

TOSHIBA Diodes for Protecting against ESD

# DF5A5.6CFU

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

Unit: mm

\* 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.

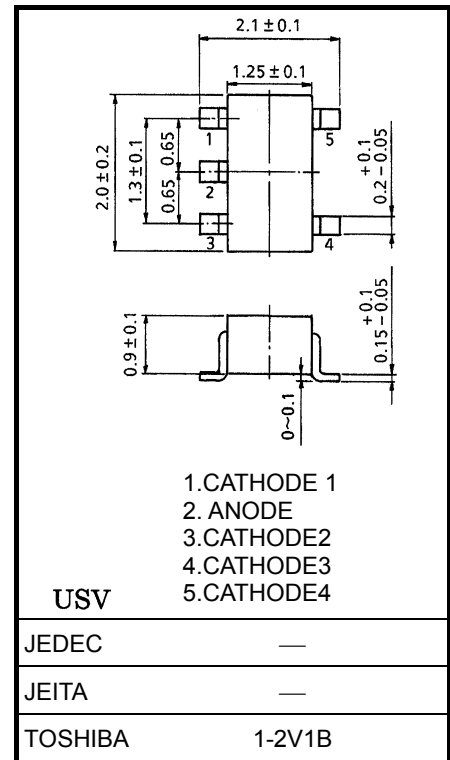
- The mounting of four devices on an ultra-compact package allows the number of parts and the mounting cost to be reduced.
- Low terminal capacitance:  $C_T = 29 \text{ pF}$  (typ.)

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Power dissipation	P	200	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature range	$T_{\text{stg}}$	-55 to 150	$^\circ\text{C}$

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).



Weight: 0.0062 g (typ.)

### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Zener voltage	$V_Z$	$I_Z = 5 \text{ mA}$	5.3	5.6	6.0	V
Dynamic impedance	$Z_Z$	$I_Z = 5 \text{ mA}$	—	—	40	$\Omega$
Reverse current	$I_R$	$V_R = 3.5 \text{ V}$	—	—	1.0	$\mu\text{A}$
Terminal capacitance (between Cathode and Anode)	$C_T$	$V_R = 0 \text{ V}, f = 1 \text{ MHz}$	—	29	—	pF

### Guaranteed Level of ESD Immunity

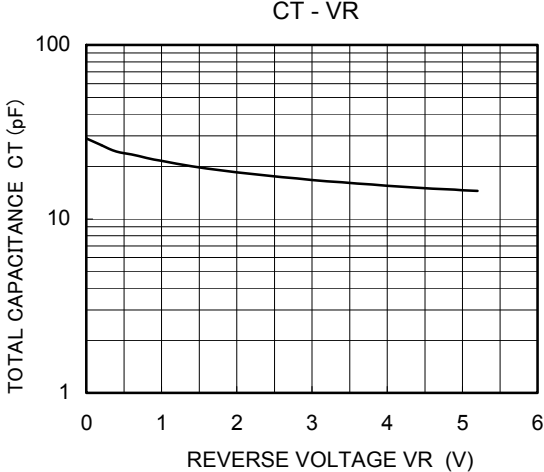
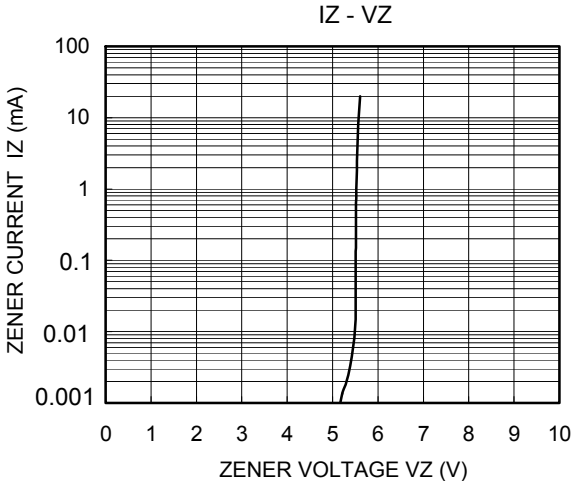
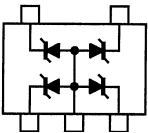
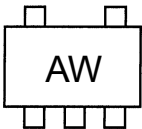
Test Condition	ESD Immunity Level
IEC61000-4-2 (Contact discharge)	$\pm 30 \text{ kV}$

Criterion: No damage to device elements

Start of commercial production  
2003-06

Marking

Equivalent Circuit (Top View)



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