

TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

## 1SS418

## High Speed Switching Application

Unit: mm

- Low forward voltage :  $V_F(3) = 0.23\text{V (typ.)@ } I_F = 5\text{mA}$

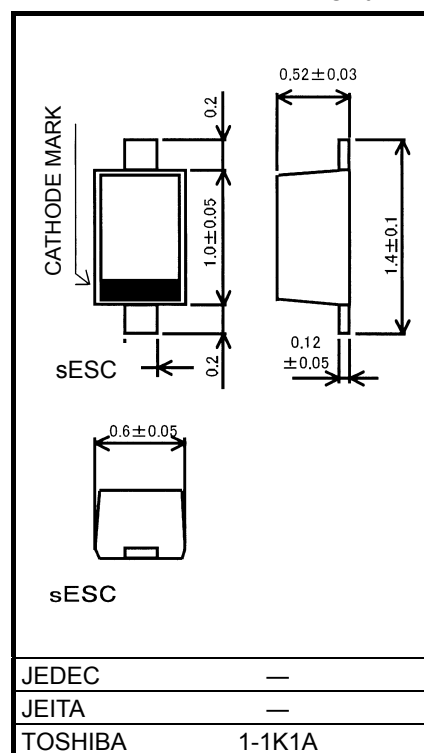
Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Characteristic                 | Symbol    | Rating         | Unit             |
|--------------------------------|-----------|----------------|------------------|
| Maximum (peak) reverse voltage | $V_{RM}$  | 35             | V                |
| Reverse voltage                | $V_R$     | 30             | V                |
| Maximum (peak) forward current | $I_{FM}$  | 200            | mA               |
| Average forward current        | $I_O$     | 100            | mA               |
| Surge current (10ms)           | $I_{FSM}$ | 1              | A                |
| Power dissipation              | $P^*$     | 100            | mW               |
| Junction temperature           | $T_j$     | 125            | $^\circ\text{C}$ |
| Storage temperature range      | $T_{stg}$ | $-55 \sim 125$ | $^\circ\text{C}$ |
| Operating temperature range    | $T_{opr}$ | $-40 \sim 100$ | $^\circ\text{C}$ |

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).

- \* Mounted on a glass epoxy circuit board of  $20 \times 20\text{mm}$ , pad dimension of  $4 \times 4\text{mm}$ .

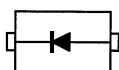


Weight: 0.0011g(Typ.)

Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

| Characteristic    | Symbol   | Test Circuit | Test Condition             | Min | Typ. | Max  | Unit          |
|-------------------|----------|--------------|----------------------------|-----|------|------|---------------|
| Forward voltage   | $V_F(1)$ | —            | $I_F = 1\text{mA}$         | —   | 0.18 | —    | V             |
|                   | $V_F(2)$ | —            | $I_F = 5\text{mA}$         | —   | 0.23 | —    |               |
|                   | $V_F(3)$ | —            | $I_F = 100\text{mA}$       | —   | 0.38 | 0.50 |               |
| Reverse current   | $I_R$    | —            | $V_R = 10\text{V}$         | —   | —    | 20   | $\mu\text{A}$ |
| Reverse current   | $I_R$    | —            | $V_R = 30\text{V}$         | —   | —    | 50   | $\mu\text{A}$ |
| Total capacitance | $C_T$    | —            | $V_R = 0, f = 1\text{MHz}$ | —   | 15   | —    | pF            |

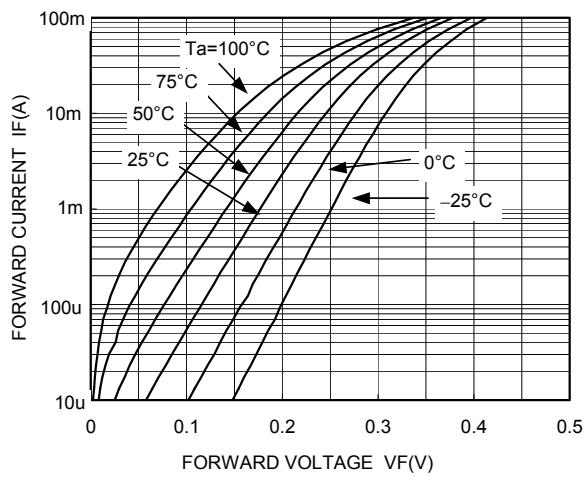
## Equivalent Circuit (Top View)



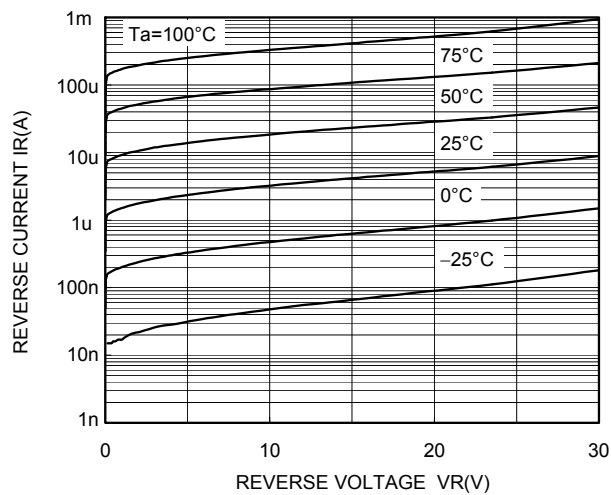
## Marking



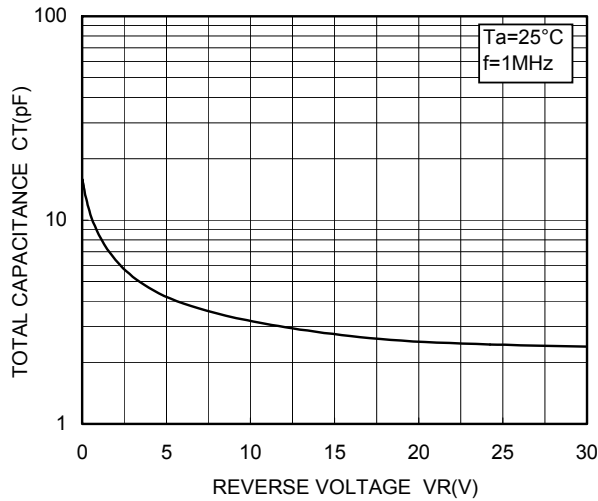
IF - VF



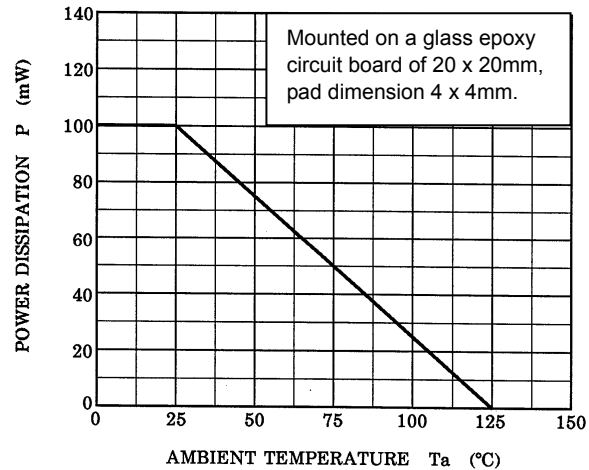
IR - VR



CT - VR



P - Ta



**RESTRICTIONS ON PRODUCT USE**

20070701-EN GENERAL

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- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.  
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