

TOSHIBA Diodes for Protecting against ESD

# DF5A3.6JE

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.

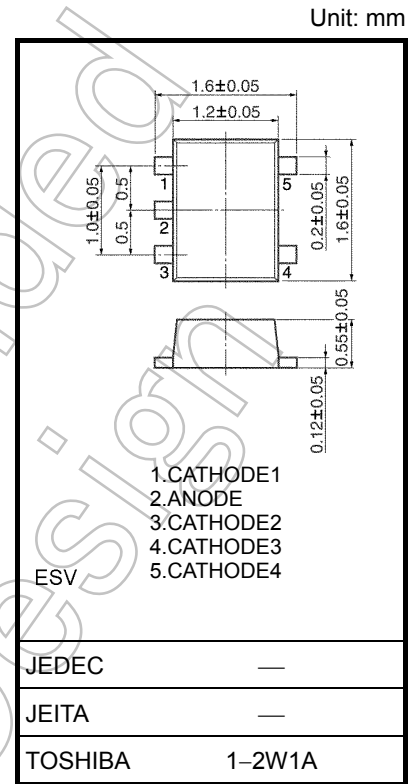
- The mounting of four devices on an ultra-compact package allows the number of parts and the mounting cost to be reduced.

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

| Characteristic            | Symbol           | Rating     | Unit |
|---------------------------|------------------|------------|------|
| Power dissipation         | P                | 100        | MW   |
| Junction temperature      | T <sub>j</sub>   | 150        | °C   |
| Storage temperature range | T <sub>stg</sub> | -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).



|         |        |
|---------|--------|
| JEDEC   | —      |
| JEITA   | —      |
| TOSHIBA | 1-2W1A |

Weight: 0.003 g (typ.)

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

| Characteristic                                   | Symbol         | Test Condition                  | Min | Typ. | Max | Unit |
|--|----------------|---------------------------------|-----|------|-----|------|
| Zener voltage                                    | V <sub>Z</sub> | I <sub>Z</sub> = 5 mA           | 3.4 | 3.6  | 3.8 | V    |
| Dynamic impedance                                | Z <sub>Z</sub> | I <sub>Z</sub> = 5 mA           | —   | —    | 130 | Ω    |
| Reverse current                                  | I <sub>R</sub> | V <sub>R</sub> = 1 V            | —   | —    | 10  | μA   |
| Terminal capacitance (between Cathode and Anode) | C <sub>T</sub> | V <sub>R</sub> = 0 V, f = 1 MHz | —   | 110  | —   | pF   |

### Guaranteed Level of ESD Immunity

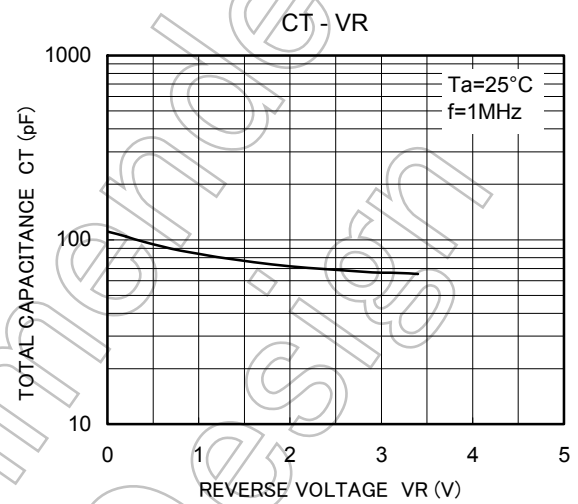
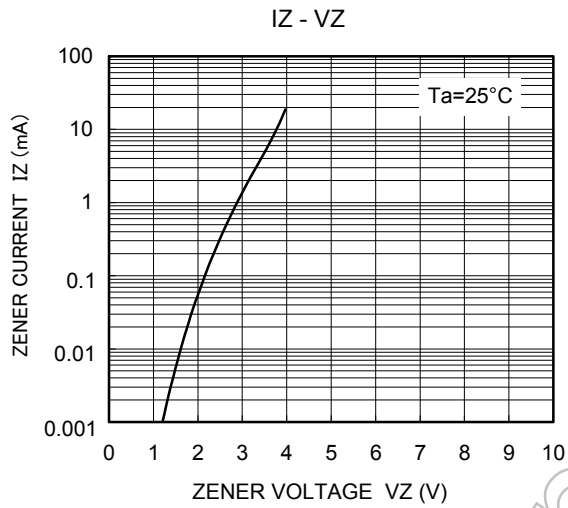
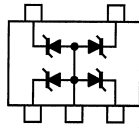
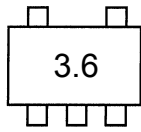
| Test Condition                   | ESD Immunity Level |
|----------------------------------|--------------------|
| IEC61000-4-2 (Contact discharge) | ± 30 kV            |

Criterion: No damage to device elements

Start of commercial production  
2002-03

**Marking**

**Equivalent Circuit (Top View)**



Not Recommended for New Design

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