

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

- Femtofarad capacitance: $C_j = 8\text{pF}$ (Typ)
- Ultra Low Leakage: nA Level
- Low clamping voltage $V_C = 21\text{ V}$
- IEC 61000-4-2:
Air discharge: $\pm 15\text{KV}$, Contact discharge: $\pm 30\text{KV}$
- IEC 61000-4-5 (8/20 μs): $I_{PPM} = 8.0\text{ A}$
- RoHS Compliant

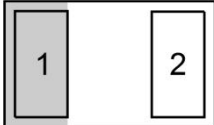
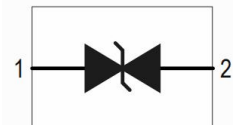
Application information

- Cellular Handsets and Accessories
- Keypads, Side Keys, LCD Displays
- Notebooks and Handhelds
- Personal Digital Assistants
- Portable Instrumentation
- Digital Cameras
- Audio Players
- Peripherals

Ordering information

Device	Package	Marking	Packaging
ESD8D12C	DFN1006-2L	AA	10000/Tape & Reel

Schematic & Pin configuration

Simplified outline	Graphic symbol
	

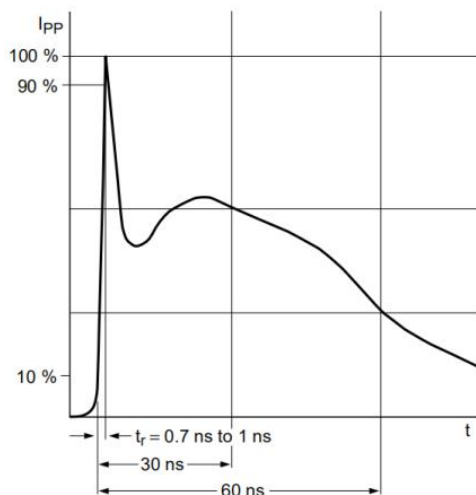
Maximum Ratings ($T_{OP} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ($T_p = 8/20\text{ }\mu\text{s}$)	P_{PPM}	136	W
Rated Peak Pulse Current ($T_p = 8/20\text{ }\mu\text{s}$)	I_{PPM}	8.0	A
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	$^{\circ}\text{C}$
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	30	kV

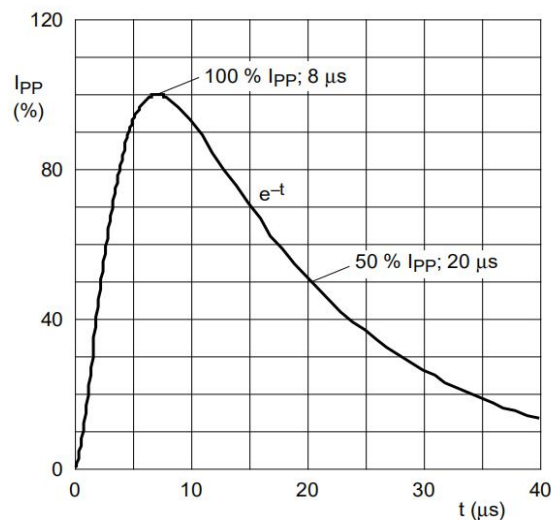
Electrical Characteristics ($T_{OP} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	12.0	V	
Breakdown Voltage	V_{BR}	13.0	--	15.5	V	$I_T=1\text{mA}$
Leakage Current I_{Leak}	I_R	--	--	200	nA	$V_{RWM}=12\text{V}$
Clamping Voltage	V_C	--	--	17.0	V	$I_{PP}=8.0\text{A}, T_p=8/20\mu\text{s}$
Junction Capacitance	C_j	--	8	12	pF	$V_R=0\text{V}, f=1\text{MHz}$

Typical Electrical and Thermal Characteristics (Curves)



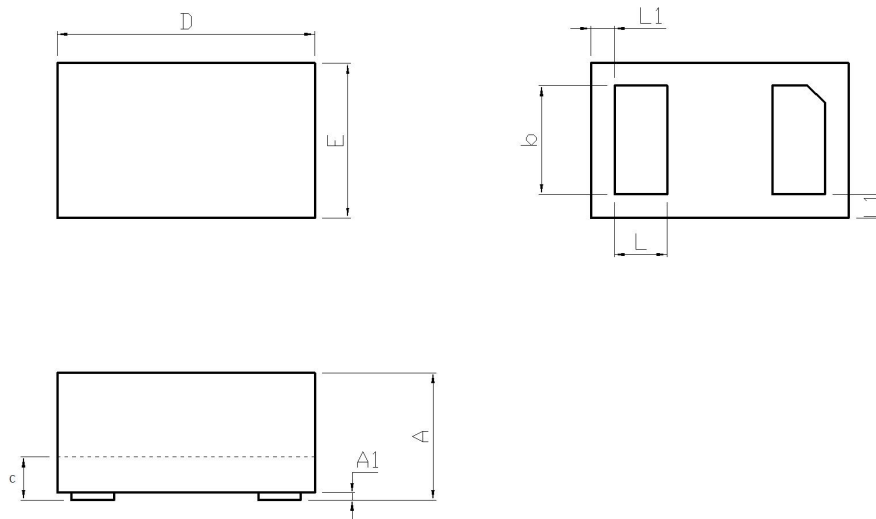
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform(8/20µs pulse)

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