

DSF01S30SL

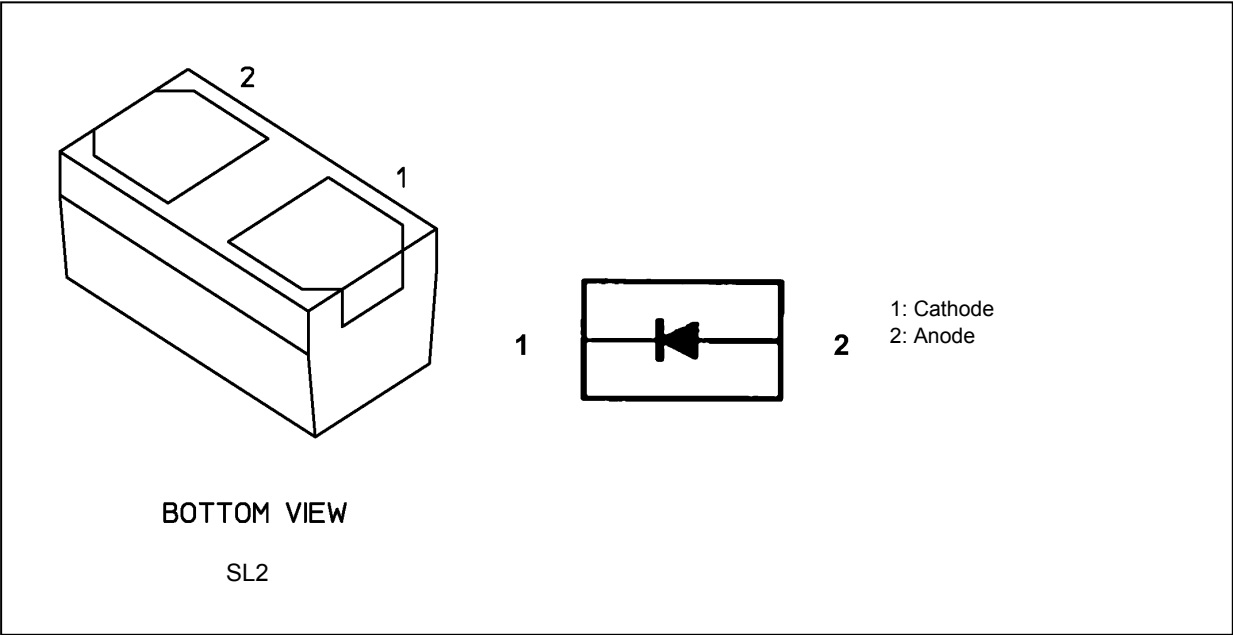
1. Applications

- 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  $25.4\text{ mm} \times 25.4\text{ mm} \times 1.6\text{ mm}$ , Pad dimension of  $645\text{ mm}^2$ .

Note 2: Measured with a 10 ms pulse.

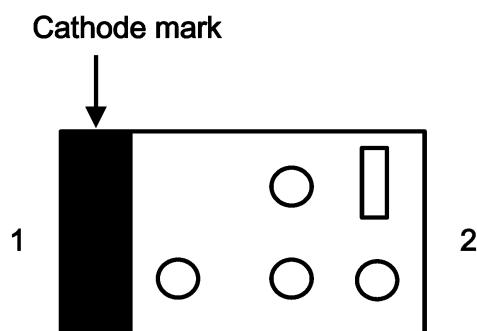
Start of commercial production

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            |

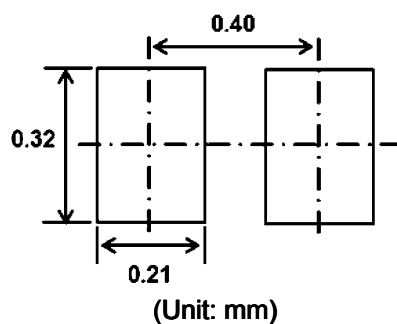
## 6. Marking



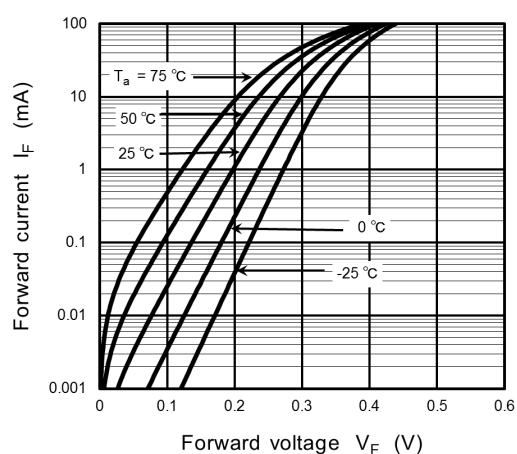
## 7. Usage Considerations

- 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.

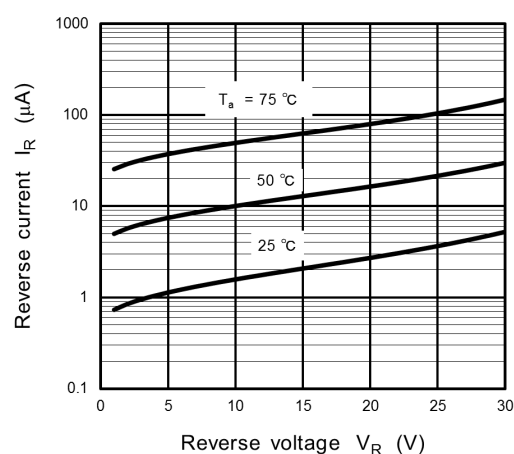
## 8. Land Pattern Dimensions (for reference only)



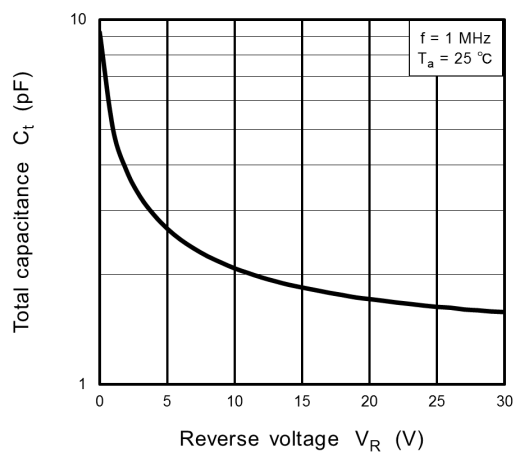
# 9. Characteristics Curves (Note)



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



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

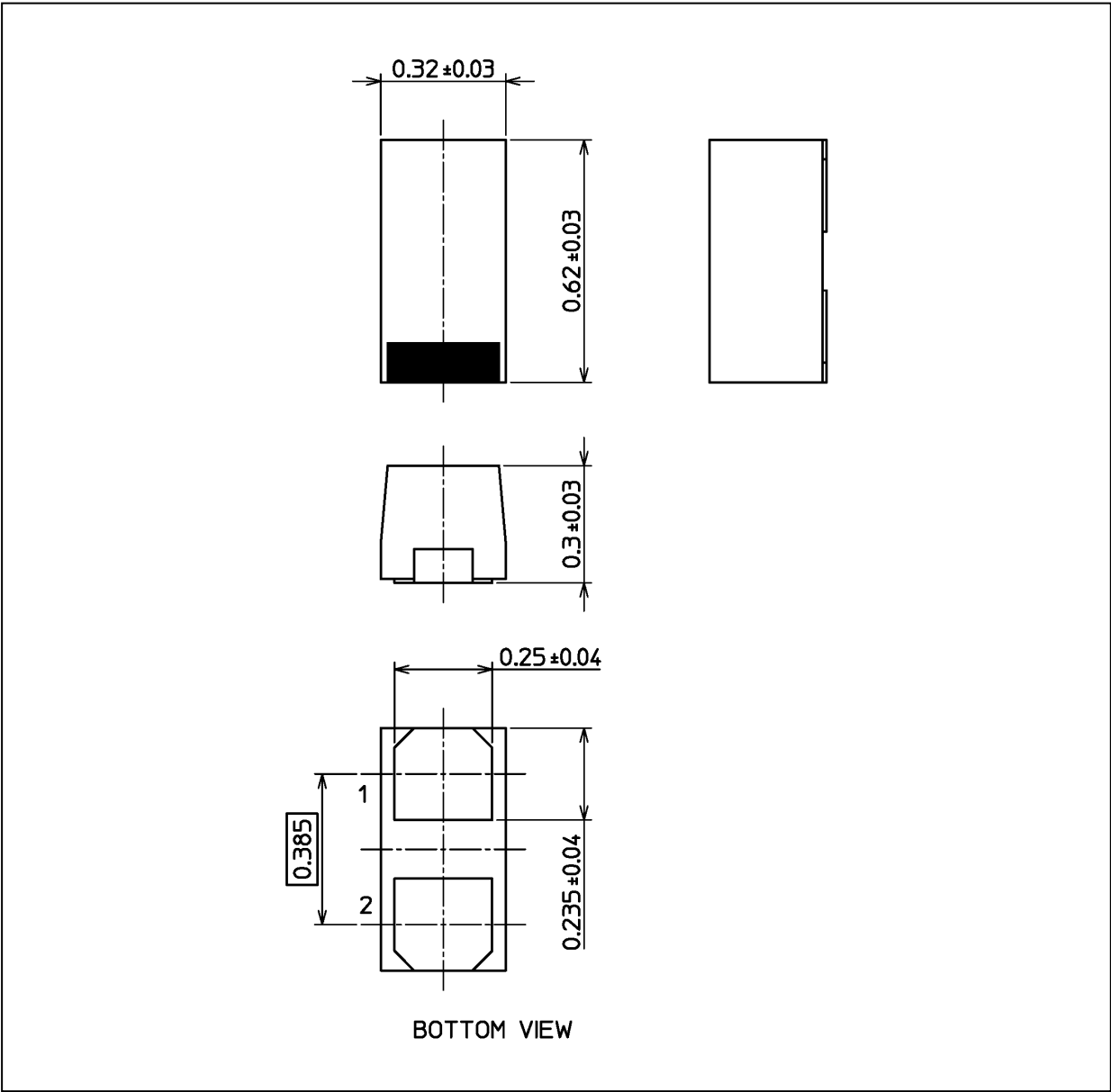


**Fig. 9.3  $C_t - V_R$**

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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