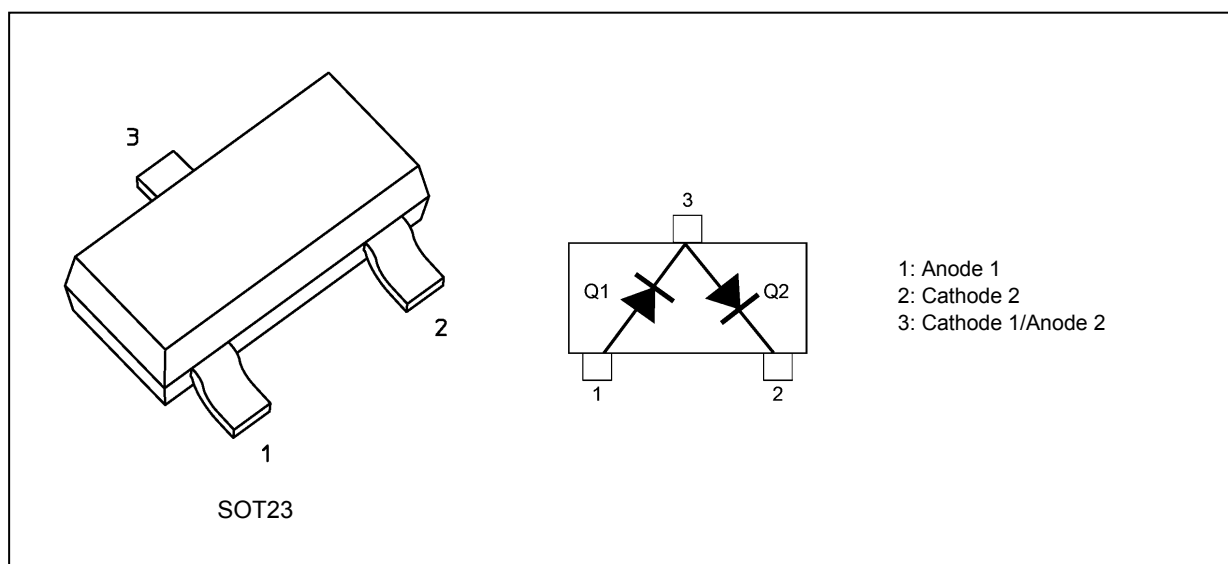


BAV99

1. Applications

- Ultra-High-Speed Switching

2. Packaging and Internal Circuit



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

| Characteristics | Symbol | Note | Rating | Unit |
|---|-----------|----------|------------|--------------------|
| Peak reverse voltage | V_{RM} | | 100 | V |
| Reverse voltage | V_R | | 100 | |
| Peak forward current | I_{FM} | (Note 1) | 500 | mA |
| Average rectified current | I_O | (Note 2) | 215 | mA |
| Non-repetitive peak forward surge current | I_{FSM} | (Note 3) | 2 | A |
| Power dissipation | P_D | | 150 | mW |
| | | (Note 4) | 320 | |
| Junction temperature | T_j | | 150 | $^{\circ}\text{C}$ |
| Storage temperature | T_{stg} | | -55 to 150 | |

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 40%

Note 2: Unit rating. Total rating = Unit rating \times 55%

Note 3: Measured with a 10 ms pulse.

Note 4: Mounted on an FR4 board (25.4 mm \times 25.4 mm \times 1.6 mm, Cu pad: 0.42 mm² \times 3)

Start of commercial production

2016-08

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

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|-----------------------|-----------|--------------------------------------|-----|------|-------|------|
| Forward voltage | $V_F (1)$ | $I_F = 1\text{ mA}$ | — | — | 0.715 | V |
| | $V_F (2)$ | $I_F = 10\text{ mA}$ | — | — | 0.855 | |
| | $V_F (3)$ | $I_F = 50\text{ mA}$ | — | — | 1.0 | |
| | $V_F (4)$ | $I_F = 150\text{ mA}$ | — | — | 1.25 | |
| Reverse current | $I_R (1)$ | $V_R = 25\text{ V}$ | — | — | 30 | nA |
| | $I_R (2)$ | $V_R = 80\text{ V}$ | — | — | 200 | |
| Total capacitance | C_t | $V_R = 0\text{ V}, f = 1\text{ MHz}$ | — | 0.9 | — | pF |
| Reverse recovery time | t_{rr} | $I_F = 10\text{ mA}$, See Fig. 4.1. | — | — | 3.0 | ns |

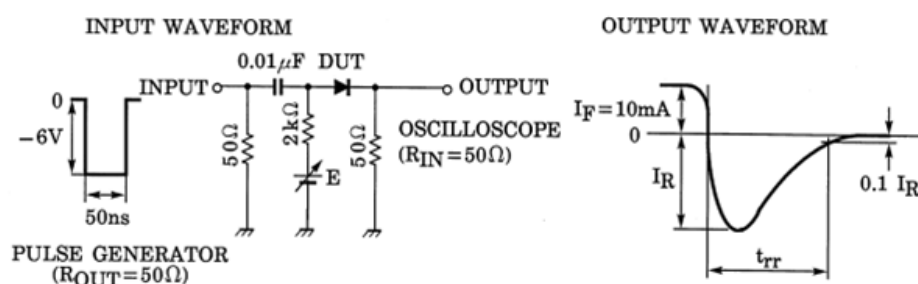
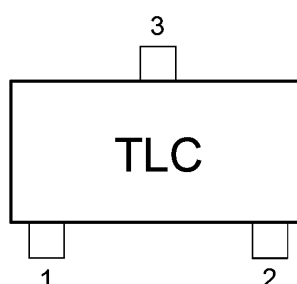
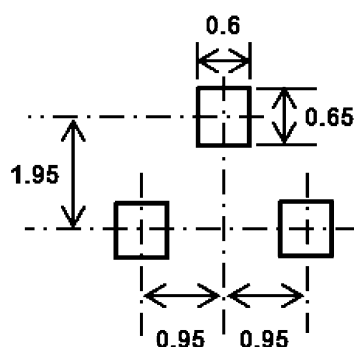


Fig. 4.1 Reverse recovery time (t_{rr}) Test circuit

5. Marking



6. Land Pattern Dimensions (for reference only)



SOT23 (Unit: mm)

7. Characteristics Curves (Note)

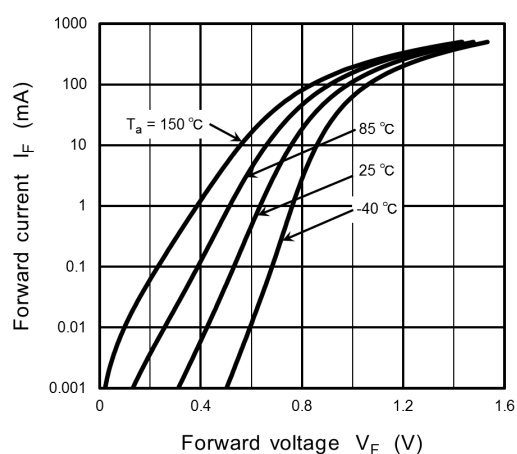


Fig. 7.1 $I_F - V_F$

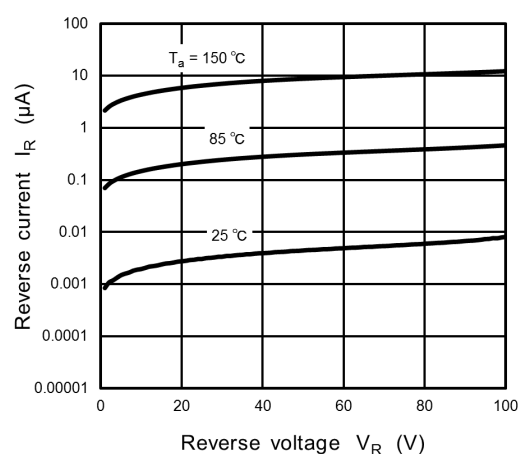


Fig. 7.2 $I_R - V_R$

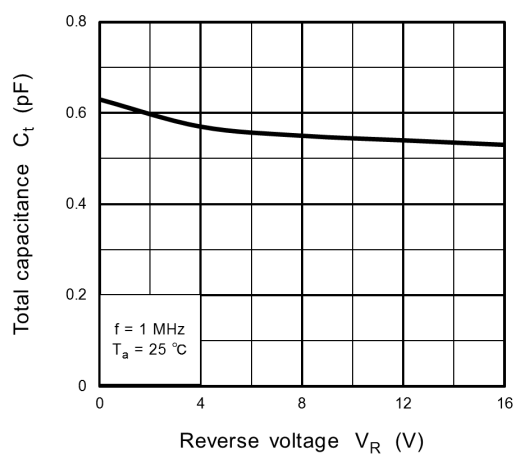


Fig. 7.3 $C_t - V_R$

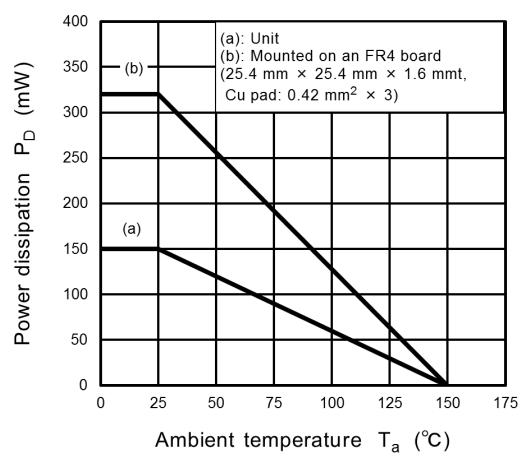
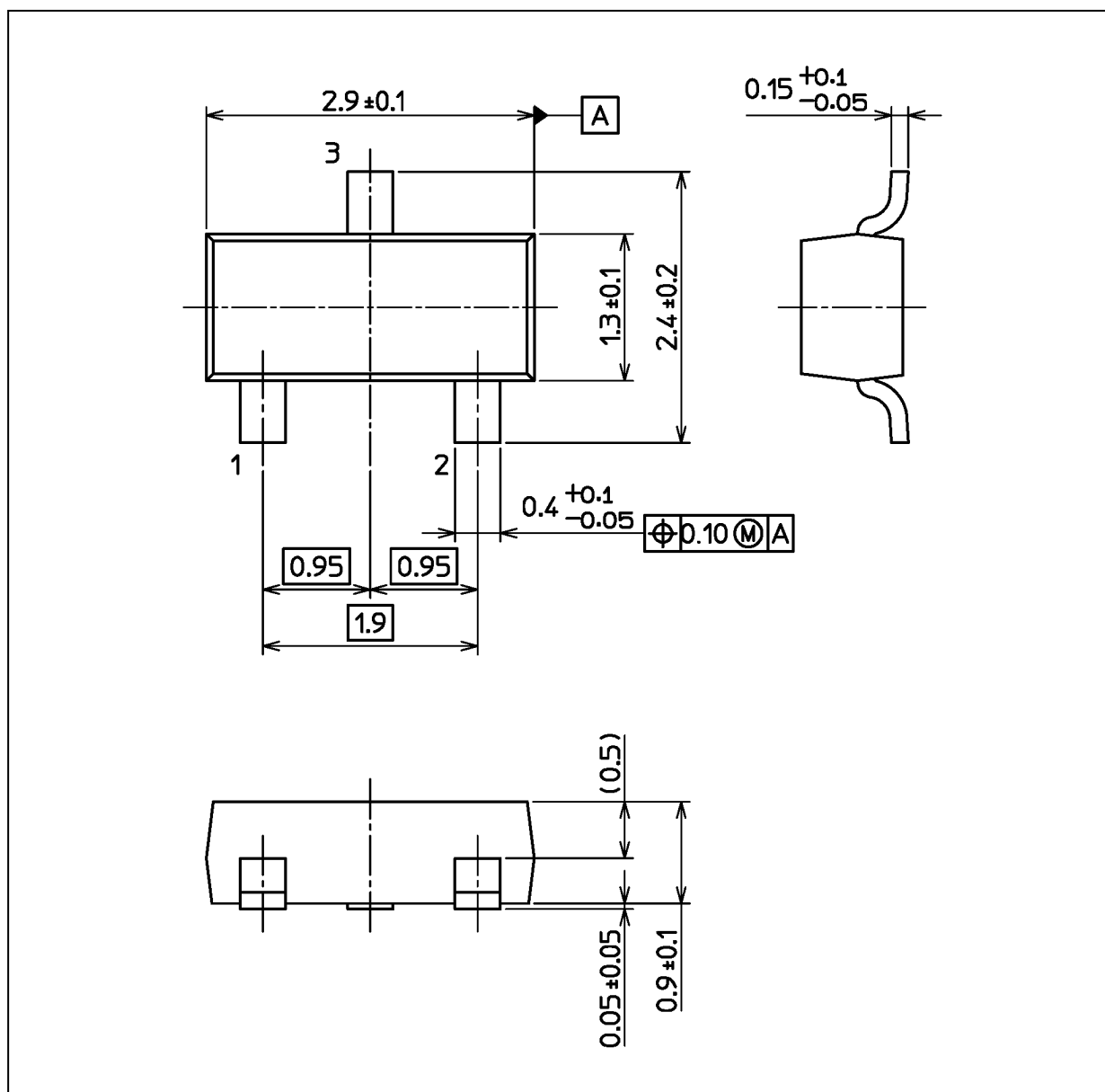


Fig. 7.4 $P_D - T_a$

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

Package Dimensions

Unit: mm



Weight: 0.009 g (typ.)

| Package Name(s) |
|-----------------|
| JEDEC: SOT-23 |
| Nickname: SOT23 |

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