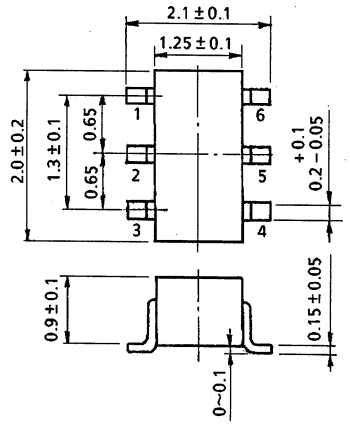
TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

# HN2S03FU

High Speed Switching Application

- HN2S03FU is composed of 3 independent diodes.
- Low forward voltage : $V_{F\ (3)}$ = 0.50V (typ.)
- Low reverse current : $I_R$= 0.5μA (max)
- Small total capacitance : $C_T$ = 3.9pF (typ.)

Unit: mm

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US6

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|---|---|
| JEDEC | — |
| EIAJ | — |
| TOSHIBA | 1-2T1C |

Weight: 6.2mg(Typ.)

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

| Characteristic | Symbol | Rating | Unit |
|---|---|---|---|
| Maximum (peak) reverse Voltage | $V_{RM}$ | 25 | V |
| Reverse voltage | $V_R$ | 20 | V |
| Maximum (peak) forward current | $I_{FM}$ | 100 * | mA |
| Average forward current | $I_O$ | 50 * | mA |
| Surge current (10ms) | $I_{FSM}$ | 1 * | A |
| Power dissipation | P | 200 ** | mW |
| Junction temperature | $T_j$ | 125 | °C |
| Storage temperature range | $T_{stg}$ | −55~125 | °C |
| Operating temperature range | $T_{opr}$ | −40~110 | °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).

* : This is absolute maximum rating of single diode (Q1 or 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.

** :Total rating

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

| Characteristic | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage | $V_{F\ (1)}$ | — | $I_F$ = 1mA | — | 0.33 | — | V |
| | $V_{F\ (2)}$ | — | $I_F$ = 5mA | — | 0.38 | — | |
| | $V_{F\ (3)}$ | — | $I_F$ = 50mA | — | 0.50 | 0.55 | |
| Reverse current | $I_R$ | — | $V_R$ = 20V | — | — | 0.5 | μA |
| Total capacitance | $C_T$ | — | $V_R$ = 0, f = 1MHz | — | 3.9 | — | pF |

stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.

- In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc.
- The TOSHIBA products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.).These TOSHIBA products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc. Unintended Usage of TOSHIBA products listed in his document shall be made at the customer's own risk.
- The products described in this document shall not be used or embedded to any downstream products of which manufacture, use and/or sale are prohibited under any applicable laws and regulations.
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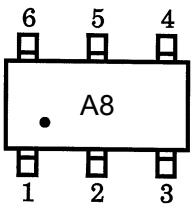
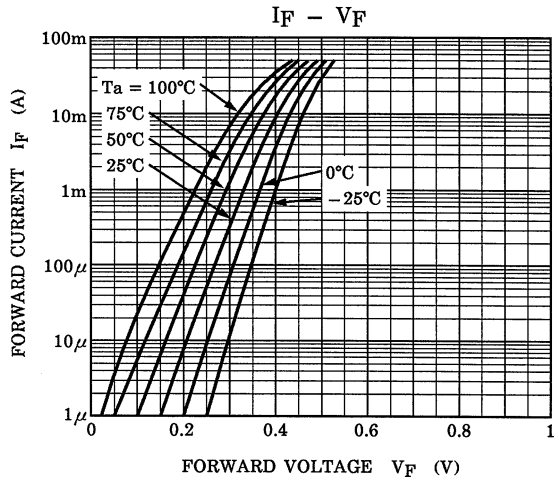
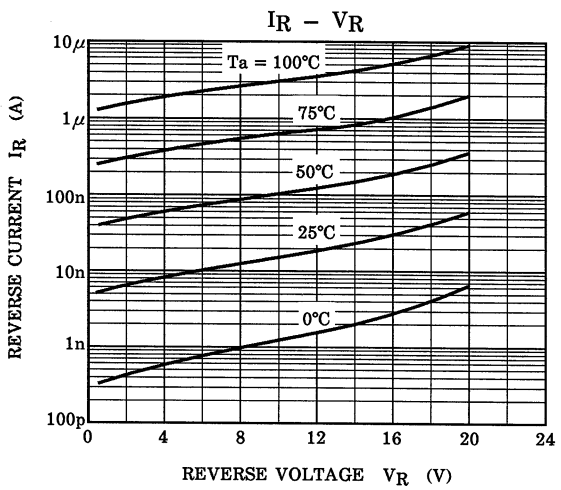
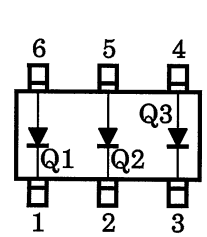


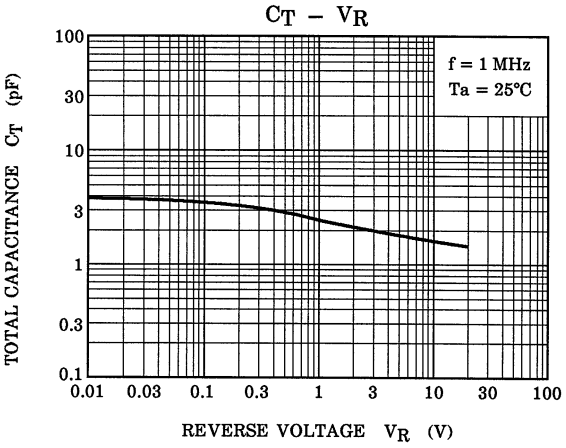



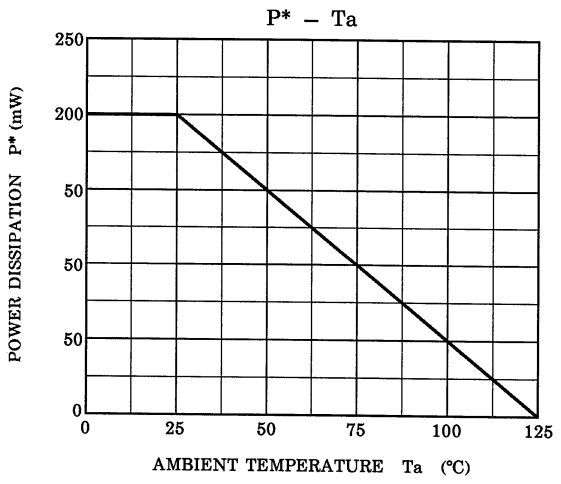




## Pin Assignment (Top View)




## Marking




* : Total Rating