

TOSHIBA Diode Silicon Epitaxial Planar Type

1SS397

High Voltage, High Speed Switching Applications

- Small package : SC-70
- Low forward voltage : $V_F = 1.0\text{ V (typ.)}$
- High voltage : $V_R = 400\text{ V (min.)}$
- Fast reverse recovery time : $t_{rr} = 0.5\text{ }\mu\text{s (typ.)}$
- Small total capacitance : $C_T = 2.5\text{ pF (typ.)}$

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

| Characteristic | Symbol | Rating | Unit |
|--------------------------------|--------------------|------------|------------------|
| Maximum (peak) reverse Voltage | V_{RM} | 420 | V |
| Reverse voltage | V_R | 400 | V |
| Maximum (peak) forward current | I_{FM} | 300 | mA |
| Average forward current | I_O | 100 | mA |
| Surge current (10ms) | I_{FSM} | 2 | A |
| Power dissipation | P_D (Note 1, 3) | 200 | mW |
| | P_D (Note 2) | 100 | |
| Junction temperature | T_j (Note 1) | 150 | $^\circ\text{C}$ |
| | T_j (Note 2) | 125 | |
| Storage temperature range | T_{stg} (Note 1) | -55 to 150 | $^\circ\text{C}$ |
| | T_{stg} (Note 2) | -55 to 125 | |

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: For devices with the ordering part number ending in LF(T).

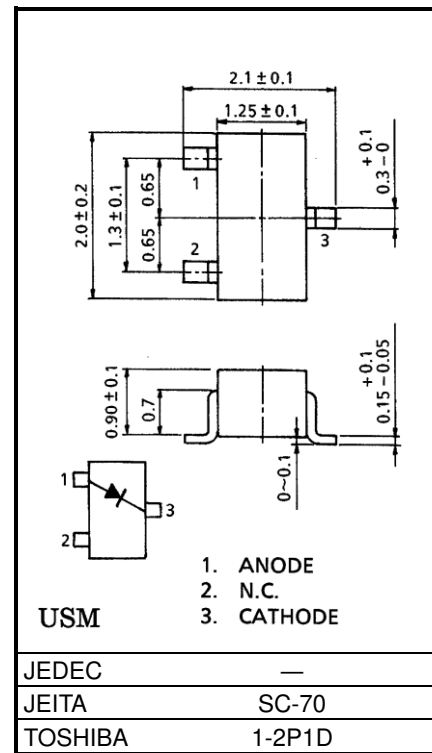
Note 2: For devices with the ordering part number in other than LF(T).

Note 3: Mounted on a FR4 board. (25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 0.5 mm² × 3)

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

| Characteristic | Symbol | Test Condition | Min | Typ. | Max | Unit |
|-----------------------|-----------|---------------------------------------|-----|------|-----|---------------|
| Forward voltage | V_F (1) | $I_F = 10\text{ mA}$ | — | 0.8 | — | V |
| | V_F (2) | $I_F = 100\text{ mA}$ | — | 1.0 | 1.3 | |
| Reverse current | I_R (1) | $V_R = 300\text{ V}$ | — | — | 0.1 | μA |
| | I_R (2) | $V_R = 400\text{ V}$ | — | — | 1.0 | |
| Total capacitance | C_T | $V_R = 0\text{ V, } f = 1\text{ MHz}$ | — | 2.5 | 5.0 | pF |
| Reverse recovery time | t_{rr} | $I_F = 10\text{ mA}$ (Fig.1) | — | 0.5 | — | μs |

Unit: mm



Weight: 0.006g (typ.)

Start of commercial production
1995-10

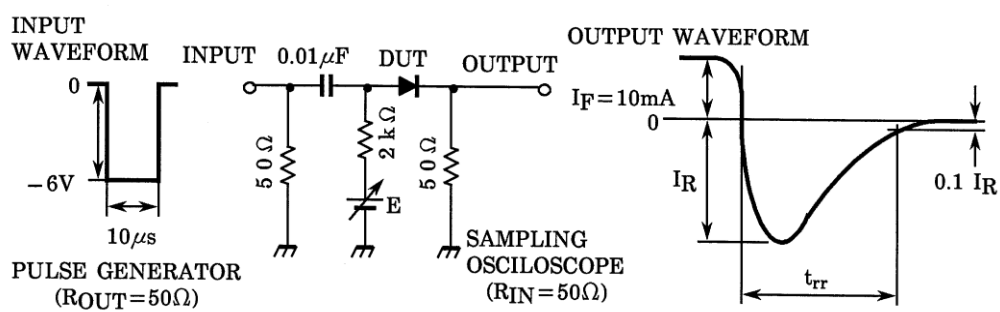
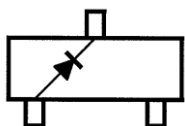
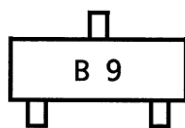


Fig.1 Reverse Recovery Time (t_{rr}) Test Circuit

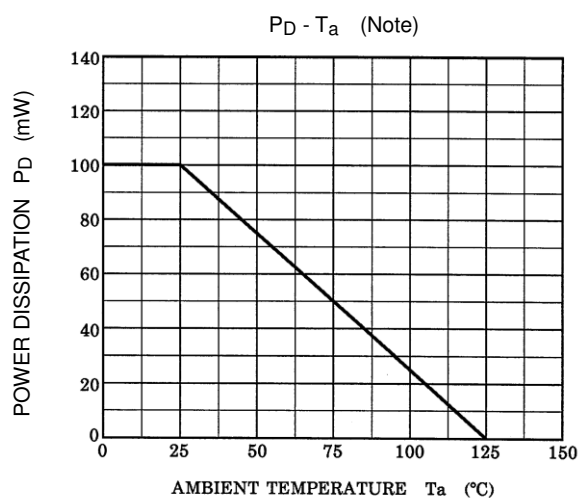
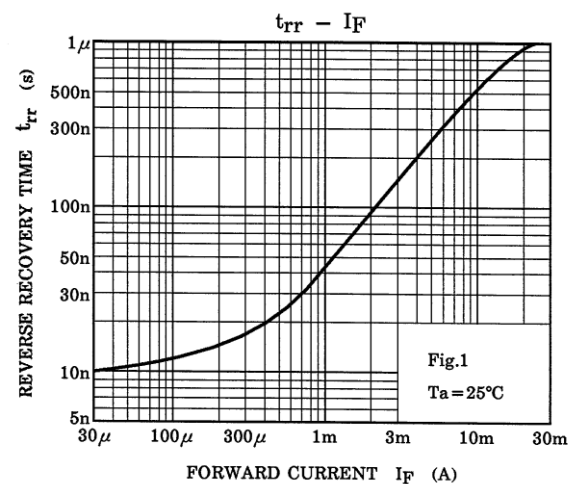
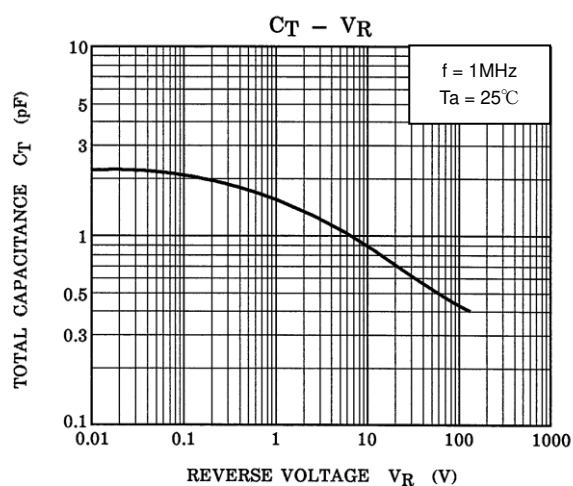
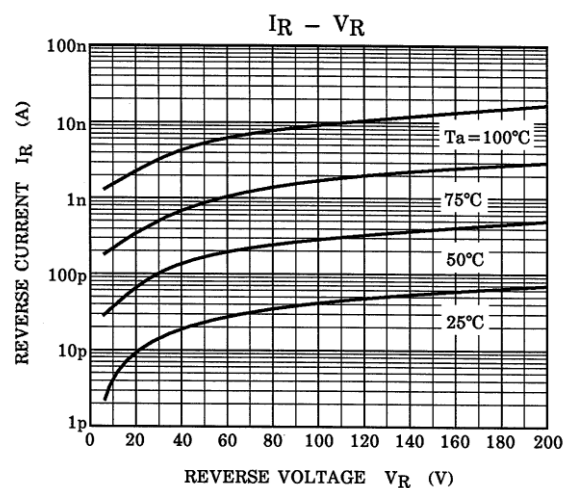
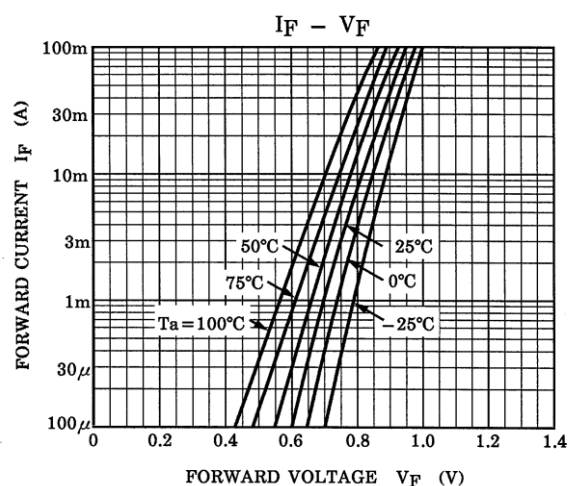
Equivalent Circuit (Top View)



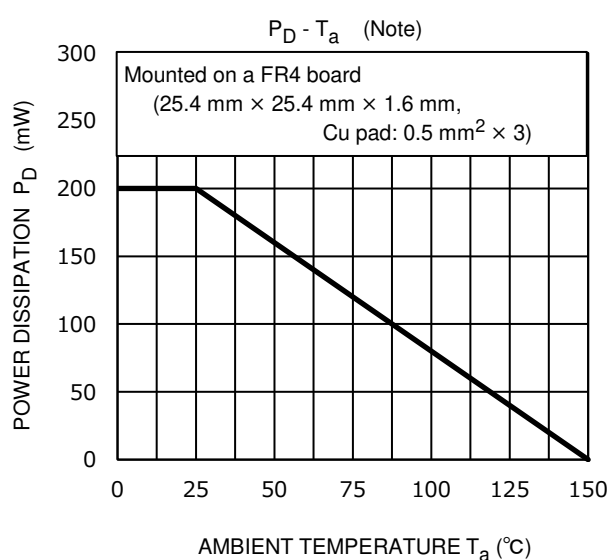
Marking



Characteristics Curves



Note: Reference only with T_j of 125°C .



Note: Reference only with T_j of 150°C .

The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

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