

## 1-Line, Bi-directional, Transient Voltage Suppressors

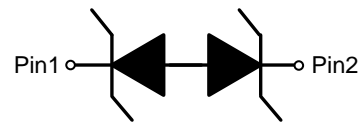
### Descriptions

The ESD5D015TA is a bi-directional TVS (Transient Voltage Suppressor). It is specifically designed to protect sensitive electronic components that may be subjected to ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. It is particularly well-suited for cellular phones, portable device, digital cameras, power supplies and many other portable applications because of its small package and low weight.

The ESD5D015TA is available in DFN1006-2L package. Standard products are Pb-free and Halogen-free.



DFN1006-2L



Circuit diagram

### Features

- Stand-off voltage:  $\pm 5.0V$  Max
- Transient protection for each line according to IEC61000-4-2 (ESD):  $\pm 30KV$  Air,  $\pm 30KV$  contact IEC61000-4-5 (Surge): 15A (8/20 $\mu s$ )
- Solid-state silicon technology
- Low leakage current

### Applications

- Cell phone handsets and accessories
- Personal Digital Assistants (PDAs)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Digital Cameras
- CAR/MID DVD/MP3/MP4/PMP Players

### Order information

Device	Marking	Package	Shipping
ESD5D015TA	5S	SOD-882	10000/Tape&Reel

## Absolute maximum ratings

Parameter	Symbol	Rating	Unit
Peak pulse current ( $t_p = 8/20\mu s$ )	$I_{PP}$	15.0	A
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 30$	kV
ESD according to IEC61000-4-2 contact discharge		$\pm 30$	
Operating temperature	$T_{OP}$	-40~125	$^{\circ}C$
Lead temperature	$T_L$	260	C
Storage temperature	$T_{STG}$	-55~150	$^{\circ}C$

## Electrical characteristics (TA=25 $^{\circ}C$ , unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	$V_{RWM}$				$\pm 5.0$	V
Reverse leakage current	$I_R$	$V_{RWM} = 5.0V$			0.2	$\mu A$
Reverse breakdown voltage	$V_{BR}$	$I_T = 1mA$	5.5	8.0		V
Clamping voltage	$V_C$	$I_{pp} = 1A$ $t_p = 8/20\mu s$		9.0		V
		$I_{pp} = 15A$ $t_p = 8/20\mu s$		11.0	12.0	V
Junction capacitance	$C_J$	$V_R = 0V$ , $f = 1MHz$		1.5	2.0	pF

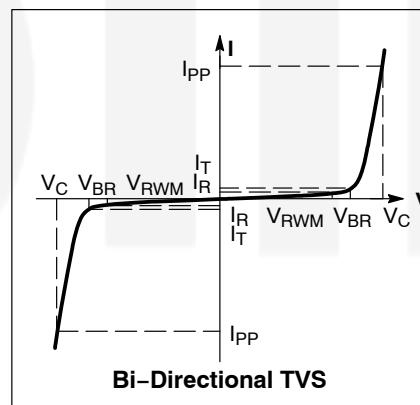
## Electrical performance curve

$V_C$ : Maximum clamping voltage

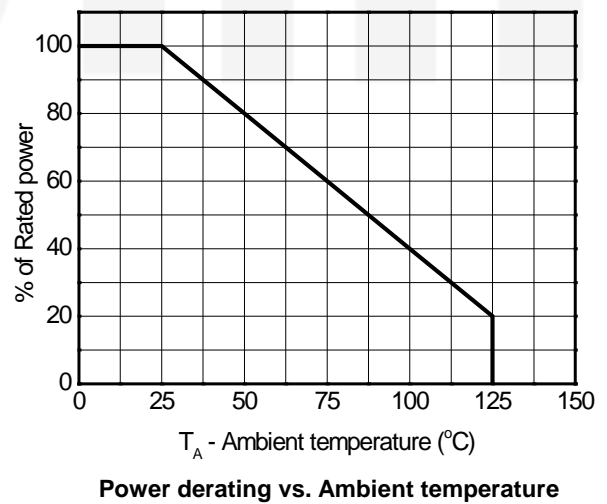
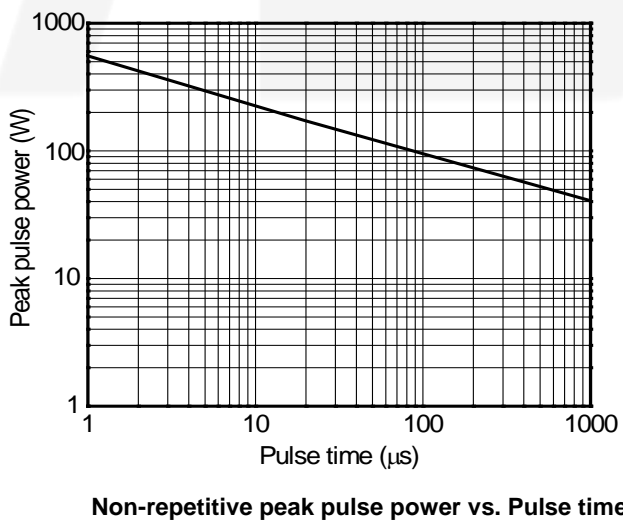
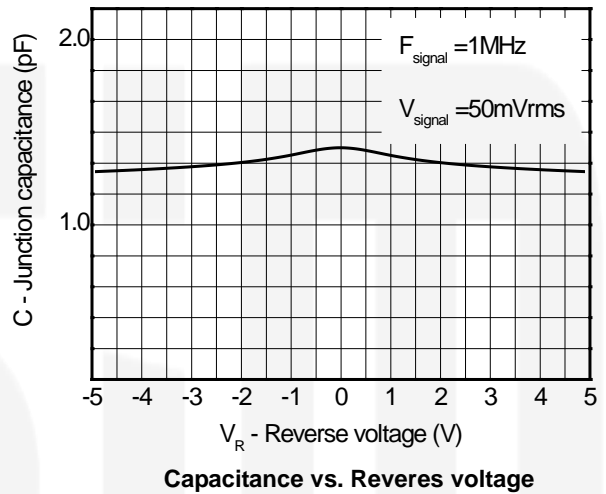
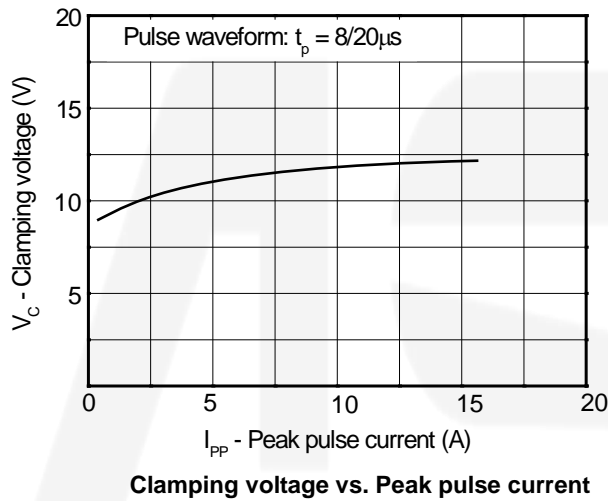
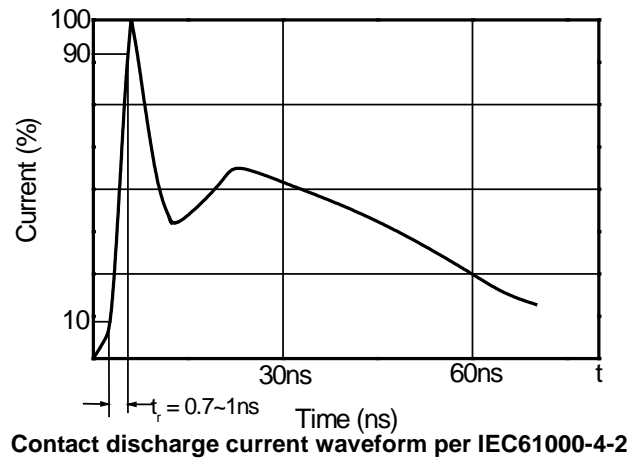
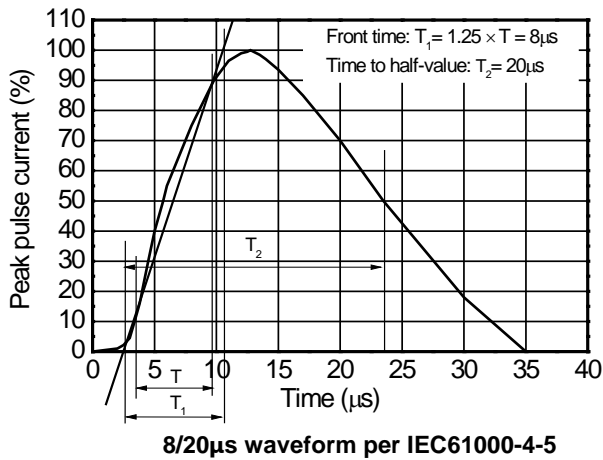
$V_{br}$ : Reverse breakdown voltage

$V_{RWM}$ : Working voltage

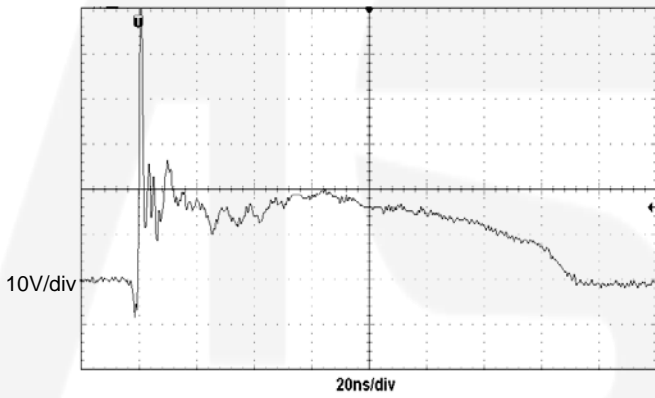
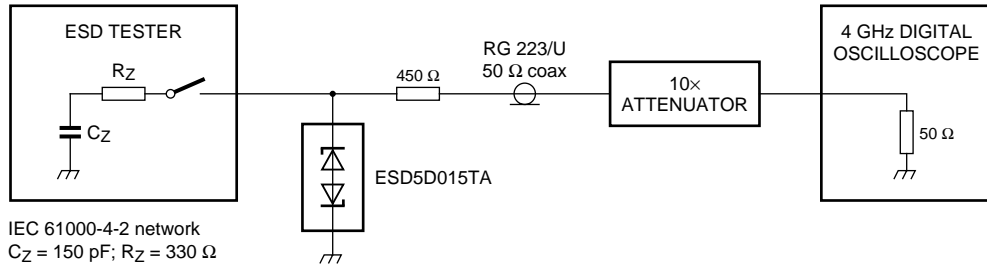
$I_{PP}$ : Maximum peak current



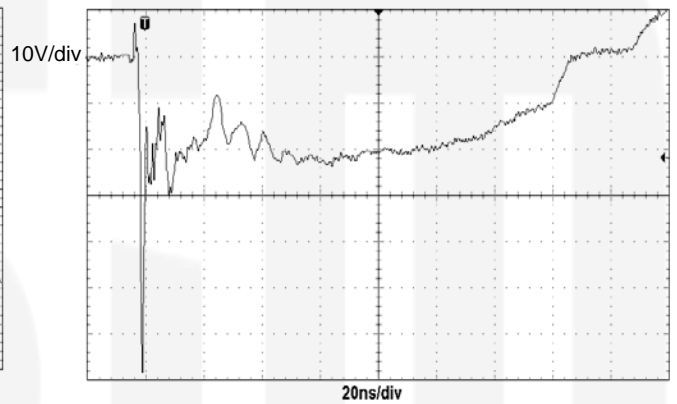
**Typical characteristics ( $T_A=25^\circ\text{C}$ , unless otherwise noted)**



ESD clamping test setup and waveforms



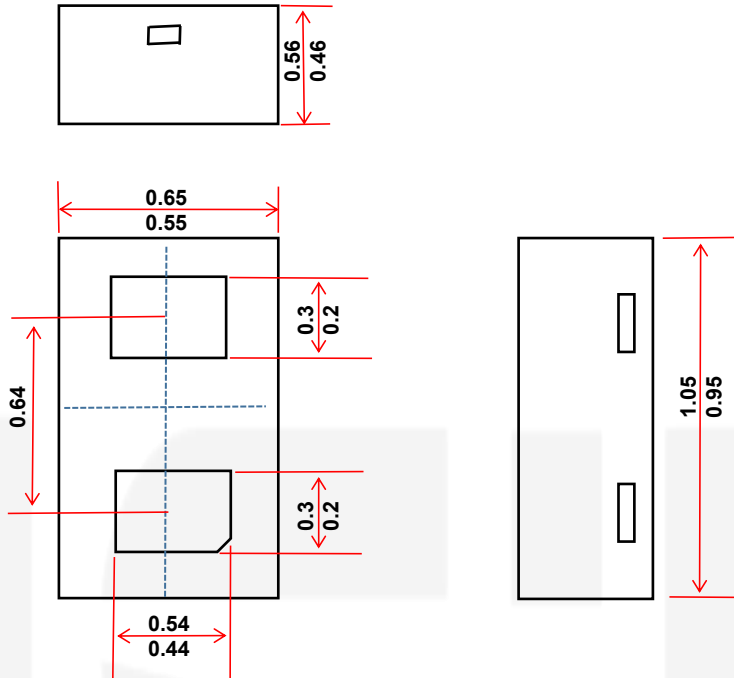
**ESD clamping**  
 (+8kV contact discharge per IEC61000-4-2)



**ESD clamping**  
 (-8kV contact discharge per IEC61000-4-2)

**Package outline dimensions**

**DFN1006-2L**



**Recommended Mounting Pad Layout** Unit:mm

