

TOSHIBA Diodes for Protecting against ESD Epitaxial Planar Type

# DF3A6.8FV

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.

- Because two devices are mounted on an ultra compact package, it is possible to allow reducing the number of the parts and the mounting cost.

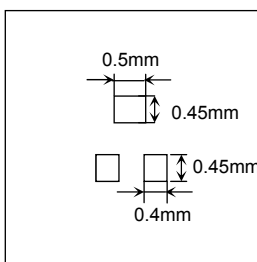
### Absolute Maximum Ratings (Ta = 25°C)

| Characteristics           | Symbol           | Rating  | Unit |
|---------------------------|------------------|---------|------|
| Power dissipation         | P*               | 150     | mW   |
| Junction temperature      | T <sub>j</sub>   | 150     | °C   |
| Storage temperature range | T <sub>stg</sub> | -55~150 | °C   |

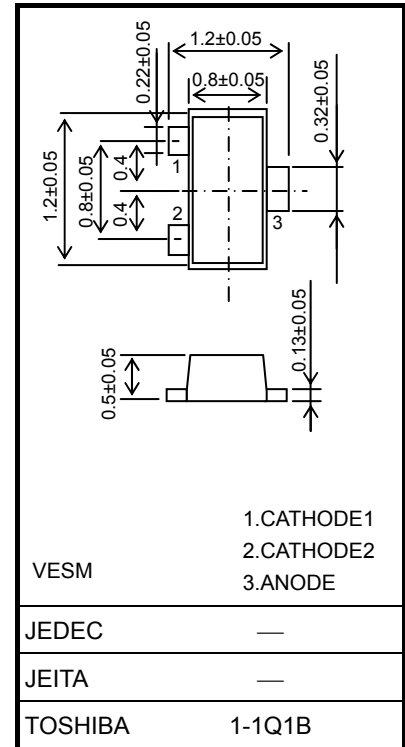
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

\*: Mounted on FR4 board (25.4 mm × 25.4 mm × 1.6 mmt)



Unit: mm



|            |        |
|------------|--------|
| 1.CATHODE1 |        |
| 2.CATHODE2 |        |
| 3.ANODE    |        |
| VESM       |        |
| JEDEC      | —      |
| JEITA      | —      |
| TOSHIBA    | 1-1Q1B |

Weight: 0.0015 g (typ.)

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

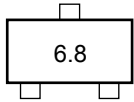
| Characteristics                                  | Symbol         | Test Condition               | Min | Typ. | Max | Unit |
|--------------------------------------------------|----------------|------------------------------|-----|------|-----|------|
| Zener voltage                                    | V <sub>Z</sub> | I <sub>Z</sub> = 5 mA        | 6.4 | 6.8  | 7.2 | V    |
| Dynamic impedance                                | Z <sub>Z</sub> | I <sub>Z</sub> = 5 mA        | —   | —    | 25  | Ω    |
| Reverse current                                  | I <sub>R</sub> | V <sub>R</sub> = 5 V         | —   | —    | 0.5 | μA   |
| Terminal capacitance (between Cathode and Anode) | C <sub>T</sub> | V <sub>R</sub> = 0, f = 1MHz | —   | 45   | —   | pF   |

## Guaranteed Level of ESD Immunity

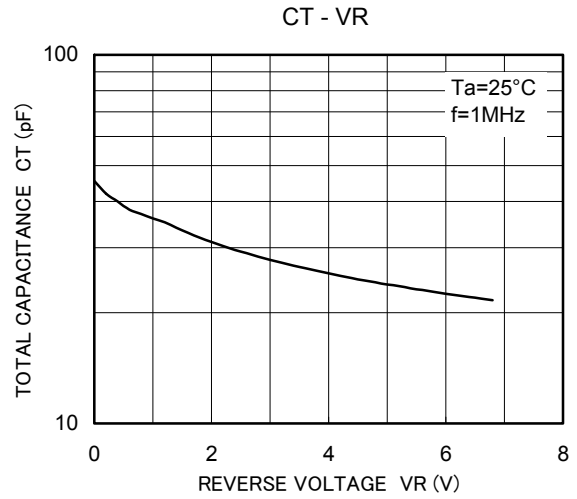
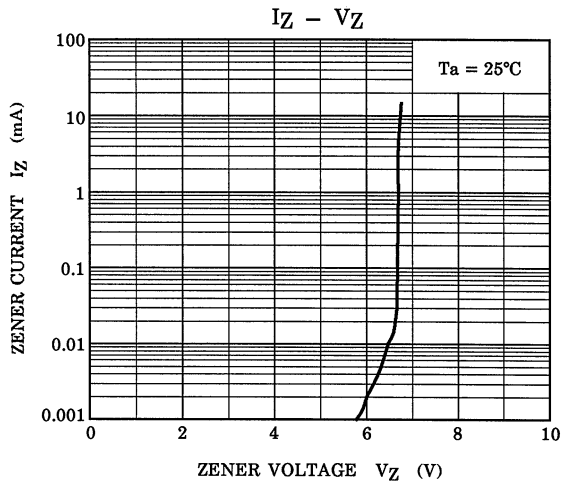
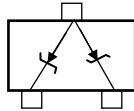
| Test Condition                      | ESD Immunity Level |
|-------------------------------------|--------------------|
| IEC61000-4-2<br>(Contact discharge) | $\pm 30\text{kV}$  |

Criterion: No damage to device elements

## Marking



## Equivalent Circuit (top view)



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