

## 1-Line Bidirectional ESD Protection Diode

### General description

Low capacitance bidirectional ElectroStatic Discharge (ESD) protection diode in a DFN1006(SOD882) leadless ultra small Surface-Mounted Device (SMD) plastic package designed to protect one signal line from the damage caused by ESD and other transients.

### Features and benefits

- Bidirectional ESD protection of one line
- Femtofarad capacitance:  $C_j = 15\text{pF}$  (Typ)
- Low clamping voltage  $V_C = 11\text{V}@10\text{A}$
- Low leakage current: nA Level
- ESD protection up to 30 kV
- IEC 61000-4-2; level 4 (ESD)
- IEC 61000-4-5 (surge);  $I_{PPM} = 10\text{A}$

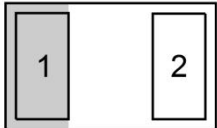
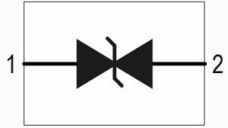
### Application information

- Portable electronics
- Computers and peripherals
- Audio and video equipment
- Cellular handsets and accessories
- Communication systems
- Power supplies

### Ordering information

Device	Package	Marking	Packaging
ESD8D3.3C	DFN1006-2L	B	10000/Tape & Reel

### Schematic & Pin configuration

Simplified outline	Graphic symbol
	

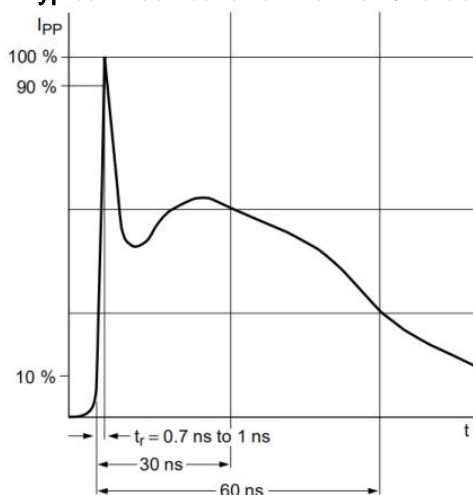
## Maximum Ratings ( $T_{OP} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ( $T_p = 8/20\text{ }\mu\text{s}$ )	$P_{PPM}$	110	W
Rated Peak Pulse Current ( $T_p = 8/20\text{ }\mu\text{s}$ )	$I_{PPM}$	10	A
ESD voltage IEC 61000-4-2 (air discharge)	$V_{ESD}$	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	$V_{ESD}$	30	kV
Maximum lead temperature for soldering during 10s	$T_L$	260	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^{\circ}\text{C}$
Operating Temperature Range	$T_{OP}$	-40 to +125	$^{\circ}\text{C}$
Maximum junction temperature	$T_j$	150	$^{\circ}\text{C}$

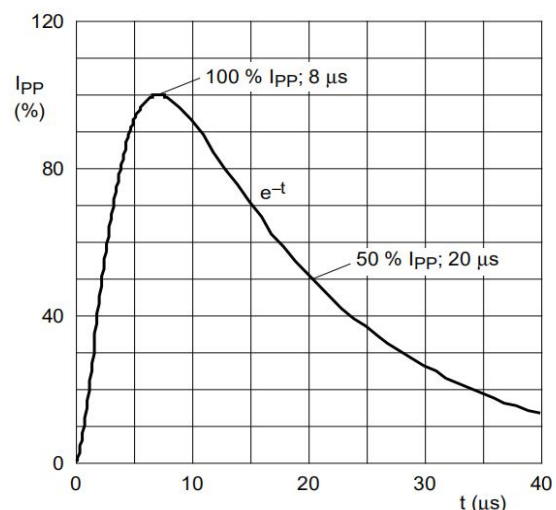
## Electrical Characteristics ( $T_{OP} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	$V_{RWM}$	--	--	3.3	V	
Breakdown Voltage	$V_{BR}$	4.5	--	6.5	V	$I_T=1\text{mA}$
Leakage Current $I_{Leak}$	$I_R$	--	--	100	nA	$V_{RWM}=3.3\text{V}$
Clamping Voltage	$V_C$	--	--	11.0	V	$I_{PP}=10\text{A}, T_p=8/20\mu\text{s}$
Junction Capacitance	$C_j$	--	15	20	pF	$V_R=0\text{V}, f=1\text{MHz}$

### Typical Electrical and Thermal Characteristics (Curves)



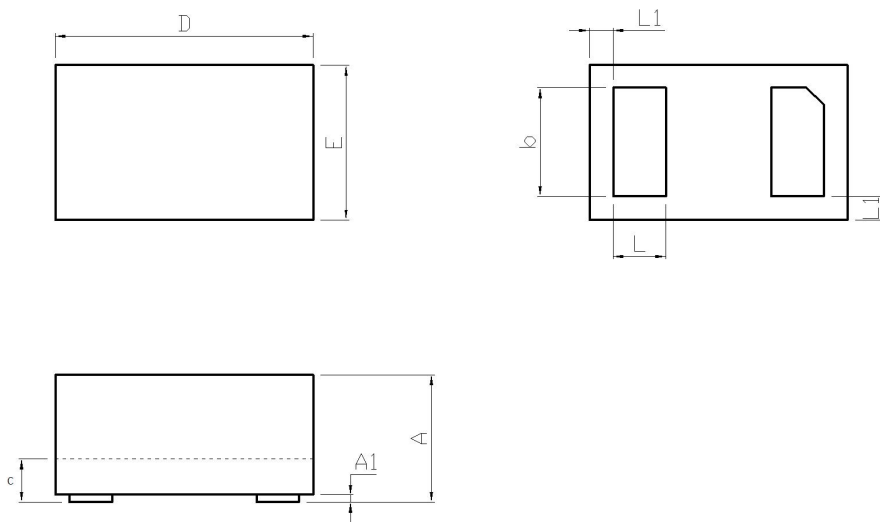
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform( 8/20 $\mu\text{s}$  pulse)

## Package Outline Dimensions

### DFN1006-2L



DFN1006-2L (mm)			
Dim	Min	Typ.	Max
A	0.46	0.48	0.50
A1	0	0.02	0.05
b	0.45	0.5	0.55
c	0.1	0.12	0.14
D	0.95	1.00	1.05
E	0.55	0.60	0.65
L	0.20	0.25	0.30
L1	0.035	0.05	0.065
h	0.07	0.12	0.17