

Bi-directional ESD Protection Diode in DFN1006 Package

SE05N6S21HB

Features

- ◆ Working voltages : 5V
- ◆ Low capacitance: 15pF (Typical)
- ◆ Low leakage current: 0.1uA @ V_{RWM}
- ◆ Low clamping voltage
- ◆ Response Time is < 1 ns

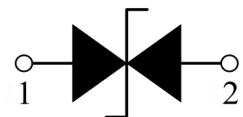
DFN1006-2L



Applications

- ◆ Smart Phone and Tablet PC
- ◆ TV and Set Top Box
- ◆ Wearable Devices
- ◆ PDA

Pin Configuration



Mechanical Characteristics

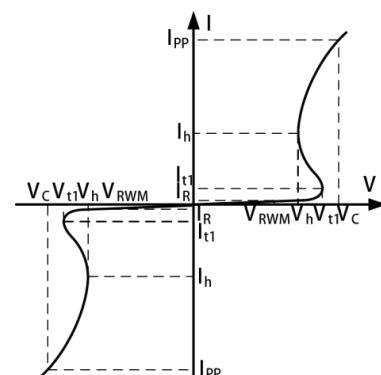
- ◆ DFN1006-2L package
- ◆ Molding Compound Flammability Rating: UL 94V-0
- ◆ Quantity Per Reel: 10,000pcs
- ◆ Reel size: 7inch

Absolute Maximum Rating

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air)	± 25	KV
	ESD per IEC 61000-4-2 (Contact)	± 25	
T_J	Operating Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C
T_{LST}	Lead Soldering Temperature	260	°C

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}
V_{BR}	Breakdown Voltage @ I_T
V_{t1}	Trigger Voltage
I_{t1}	Trigger Current @ V_{t1}
V_h	Holding Voltage
I_h	Holding Current @ V_h



Bi-Directional TVS

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Electrical Characteristics (@ T=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	--	--	--	5.0	V
Reverse Leakage Current	I_R	$V_{RWM} = 15V, T=25^\circ C$	--	--	0.1	μA
Reverse Breakdown Voltage	V_{BR}	$I_T = 1mA$	5.6	6.4	8.4	V
Clamping Voltage	V_c	$I_{PP} = 1A, t_P = 8/20\mu s$	--	--	10	V
Clamping Voltage	V_c	$I_{PP} = 5A, t_P = 8/20\mu s$	--	--	12	V
Junction Capacitance	C_J	$V_R = 0 V, f = 1MHz$	--	15	18	pF

Characteristic Curves

Fig1. Transmission Line Pulse (TLP)

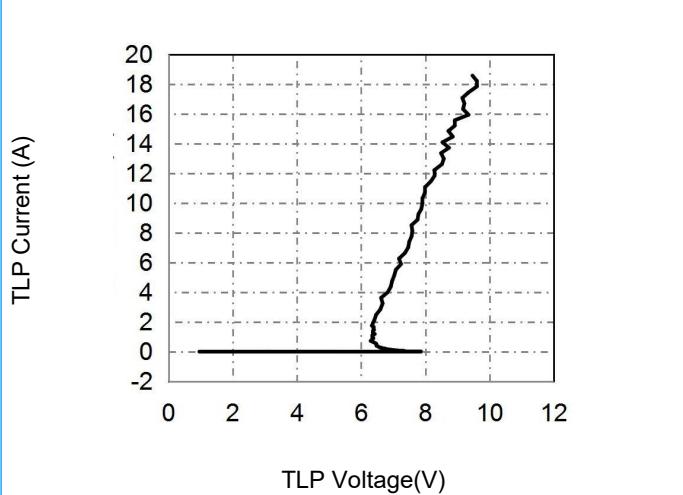


Fig2. Curve Trace

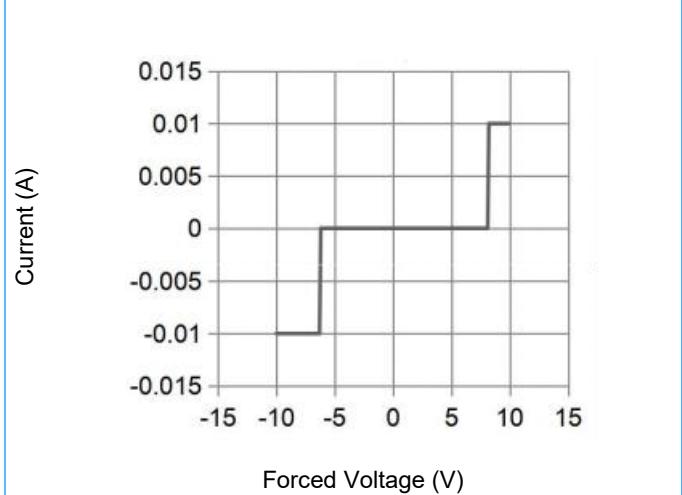


Fig3. ESD Clamping of I/O_1to I/O_2

(+8kV Contact per IEC 61000-4-2)

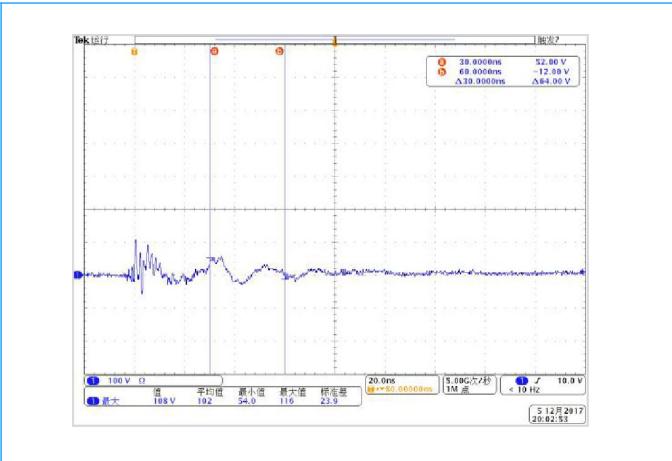
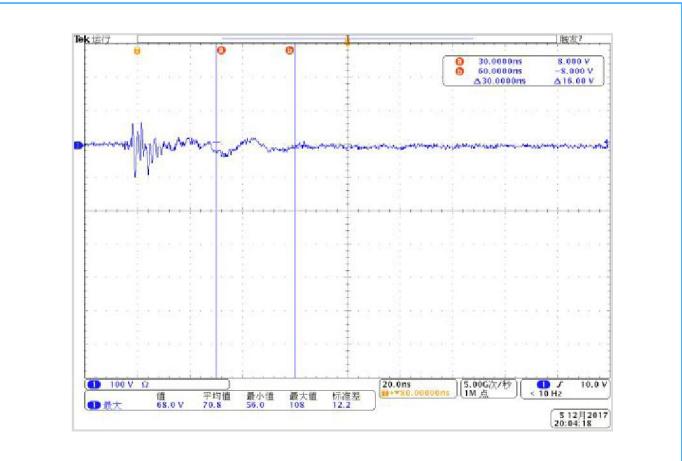


Fig4. ESD Clamping of I/O_1to I/O_2

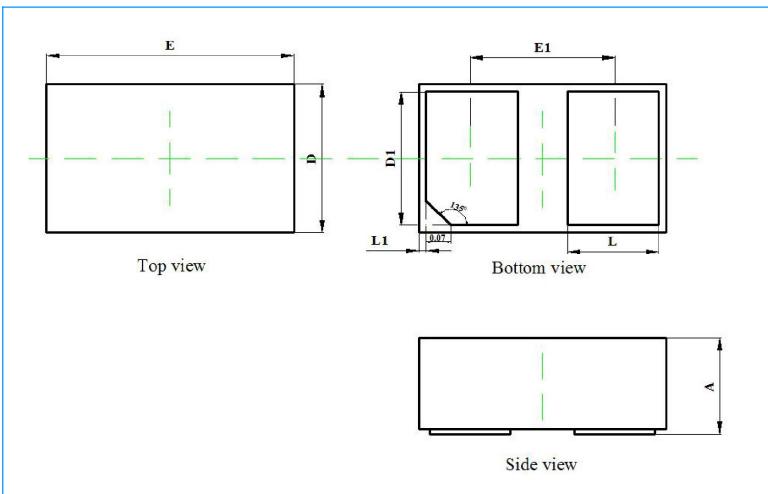
(-8kV Contact per IEC 61000-4-2)



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DFN1006-2L Dimensions



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.350	0.550	0.014	0.021
D	0.550	0.650	0.022	0.026
E	0.950	1.050	0.037	0.041
D1	0.420	0.520	0.017	0.020
E1	0.550	0.650	0.022	0.026
L	0.270	0.370	0.011	0.015
L1	0.000	0.100	0.000	0.004

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