

TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

DSF521CT

High Speed Switching Application

Low forward voltage : $V_F(3) = 0.5V$ (max)

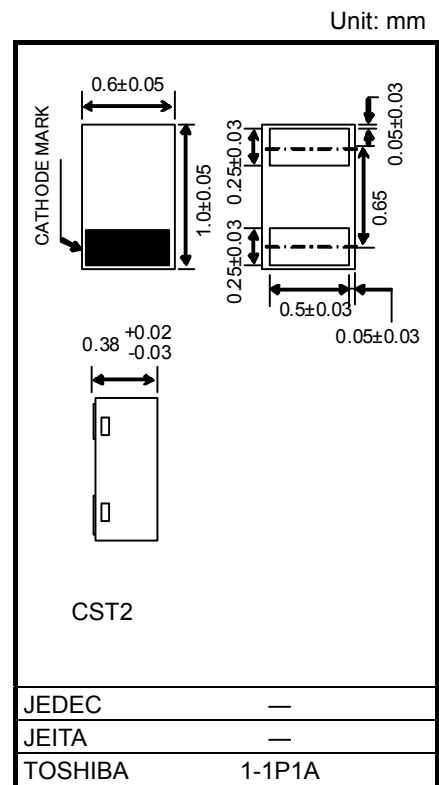
Absolute Maximum Ratings (Ta = 25°C)

| Characteristic | Symbol | Rating | Unit |
|--------------------------------|-----------|------------|------|
| Reverse voltage | V_R | 30 | V |
| Maximum (peak) forward current | I_{FM} | 300 | mA |
| Average forward current | I_O | 200 | mA |
| Surge current (10ms) | I_{FSM} | 1 | A |
| Power dissipation | P^* | 150 | 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).

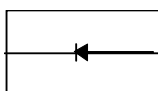


Weight: 0.7 mg (typ.)

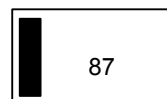
Electrical Characteristics (Ta = 25°C)

| Characteristic | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|-------------------|----------|--------------|----------------------|-----|------|-----|---------|
| Forward voltage | $V_F(1)$ | — | $I_F = 1mA$ | — | 0.2 | — | V |
| | $V_F(2)$ | — | $I_F = 5mA$ | — | 0.24 | — | |
| | $V_F(3)$ | — | $I_F = 200mA$ | — | 0.45 | 0.5 | |
| Reverse current | $I_R(1)$ | — | $V_R = 10V$ | — | — | 20 | μA |
| | $I_R(2)$ | — | $V_R = 30V$ | — | — | 30 | |
| Total capacitance | C_T | — | $V_R = 0, f = 1 MHz$ | — | 34 | — | pF |

Equivalent Circuit (top view)

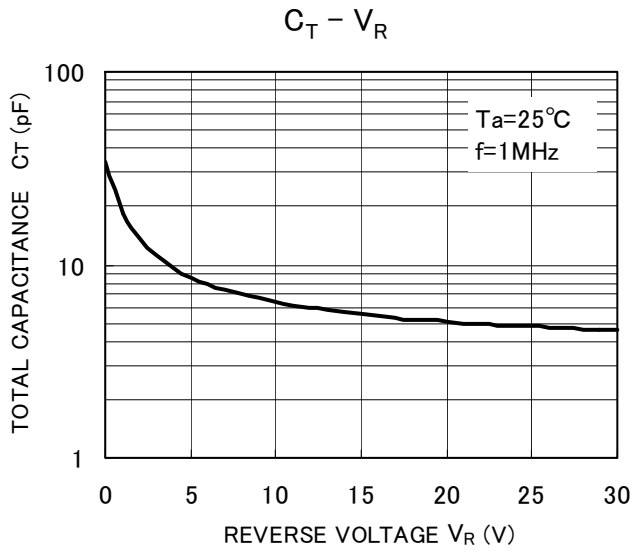
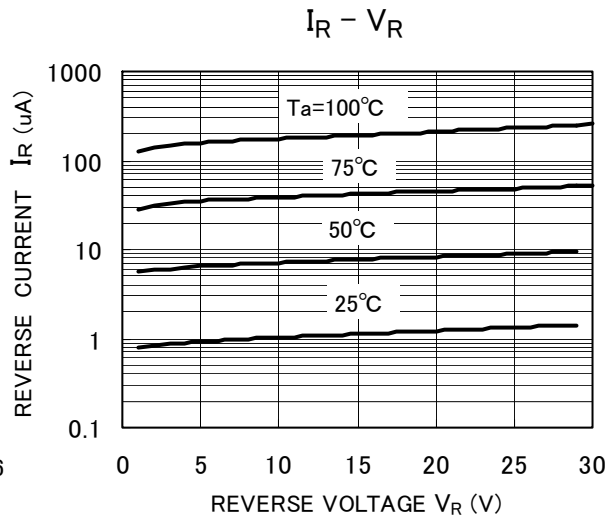
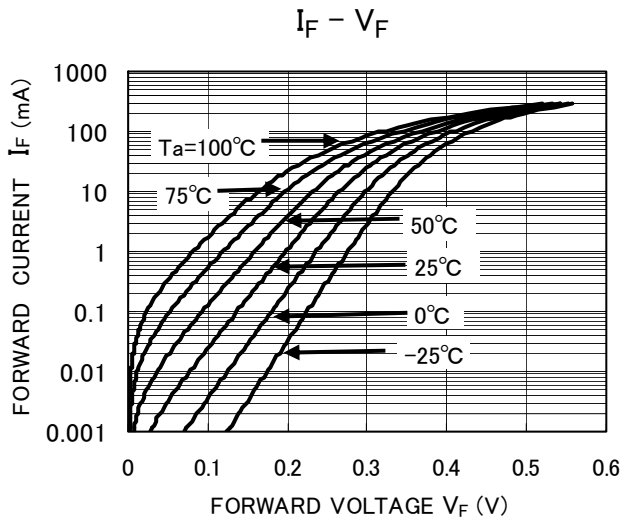


Marking



Handling Precaution

Schottky barrier diodes have reverse current characteristic compared to the other diodes.
There is a possibility SBD may cause thermal runaway when it is used under high temperature or high voltage.
Please take forward and reverse loss into consideration during design.



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