

HN1D02F

Ultra-High-Speed Switching Applications

- The HN1D02F is composed of two (2) cathode common units.
- Low forward voltage : $V_F(3) = 0.90\text{ V (typ.)}$
- 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 | 300 | mW |
| Junction temperature | T_j | 125 | °C |
| Storage temperature | T_{stg} | -55 to 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.

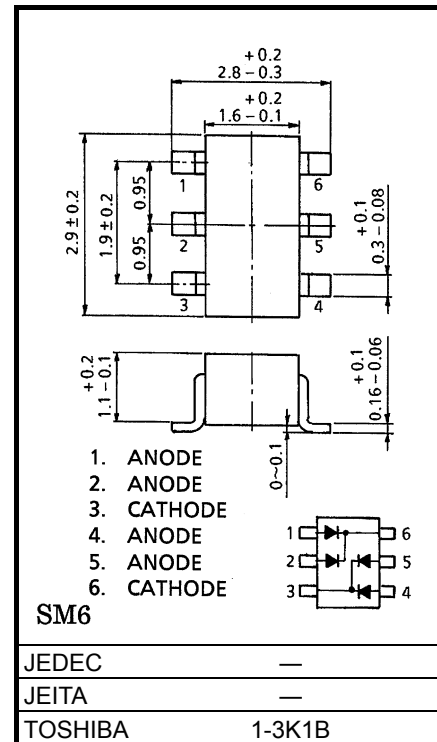
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

(*) These are the Absolute Maximum Ratings for a single diode (Q1 or Q2 or Q3 or Q4). If Unit 1 and Unit 2 are used independently or simultaneously, the Absolute Maximum Ratings per diode are 75% of those of a single diode.

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

| Characteristic | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|-----------------------|----------|--------------|-------------------------------|-----|------|------|------|
| Forward voltage | $V_F(1)$ | — | $I_F = 1\text{ mA}$ | — | 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 |

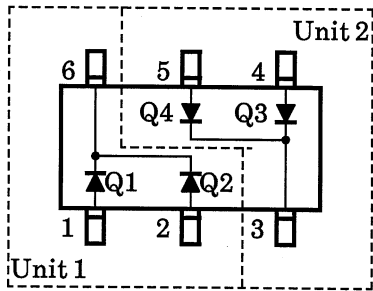
Unit: mm



Weight: 0.015 g (typ.)

Start of commercial production
1992-05

Pin Assignment (Top View)



Marking

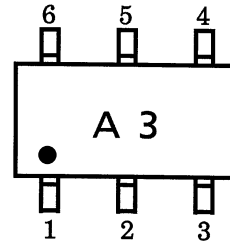
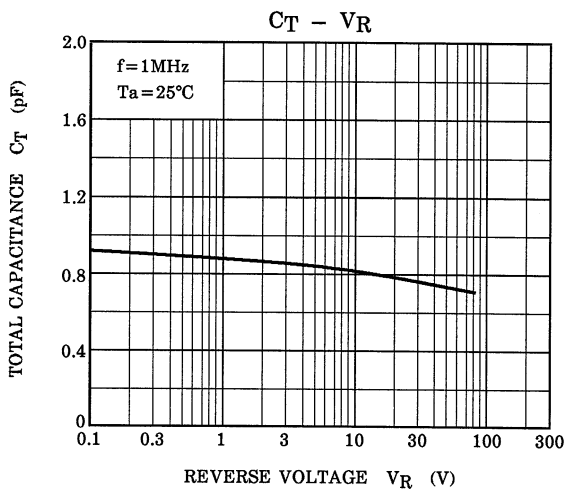
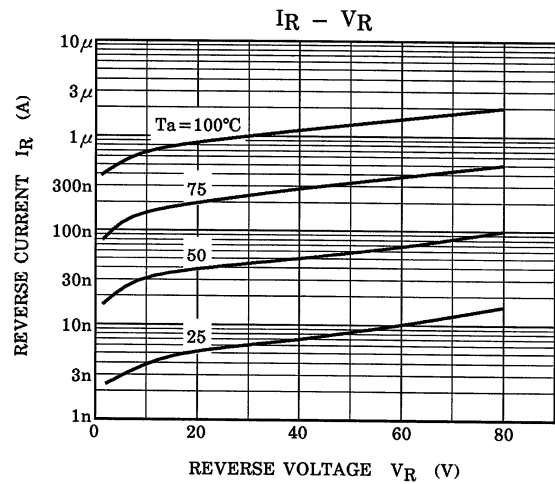
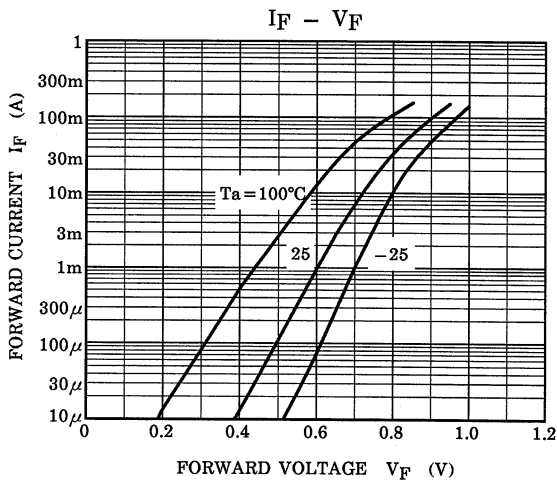
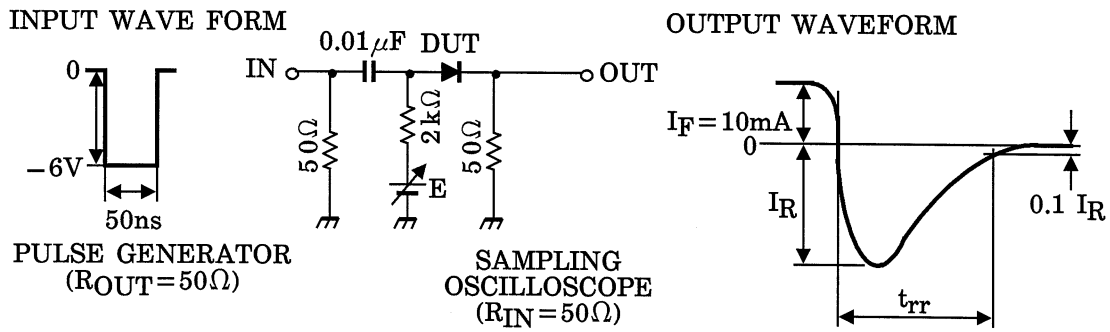


Fig. 1 Reverse Recovery Time (t_{rr}) Test Circuit





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