

General description

Femtofarad bidirectional ElectroStatic Discharge (ESD) protection diode in a leadless ultra small DFN1006 Surface-Mounted Device (SMD) plastic package designed to protect one signal line from the damage caused by ESD and other transients. The combination of extremely low capacitance, high ESD maximum rating and ultra small package makes the device ideal for high-speed data line protection and antenna protection applications.

Features and benefits

- Bidirectional ESD protection of one line
- Femtofarad capacitance: $C_i = 0.55\text{pF}$ (Typ)
- Low clamping voltage $V_c = 15\text{ V}@3\text{A}$
- Ultra Low Leakage: nA Level
- Response time is typically $< 1\text{ ns}$
- IEC 61000-4-2; level 4 (ESD)

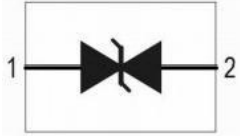
Application information

- 10/100/1000 Mbit/s Ethernet
- FireWire
- High-speed data lines
- Subscriber Identity Module (SIM) card protection
- Cellular handsets and accessories
- Portable electronics
- Communication systems
- Computers and peripherals
- Audio and video equipment
- Antenna protection

Ordering information

Device	Package	Marking	Packaging
ESD8L5.0C	DFN1006-2L	N	10000/Tape & Reel

Schematic & Pin configuration

Simplified outline			Graphic symbol
1	2		

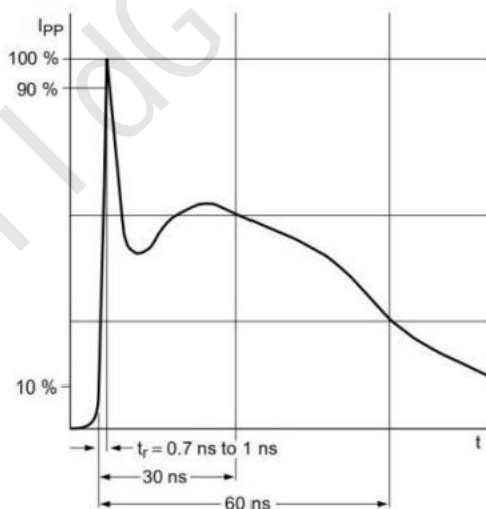
Maximum Ratings (Top=25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (Tp =8/20 μ s)	PppM	45	W
Rated Peak Pulse Current (Tp=8/20 μ s)	IppM	3	A
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
Maximum junction temperature	Tj	150	° C
ESD voltage IEC 61000-4-2 (air discharge)	VESD	15	kV
ESD voltage IEC 61000-4-2 (contact discharge)	VESD	8	kV

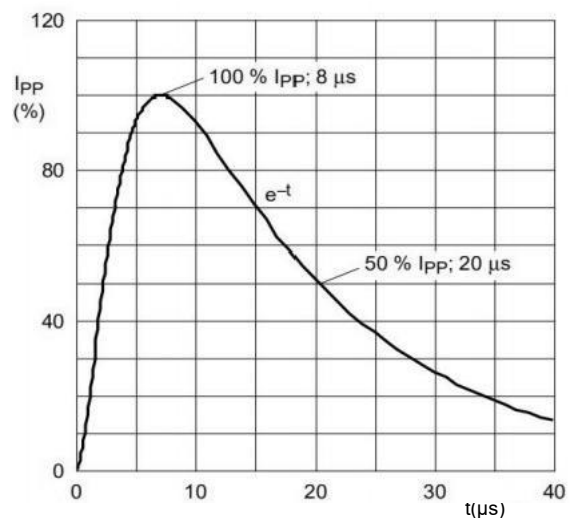
Electrical Characteristics (Top=25C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	VRWM			5.0	V	
Breakdown Voltage	VBR	6.5		9.0	V	I _r =1mA
Leakage Current I _{Leak}	I _R			100	nA	VRWM=5V
Clamping Voltage	V _c			15.0	V	pp=3A, Tp=8/20 μ s
Junction Capacitance	C _j		0.55	0.8	pF	V _r =0V, f=1MHz

Typical Electrical and Thermal Characteristics (Curves)



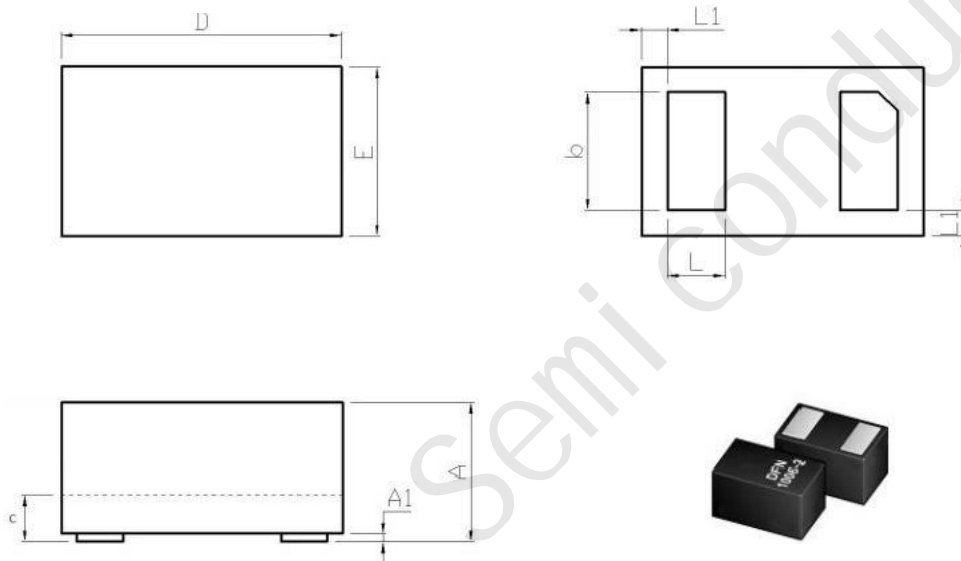
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform(8/20μs 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