

Switching Diodes Silicon Epitaxial Planar

1SS226

1. Applications

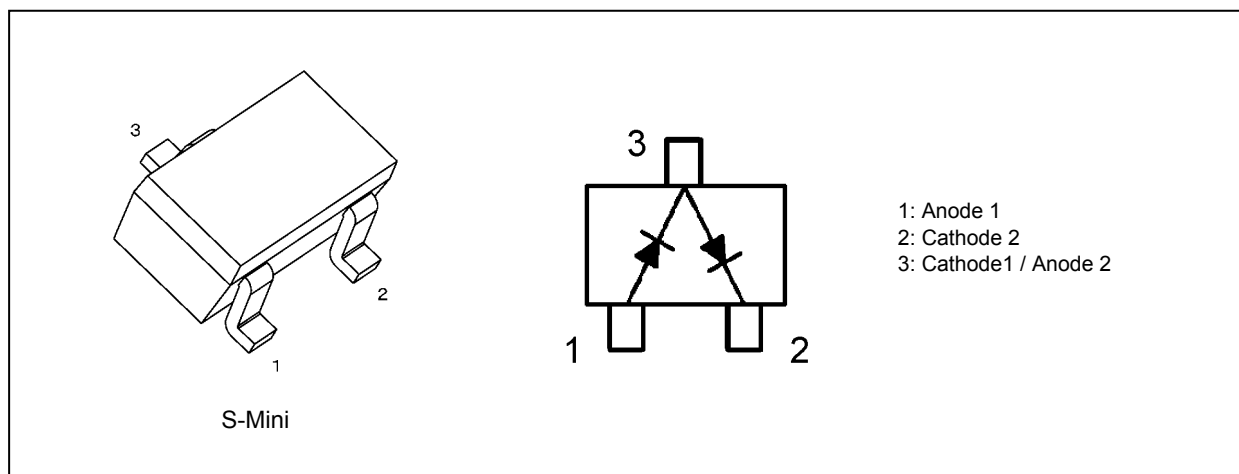
- Ultra-High-Speed Switching

2. Features

- (1) AEC-Q101 qualified (Note 1)

Note 1: For detail information, please contact to our sales.

3. Packaging and Internal Circuit



Start of commercial production

1982-09

4. Absolute Maximum Ratings (Note) (Unless otherwise specified, $T_a = 25\text{ }^\circ\text{C}$)

| Characteristics | Symbol | Note | Rating | Unit |
|---|-----------|--------------------|------------|------------------|
| Peak reverse voltage | V_{RM} | | 85 | V |
| Reverse voltage | V_R | | 80 | |
| Peak forward current | I_{FM} | (Note 1) | 300 | mA |
| Average rectified current | I_O | (Note 1) | 100 | |
| Power dissipation | P_D | (Note 2) | 150 | mW |
| Non-repetitive peak forward surge current | I_{FSM} | (Note 1), (Note 3) | 2 | A |
| Junction temperature | T_j | | 125 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | | -55 to 125 | |

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc.).

Note 1: Unit rating. Total rating = Unit rating \times 70%

Note 2: Mounted on a glass epoxy circuit board of 20 mm \times 20 mm, Pad dimension of 4 mm \times 4 mm.

Note 3: Measured with a 10 ms pulse.

5. Electrical Characteristics (Unless otherwise specified, $T_a = 25\text{ }^\circ\text{C}$)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|-----------------------|------------|---|-----|------|------|---------------|
| Forward voltage | $V_{F(1)}$ | $I_F = 1\text{ mA}$ | — | 0.60 | — | V |
| | $V_{F(2)}$ | $I_F = 10\text{ mA}$ | — | 0.72 | — | |
| | $V_{F(3)}$ | $I_F = 100\text{ mA}$ | — | 0.90 | 1.20 | |
| Reverse current | $I_{R(1)}$ | $V_R = 30\text{ V}$ | — | — | 0.1 | μA |
| | $I_{R(2)}$ | $V_R = 80\text{ V}$ | — | — | 0.5 | |
| Total capacitance | C_t | $V_R = 0\text{ V}$, $f = 1\text{ MHz}$ | — | 0.9 | 3.0 | pF |
| Reverse recovery time | t_{rr} | $I_F = 10\text{ mA}$ See Fig. 5.1. | — | 1.6 | 4.0 | ns |

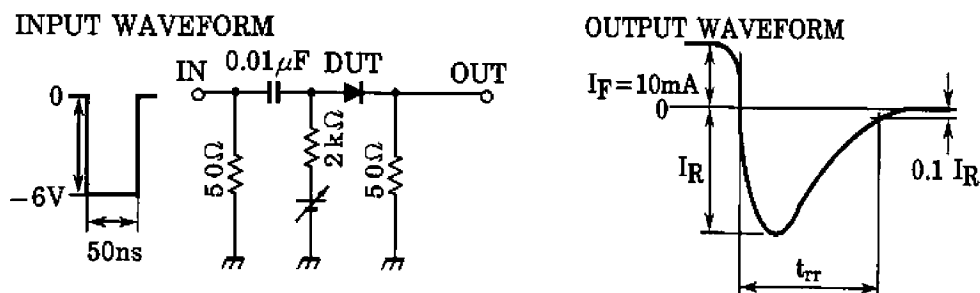


Fig. 5.1 Reverse recovery time (t_{rr}) Test circuit

6. Marking

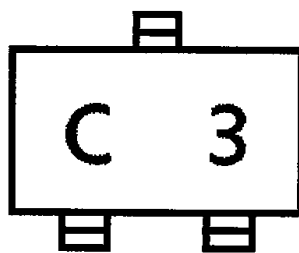


Fig. 6.1 Marking

7. Land Pattern Dimensions (for reference only)

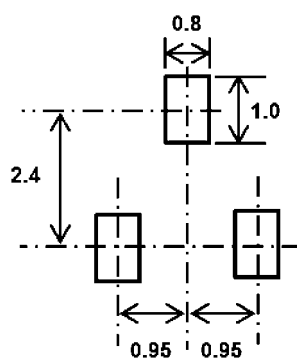


Fig. 7.1 S-Mini (Unit: mm)

8. Characteristics Curves (Note)

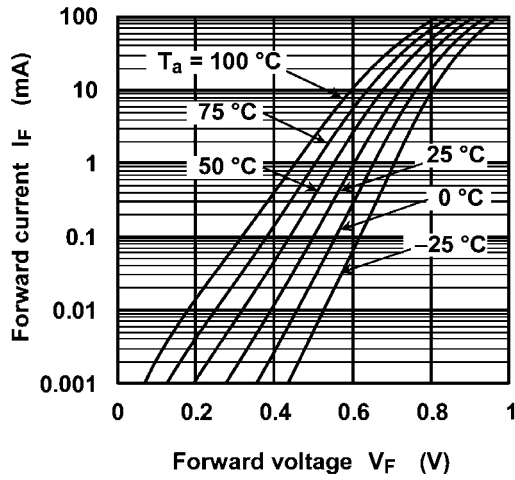


Fig. 8.1 $I_F - V_F$

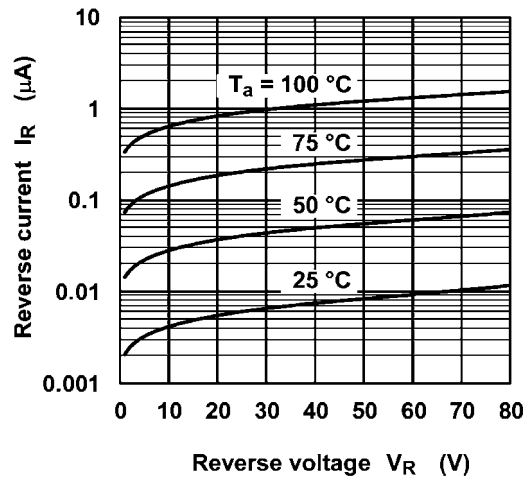


Fig. 8.2 $I_R - V_R$

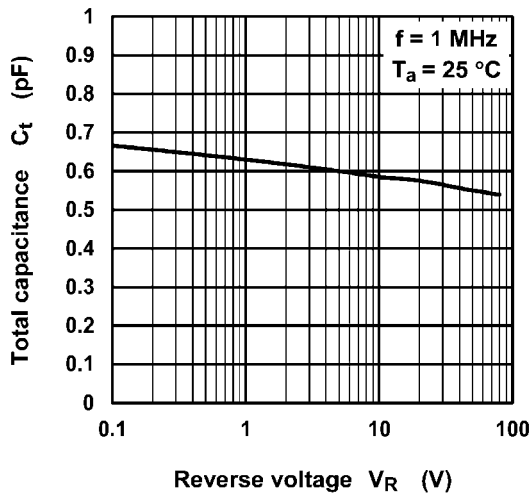


Fig. 8.3 $C_t - V_R$

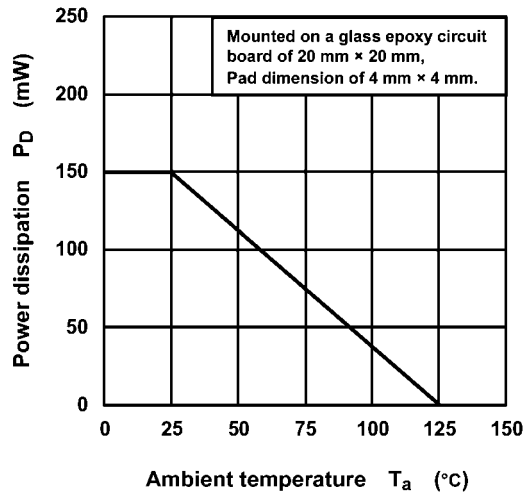
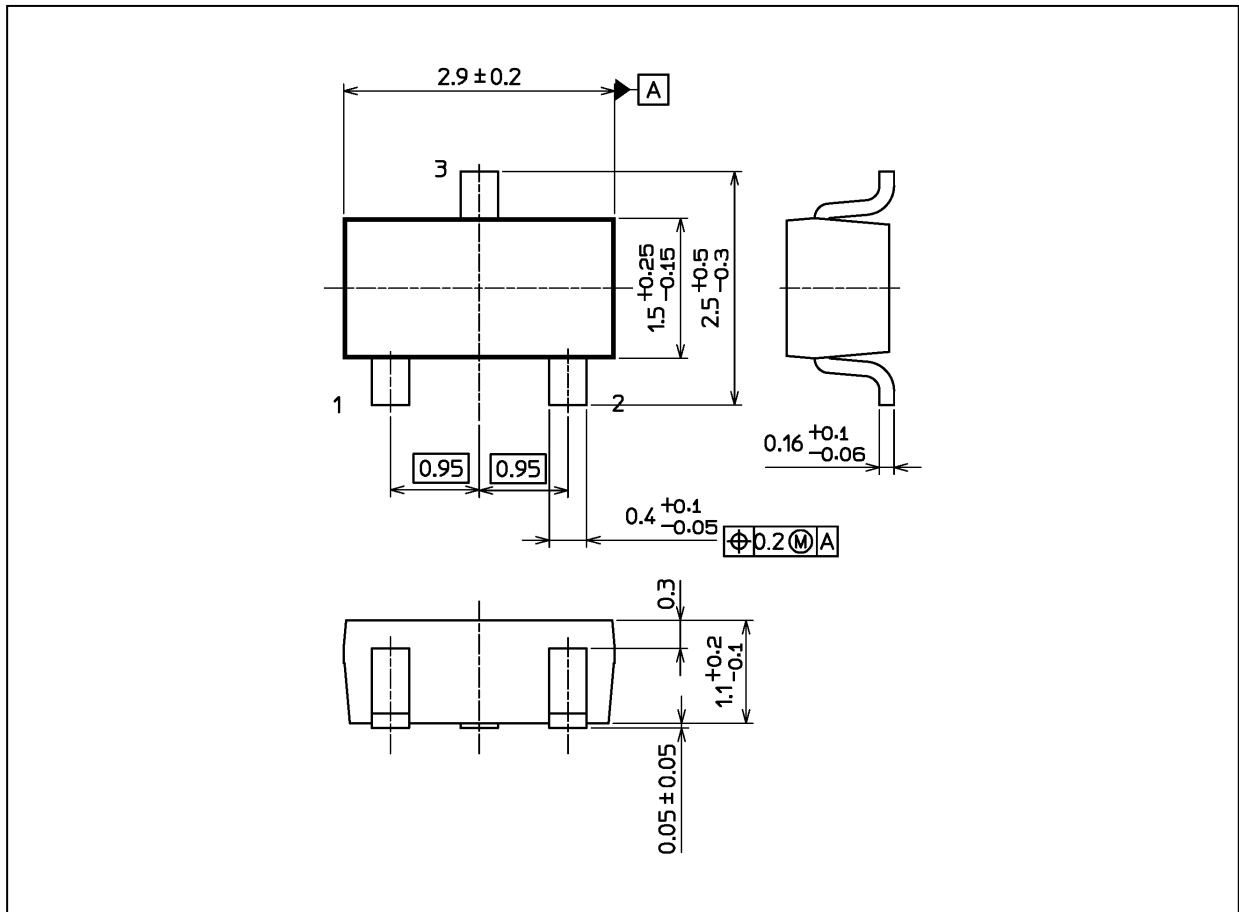


Fig. 8.4 $P_D - T_a$

Note: The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

Package Dimensions

Unit: mm



Weight: 12 mg (typ.)

| Package Name(s) |
|------------------|
| TOSHIBA: 2-3F1S |
| Nickname: S-Mini |

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