



■ Features

- Bi-directional ESD protection of one lines
- 80Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 5V
- Ultra low capacitance: 0.3pF typical
- Low clamping voltage
- 2-pin leadless package
- Ultra low leakage: nA level
- IEC 61000-4-2 $\pm 15kV$ contact $\pm 20kV$ air
- IEC 61000-4-5 (Lightning) 4A ($8/20\mu s$)

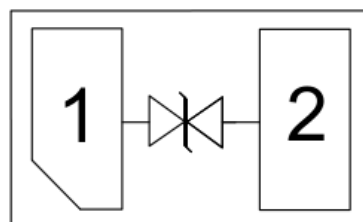
■ Applications

- Smart phones
- Display Ports
- MDDI Ports
- USB Ports
- Digital Video Interface (DVI)
- PCI Express and Serial SATA Ports

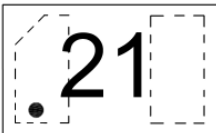
■ Mechanical Data

- Package: DFN1006-2L
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

■ Schematic & PIN Configuration



■ Ordering Information

Part Number	Package	Marking	Packing	Reel Size
ESD5311X	DFN1006-2L		10000 Tape & Reel	7 inches

■ Absolute Maximum Rating($T_A=25^{\circ}\text{C}$ unless otherwise Specified)

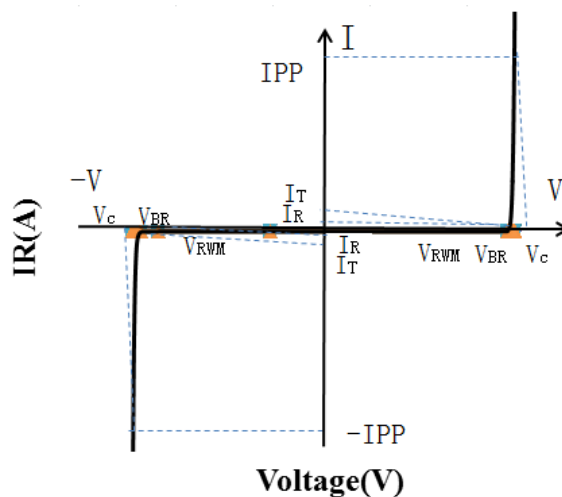
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	80	W
Peak Pulse Current (8/20 μs)	IPP	4	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	± 20 ± 15	kV
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

■ Electrical Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise Specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	VRWM				5.0	V
Breakdown Voltage	VBR	$I_T = 1\text{mA}$	6.0	7.5	8.5	V
Reverse Leakage Current	IR	VRWM = 5.0V			0.5	μA
Clamping Voltage	VC	IPP = 1A (8 x 20 μs pulse)			12	V
Clamping Voltage	VC	IPP = 4A (8 x 20 μs pulse)		19	22	V
Junction Capacitance	CJ	VR = 0V, f = 1MHz		0.3	0.45	pF

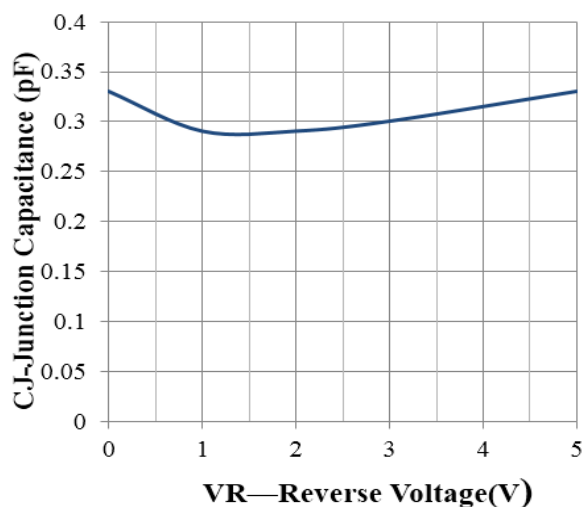
■ Electrical Parameters ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter
IT	Test Current
IPP	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic

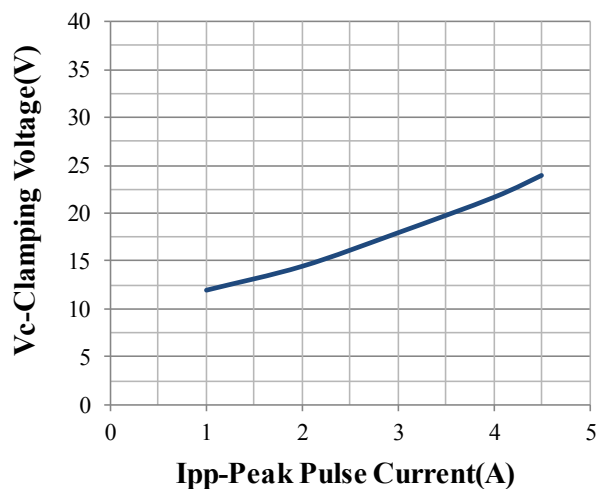




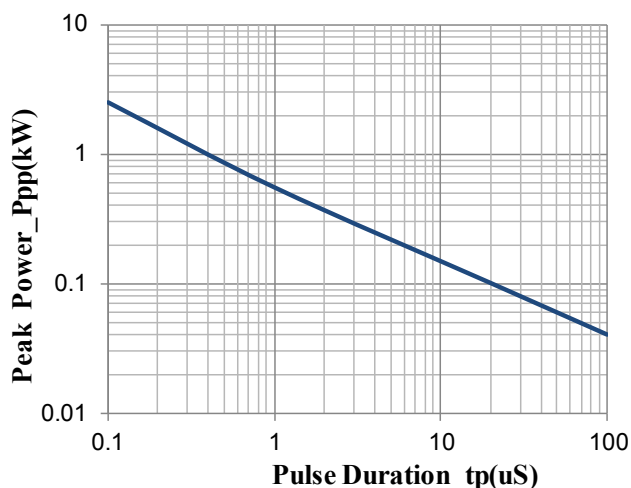
■ Typical Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



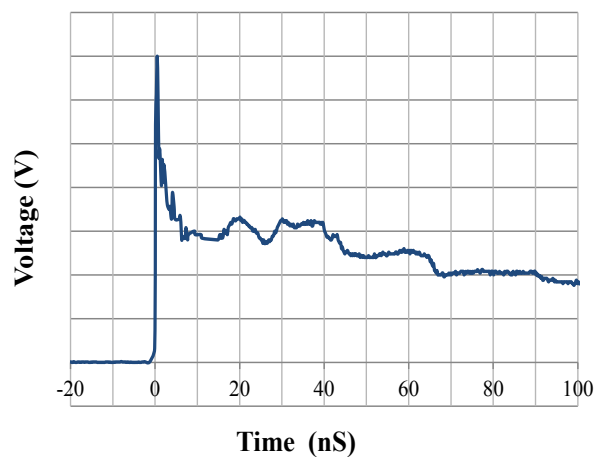
Junction Capacitance vs. Reverse Voltage



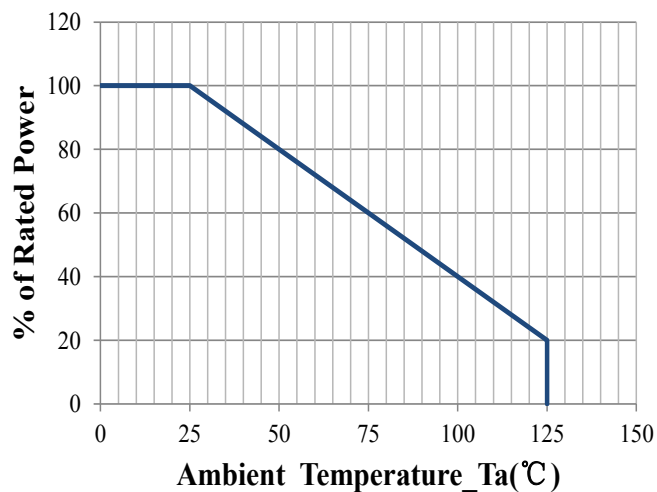
Clamping Voltage vs. Peak Pulse Current



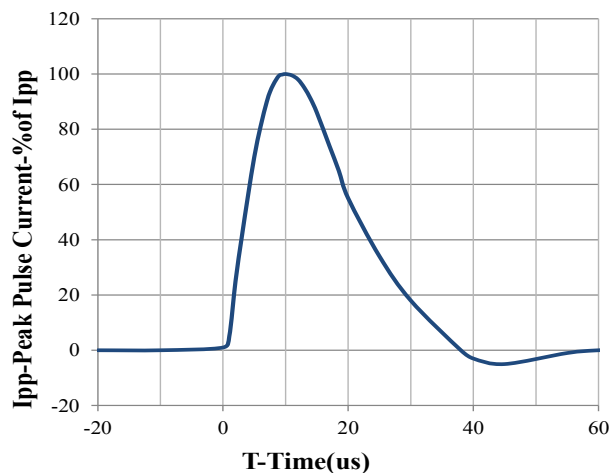
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



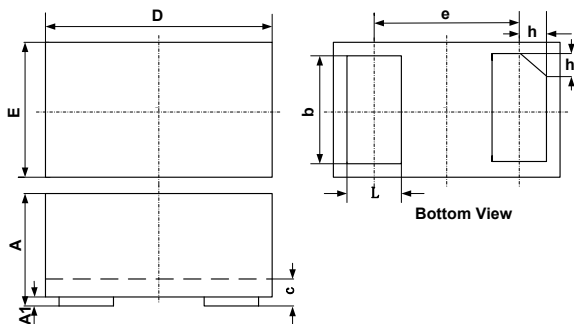
Power Derating Curve



8 X 20us Pulse Waveform



■ Outline Drawing – DFN1006-2L



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.40	0.42	0.45	0.016	0.018	0.020
A1	0.00	0.02	0.055	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.99	1.02	1.05	0.039	0.040	0.041
e	0.65 BSC			0.026 BSC		
E	0.59	0.62	0.65	0.023	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0.07	0.12	0.17	0.003	0.005	0.007