

TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

## 1SS389

## High Speed Switching Application

Unit: mm

- Small package
- Low forward voltage:  $V_F = 0.23V$  (typ.) @  $I_F = 5mA$

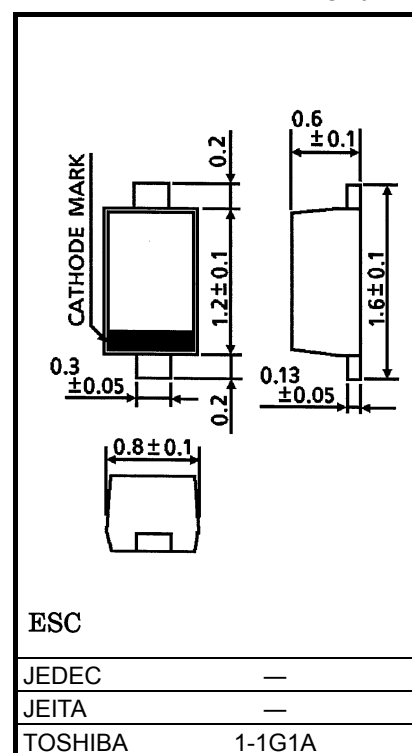
Absolute Maximum Ratings ( $T_a = 25^\circ C$ )

| Characteristic                 | Symbol    | Rating     | Unit       |
|--------------------------------|-----------|------------|------------|
| Maximum (peak) reverse Voltage | $V_{RM}$  | 15         | V          |
| Reverse voltage                | $V_R$     | 10         | 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              | $P^*$     | 150        | mW         |
| Junction temperature           | $T_j$     | 125        | $^\circ C$ |
| Storage temperature range      | $T_{stg}$ | -55 to 125 | $^\circ C$ |
| Operating temperature range    | $T_{opr}$ | -40 to 100 | $^\circ C$ |

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  $20 \times 20mm$ , pad dimension of  $4 \times 4mm$ .



Weight: 1.4mg (typ.)

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

| Characteristic    | Symbol    | Test Circuit | Test Condition      | Min | Typ. | Max  | Unit    |
|-------------------|-----------|--------------|---------------------|-----|------|------|---------|
| Forward voltage   | $V_F$ (1) | —            | $I_F = 1mA$         | —   | 0.18 | —    | V       |
|                   | $V_F$ (2) | —            | $I_F = 5mA$         | —   | 0.23 | 0.30 |         |
|                   | $V_F$ (3) | —            | $I_F = 100mA$       | —   | 0.35 | 0.50 |         |
| Reverse current   | $I_R$     | —            | $V_R = 10V$         | —   | —    | 20   | $\mu A$ |
| Total capacitance | CT        | —            | $V_R = 0, f = 1MHz$ | —   | 20   | 40   | pF      |

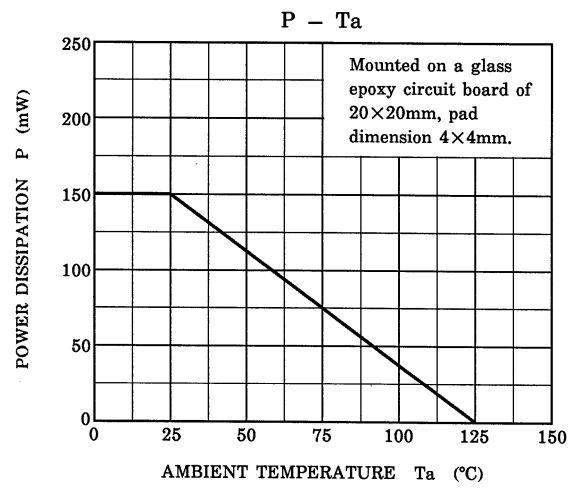
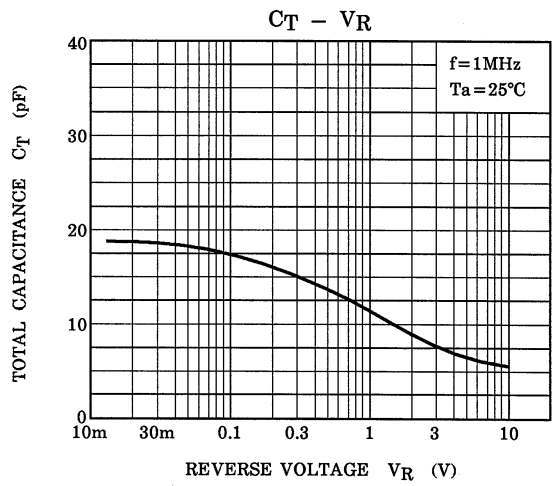
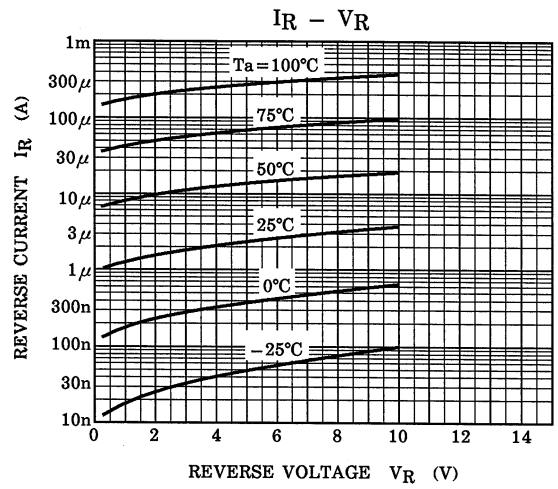
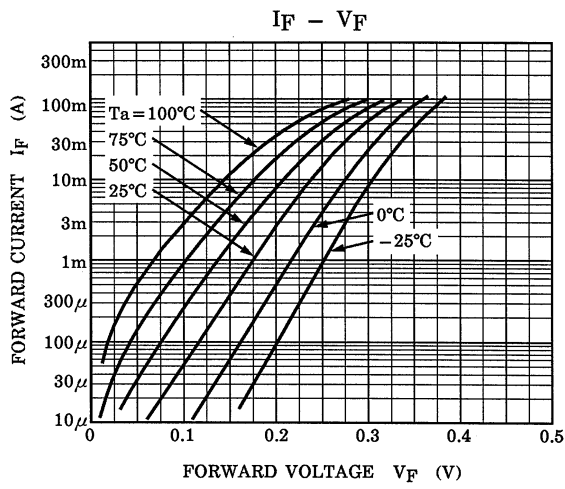
## Equivalent Circuit (Top View)



## Marking



Start of commercial production  
1994-11



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