TOSHIBA Diode Silicon Epitaxial Planar Type

# HN4D01JU

Ultra High Speed Switching Applications

- Low forward voltage : $V_{F\ (3)}$ = 0.92V (typ.)
- Fast reverse recovery time : $t_{rr}$ = 1.6ns (typ.)
- Small total capacitance : $C_T$ = 2.2pF (typ.)

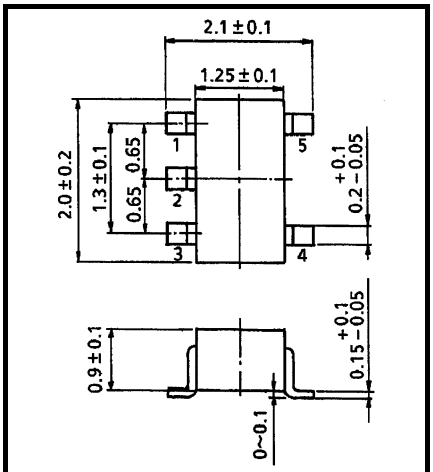
## Absolute Maximum Ratings (Ta = 25°C)

| 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).

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

Unit: mm




1. CATHODE1
2. ANODE
3. CATHODE2
4. CATHODE3
5. CATHODE4

USV

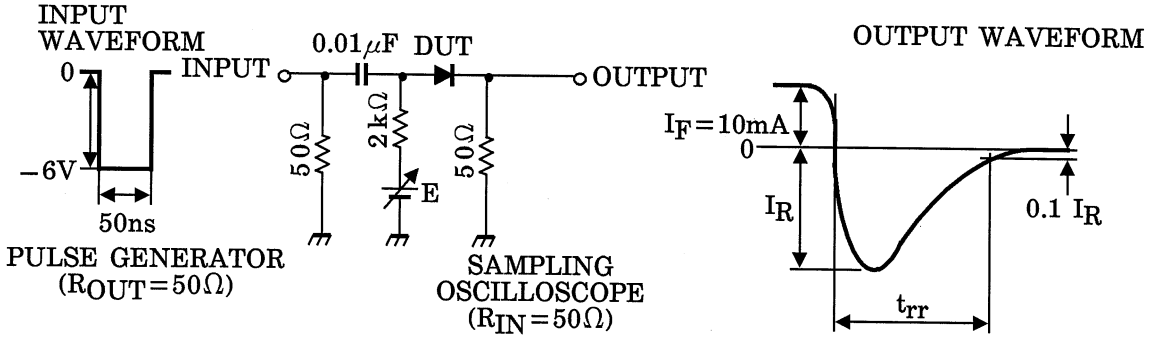
| | |
|---|---|
| JEDEC | — |
| EIAJ | — |
| TOSHIBA | — |

Weight: 0.0062 g (typ.)

## Electrical Characteristics (Ta = 25°C)

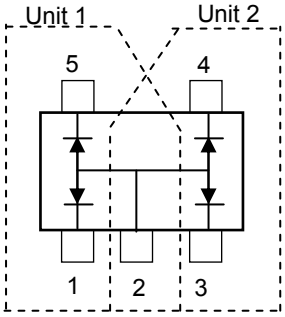
| Characteristic | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage | $V_{F\ (1)}$ | — | $I_F$ = 1mA | — | 0.61 | — | V |
| | $V_{F\ (2)}$ | — | $I_F$ = 10mA | — | 0.74 | — | |
| | $V_{F\ (3)}$ | — | $I_F$ = 100mA | — | 0.92 | 1.20 | |
| 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 | — | 2.2 | — | pF |
| Reverse recovery time | $t_{rr}$ | — | $I_F$ = 10mA, Fig.1 | — | 1.6 | — | ns |

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

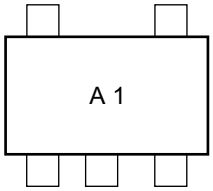


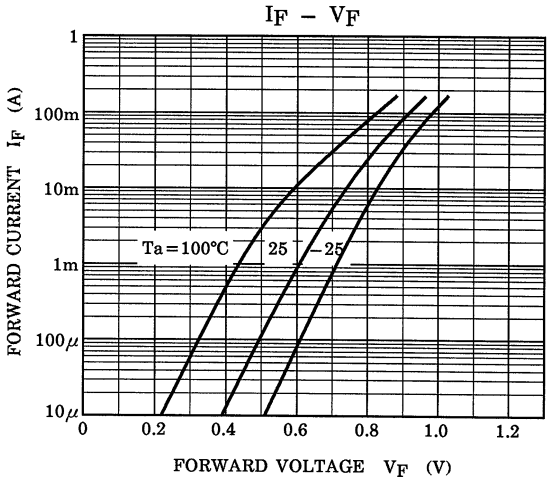

Start of commercial production
2001-03

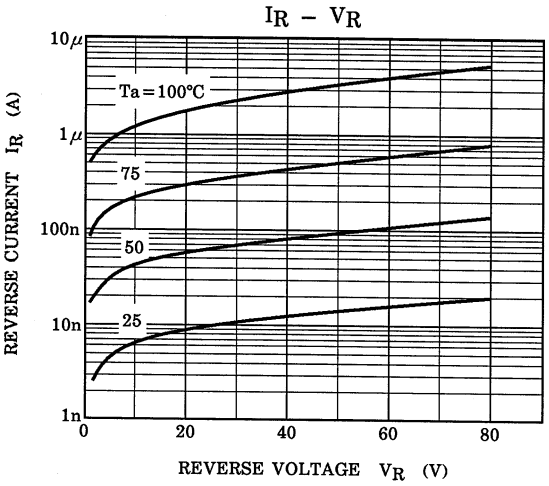
## Equivalent Circuit (Top View)

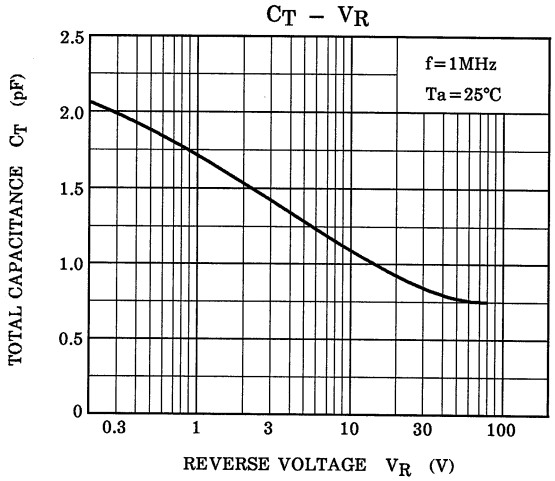


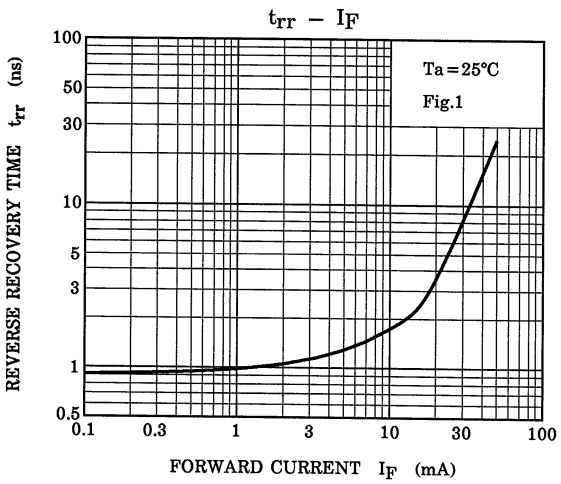

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