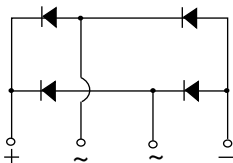
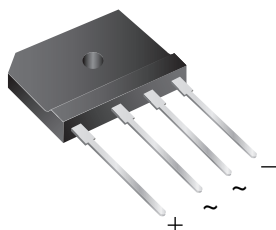


# Low $V_F$ Single-Phase Single In-Line Bridge Rectifiers



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<sub>RMS</sub>, 1 minute
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://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)

## LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	15 A
$V_{RRM}$	600 V
$I_{FSM}$	400 A
$I_R$	10 $\mu$ A
$V_F$ at $I_F = 7.5$ A, $T_A = 125$ °C	0.73 V
$T_J$ max.	150 °C
Package	GSIB-5S
Circuit configuration	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	A
	$T_A = 25$ °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	A <sup>2</sup> s
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 <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I <sub>F</sub> = 7.5 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.87	0.90	V
		T <sub>A</sub> = 125 °C		0.73	-	
Reverse current per diode	V <sub>R</sub> = 600 V	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	0.2	10	μA
		T <sub>A</sub> = 125 °C		60	-	
Typical reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>	1.8	-	μs
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	260	-	pF

**Notes**(1) Pulse test: 300  $\mu\text{s}$  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 $\mu\text{s}$ waveform, $R = 2\text{ }\Omega$ , $T_A = 25\text{ }^{\circ}\text{C}$ (1)	$V_{PEAK}$	-	6 kV maximum

**Note**(1) Immunity to IEC 61000-4-5 peak pulse voltage test, 1.2/50  $\mu\text{s}$ , 2  $\Omega$ , 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

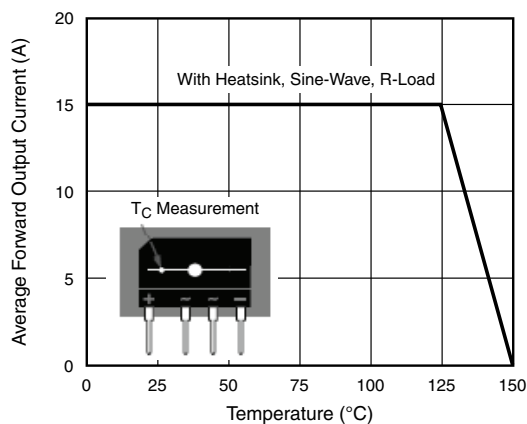
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Derating Curve Output Rectified Current

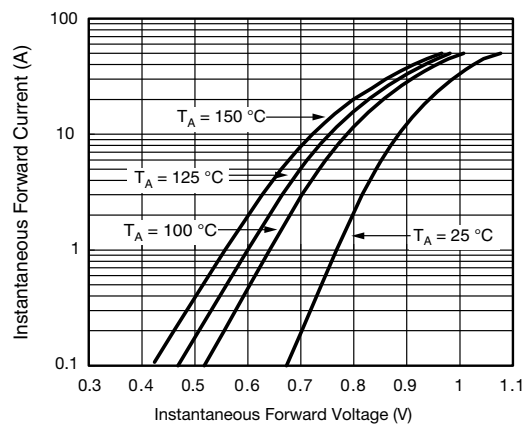


Fig. 4 - Typical Forward Characteristics Per Diode

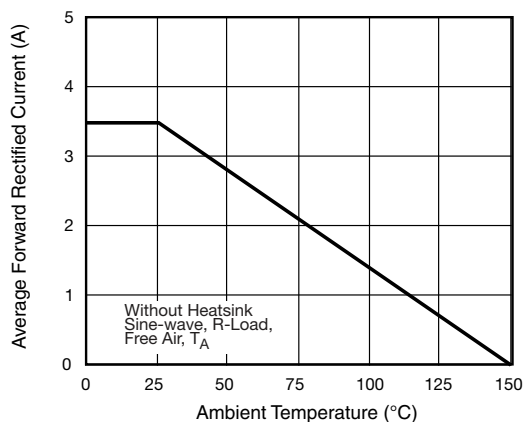


Fig. 2 - Forward Current Derating Curve

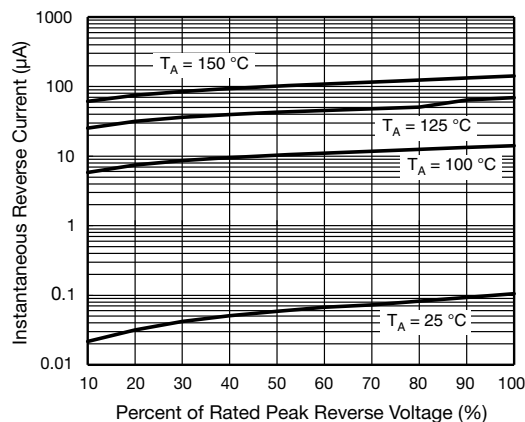


Fig. 5 - Typical Reverse Characteristics Per Diode

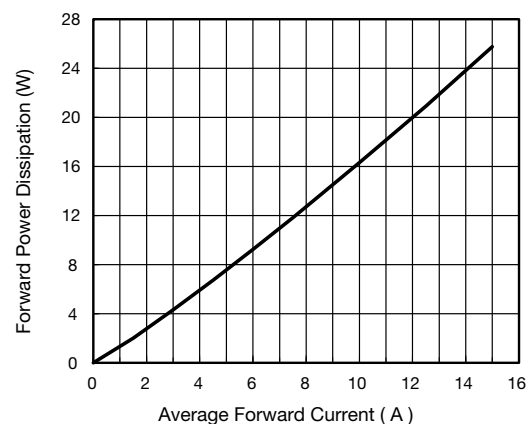


Fig. 3 - Forward Power Dissipation

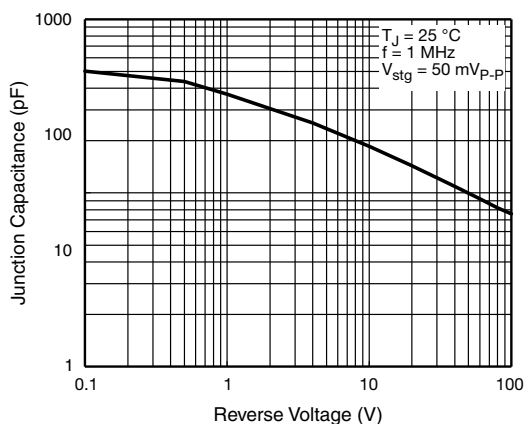
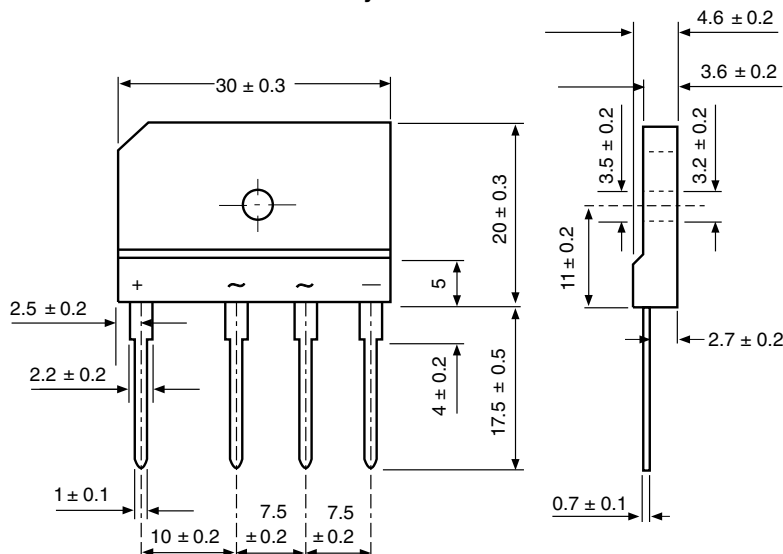


Fig. 6 - Typical Junction Capacitance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in millimeters

**Case Style GSIB-5S**




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