

TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

# 1SS404

## High Speed Switching Applications

- Two-pin small packages are suitable for higher mounting densities
- Low forward voltage :  $V_F (3) = 0.38 \text{ V (typ.)}$
- Low reverse current:  $I_R = 50 \text{ } \mu\text{A (max)}$
- Small total capacitance:  $C_T = 46 \text{ pF (typ.)}$

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

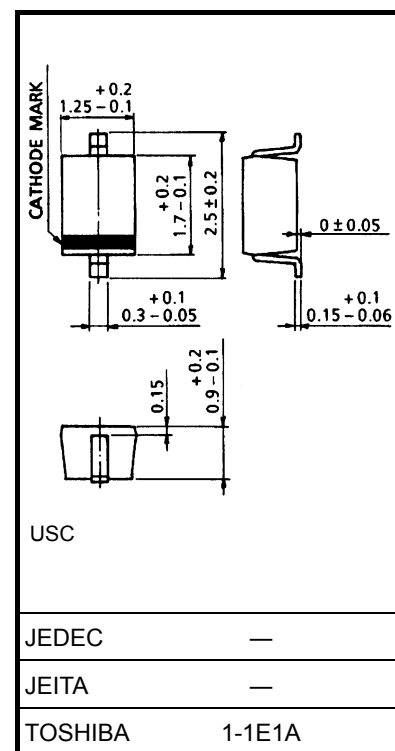
| Characteristics                | Symbol    | Rating         | Unit             |
|--------------------------------|-----------|----------------|------------------|
| Maximum (peak) reverse voltage | $V_{RM}$  | 25             | V                |
| Reverse voltage                | $V_R$     | 20             | V                |
| Maximum (peak) forward current | $I_{FM}$  | 700            | mA               |
| Average forward current        | $I_O$     | 300            | mA               |
| Power dissipation              | P         | 200 (Note 1)   | 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).

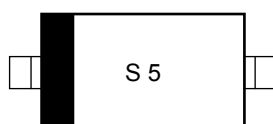
Note 1: Mounted on a glass epoxy board of  $20 \text{ mm} \times 20 \text{ mm}$ , pad dimension  $4 \text{ mm} \times 4 \text{ mm}$ .

Unit: mm

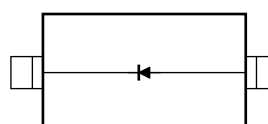


Weight: 0.004 g (typ.)

## Marking

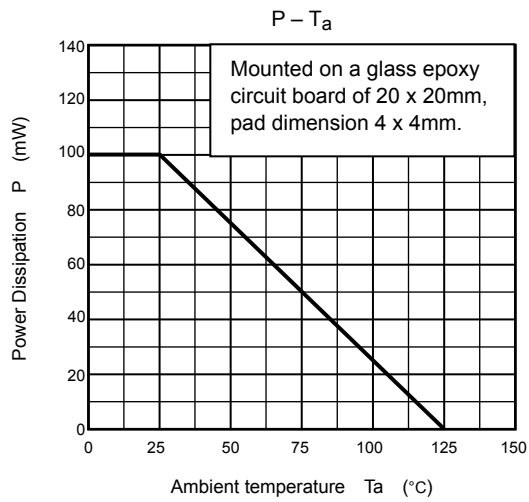
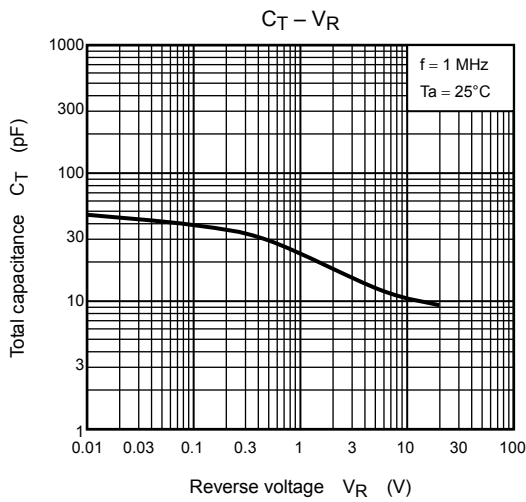
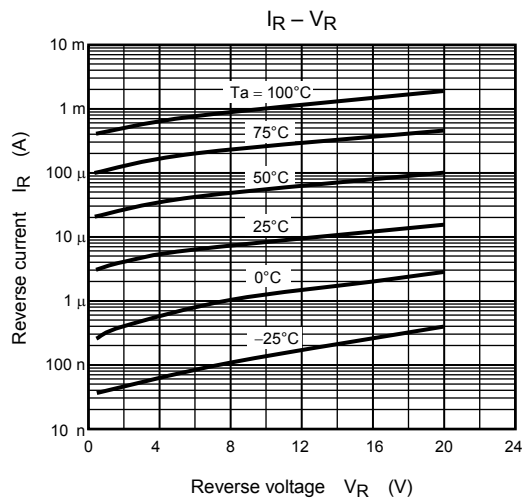
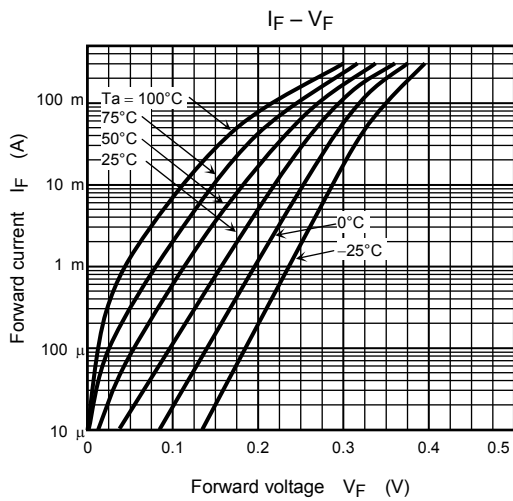


## Equivalent Circuit (top view)



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

| Characteristics   | Symbol    | Test Condition               | Min | Typ. | Max  | Unit          |
|-------------------|-----------|------------------------------|-----|------|------|---------------|
| Forward voltage   | $V_F (1)$ | $I_F = 1 \text{ mA}$         | —   | 0.16 | —    | V             |
|                   | $V_F (2)$ | $I_F = 10 \text{ mA}$        | —   | 0.22 | —    |               |
|                   | $V_F (3)$ | $I_F = 300 \text{ mA}$       | —   | 0.38 | 0.45 |               |
| Reverse current   | $I_R$     | $V_R = 20 \text{ V}$         | —   | —    | 50   | $\mu\text{A}$ |
| Total capacitance | $C_T$     | $V_R = 0, f = 1 \text{ MHz}$ | —   | 46   | —    | pF            |



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