

Transient Voltage Suppressors for ESD Protection

SE05N2S21GH

Features

- ◆ Working voltages: 5V
- ◆ Low capacitance: 12pF
- ◆ Low leakage current: 0.1uA @ V_{RWM}
- ◆ Low clamping voltage
- ◆ Response Time is < 1 ns

Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Portable Instrumentation
- ◆ Notebooks, Desktops, and Servers
- ◆ Digital Cameras
- ◆ MDDI Ports
- ◆ PCI Express

DFN0603-2L



Mechanical Characteristics

- ◆ DFN0603-2L package
- ◆ Molding Compound Flammability Rating: UL 94V-0
- ◆ Quantity Per Reel: 10,000pcs
- ◆ Reel size: 7inch

Functional Diagram



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

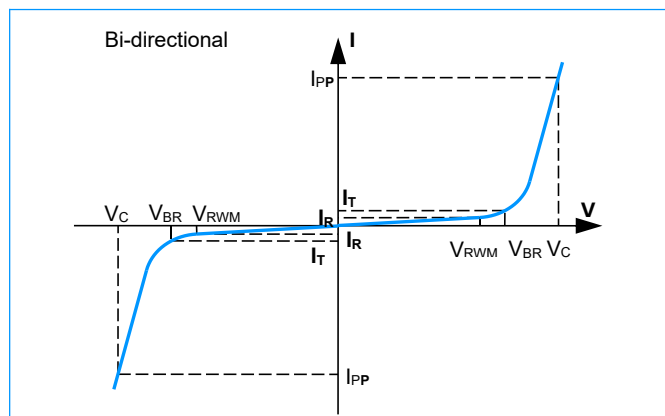
Symbol	Parameter	Value	Units
T_J	Operating Temperature Range	-55 to +150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-55 to +150	$^{\circ}\text{C}$
V_{ESD}	ESD per IEC61000-4-2 (Air)	± 30	kV
	ESD per IEC61000-4-2 (Contact)	± 30	
T_{LST}	Lead Soldering Temperature	260	$^{\circ}\text{C}$

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I-V Curve Characteristics

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



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

Symbol	Conditions	Min.	Typ.	Max.	Units
V_{RWM}	--	--	--	5.0	V
I_R	$V_{RWM} = 5\text{V}, T = 25^\circ\text{C}$	--	--	0.1	μA
V_{BR}	$I_T = 1\text{mA}$	5.6	--	8.0	V
V_C	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$	--	7	--	V
V_C	$I_{PP} = 5.5\text{A}, t_p = 8/20\mu\text{s}$	--	10	--	V
C_J	$V_R = 0\text{V}, f = 1\text{MHz}$	--	12	--	pF

Characteristic Curves

Fig 1. 8/20 μs Pulse Waveform

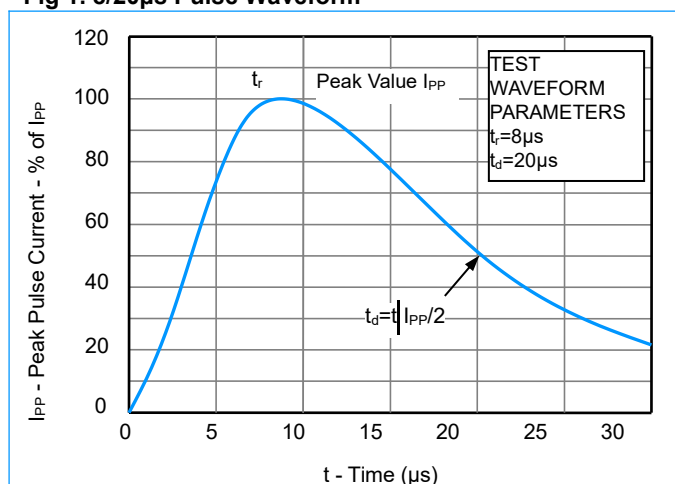
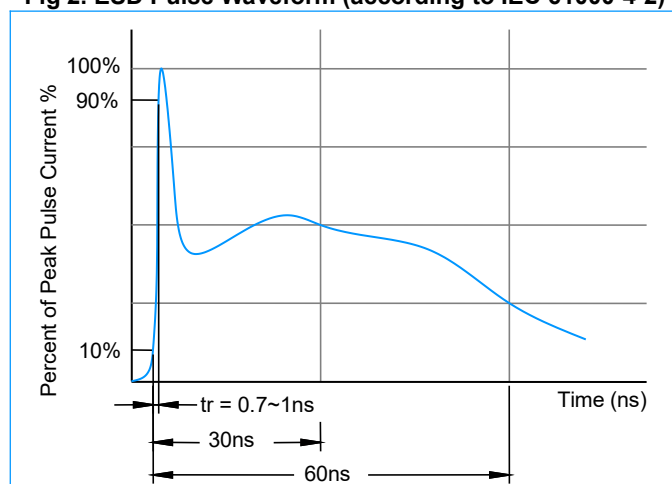


Fig 2. ESD Pulse Waveform (according to IEC 61000-4-2)



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Characteristic Curves (Continue)

Fig 3. Clamped +8 kV ESD Voltage Waveform

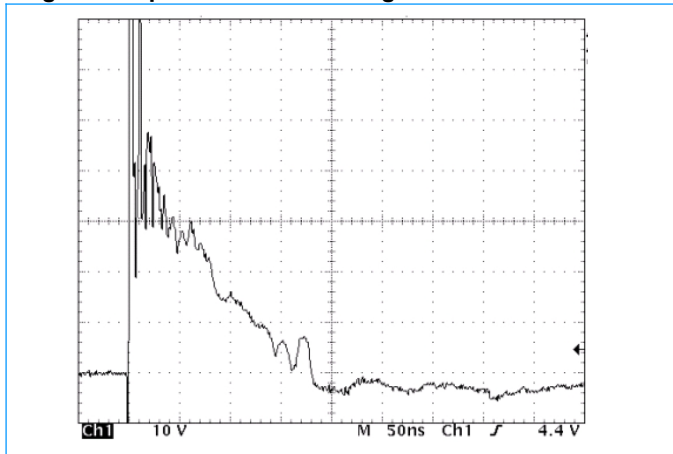
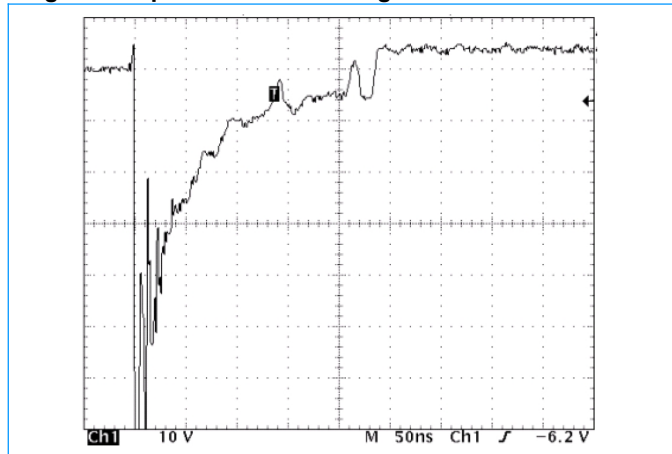
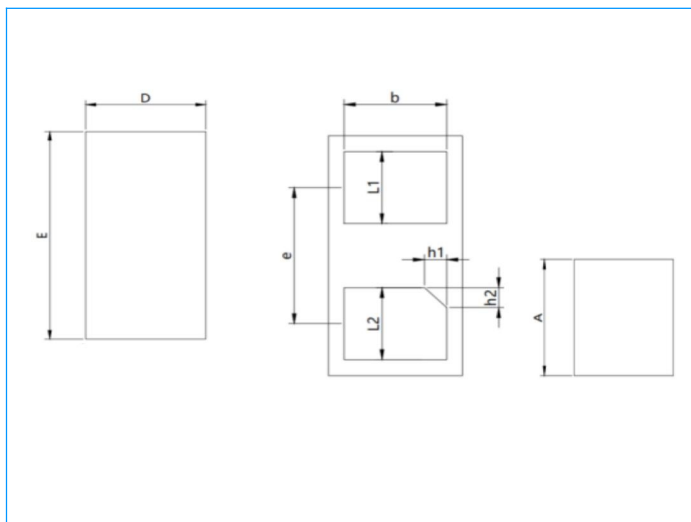


Fig 4. Clamped -8 kV ESD Voltage Waveform



DFN0603-2L Package Outline & Dimensions



DIM	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D	0.25	0.30	0.35	0.0098	0.0118	0.0138
E	0.55	0.60	0.65	0.022	0.024	0.026
L1	0.155	0.18	0.205	0.0061	0.007	0.008
L2	0.155	0.18	0.205	0.0061	0.007	0.008
b	0.205	0.23	0.255	0.008	0.009	0.010
e	0.205	0.34	0.365	0.008	0.0133	0.0143
h1	0.025	0.05	0.075	0.0009	0.0019	0.0029
h2	0.025	0.05	0.075	0.0009	0.0019	0.0029
A	--	0.30	0.35	--	0.0118	0.0138

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