TOSHIBA Diode Silicon Epitaxial Planar Type

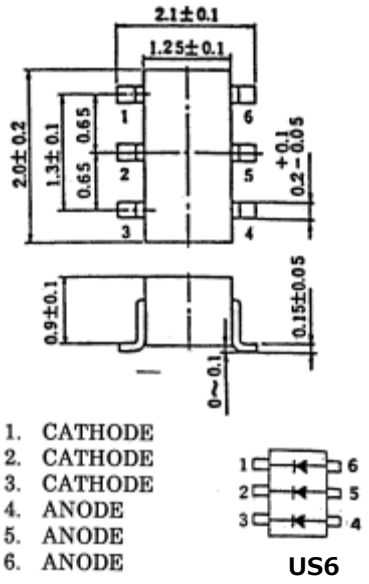
# HN2D01FU

## Ultra High Speed Switching Application

- AEC-Q101 Qualified (Note1)
- HN2D01FU is composed of 3 independent diodes.
- Low forward voltage: $V_{F\ (3)}$ = 0.98V (typ.)
- Fast reverse recovery time: $t_{rr}$ = 1.6ns (typ.)
- Small total capacitance: $C_T$ = 0.5pF (typ.)

Note1: For detail information, please contact our sales.

Unit: mm




| | |
|---|---|
| JEDEC | — |
| JEITA | — |
| TOSHIBA | 2-2J1S |

Weight: 6.2mg (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 | $I_{FM}$ | 240 * | mA |
| Average forward current | $I_O$ | 80 * | mA |
| Surge current (10ms) | $I_{FSM}$ | 1 * | A |
| Power dissipation | $P_D$ (Note 4) | 200 | mW |
| Junction temperature | $T_j$ (Note 2) | 150 | °C |
| | $T_j$ (Note 3) | 125 | |
| Storage temperature | $T_{stg}$ (Note 2) | −55 to 150 | °C |
| | $T_{stg}$ (Note 3) | −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 2: For devices with the ordering part number ending in LF(T.
Note 3: For devices with the ordering part number in other than LF(T.
Note 4: Total rating, Mounted on a FR4 board. (25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 0.32 $mm^2$ × 6).

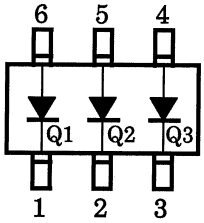
*: This is absolute maximum rating of single diode (Q1, Q2 or Q3). In the case of using 2 or 3 diodes, the absolute maximum ratings per diodes is 75 % of the single diode one.

Start of commercial production
1990-10

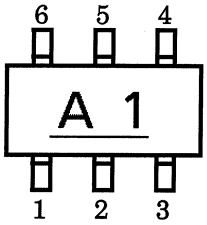
## Electrical Characteristics (Q1, Q2, Q3 Common, Ta = 25°C)

| Characteristic | Symbol | Test Condition | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|
| Forward voltage | $V_{F\ (1)}$ | $I_F$ = 1 mA | — | 0.62 | — | V |
| | $V_{F\ (2)}$ | $I_F$ = 10 mA | — | 0.75 | — | |
| | $V_{F\ (3)}$ | $I_F$ = 100 mA | — | 0.98 | 1.20 | |
| Reverse current | $I_{R\ (1)}$ | $V_R$ = 30 V | — | — | 0.1 | μA |
| | $I_{R\ (2)}$ | $V_R$ = 80 V | — | — | 0.5 | |
| Total capacitance | $C_T$ | $V_R$ = 0 V , f = 1 MHz | — | 0.5 | 3.0 | pF |
| Reverse recovery time | trr | $I_F$ = 10 mA (Fig.1) | — | 1.6 | 4.0 | ns |

## Pin Assignment (Top View)




## Marking



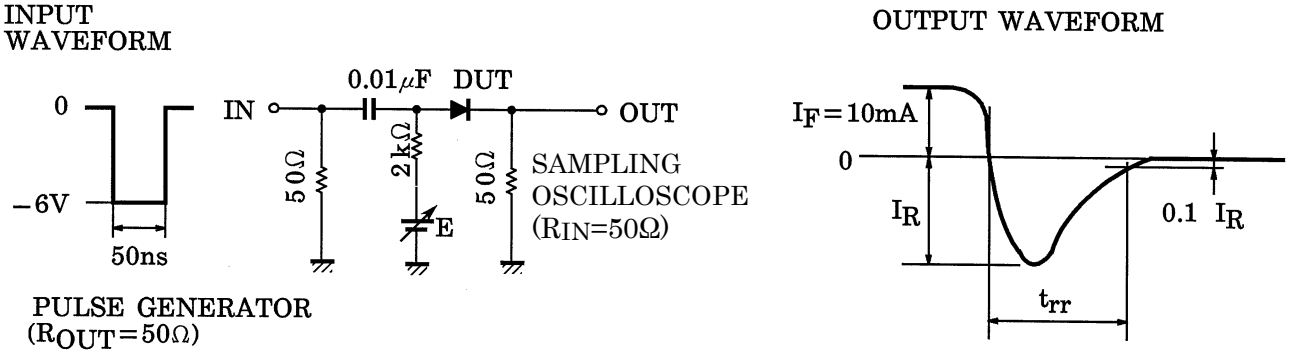
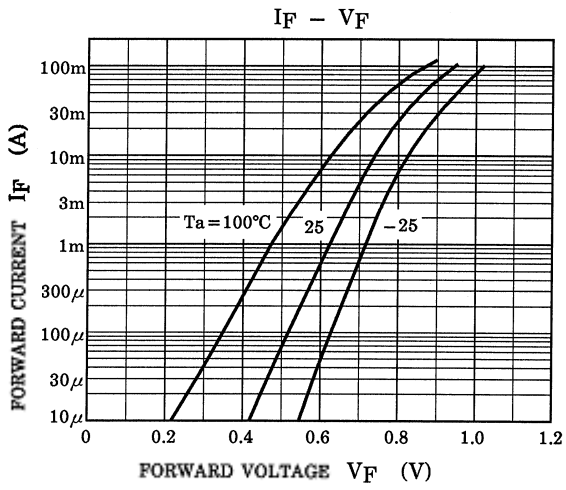
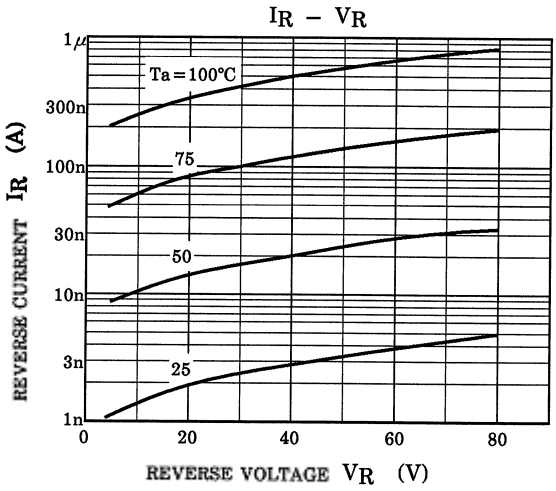
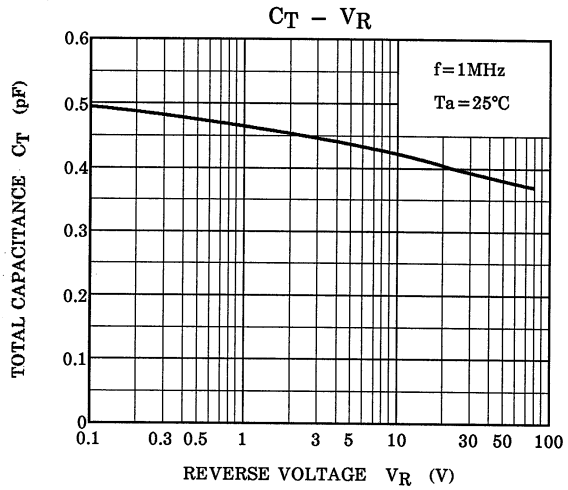




**Fig.1 Reverse Recovery Time ($t_{rr}$) Test Circuit**

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

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