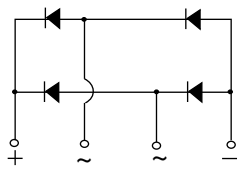
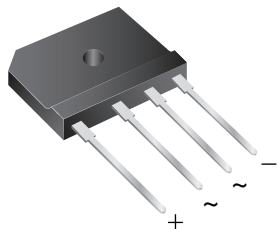


## Low $V_F$ Single-Phase Single In-Line Bridge Rectifiers



Case Style GSIB-5S

### 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>
- 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)



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

### 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    |
| $I_{F(AV)}$                             | 25 A       |
| $V_{RRM}$                               | 600 V      |
| $I_{FSM}$                               | 550 A      |
| $I_R$                                   | 10 $\mu$ A |
| $V_F$ at $I_F = 12.5$ A, $T_A = 125$ °C | 0.76 V     |
| $T_J$ max.                              | 150 °C     |
| Diode variations                        | In-Line    |

| MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)                          |                               |               |                  |
|----------------------------------------------------------------------------------|-------------------------------|---------------|------------------|
| PARAMETER                                                                        | SYMBOL                        | LVB2560       | UNIT             |
| Maximum repetitive peak reverse voltage                                          | $V_{RRM}$                     | 600           | V                |
| Maximum average forward rectified output current at                              | $T_C = 105$ °C<br>$I_O^{(1)}$ | 25            | A                |
|                                                                                  | $T_A = 25$ °C<br>$I_O^{(2)}$  | 3.6           |                  |
| Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25$ °C | $I_{FSM}$                     | 550           | A                |
| Rating for fusing ( $t < 8.3$ ms)                                                | $I^2t$                        | 1255          | 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

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted) |                                                                        |                                     |      |      |               |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------|------|------|---------------|
| PARAMETER                                                                                      | TEST CONDITIONS                                                        | SYMBOL                              | TYP. | MAX. | UNIT          |
| Instantaneous forward voltage                                                                  | $I_F = 12.5\text{ A}$                                                  | $T_A = 25\text{ }^{\circ}\text{C}$  | 0.89 | 0.92 | V             |
|                                                                                                |                                                                        | $T_A = 125\text{ }^{\circ}\text{C}$ | 0.76 | -    |               |
| Reverse current per diode                                                                      | $V_R = 600\text{ V}$                                                   | $T_A = 25\text{ }^{\circ}\text{C}$  | 0.2  | 10   | $\mu\text{A}$ |
|                                                                                                |                                                                        | $T_A = 125\text{ }^{\circ}\text{C}$ | 140  | -    |               |
| 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  | -    | $\mu\text{s}$ |
| Typical junction capacitance                                                                   | 4.0 V, 1 MHz                                                           | $C_J$                               | 330  | -    | pF            |

**Notes**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

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

| <b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted) |                     |         |                      |
|---------------------------------------------------------------------------------------------|---------------------|---------|----------------------|
| PARAMETER                                                                                   | SYMBOL              | LVB2560 | 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

| <b>EMC SURGE IMMUNITY TEST STANDARD</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ , 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

| <b>ORDERING INFORMATION</b> (Example) |                 |                        |               |               |
|---------------------------------------|-----------------|------------------------|---------------|---------------|
| PREFERRED P/N                         | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| LVB2560-M3/45                         | 7.1             | 45                     | 20            | Tube          |

**RATINGS AND CHARACTERISTICS CURVES**

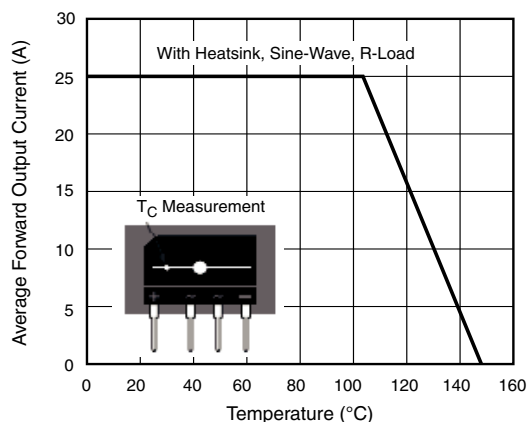
( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Derating Curve Output Rectified Current

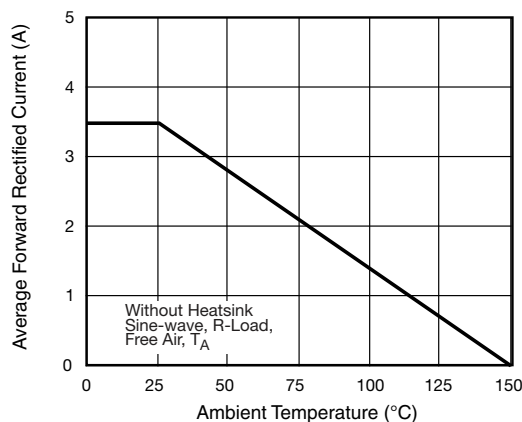


Fig. 2 - Forward Current Derating Curve

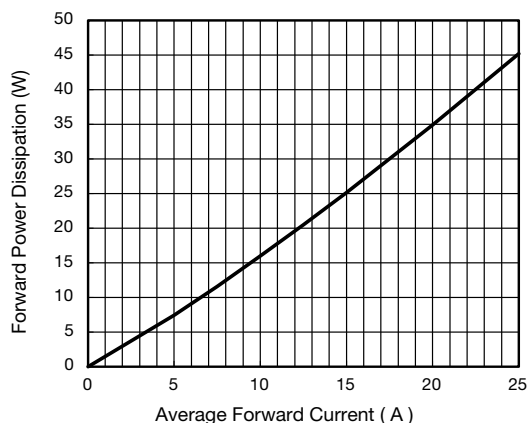


Fig. 3 - Forward Power Dissipation

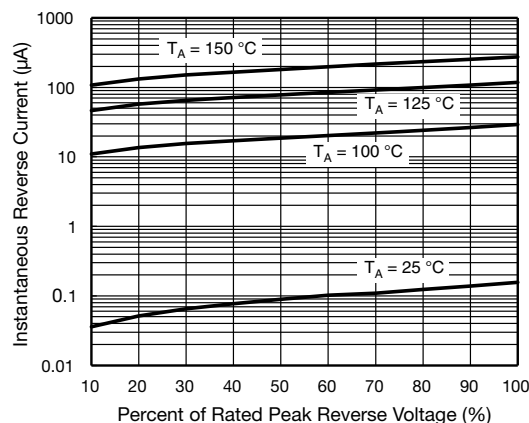


Fig. 5 - Typical Reverse Characteristics Per Diode

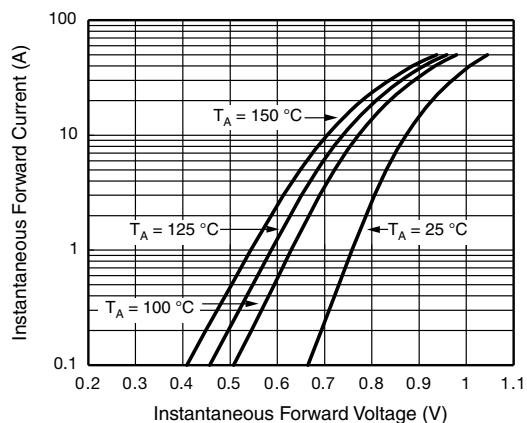


Fig. 4 - Typical Forward Characteristics Per Diode

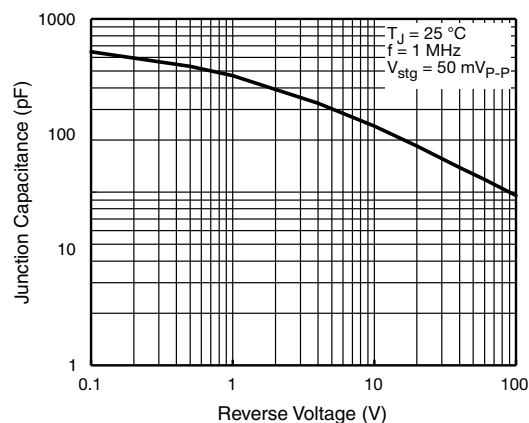
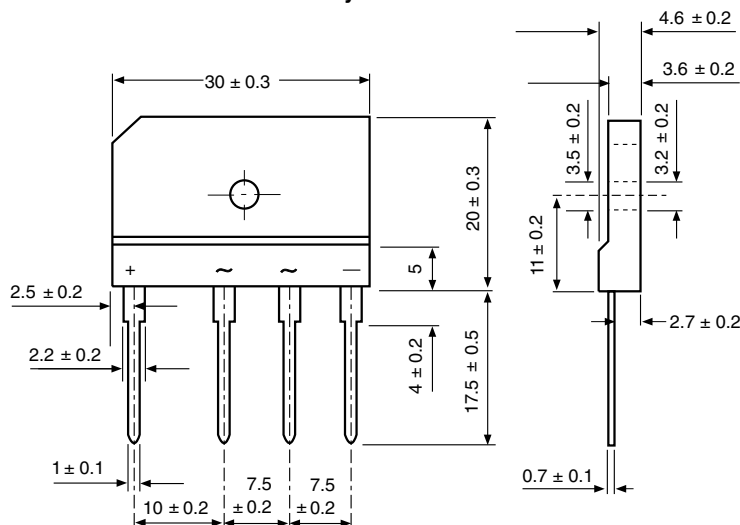


Fig. 6 - Typical Junction Capacitance Per Diode

# **PACKAGE OUTLINE DIMENSIONS** in millimeters

## Case Style GSIB-5S





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