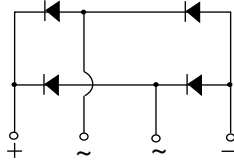
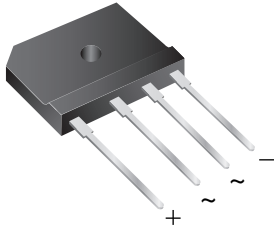


Low V_F Single-Phase Single In-Line Bridge Rectifiers


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} , 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

LINKS TO ADDITIONAL RESOURCES



| PRIMARY CHARACTERISTICS | |
|--|------------|
| $I_{F(AV)}$ | 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 |
| Package | GSIB-5S |
| Circuit configuration | In-line |

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 | LVB1560 | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 600 | V |
| Maximum average forward rectified output current at | $T_C = 125$ °C | $I_O^{(1)}$ | 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} | 400 | A |
| Rating for fusing ($t < 8.3$ ms) | $T_J = 25$ °C | I^2t | A ² 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 ($T_A = 25\text{ }^\circ\text{C}$ 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)

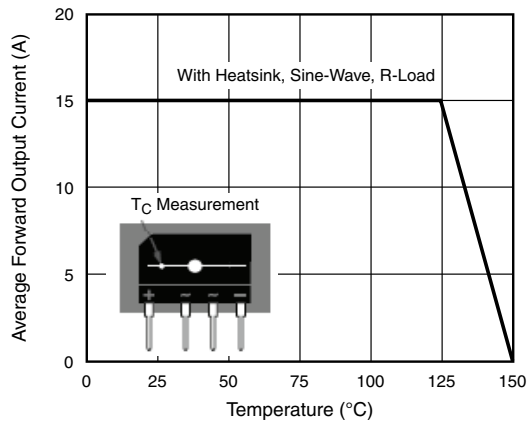


Fig. 1 - Derating Curve Output Rectified Current

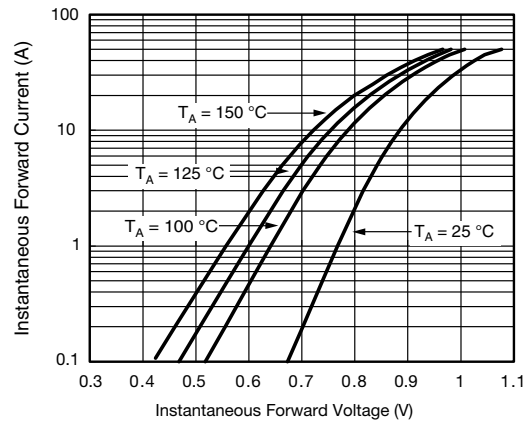


Fig. 4 - Typical Forward Characteristics Per Diode

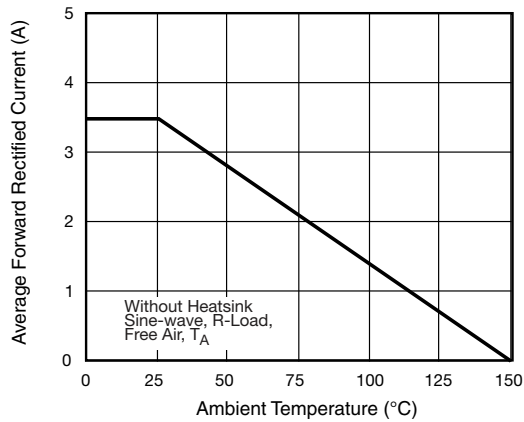


Fig. 2 - Forward Current Derating Curve

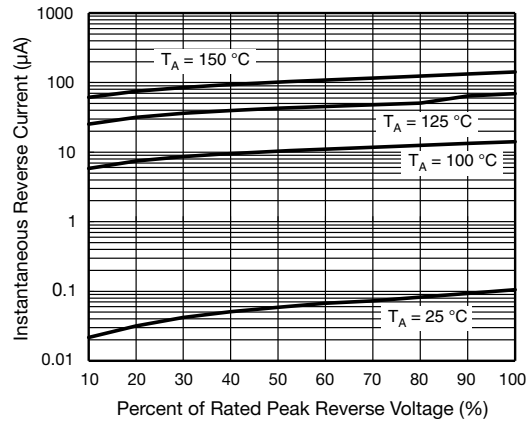


Fig. 5 - Typical Reverse Characteristics Per Diode

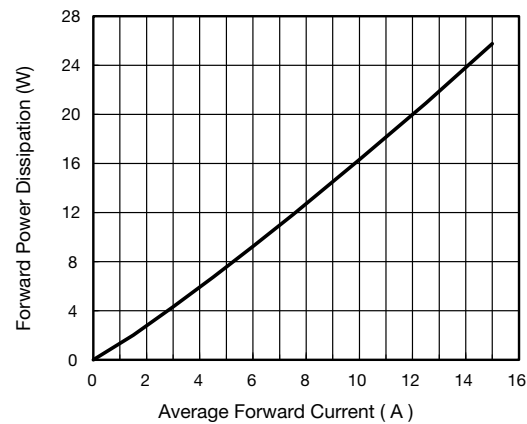


Fig. 3 - Forward Power Dissipation

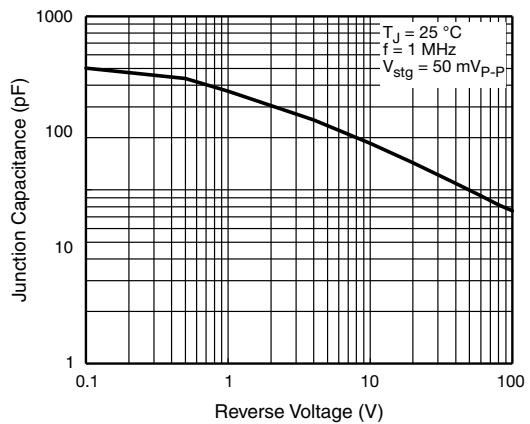
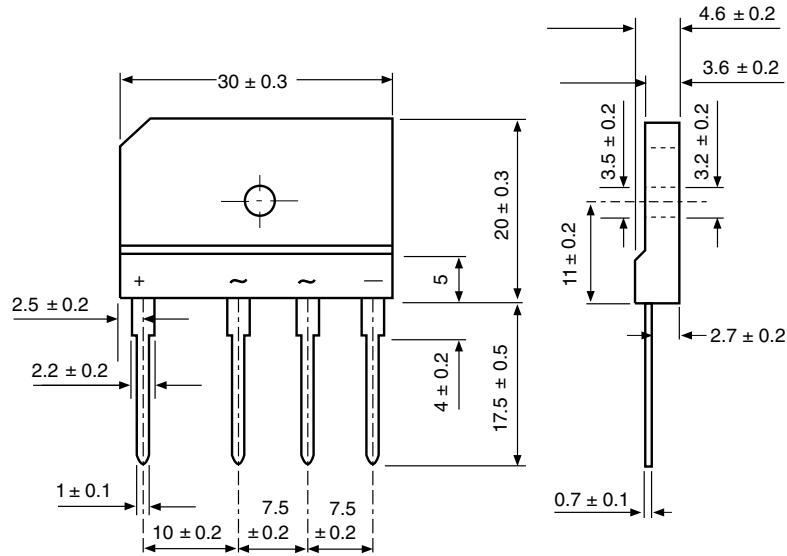


Fig. 6 - Typical Junction Capacitance Per Diode



PACKAGE OUTLINE DIMENSIONS in millimeters

Case Style GSIB-5S





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