

## Low Capacitance Uni-directional TVS Diode

### Features

- Ultra small package: 1.0x0.6x0.5mm
- Ultra low capacitance: 0.5pF typical
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30\text{kV}$   
Contact discharge:  $\pm 25\text{kV}$
  - – IEC61000-4-5 (Lightning) 4A (8/20 $\mu\text{s}$ )
- RoHS Compliant
- Lead Finish: NiPdAu

### Ordering Information

Part Number	Qty per Reel	Reel Size
ESD5V0U05-1006	10000	7"

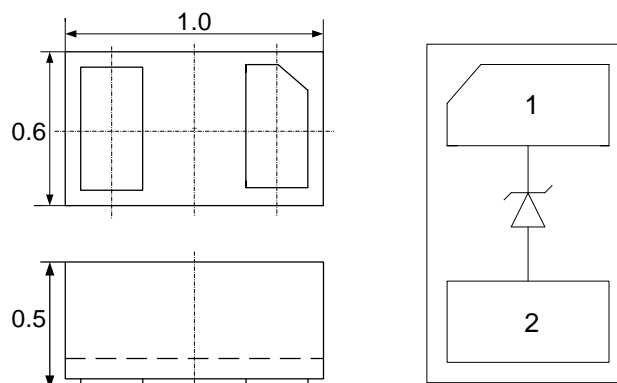
### Mechanical Characteristics

- Package: DFN1006-2 (0402)
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

### Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

### Dimensions and Pin Configuration





# ESD5V0U05-1006

## Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	70	W
Peak Pulse Current (8/20μs)	Ipp	4	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±30 ±25	kV
Operating Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			5	V	
Breakdown Voltage	V <sub>BR</sub>	6.5	7.5	9.0	V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			0.08	μA	V <sub>RWM</sub> = 5V
Clamping Voltage	V <sub>C</sub>			10	V	I <sub>pp</sub> = 1A (8x 20us pulse)
Clamping Voltage	V <sub>C</sub>			14	V	I <sub>pp</sub> = 4A (8x 20us pulse)
Junction Capacitance	C <sub>J</sub>		0.5	0.65	pF	V <sub>R</sub> = 0V, f = 1MHz, Pin 1 to Pin 2

## Typical Performance Characteristics (T<sub>A</sub>=25°C unless otherwise Specified)

Fig1. 8/20µs Pulse Waveform

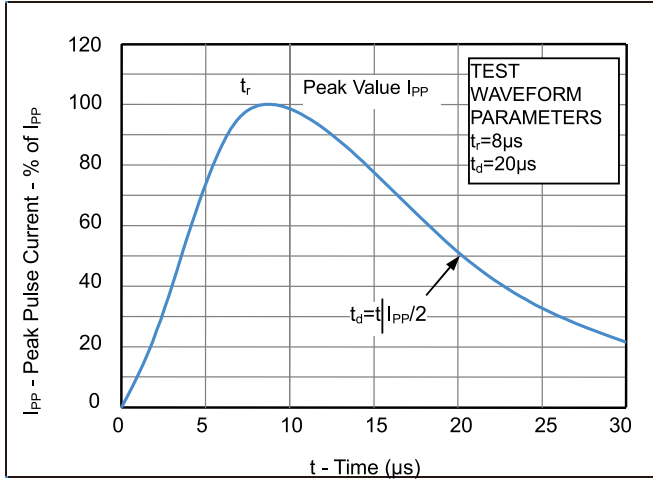


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

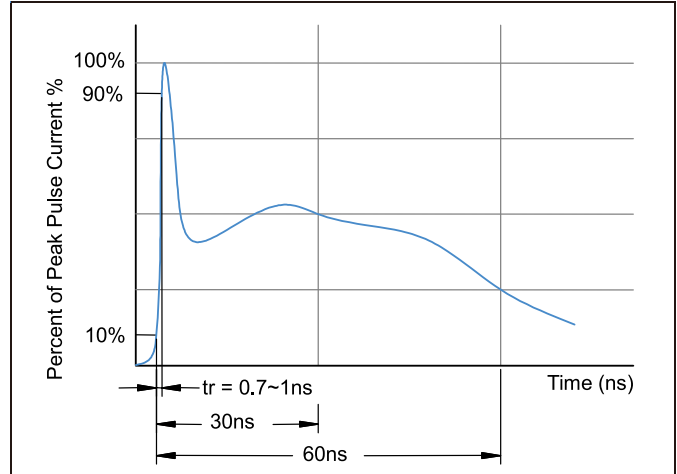
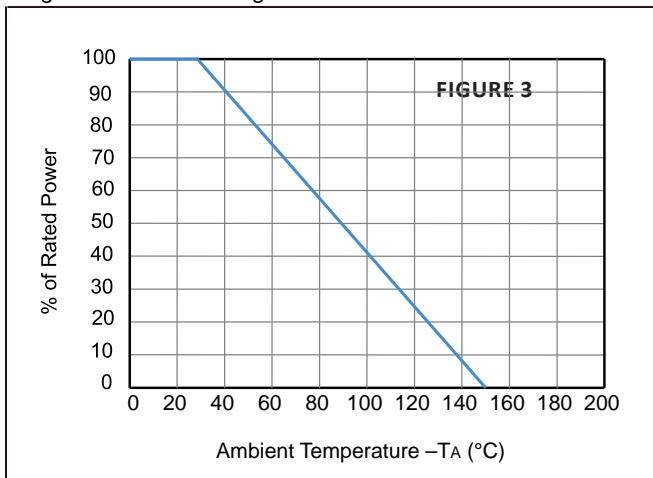
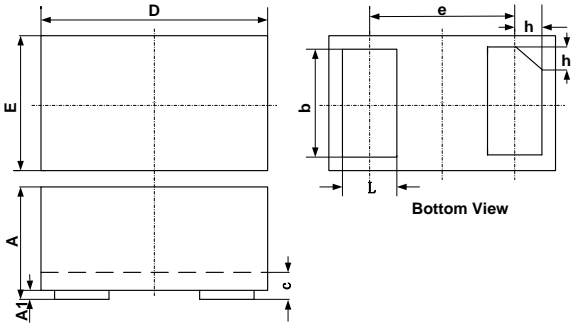


Fig3. Power Derating Curve

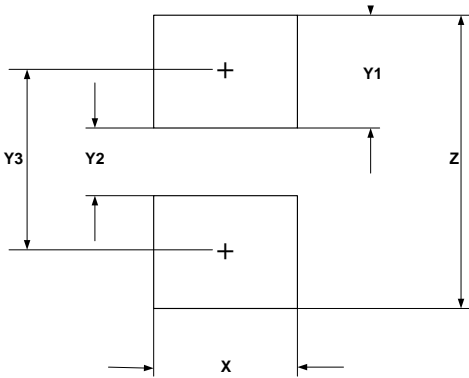


## DFN1006-2 Package Outline Drawing (0402)



SYM BOL	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0.07	0.12	0.17	0.003	0.005	0.007

## Suggested Land Pattern



SYM BOL	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052