

HN1D04FU

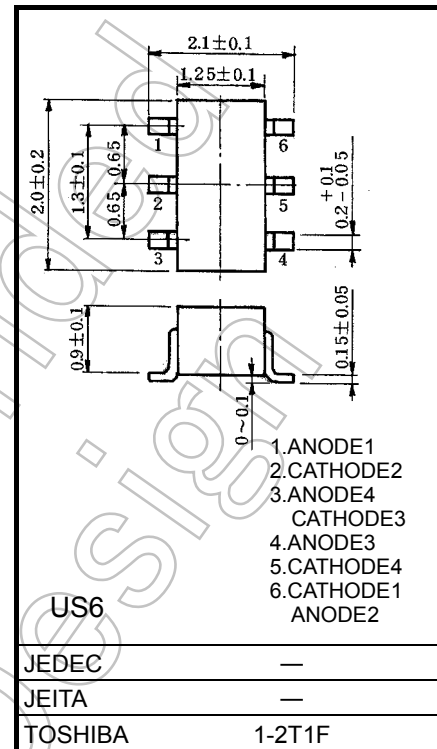
Ultra High Speed Switching Application

Unit: mm

- Low forward voltage : $V_{F(3)} = 0.90V$ (typ.)
- Fast reverse recovery time : $t_{rr} = 1.6ns$ (typ.)
- Small total capacitance : $C_T = 0.9pF$ (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 (10ms) | I_{FSM} | 2* | A |
| Power dissipation | P | 200** | mW |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55 to 150 | °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).

*: Where Q1 and Q2 or Q3 and Q4 are used independently or simultaneously, the Absolute Maximum Ratings per diode are 50% of those of the single diode.

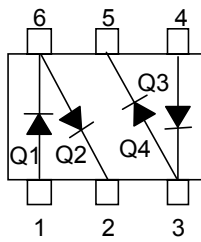
** : Total rating

Electrical Characteristics (Q1, Q2, Q3, Q4 Common; Ta = 25°C)

| Characteristic | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|-----------------------|----------|--------------|----------------------|-----|------|------|------|
| Forward voltage | $V_F(1)$ | — | $I_F = 1mA$ | — | 0.60 | — | V |
| | $V_F(2)$ | — | $I_F = 10mA$ | — | 0.75 | — | |
| | $V_F(3)$ | — | $I_F = 100mA$ | — | 0.90 | 1.20 | |
| Reverse current | $I_R(1)$ | — | $V_R = 30V$ | — | — | 0.1 | μA |
| | $I_R(2)$ | — | $V_R = 80V$ | — | — | 0.5 | |
| Total capacitance | C_T | — | $V_R = 0, f = 1MHz$ | — | 0.9 | — | pF |
| Reverse recovery time | t_{rr} | — | $I_F = 10mA$ (fig.1) | — | 1.6 | — | ns |

Start of commercial production
2000-12

Pin Assignment (Top View)



Marking

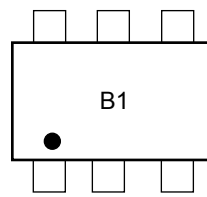
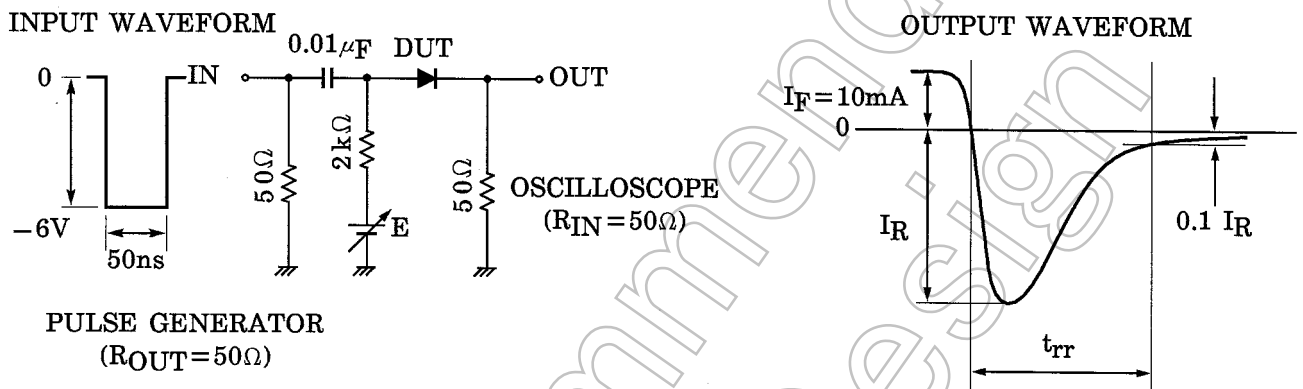
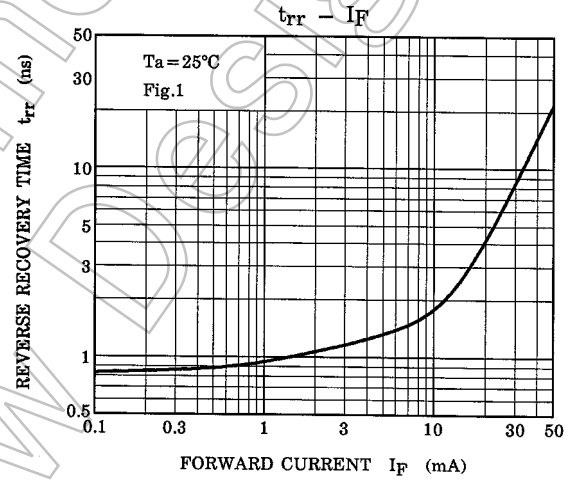
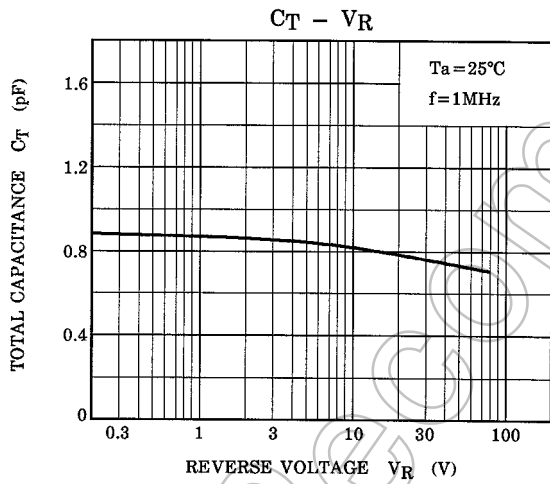
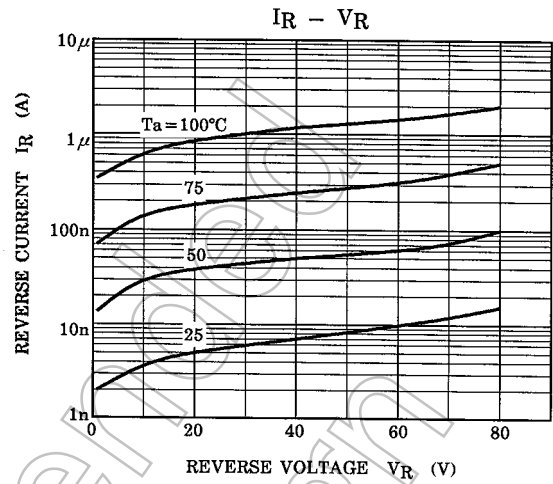
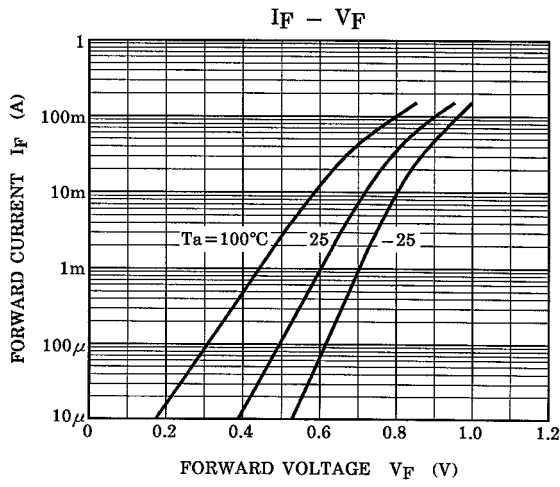


Fig. 1 Reverse Recovery Time (t_{rr}) Test Circuit



Not Recommended for New Design

Q1, Q2, Q3, Q4 Common



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