

# DSF01S30SL

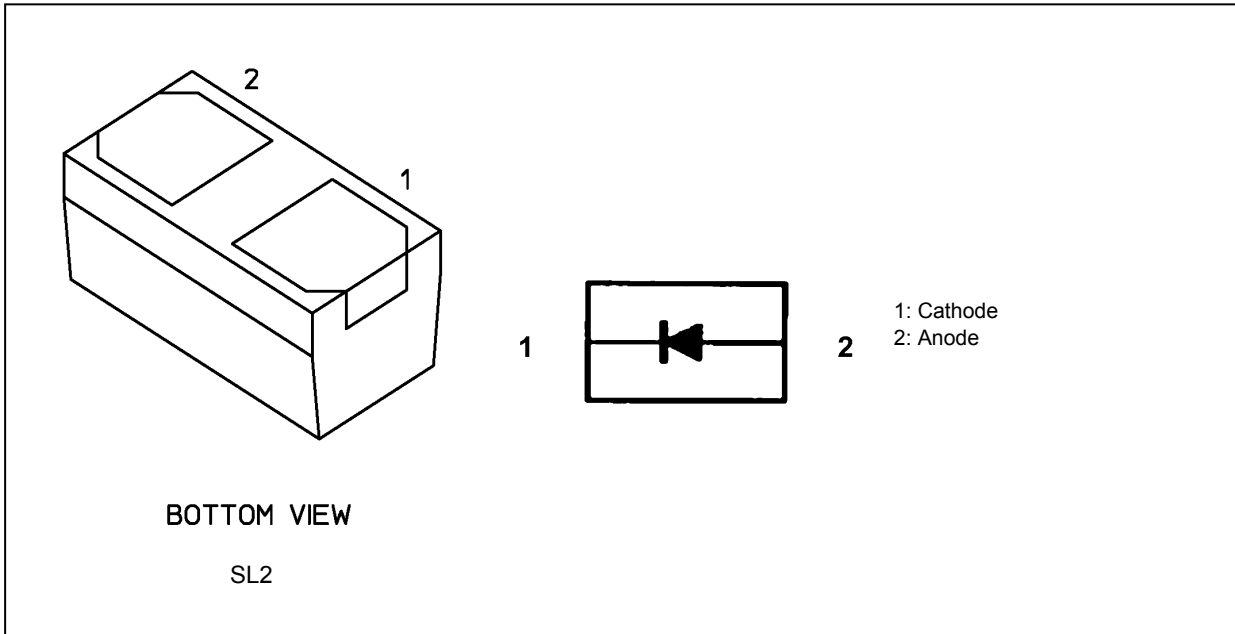
## 1. Applications

- High-Speed Switching

## 2. Features

- (1) Low forward voltage:  $V_F = 0.41 \text{ V (typ.) @ } I_F = 100 \text{ mA}$

## 3. Packaging and Internal Circuit



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

| Characteristics                           | Symbol    | Note     | Rating     | Unit             |
|---|-----------|----------|------------|------------------|
| Reverse voltage                           | $V_R$     |          | 30         | V                |
| Peak forward current                      | $I_{FM}$  |          | 200        | mA               |
| Average rectified current                 | $I_O$     | (Note 1) | 100        |                  |
| Non-repetitive peak forward surge current | $I_{FSM}$ | (Note 2) | 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: Mounted on a glass epoxy circuit board of 25.4 mm × 25.4 mm × 1.6 mm, Pad dimension of 645 mm<sup>2</sup>.

Note 2: Measured with a 10 ms pulse.

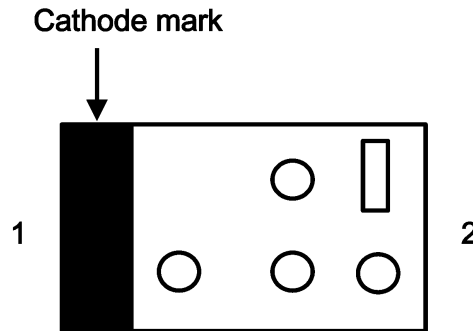
Start of commercial production

2015-06

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

| Characteristics   | Symbol | Note | Test Condition                       | Min | Typ. | Max | Unit          |
|-------------------|--------|------|--------------------------------------|-----|------|-----|---------------|
| Forward voltage   | $V_F$  |      | $I_F = 10\text{ mA}$                 | —   | 0.27 | 0.3 | V             |
|                   |        |      | $I_F = 100\text{ mA}$                | —   | 0.41 | 0.5 |               |
| Reverse current   | $I_R$  |      | $V_R = 10\text{ V}$                  | —   | —    | 7   | $\mu\text{A}$ |
|                   |        |      | $V_R = 30\text{ V}$                  | —   | —    | 50  |               |
| Total capacitance | $C_t$  |      | $V_R = 0\text{ V}, f = 1\text{ MHz}$ | —   | 9.3  | —   | pF            |

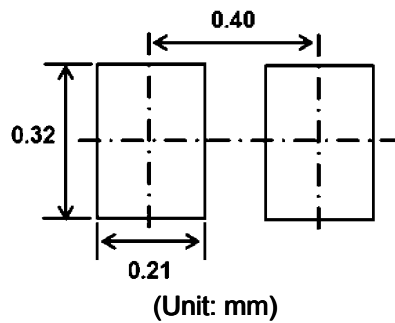
**6. Marking**



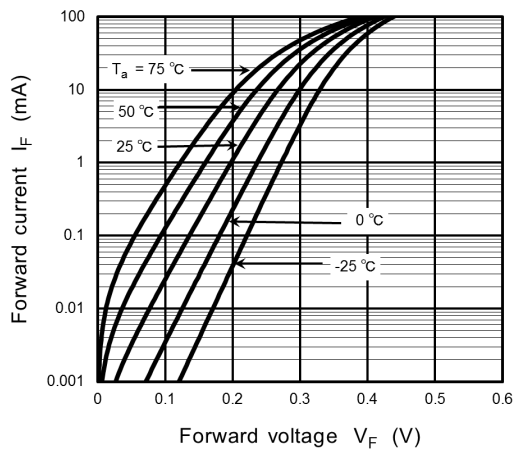
**7. Usage Considerations**

- Schottky barrier diodes (SBDs) have reverse leakage greater than other types of diodes. This makes SBDs more susceptible to thermal runaway under high-temperature and high-voltage conditions. Thus, both forward and reverse power losses of SBDs should be considered for thermal and safety design.

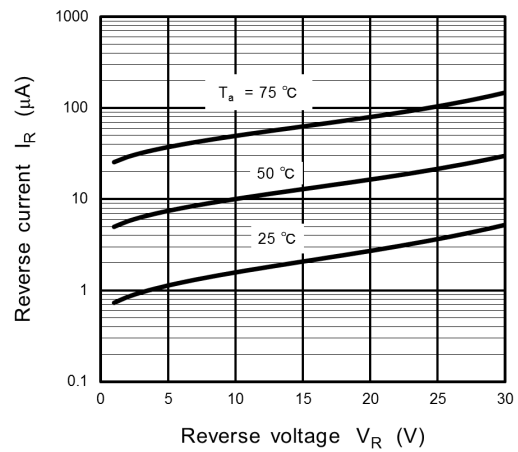
**8. Land Pattern Dimensions (for reference only)**



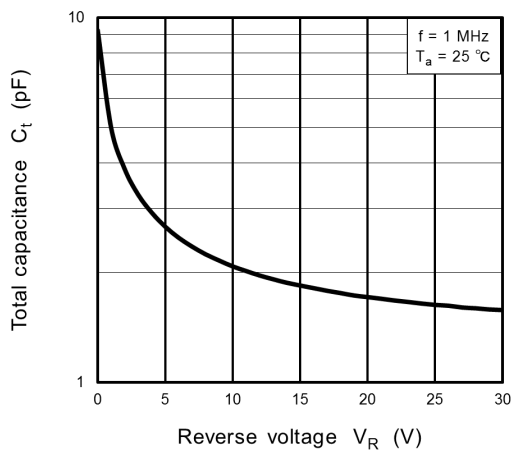
**9. Characteristics Curves (Note)**



**Fig. 9.1  $I_F - V_F$**



**Fig. 9.2  $I_R - V_R$**

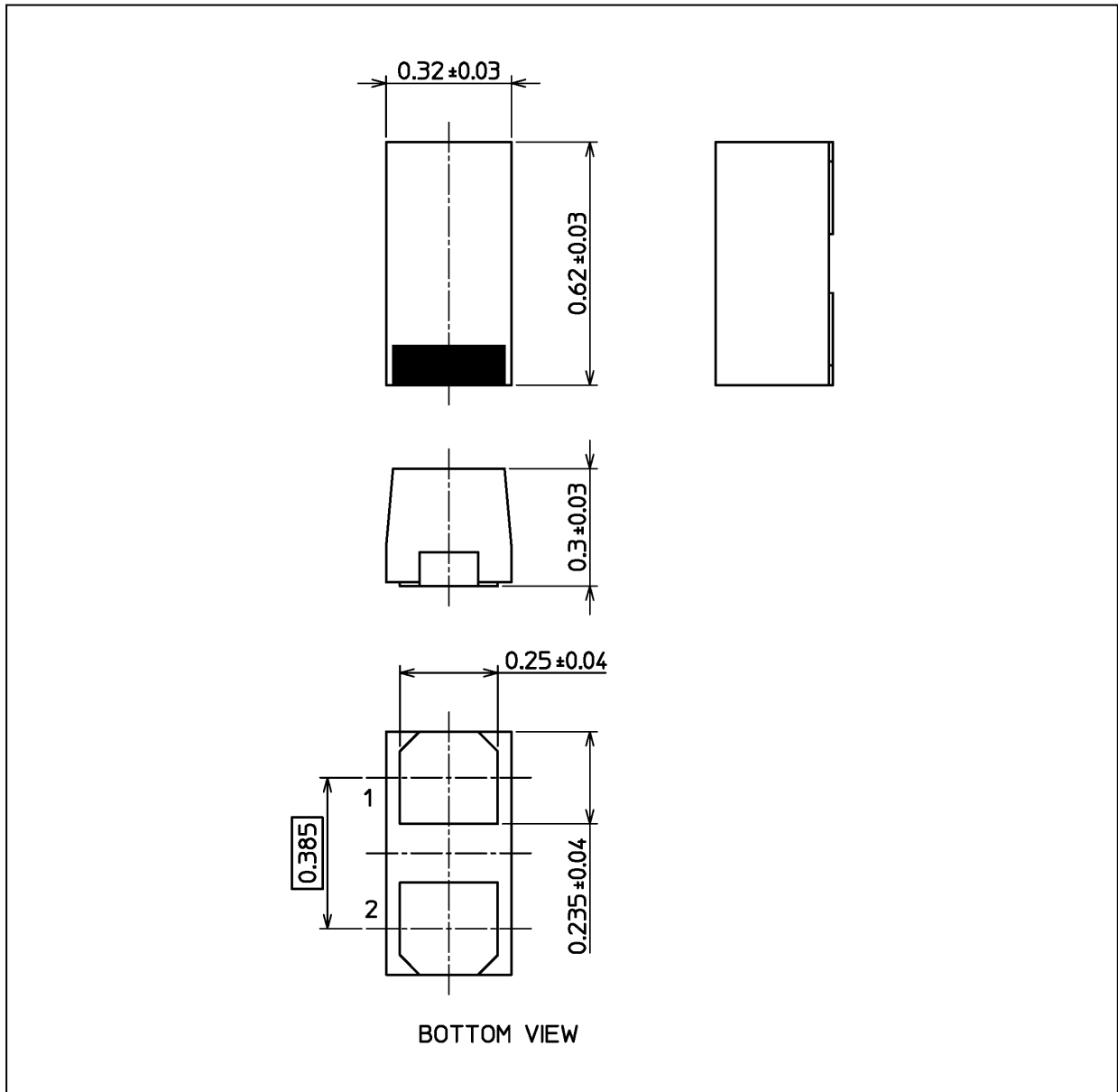


**Fig. 9.3  $C_t - V_R$**

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

Package Dimensions

Unit: mm



Weight: 0.2 mg (typ.)

| Package Name(s)  |
|------------------|
| TOSHIBA: 1-1AL1A |
| Nickname: SL2    |

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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

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Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А