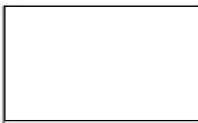




## 1-Line Uni-directional ESD Protection Diode

DFN1006-2L

### Schematic & Pin configuration

Graphic symbol	Pin	Symbol	Description
	1	K	Cathode
	2	A	Anode

### General description

The ESD8ST3.3 is an uni-directional TVS diode,utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage,making this device an ideal solution for protecting voltage sensitive data and power line.The ESD8ST3.3 complies with the IEC 61000-4-2(ESD)standard with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge.It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package.The small size and high ESD surge protection make ESD8ST3.3 an ideal choice to protect cell phone,digital cameras,audio players and many other portable applications.

### Features and benefits

- Complies with following standards:
  - IEC 61000-4-2 (ESD)immunity test
    - Air discharge: $\pm 30\text{kV}$
    - Contact discharge: $\pm 30\text{kV}$
  - IEC61000-4-5(Lightning)65A(8/20us)
- Low clamping voltage
- Ultra small package:1.0x0.6x0.5mm
- RoHS Compliant

### Application information

- Hand Held Portable Applications
- Vbat pin for Mobile Devices
- Battery Protection
- Power Line Protection
- Mobile Phones
- Portable electronics

### Ordering information

Device	Package	Packaging	Reel Size
ESD8ST3.3	DFN1006-2L	10000/Tape &Reel	7 Inch

### Maximum Ratings (Top=25 C, unless otherwise specified)

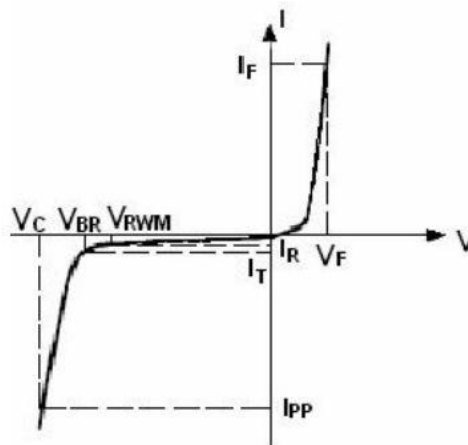
Parameter	Symbo	Value	Unit
Peak Pulse Power (Tp=8/20 μ s)	PpPM	600	W
Rated Peak Pulse Current (Tp =8/20 μ s)	PPM	65	A
ESD voltage IEC 61000-4-2 (air discharge)	VESD	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	VESD	30	kV
Maximum lead temperature for soldering during 10s	TL	260	° C
Storage Temperature Range	Tstg	-55 to +150	° C
Operating Temperature Range	Top	-40 to +125	° C

### Electrical Characteristics (Top=25°C, unless otherwise specified)

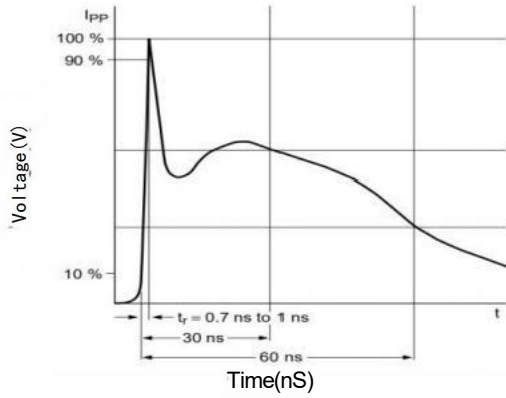
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	VRWM			3.3	v	
Breakdown Voltage	VBR	3.6	4.2	5.6	v	Ir=1mA
Leakage Current ILeak	Ir			0.1	uA	VRWM=3.3V
Forward Voltage	VF	0.6		1.1	v	Ir=10mA
Forward Clamping Voltage	VcF		5.5	6.0	v	Ipp=10A, Tp=8/20 μ s
Reverse Clamping Voltage	Vcr		9.0	10.5	v	Ipp=65A, Tp=8/20 μ s
Junction Capacitance	Cj		120	140	pF	VR=0V, f=1MHz

### Portion Electronics Parameter

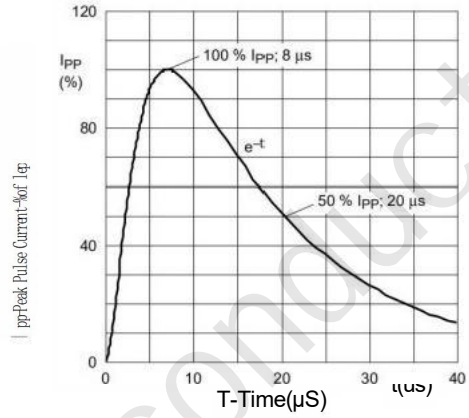
Symbo	Parameter
pp	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ipp
VRWM	Working Peak Reverse Voltage
IR	Reverse Leakage Current @VRWM
Ir	Test Current
VBR	Breakdown Voltage @Ir
IF	Forward Current
VF	Forward Voltage @IF



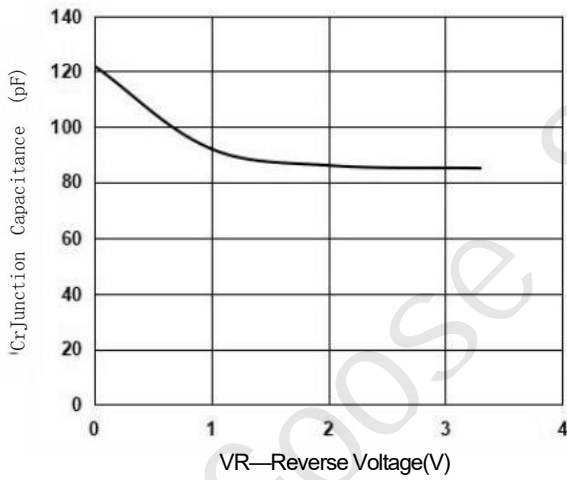
## Typical Performance Characteristics ( $T_4=25^\circ\text{C}$ unless otherwise Specified)



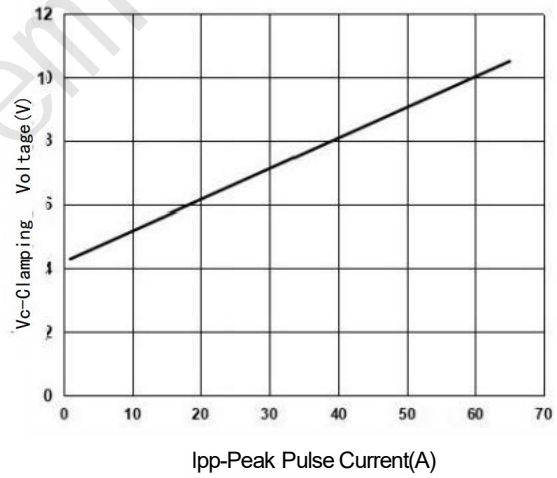
IEC61000-4-2 Pulse Waveform



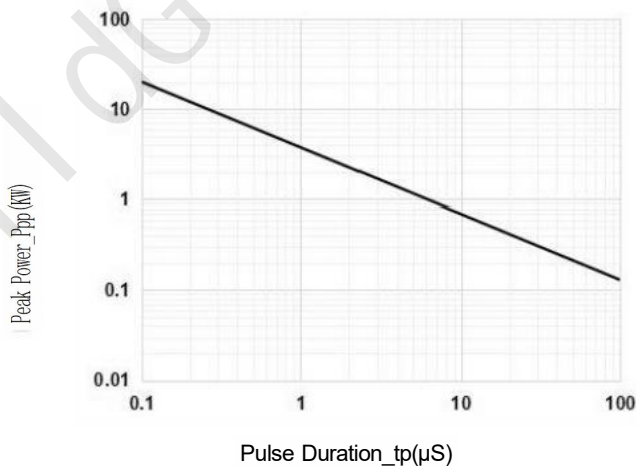
IEC61000-4-58X20µs Pulse Waveform



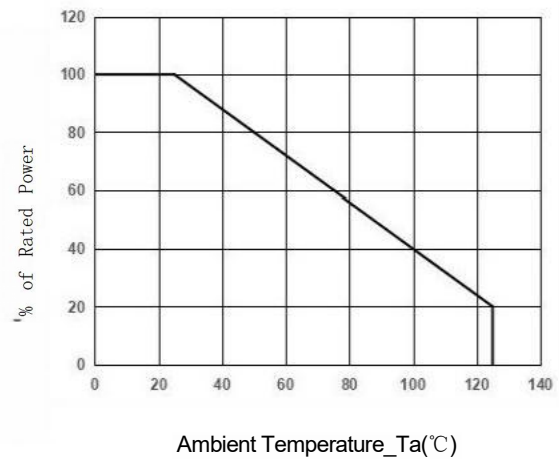
Junction Capacitance vs. Reverse Voltage



Clamping Voltage vs. Peak Pulse Current



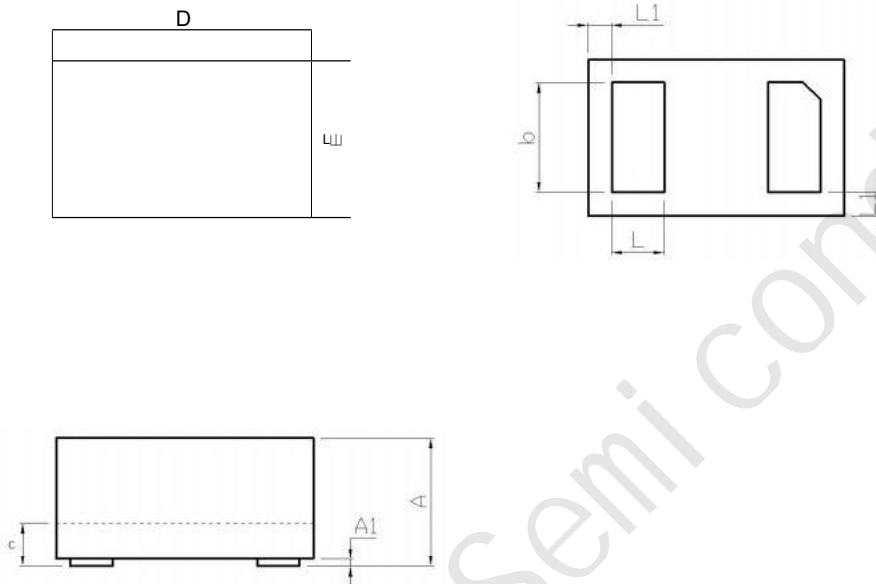
Peak Pulse Power vs. Pulse Time



Power Derating Curve

**Package Outline Dimensions**

DFN1006-2L



DFN1006-2L (mm)			
Dim	Min	Typ.	Max
A	0.40	0.50	<b>0.55</b>
A1	0	0.02	<b>0.05</b>
b	<b>0.45</b>	<b>0.5</b>	<b>0.55</b>
c	0.12	0.15	<b>0.18</b>
D	0.95	1.00	<b>1.05</b>
E	0.55	0.60	<b>0.65</b>
L	0.20	0.25	<b>0.30</b>
L1	0.035	0.05	<b>0.065</b>

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