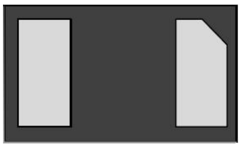
Bi-directional ESD Protection Diode in DFN1006-2L Package

SE07N6S01GY

Features

- Working voltage: 7V
- Low capacitance: 15pF (Typical)
- Low leakage current: 0.1μA @ V_{RWM}
- Low clamping voltage
- Response Time is < 1 ns
- Meets MSL level 1

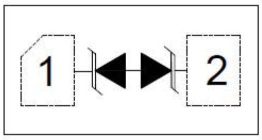
DFN1006-2L



Applications

- Cellular handsets
- USB V_{BUS} and CC line protection
- Microphone line protection
- GPIO protection

Pin Configuration



Mechanical Characteristics

- DFN1006-2L package
- Molding Compound Flammability Rating: UL 94V-0
- Quantity Per Reel: 10,000pcs
- Reel Size: 7inch
- Lead Finish: Lead Free

Protection Solution to Meet

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 6A (8/20μs)

Absolute Maximum Rating

Symbol	Parameter	Value	Units
V_{ESD}	**ESD per IEC 61000-4-2 (Air)**	±30	KV
	ESD per IEC 61000-4-2 (Contact)	±30	
T_J	**Operating Temperature**	-55 to +125	℃
T_{STG}	**Storage Temperature**	-55 to +150	℃
T_{LST}	**Lead Soldering Temperature**	260 (10 sec.)	℃

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Electrical Characteristics (@T_A=25℃, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}	--	--	--	7	V
Reverse Breakdown Voltage	V_{BR}	I_T = 1mA	--	--	0.1	μA
Reverse Leakage Current	I_R	V_{RWM} = ±7V, T=25℃	7.6	--	9	V
Clamping Voltage	V_C	I_{PP} = 1A, t_p = 8/20μs	--	9	--	V
		I_{PP} = 6.5A, t_p = 8/20μs	--	11	--	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz	--	15	--	pF

Characteristic Curves

Fig 1. V- I Curve Characteristics

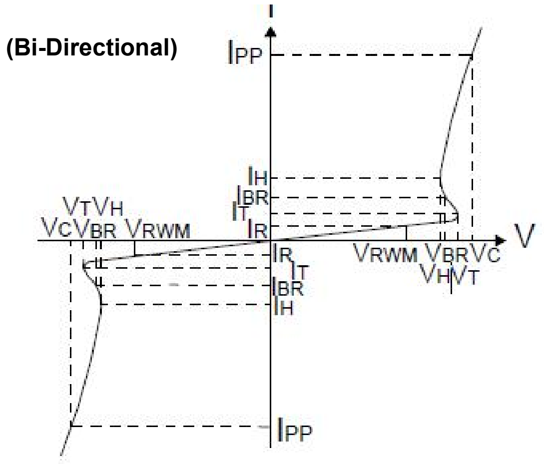


Fig 2. Pulse Waveform (8/20μs)

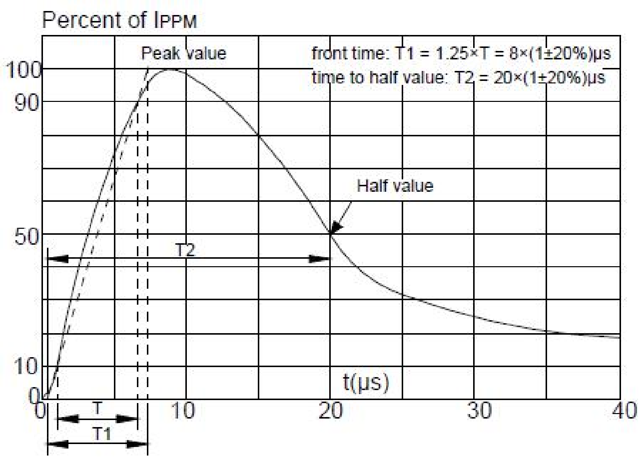


Fig 3. Pulse Derating Curve

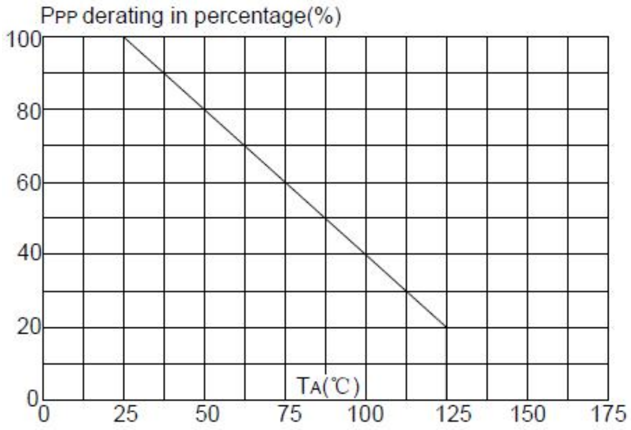
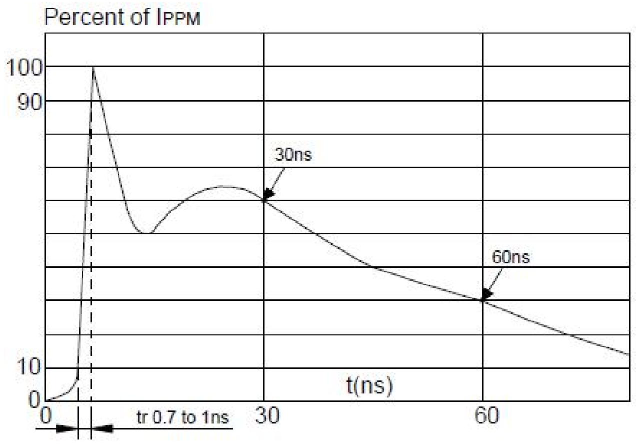


Fig 4. ESD Clamping (30kV Contact)



Characteristic Curves (Contniue)

Fig 5. Clamping Voltage vs. Peak Pulse Current

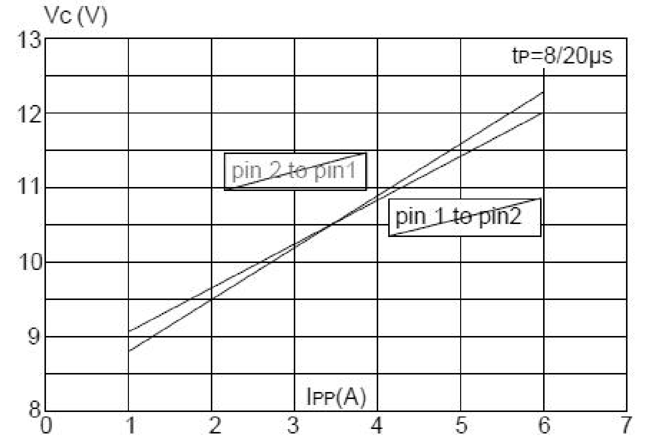
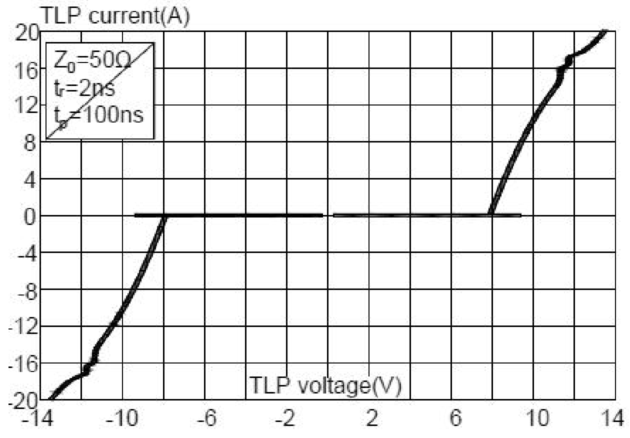
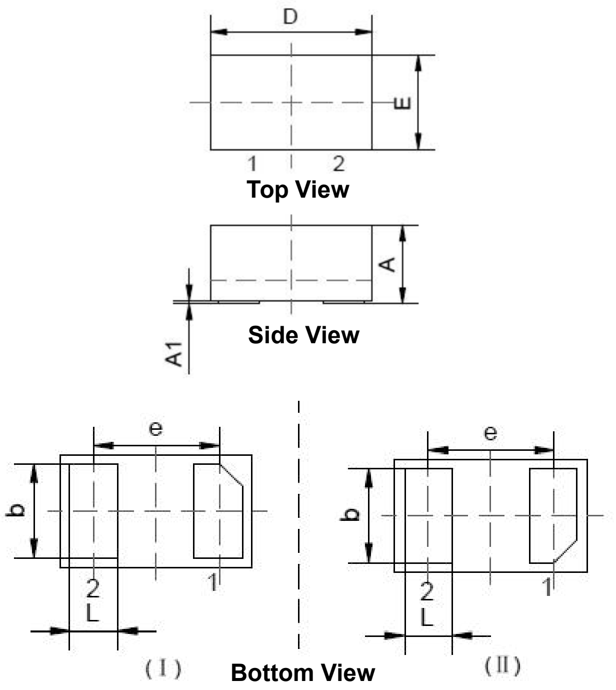


Fig 6. TLP Measurement



DFN1006-2L Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.40	0.50	0.55	0.016	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012

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