1- Line Bidirectional ESD Protection Diode

General description

Low capacitance bidirectional Electro Static 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

- Low Capacitance 2.8 pF(Typ)
- Reverse stand-off voltage: 5V Max
- Low leakage current: nA Level
- Response time is typically < 1 ns
- IEC61000−4−2 Level 4 ESD Protection

Application information

- Cellular Handsets & Accessories
- Digital Cameras
- Peripherals
- MP3 Players
- Portable Instrumentation
- • Notebooks & Desktop Computers
- • Keypads, Side Keys, USB 2.0,LCD Displays

Ordering information

Device	Package	Packaging	Reel Size
PWESD-5VDDA	DFN1006-2L	10000/Tape & Reel	7 Inch

Schematic & Pin configuration

Simplified outline	Graphic symbol
	

Maximum Ratings

(T_{OP} = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (Tp = 8/20μs)	P_{PPM}	53	W
Rated Peak Pulse Current (Tp = 8/20μs)	I_{PPM}	3.5	A
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	25	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	25	kV
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Operating Temperature Range	T_{OP}	-40 to +125	°C
Maximum junction temperature	T_j	150	°C

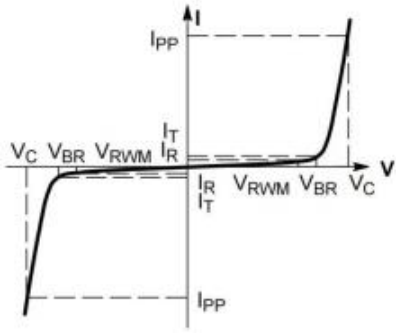
Electrical Characteristics

(T_{OP} = 25 °C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	7.0	--	9.0	V	I_T=1mA
Leakage Current ILeak	I_R	--	--	100	nA	V_{RWM}=5V
Clamping Voltage	V_C	--	10.0	12.0	V	I_{PP}=1.0A,T_p=8/20μs
		--	14.0	15.0	V	I_{PP}=3.5A,T_p=8/20μs
Junction Capacitance	C_j	--	2.8	3.2	pF	V_R=0V, f=1MHz
		--	2.0	2.5	pF	V_R=5.0V, f=1MHz

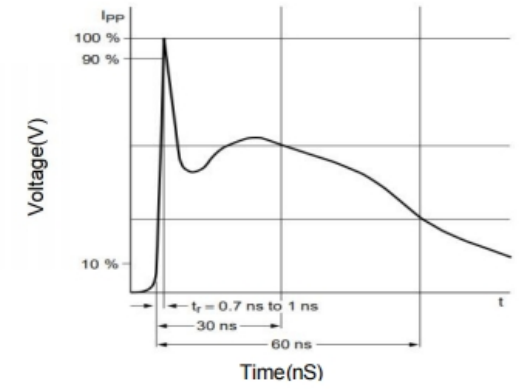
Portion Electronics Parameter

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	VBR Test Current

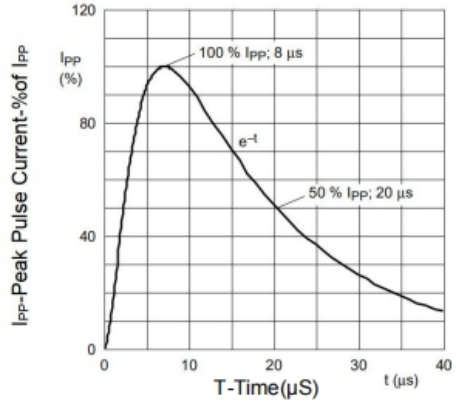


Typical Performance Characteristics

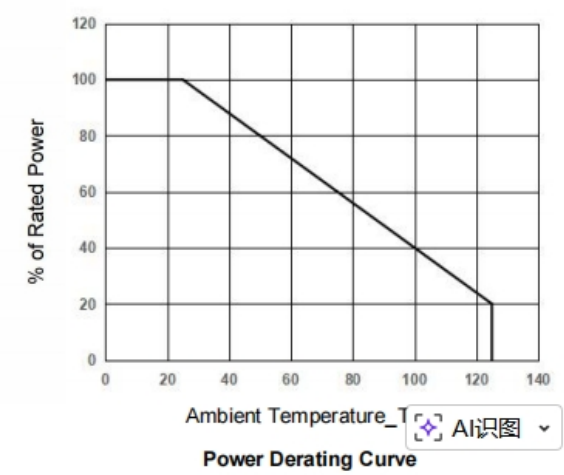
(T_A=25℃ unless otherwise Specified)



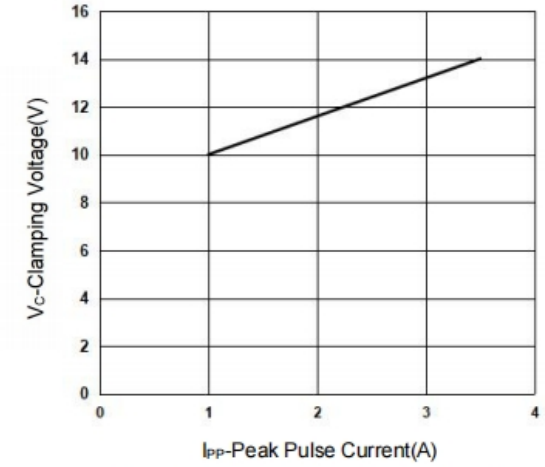
IEC61000-4-2 Pulse Waveform



IEC61000-4-5 8X20µs Pulse Waveform



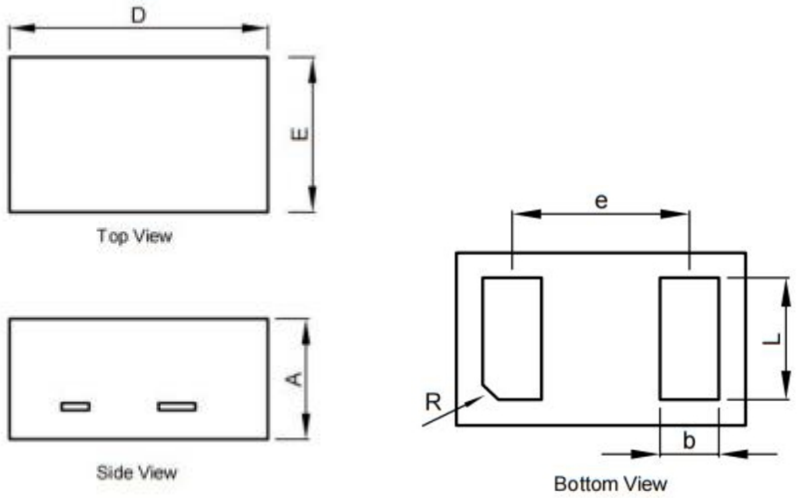
Power Derating Curve



Clamping Voltage vs. Peak Pulse Current

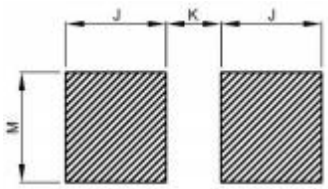
Package Outline Dimensions

DFN1006-2L



SYMBOL	MILLIMETERS		
	MIN	TYP	MAX
A	0.45	0.50	0.55
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b	0.20	0.25	0.30
L	0.45	0.50	0.55
e		0.675	
R	0.07	0.10	0.13

Soldering Footprint (mm)



SYMBOL	MILLIMETERS	
	MIN	MAX
J	0.50	0.60
K	0.25	0.35
M	0.55	0.65

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