COMPLIANT

HALOGEN

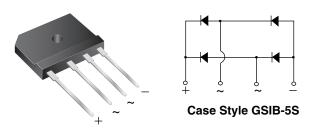
FREE



### www.vishay.com

## Vishay General Semiconductor

# Low V<sub>F</sub> Single-Phase Single In-Line Bridge Rectifiers



### **LINKS TO ADDITIONAL RESOURCES**



PRIMARY CHARACTERISTICS			
I <sub>F(AV)</sub>	25 A		
$V_{RRM}$	600 V		
I <sub>FSM</sub>	400 A		
I <sub>R</sub>	10 μA		
$V_F$ at $I_F = 12.5$ A, $T_A = 125$ °C	0.74 V		
T <sub>J</sub> 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
- High case dielectric strength of 2500 V<sub>RMS</sub>
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

### 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 <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	LVE2560	UNIT	
Marking code			LVE2560		
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 <sub>C</sub> = 118.7 °C	I <sub>O</sub> <sup>(1)</sup>	25	А	
	T <sub>A</sub> = 25 °C	I <sub>O</sub> <sup>(2)</sup>	3.5	^	
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25\ ^{\circ}C$		I <sub>FSM</sub>	400	А	
Rating for fusing (t < 8.3 ms), T <sub>J</sub> = 25 °C		l <sup>2</sup> t	664	A <sup>2</sup> s	
Operating junction and storage temperature range		T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C	

### Notes

- (1) Unit case mounted on aluminum plate heatsink
- (2) Units mounted on PCB without heatsink



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	TEST CO	TEST CONDITIONS		TYP.	MAX.	UNIT	
Instantaneous forward voltage	I <sub>F</sub> = 12.5 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.87	0.92	V	
	IF = 12.5 A	T <sub>A</sub> = 125 °C		0.74	-		
Reverse current per diode	V <sub>R</sub> = 600 V	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	0.03	10	μΑ	
		T <sub>A</sub> = 125 °C		15.0	-		
Typical reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> =	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		309	-	ns	
Typical junction capacitance	4.0 V, 1 MHz	4.0 V, 1 MHz		240	-	pF	

#### **Notes**

(1) Pulse test: 300 µs pulse width, 1 % duty cycle
(2) Pulse test: pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	LVE2560	UNIT	
Maximum thermal resistance	R <sub>0JA</sub> (2)	24	°C/W	
	R <sub>0</sub> JC (1)	1		

### Notes

(1) With heatsink

(2) Without heatsink, free air

ORDERING INFORMATION (Example)						
PREFERRED P/N	PREFERRED P/N UNIT WEIGHT (g) PREFERRED PACKAGE CODE BASE QUANTITY DELIVERY					
LVE2560-M3/P	6.9	Р	20	Tube		

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### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

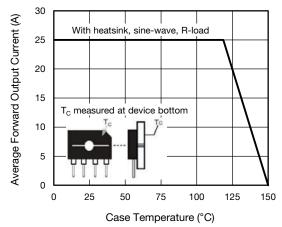


Fig. 1 - Derating Curve Output Rectified Current

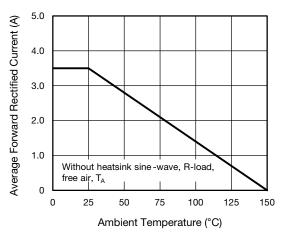


Fig. 2 - Forward Current Derating Curve

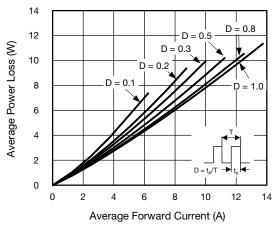


Fig. 3 - Forward Power Dissipation

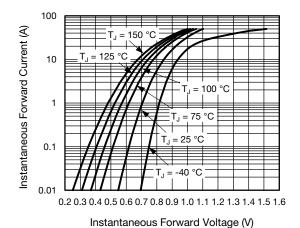


Fig. 4 - Typical Forward Characteristics Per Diode

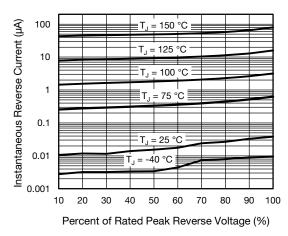


Fig. 5 - Typical Reverse Characteristics Per Diode

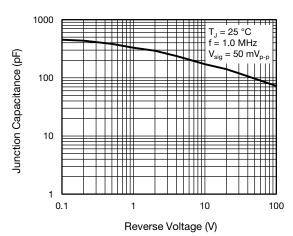


Fig. 6 - Typical Junction Capacitance Per Diode



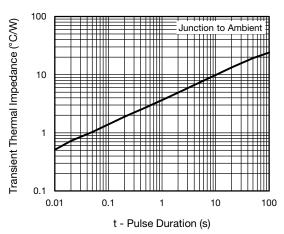
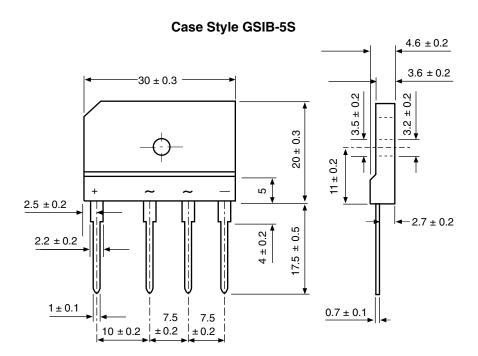


Fig. 7 - Typical Transient Thermal Impedance

### **PACKAGE OUTLINE DIMENSIONS** in millimeters





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