

TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

# 1SS416CT

## High Speed Switching Application

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

## Absolute Maximum Ratings (Ta = 25°C)

| Characteristics                | 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        | °C   |
| Storage temperature range      | $T_{stg}$ | -55 to 125 | °C   |
| Operating temperature range    | $T_{opr}$ | -40 to 100 | °C   |

\*: Mounted on a glass epoxy circuit board of 20 mm × 20 mm, pad dimension of 4 mm × 4 mm.

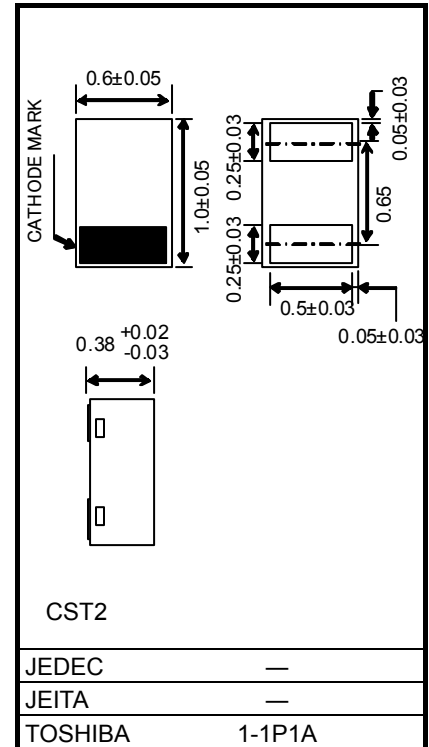
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

## Electrical Characteristics (Ta = 25°C)

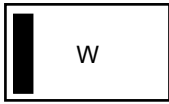
| Characteristics   | Symbol    | Test Circuit | Test Condition                          | Min | Typ. | Max  | Unit |
|-------------------|-----------|--------------|-----------------------------------------|-----|------|------|------|
| Forward voltage   | $V_F (1)$ | —            | $I_F = 1 \text{ mA}$                    | —   | 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   | $I_R(1)$  | —            | $V_R = 10 \text{ V}$                    | —   | —    | 20   | μA   |
|                   | $I_R(2)$  | —            | $V_R = 30 \text{ V}$                    | —   | —    | 50   |      |
| Total capacitance | $C_T$     | —            | $V_R = 0 \text{ V, } f = 1 \text{ MHz}$ | —   | 15   | —    | pF   |

Unit: mm

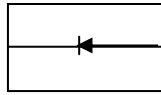


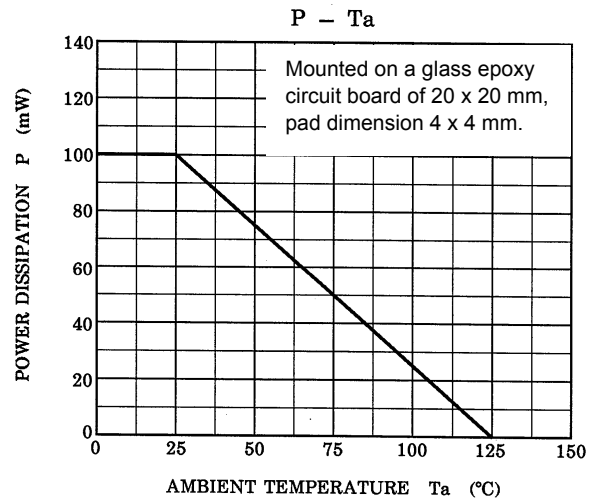
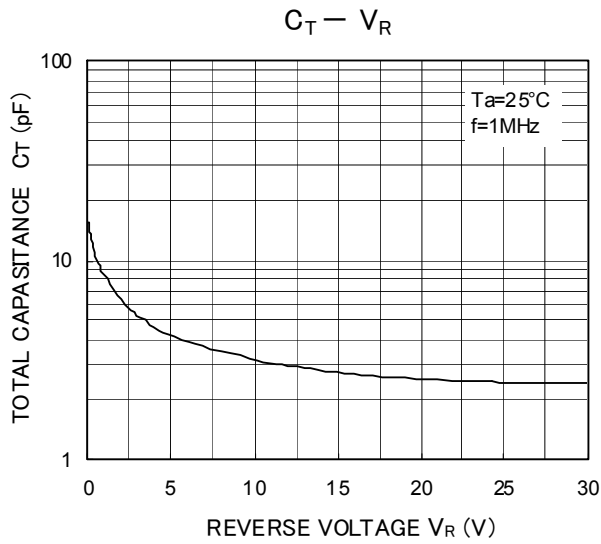
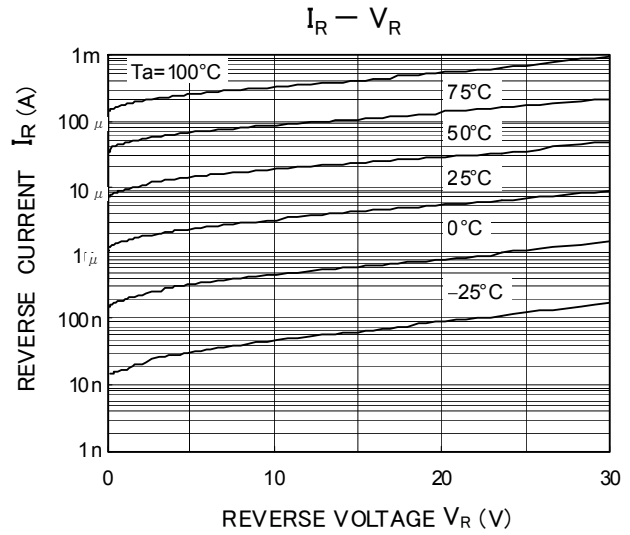
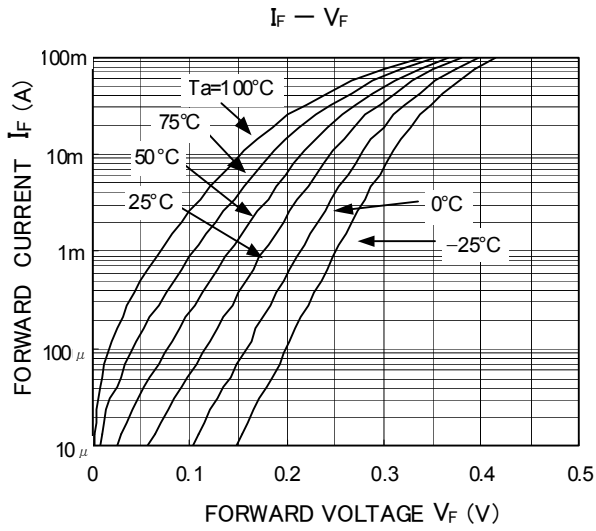
Start of commercial production  
2005-03

## Marking



## Equivalent Circuit (top view)





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