

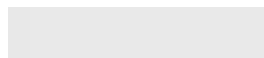


1-Line Bidirectional ESD Protection Diode

DFN1006-2L

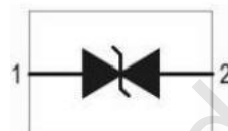
## Schematic & Pin configuration

Simplified outline



Graphic symbol

1 2



### 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
- Low operating voltage: 5.0V
- Low clamping voltage  $V_c = 10\text{ V}@50\text{ A}$
- Response time is typically  $< 1\text{ ns}$
- Ultra Low Leakage: nA Level
- IEC 61000-4-2; level 4 (ESD)
- IEC 61000-4-5 (surge);  $1\text{ ppm} = 50\text{ A}$

### Application information

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

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

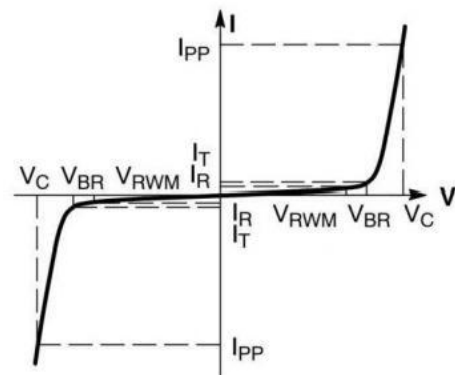
Parameter	Symbol	Value	Unit
Peak Pulse Power (Tp=8/20 μ s)	PppM	600	W
Rated Peak Pulse Current (Tp=8/20 μ s)	IppM	50	A
Maximum lead temperature for soldering during 10s	Tt	260	°C
Storage Temperature Range	Tstg	-55 to +150	°C
Operating Temperature Range	Top	-40 to +125	°C
Maximum junction temperature	Tj	150	°C
ESD voltage IEC 61000-4-2 (air discharge)	VESD	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	VESD	30	kV

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

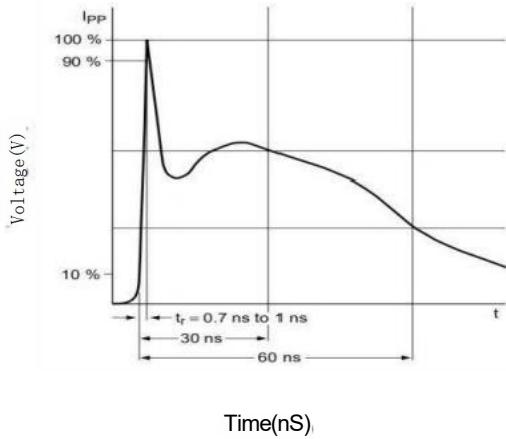
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	VRWM			5.0	v	
Breakdown Voltage	VBR	6.5		7.0	v	Ir=1mA
Leakage Current ILeak	I <sub>k</sub>			100	nA	VRwm=5.0V
Clamping Voltage	V <sub>c</sub>		7.5	9.0	v	I <sub>pp</sub> =1.0A, Tp=8/20 μ s
Clamping Voltage	V <sub>c</sub>		10.0	12	v	pp=50A, Tp=8/20 μ s
Junction Capacitance	C <sub>j</sub>		100	120	pF	VR=0V, f=1MHz

## Portion Electronics Parameter

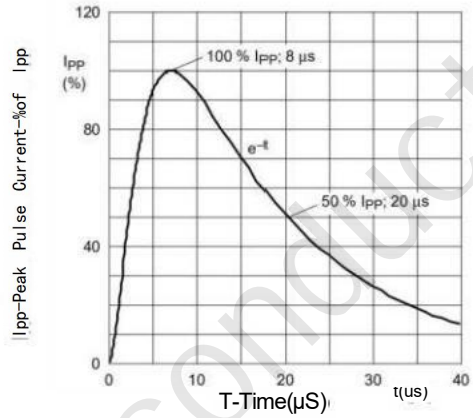
Symbo	Parameter
I <sub>pp</sub>	Maximum Reverse Peak Pulse Current
V <sub>c</sub>	Clamping Voltage @I <sub>pp</sub>
V <sub>gwM</sub>	Working Peak Reverse Voltage
I <sub>r</sub>	Maximum Reverse Leakage Current @V <sub>gwM</sub>
r	Test Current
VBR	VBR Breakdown Voltage @r



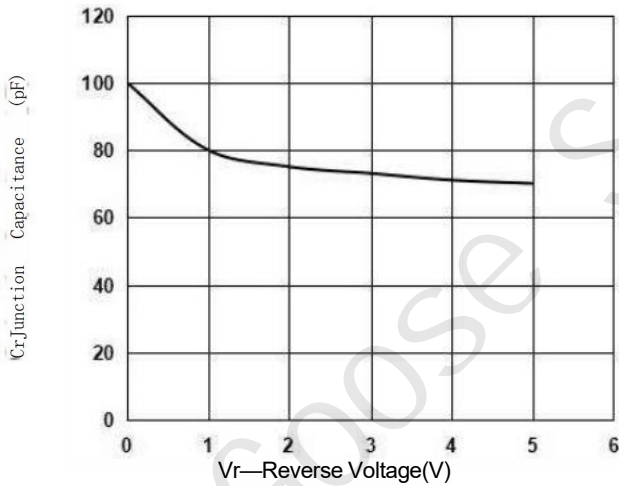
Typical Performance Characteristics (Ta=25°C unless otherwise Specified)



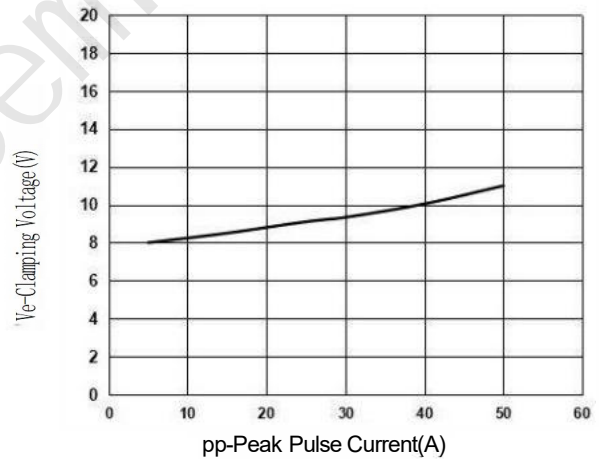
IEC61000-4-2 Pulse Waveform



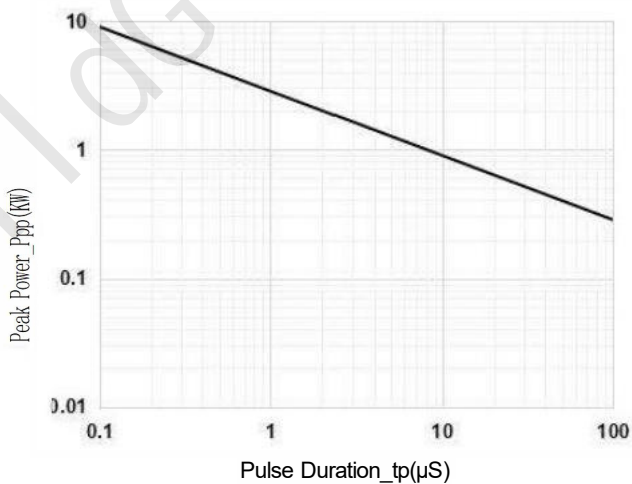
IEC61000-4-58X20μs Pulse Waveform



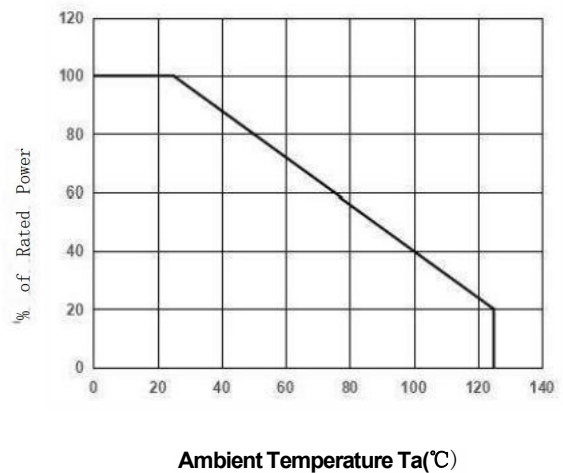
Junction Capacitance vs. Reverse Voltage



Clamping Voltage vs. Peak Pulse Current



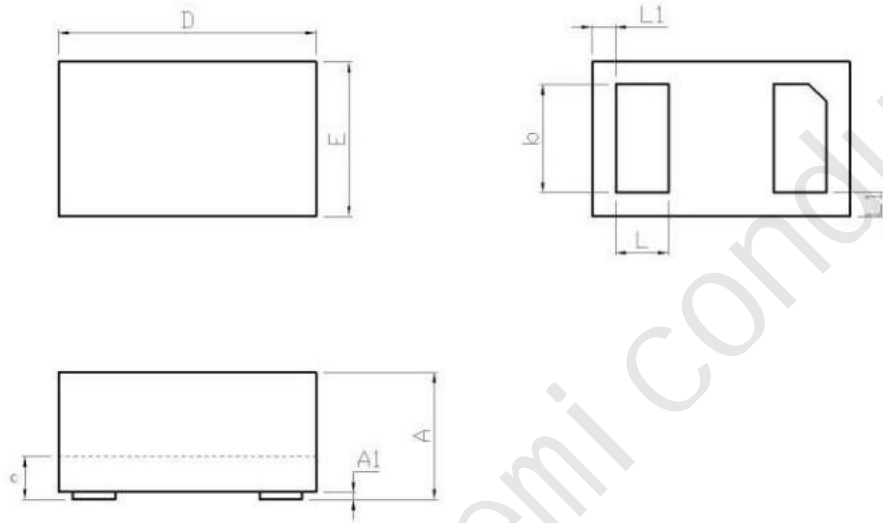
Peak Pulse Power vs. Pulse Time



Power Derating Curve

**Package Outline Dimensions**

DFN1006-2L



DFN1006-2L (mm)			
Dim	Min	Typ.	Max
A	0.45	0.50	0.55
A1	0	0.02	0.05
b	0.45	0.5	0.55
C	0.1	0.15	0.18
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

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