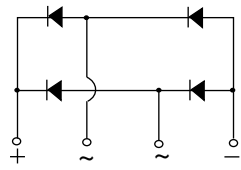
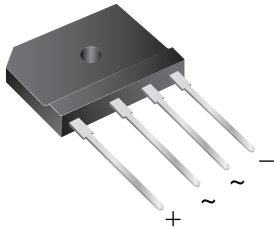
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Low V_F Single-Phase Single In-Line Bridge Rectifiers


Case Style GSIB-5S

RoHS
 COMPLIANT
 HALOGEN
FREE

FEATURES

- UL recognition file number E54214, Vol. 1
- Thin single in-line package
- Oxide planar chip junction
- Low forward voltage drop
- High surge current capability
- High case dielectric strength of 2500 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

TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for switching power supply, home appliances and white-goods applications specially for telecom power supply, high efficiency desktop PC and server SMPS.

MECHANICAL DATA

Case: GSIB-5S

Epoxy 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)

PRIMARY CHARACTERISTICS	
Package	GSIB-5S
$I_{F(AV)}$	15 A
V_{RRM}	600 V
I_{FSM}	400 A
I_R	10 μ A
V_F at $I_F = 7.5$ A, $T_A = 125$ °C	0.73 V
T_J max.	150 °C
Diode variations	In-Line

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	LVB1560	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	600	V
Maximum average forward rectified output current at	$T_C = 125$ °C	$I_O^{(1)}$	15
	$T_A = 25$ °C	$I_O^{(2)}$	3.6
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25$ °C	I_{FSM}	400	A
Rating for fusing ($t < 8.3$ ms)	$T_J = 25$ °C	I^2t	664
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 without heatsink

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage	$I_F = 7.5\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	$V_F^{(1)}$	0.87	0.90	V
		$T_A = 125\text{ }^\circ\text{C}$		0.73	-	
Reverse current per diode	$V_R = 600\text{ V}$	$T_A = 25\text{ }^\circ\text{C}$	$I_R^{(2)}$	0.2	10	μA
		$T_A = 125\text{ }^\circ\text{C}$		60	-	
Typical reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$	t_{rr}	1.8	-	μs	
Typical junction capacitance	4.0 V, 1 MHz	C_J	260	-	pF	

Notes

 (1) Pulse test: 300 μs pulse width, 1 % duty cycle

 (2) Pulse test: pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	LVB1560	UNIT
Maximum thermal resistance	$R_{\theta JA}^{(2)}$	25	$^\circ\text{C/W}$
	$R_{\theta JC}^{(1)}$	1.0	

Notes

(1) With heatsink

(2) Without heatsink, free air

EMC SURGE IMMUNITY TEST STANDARD ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted)					
STANDARD	TEST TYPE	TEST CONDITIONS	SYMBOL	CLASS	VALUE
IEC 61000-4-5	Power supply coupling mode, line to line	1.2/50 μs waveform, $R = 2\ \Omega$, $T_A = 25\text{ }^\circ\text{C}^{(1)}$	V_{PEAK}	-	6 kV maximum

Note

 (1) Immunity to IEC 61000-4-5 peak pulse voltage test, 1.2/50 μs , 2 Ω , 5 times each of positive and negative polarity test

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
LVB1560-M3/45	6.9	45	20	Tube

RATINGS AND CHARACTERISTICS CURVES

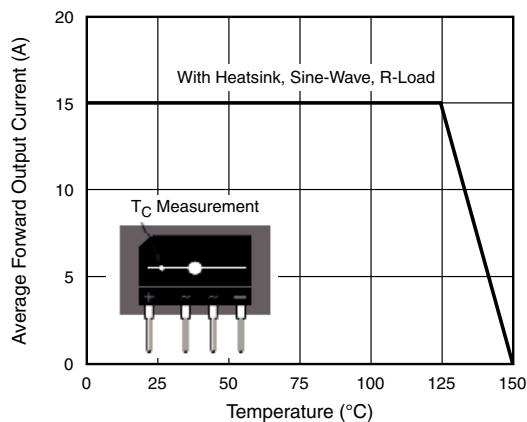
 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Derating Curve Output Rectified Current

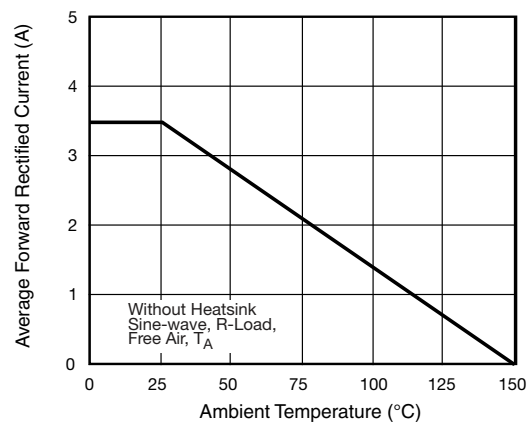


Fig. 2 - Forward Current Derating Curve

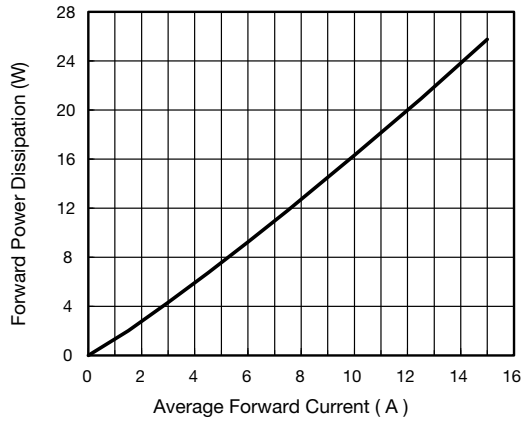


Fig. 3 - Forward Power Dissipation

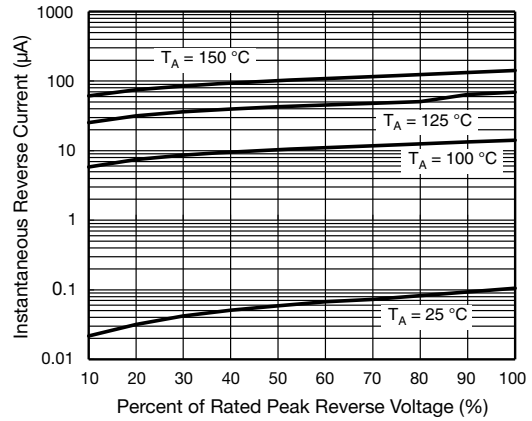


Fig. 5 - Typical Reverse Characteristics Per Diode

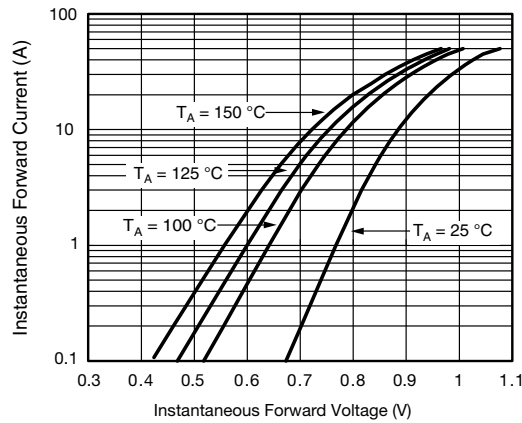


Fig. 4 - Typical Forward Characteristics Per Diode

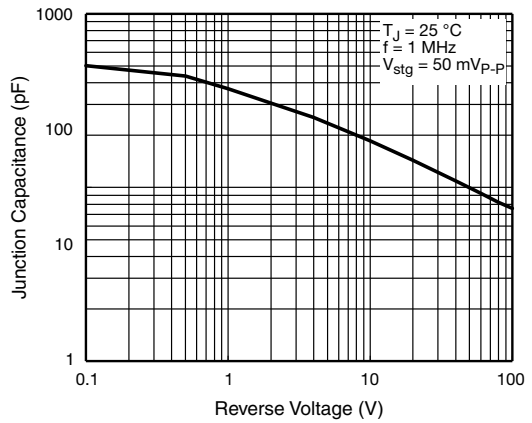
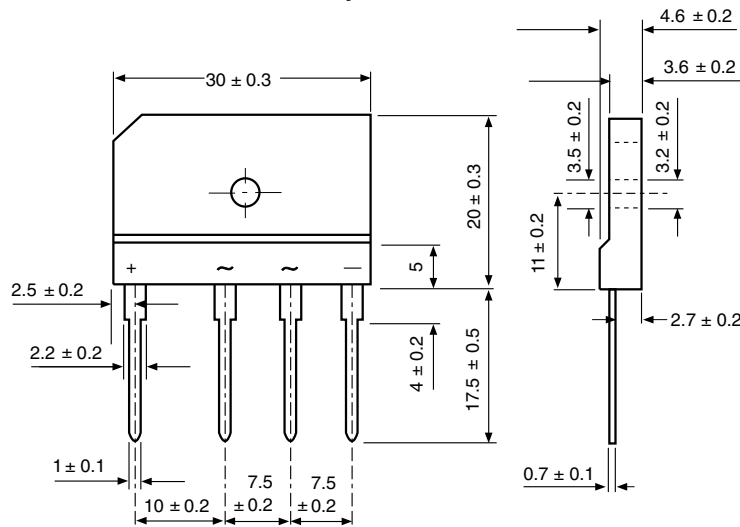


Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in millimeters

Case Style GSIB-5S





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