

1SS301

Ultra High Speed Switching Applications

- Small package : SC-70
- Low forward voltage : $V_F(3) = 0.9\text{ V (typ.)}$
- Fast reverse recovery time: $t_{rr} = 1.6\text{ ns (typ.)}$
- Small total capacitance : $C_T = 0.9\text{ pF (typ.)}$

Absolute Maximum Ratings (Ta = 25°C)

| Characteristic | Symbol | Rating | Unit |
|--------------------------------|-----------|---------|------|
| Maximum (peak) reverse voltage | V_{RM} | 85 | V |
| Reverse voltage | V_R | 80 | V |
| Maximum (peak) forward current | I_{FM} | 300 (*) | mA |
| Average forward current | I_O | 100 (*) | mA |
| Surge current (10 ms) | I_{FSM} | 2 (*) | A |
| Power dissipation | P | 100 | mW |
| Junction temperature | T_j | 125 | °C |
| Storage temperature | T_{stg} | -55~125 | °C |

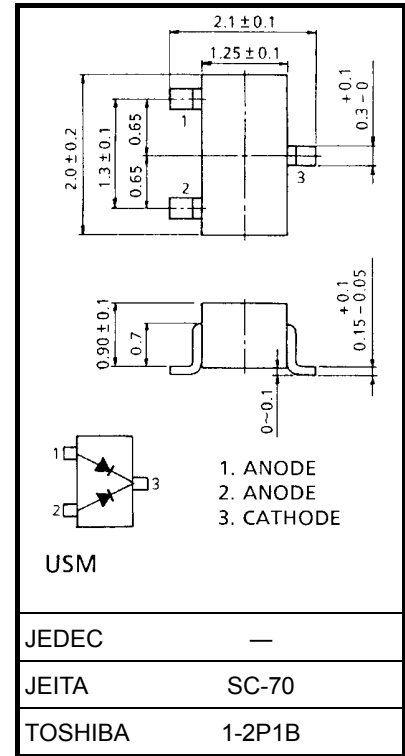
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

*: Unit rating. Total rating = unit rating × 1.5

Electrical Characteristics (Ta = 25°C)

| Characteristic | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|-----------------------|----------|--------------|-----------------------------|-----|------|------|------|
| Forward voltage | $V_F(1)$ | — | $I_F = 1\text{ mA}$ | — | 0.60 | — | V |
| | $V_F(2)$ | — | $I_F = 10\text{ mA}$ | — | 0.72 | — | |
| | $V_F(3)$ | — | $I_F = 100\text{ mA}$ | — | 0.90 | 1.20 | |
| Reverse current | $I_R(1)$ | — | $V_R = 30\text{ V}$ | — | — | 0.1 | μA |
| | $I_R(2)$ | — | $V_R = 80\text{ V}$ | — | — | 0.5 | |
| Total capacitance | C_T | — | $V_R = 0, f = 1\text{ MHz}$ | — | 0.9 | 3.0 | pF |
| Reverse recovery time | t_{rr} | — | $I_F = 10\text{ mA, Fig.1}$ | — | 1.6 | 4.0 | ns |

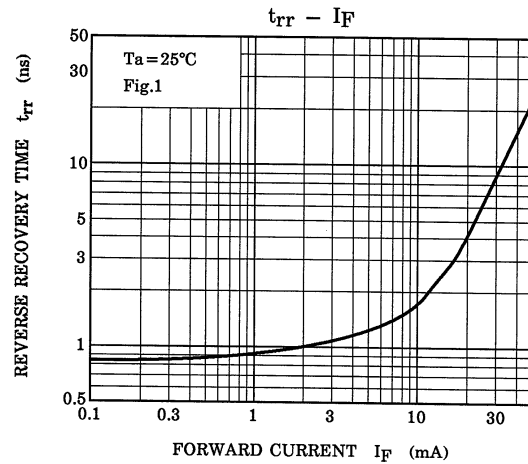
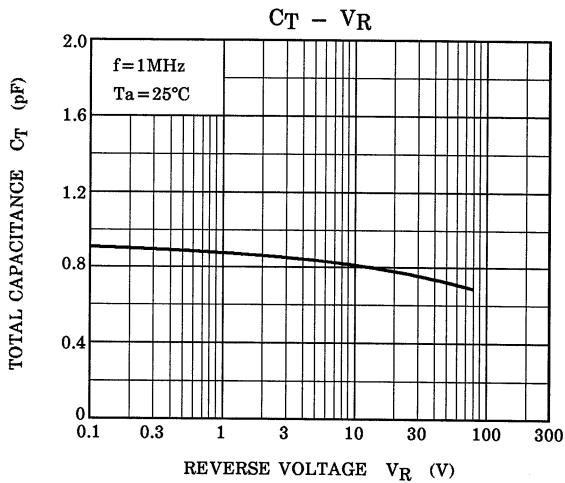
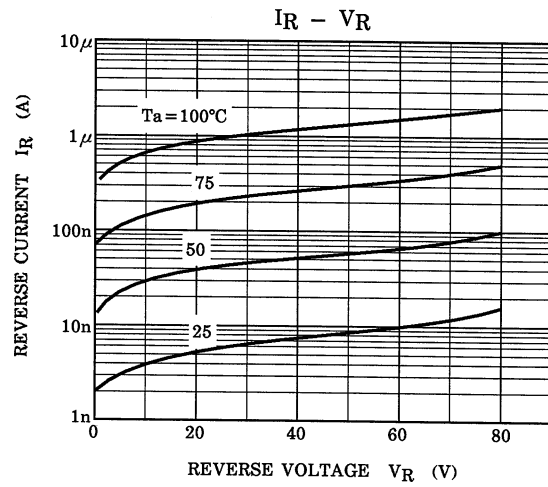
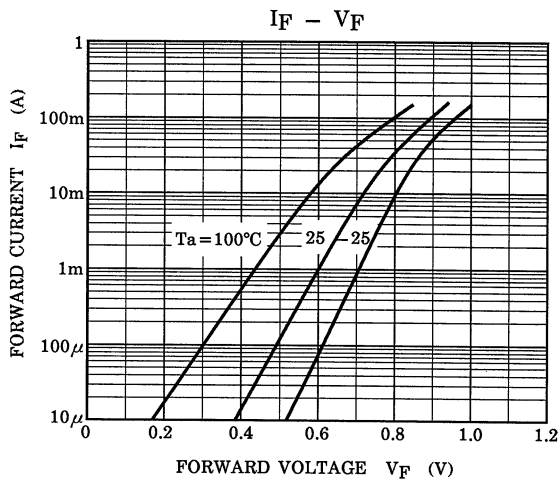
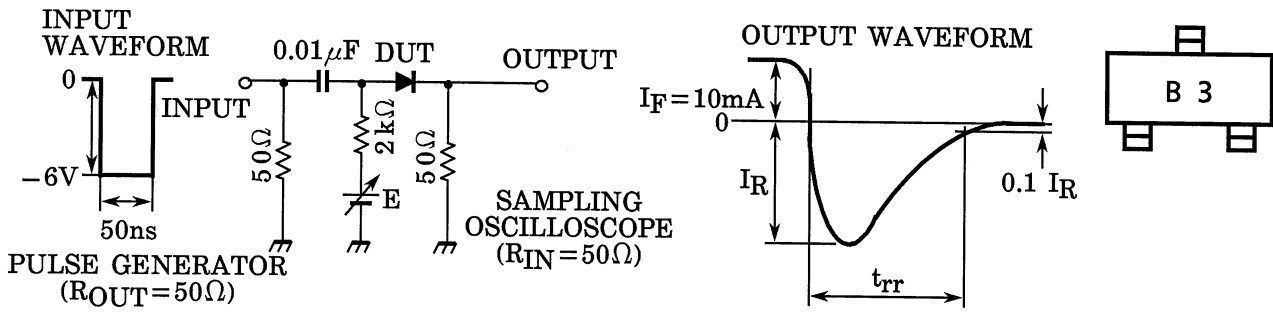
Unit: mm



Weight: 0.006 g (typ.)

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

Marking



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