SOCAY

Transient Voltage Suppressors for ESD Protection

Low Capacitance

SE05VP50N-16

Features

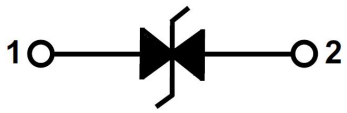
- Protects one data or I/O line
- Low capacitance
- Low clamping voltage
- IEC 61000-4-2, level 4
- IEC 61000-4-2 (ESD), > ±15KV (air),
  > ±8KV (contact)

DFN1006

Applications

- Cellular Handsets & Accessories
- Digital Visual Interface (DVI)
- RF Circuits
- Display Port
- USB Ports
- MDDI Ports
- PCI Express

Functional Diagram



Mechanical Characteristics

- DFN1006 (1.0x0.6x0.5mm) Package
- Weight 0.5 Milligrams (Approximate)
- Quantity Per Reel : 10,000pcs
- Reel Size : 7 inch
- Lead Finish : Lead Free

Mechanical Characteristics

Symbol	Parameter	Value	Units
I_{PP}	**Peak Pulse Current (tp=8/20μs waveform)**	4	A
T_L	**Lead Soldering Temperature**	260 (10 sec)	℃
T_J	**Operating Junction Temperature Range**	-55 to +125	℃
T_{STG}	**Storage Temperature Range**	-55 to +150	℃
T_{OP}	**Operating Temperature Range**	-55 to +150	℃

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Electrical Characteristics (T_A = 25℃)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}	--	--	--	5V	V
Reverse Breakdown Voltage	V_{BR}	I_t = 1mA	6	8	--	V
Reverse Leakage Current	I_R	V_{RWM} = +/-5V	--	--	100	nA
Junction Capacitance (1)	C_J	V_R = 0V, f = 1MHz	--	0.35	0.5	pF
Clamping Voltage (1)	V_C	TLP=16A or ESD=8KV	--	15	--	V
Clamping Voltage (1)	V_C	I_{PP} = 1A , t_P = 8/20μs	--	8	--	V
		I_{PP} = 4A , t_P = 8/20μs	--	11	--	V

Note: (1) Guaranteed by design.

Characteristic Curves

Fig1. 8/20 us Pulse Waveform

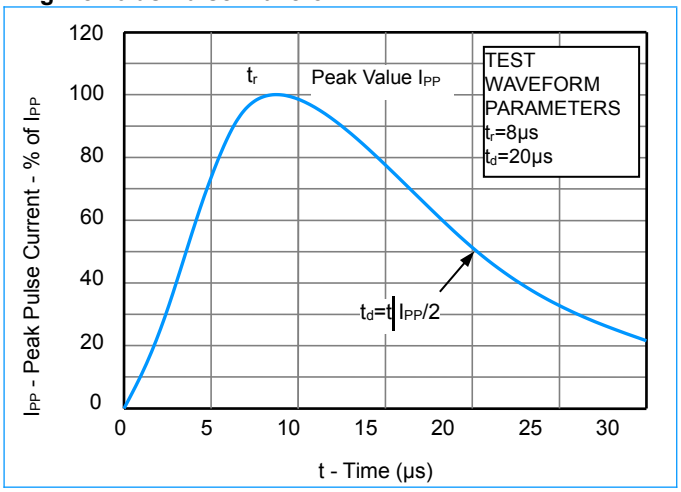


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

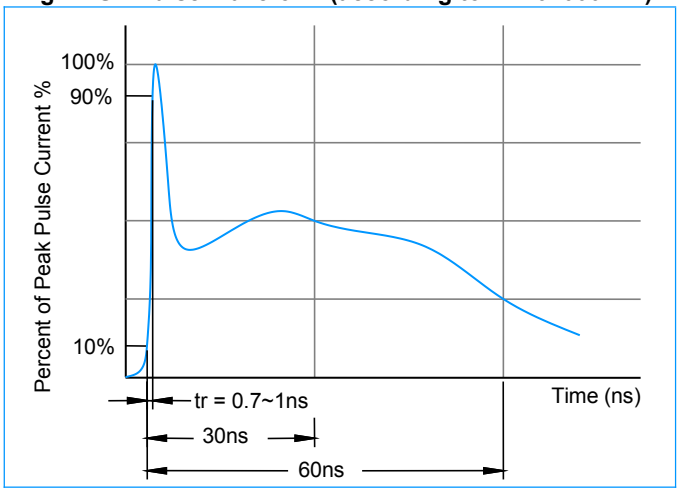


Fig3. Power Dissipation Versus Pulse Time

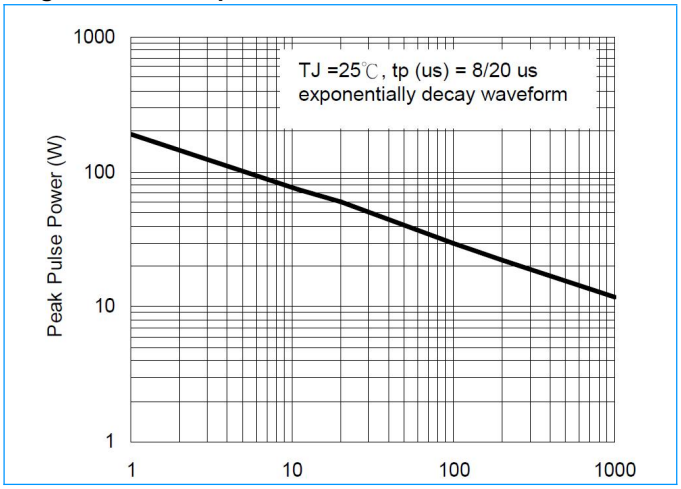
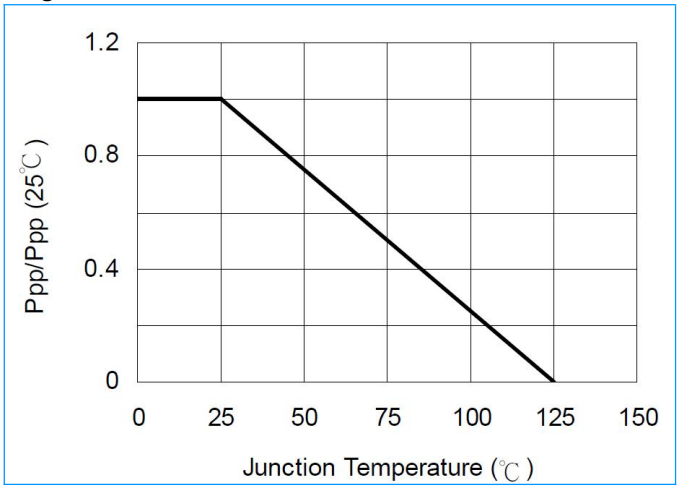


Fig4. Peak Pulse Power Versus TJ



Characteristic Curves (Continue)

Fig5. Typical Junction Capacitance

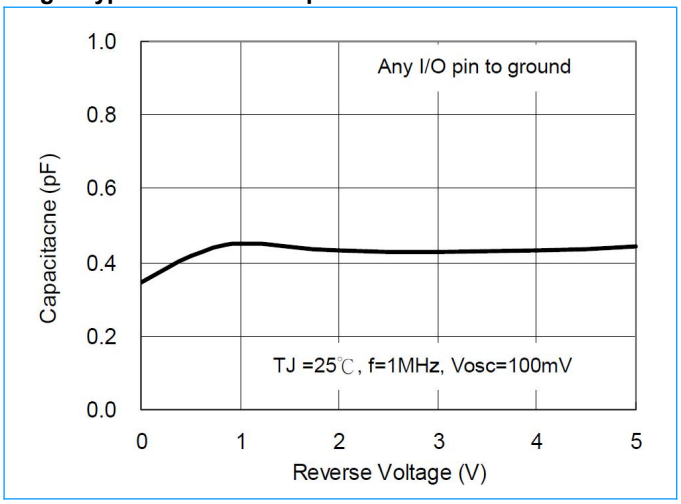


Fig6. Reverse Leakage Current Versus TJ

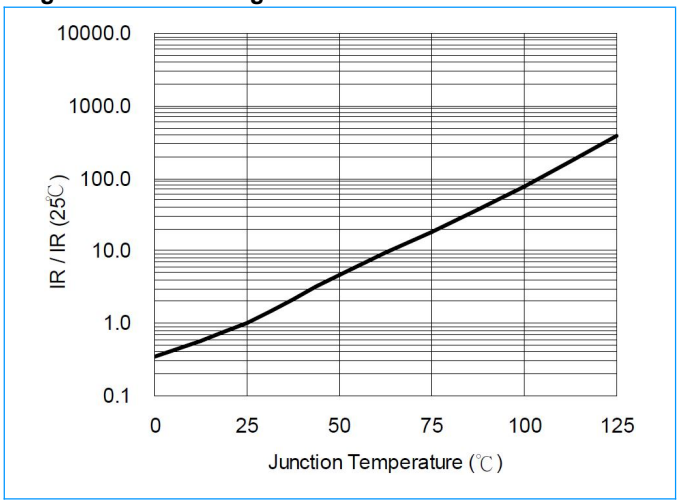


Fig7. Clamped +8 kV ESD Voltage Waveform

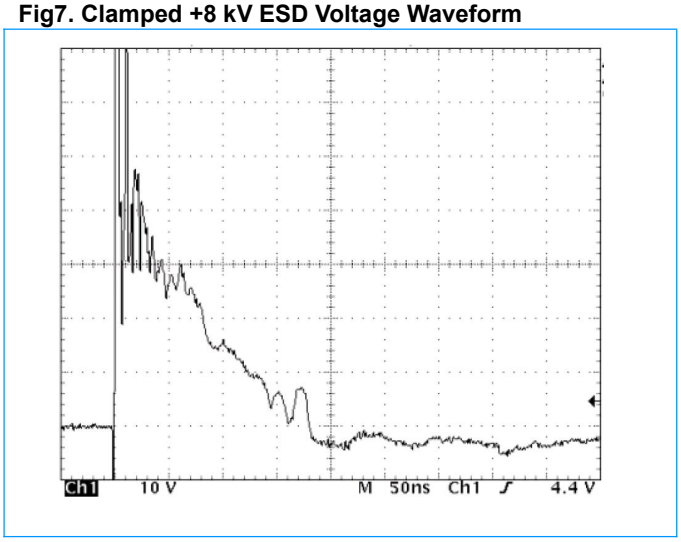
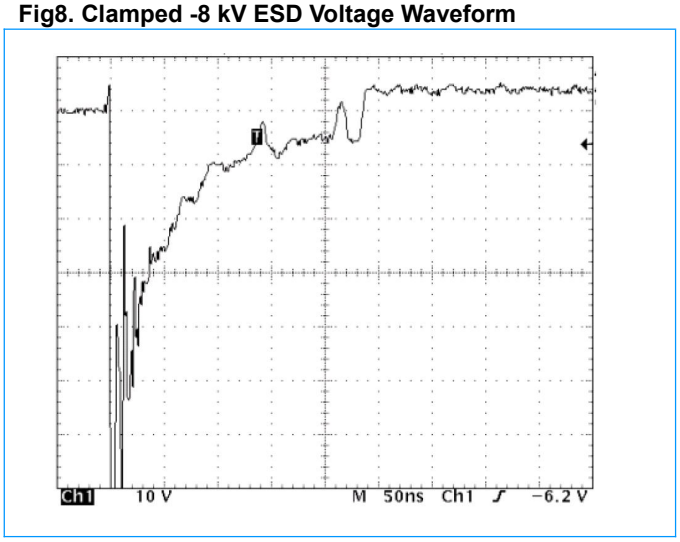


Fig8. Clamped -8 kV ESD Voltage Waveform



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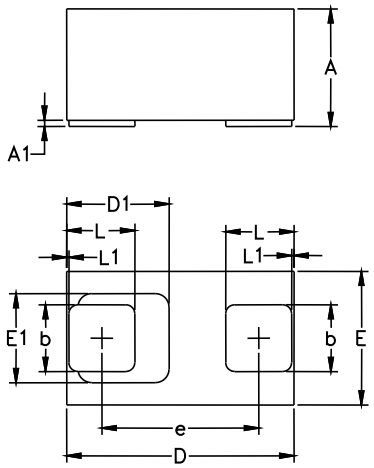
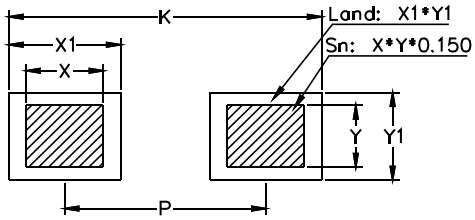
DFN1006 Package Outline & Dimensions



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.070	0.000	0.003
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.450 REF		0.018 REF	
E1	0.400 REF		0.016 REF	
b	0.275	0.325	0.011	0.013
e	0.675	0.725	0.027	0.029
L	0.275	0.325	0.011	0.013
L1	0.010 REF		0.000 REF	

Soldering Footprint



Symbol	Millimeters	Inches
K	1.4±0.05	0.055±0.002
P	0.9±0.025	0.035±0.001
X	0.354±0.025	0.014±0.001
Y	0.283±0.025	0.011±0.001
X1	0.5±0.025	0.020±0.001
Y1	0.4±0.025	0.016±0.001