

3A, 1000V Fast Recovery Glass Passivated Bridge Rectifier

FEATURES

- Glass passivated junction
- Ideal for automated placement
- UL Recognized File # E-326854
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

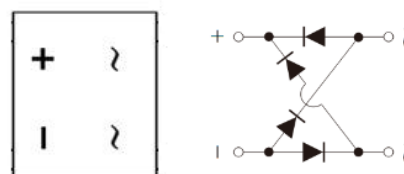
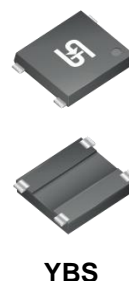
APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

MECHANICAL DATA

- Case: YBS
- Molding compound meets UL 94V-0 flammability rating
- Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1 whisker test
- Polarity: As marked
- Weight: 0.22g (approximately)

| KEY PARAMETERS | | |
|----------------|-------|------|
| PARAMETER | VALUE | UNIT |
| I_F | 3.0 | A |
| V_{RRM} | 1000 | V |
| I_{FSM} | 90 | A |
| T_{JMAX} | 150 | °C |
| Package | YBS | |
| Configuration | Quad | |



| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | |
|---|------------------------------------|-------------|----------------------|
| PARAMETER | | RYBS30M | UNIT |
| Marking code on the device | | RY30M | |
| Repetitive peak reverse voltage | V_{RRM} | 1000 | V |
| Reverse voltage, total rms value | $V_{R(RMS)}$ | 700 | V |
| Forward current | I_F | 3.0 | A |
| Surge peak forward current single half sine-wave superimposed on rated load per diode | 8.3 ms at $T_A = 25^\circ\text{C}$ | 90 | A |
| | 1.0 ms at $T_A = 25^\circ\text{C}$ | 220 | A |
| I^2t value (of a surge on-state current) at 8.3ms | I^2t | 33 | A^2s |
| Junction temperature | T_J | -55 to +150 | °C |
| Storage temperature | T_{STG} | -55 to +150 | °C |

| THERMAL PERFORMANCE | | | |
|--|-----------------|------------|-------------|
| PARAMETER | SYMBOL | TYP | UNIT |
| Junction-to-lead thermal resistance | $R_{\theta JL}$ | 13 | °C/W |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 58 | °C/W |
| Junction-to-case thermal resistance | $R_{\theta JC}$ | 11 | °C/W |

Thermal Performance Note: Units mounted on recommended PCB (16mm x 16mm Cu pad test board)

| ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | |
|---|---|---------------|------------|------------|---------------|
| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
| Forward voltage ⁽¹⁾ | $I_F = 1.5\text{ A}, T_J = 25^\circ\text{C}$ | V_F | 1.01 | - | V |
| | $I_F = 3.0\text{ A}, T_J = 25^\circ\text{C}$ | | 1.10 | 1.30 | V |
| | $I_F = 1.5\text{ A}, T_J = 125^\circ\text{C}$ | | 0.84 | - | V |
| | $I_F = 3.0\text{ A}, T_J = 125^\circ\text{C}$ | | 0.95 | 1.17 | V |
| Reverse current @ rated V_R ⁽²⁾ | $T_J = 25^\circ\text{C}$ | I_R | - | 5 | μA |
| | $T_J = 125^\circ\text{C}$ | | - | 167 | μA |
| Junction capacitance | 1 MHz, $V_R = 4.0\text{V}$ | C_J | 35 | - | pF |
| Reverse recovery time | $I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$ | t_{rr} | - | 300 | ns |

Notes:

1. Pulse test with PW=0.3 ms
2. Pulse test with PW=30 ms

| ORDERING INFORMATION | | |
|-----------------------------|----------------|------------------|
| ORDERING CODE | PACKAGE | PACKING |
| RYBS30M M2G | YBS | 3,000 / 13" Reel |

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

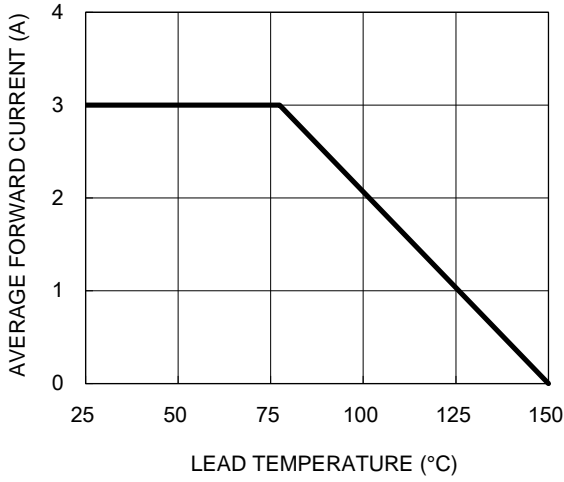


Fig.2 Typical Junction Capacitance

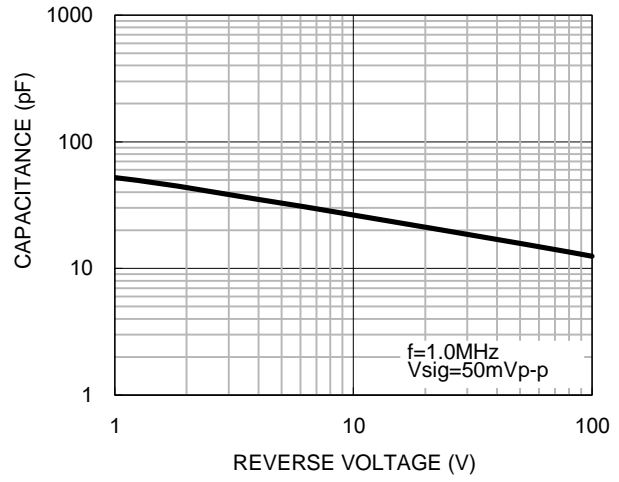


Fig.3 Typical Reverse Characteristics

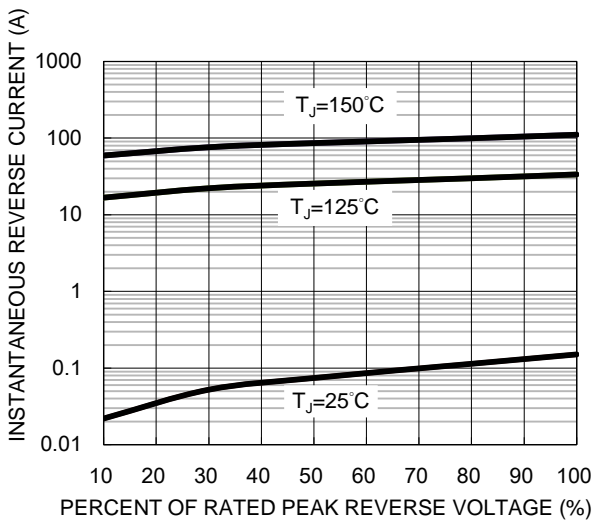
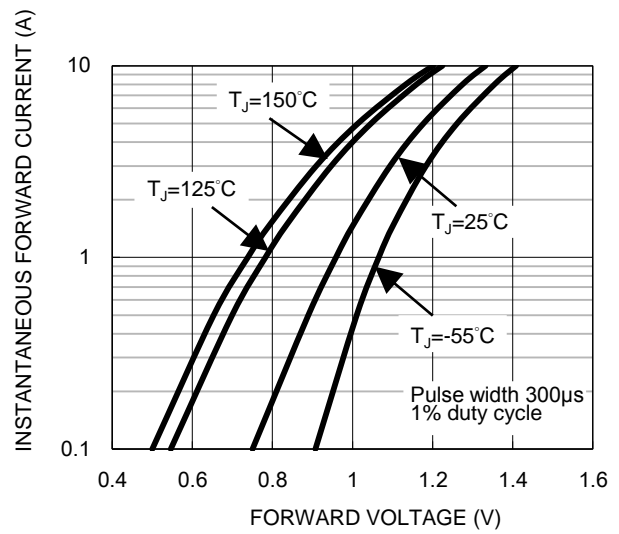
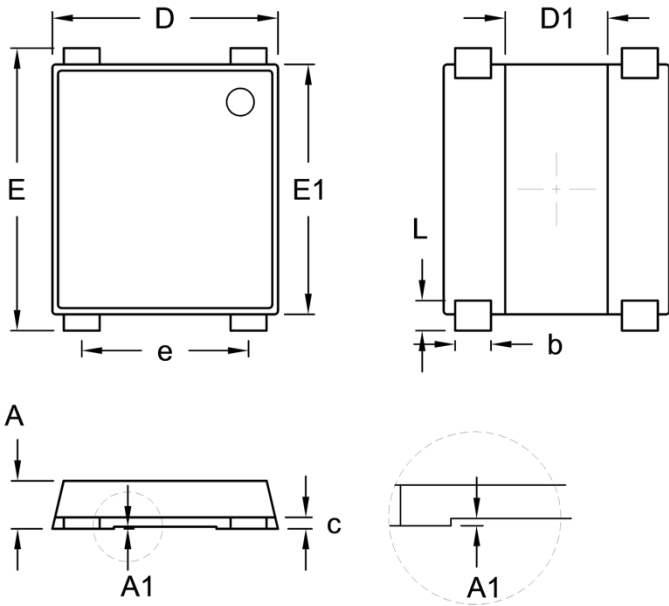


Fig.4 Typical Forward Characteristics



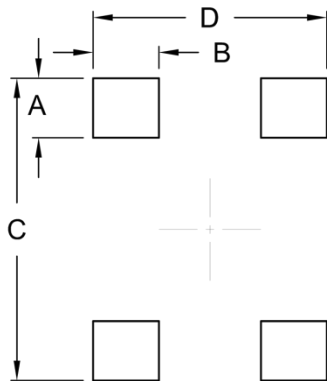
PACKAGE OUTLINE DIMENSIONS (Unit: Millimeters)

YBS



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|------|-------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 1.30 | 1.50 | 0.051 | 0.059 |
| A1 | 0.04 | 0.08 | 0.002 | 0.003 |
| b | 0.95 | 1.15 | 0.037 | 0.045 |
| c | 0.27 | 0.40 | 0.011 | 0.016 |
| D | 6.50 | 6.70 | 0.256 | 0.264 |
| D1 | 2.90 | 3.10 | 0.114 | 0.122 |
| E | 7.90 | 8.60 | 0.311 | 0.339 |
| E1 | 7.20 | 7.40 | 0.283 | 0.291 |
| e | 5.00 | 5.20 | 0.197 | 0.205 |
| L | 0.70 | 1.05 | 0.028 | 0.041 |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 1.80 | 0.070 |
| B | 2.00 | 0.078 |
| C | 9.15 | 0.360 |
| D | 7.10 | 0.279 |

MARKING DIAGRAM



P/N = Marking Code
 YW = Date Code
 F = Factory Code

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