TOSHIBA Diodes for Protecting against ESD

# DF5A5.6LFU

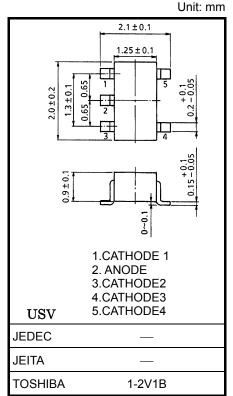
Product for Use Only as Protection against Electrostatic Discharge (ESD)

- \* This product is for protection against electrostatic discharge (ESD) only and is not intended for any other usage, including without limitation, the constant voltage diode application.
- The mounting of four devices on an ultra-compact package allows the number of parts and the mounting cost to be reduced.
- Low terminal capacitance: C<sub>T</sub> = 8.0 pF (typ.)

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

| Characteristic            | Symbol           | Rating     | Unit |
|---------------------------|------------------|------------|------|
| Power dissipation         | Р                | 200        | mW   |
| Junction temperature      | Тј               | 125        | °C   |
| Storage temperature range | T <sub>stg</sub> | -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.



Weight: 0.0062 g (typ.)

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).

#### Electrical Characteristics (Ta = 25°C)

| Characteristic                                      | Symbol         | Test Condition                 | Min | Тур. | Max | Unit |
|---|----------------|--------------------------------|-----|------|-----|------|
| Zener voltage                                       | VZ             | I <sub>Z</sub> = 5 mA          | 5.3 | 5.6  | 6.0 | V    |
| Dynamic impedance                                   | ZZ             | I <sub>Z</sub> = 5 mA          | _   | -    | 50  | Ω    |
| Reverse current                                     | Ι <sub>R</sub> | V <sub>R</sub> = 3.5 V         | _   | -    | 1.0 | μA   |
| Terminal capacitance<br>(between Cathode and Anode) | CT             | V <sub>R</sub> = 0V, f = 1 MHz | _   | 8    | _   | pF   |

#### **Guaranteed Level of ESD Immunity**

| Test Condition                      | ESD Immunity Level |
|-------------------------------------|--------------------|
| IEC61000-4-2<br>(Contact discharge) | $\pm$ 8 kV         |

Criterion: No damage to device elements

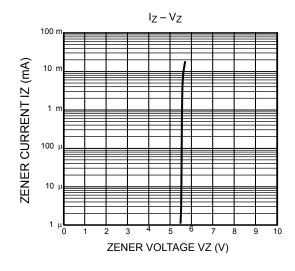
## **TOSHIBA**

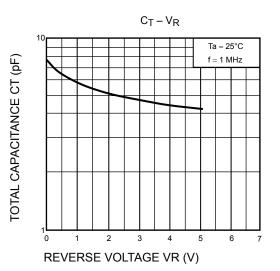
### Marking

Equivalent Circuit (Top View)









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