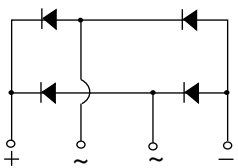
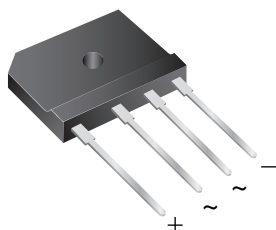


# Low $V_F$ Single-Phase Single In-Line Bridge Rectifiers



Case Style GSIB-5S



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

## LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	15 A
$V_{RRM}$	600 V
$I_{FSM}$	250 A
$I_R$	10 $\mu$ A
$V_F$ at $I_F = 7.5$ A, $T_A = 125$ °C	0.71 V
$T_J$ max.	150 °C
Package	GSIB-5S
Circuit configuration	In-line

## FEATURES

- UL recognition file number E312394
- Thin single in-line package
- Oxide planar chip junction
- Low forward voltage drop
- High surge current capability
- Low noise
- High case dielectric strength of 2500  $V_{RMS}$ , 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)

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	LVE1560E	UNIT
Marking code		LVE1560E	
Maximum repetitive peak reverse voltage	$V_{RRM}$	600	V
Maximum RMS voltage	$V_{RMS}$	420	V
Maximum DC blocking voltage	$V_{DC}$	600	V
Maximum average forward rectified output current at	$T_C = 120$ °C	$I_O^{(1)}$	A
	$T_A = 25$ °C	$I_O^{(2)}$	
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25$ °C	$I_{FSM}$	250	A
Rating for fusing ( $t < 8.3$ ms), $T_J = 25$ °C	$I^2t$	259	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** ( $T_J = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	$I_F = 7.5\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	0.85	0.90	V
		$T_J = 125\text{ }^{\circ}\text{C}$	0.71	-	
Reverse current per diode	$V_R = 600\text{ V}$	$T_J = 25\text{ }^{\circ}\text{C}$	0.03	10	$\mu\text{A}$
		$T_J = 125\text{ }^{\circ}\text{C}$	12.5	-	
Typical reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$	278	-	ns
Typical junction capacitance	4.0 V, 1 MHz	$C_J$	175	-	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	LVE1560E	UNIT
Maximum thermal resistance	$R_{\theta JA}$ (2)	24	$^{\circ}\text{C/W}$
	$R_{\theta JC}$ (1)	1	

**Notes**

(1) With heatsink

(2) Without heatsink, free air

**ORDERING INFORMATION** (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
LVE1560E-M3/P	6.7	P	20	Tube

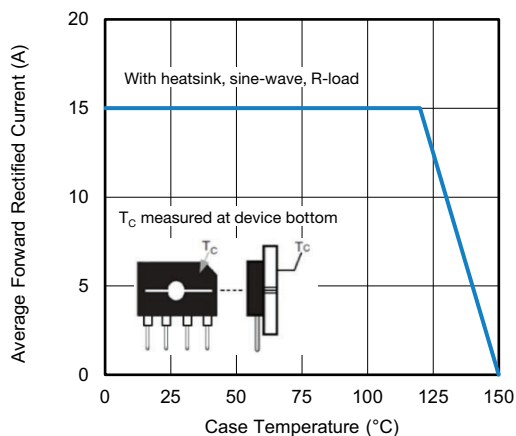
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Derating Curve Output Rectified Current

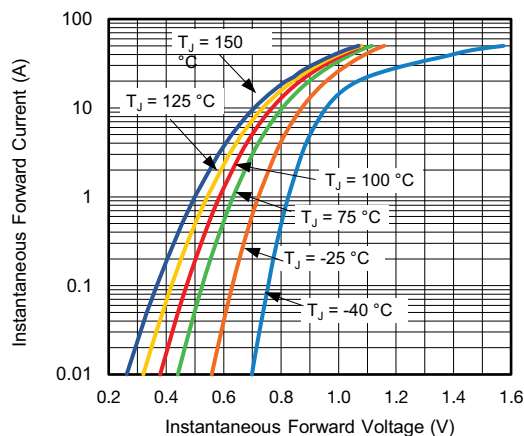


Fig. 4 - Typical Forward Characteristics Per Diode

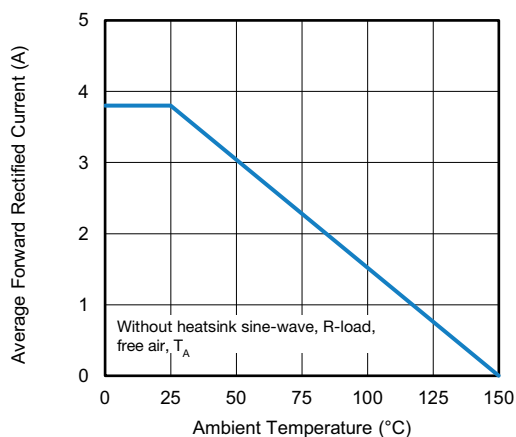


Fig. 2 - Forward Current Derating Curve

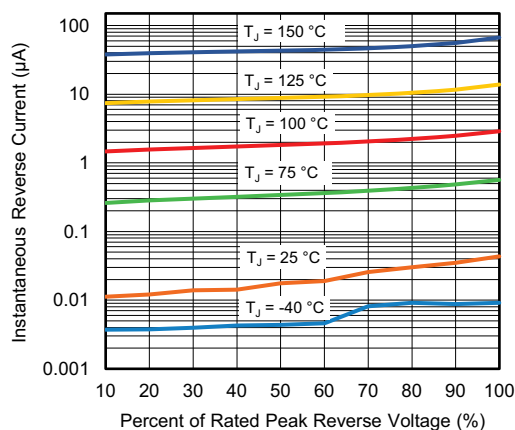


Fig. 5 - Typical Reverse Characteristics Per Diode

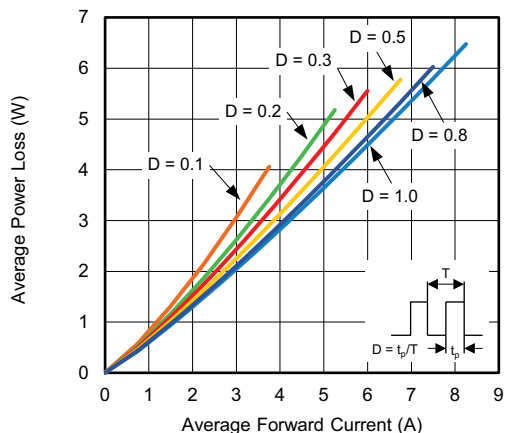


Fig. 3 - Forward Power Dissipation

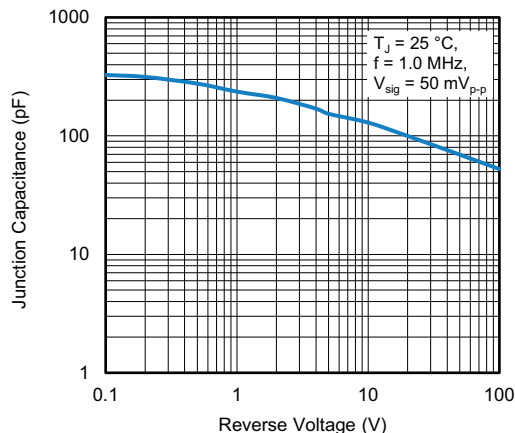


Fig. 6 - Typical Junction Capacitance Per Diode

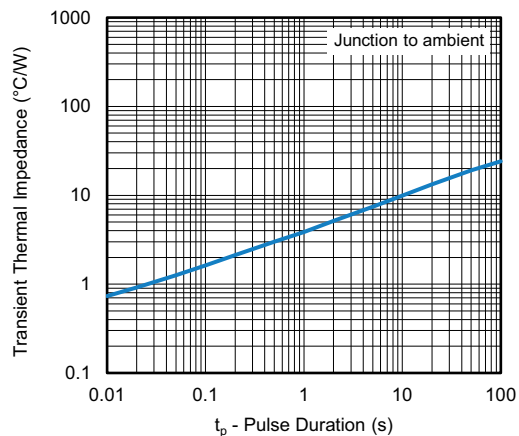
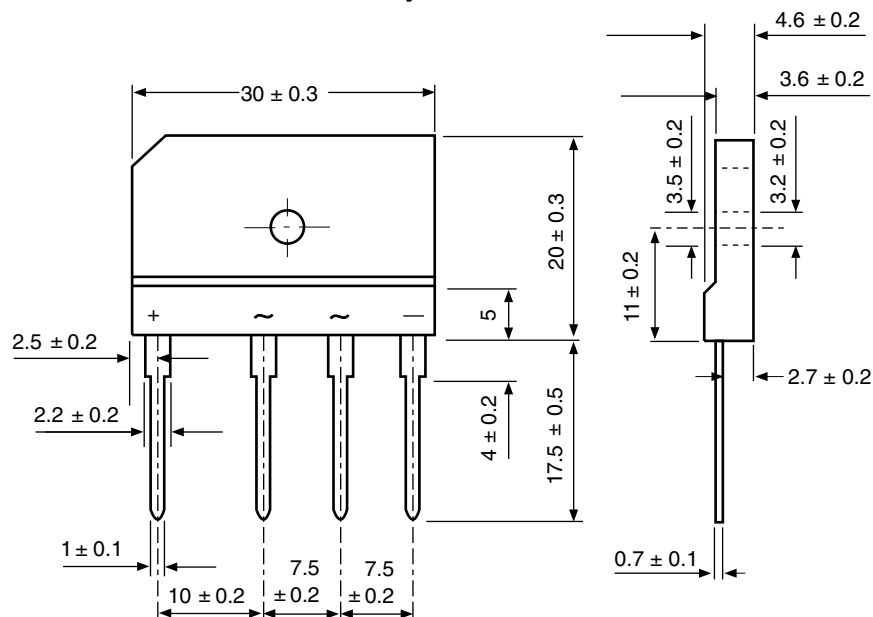


Fig. 7 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in millimeters

### Case Style GSIB-5S





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