

2-Channel ESD Protection for Super-Speed USB 3.0 Interface

Features

- Low operating voltage : $\pm 9V$
- Ultra low Capacitance: 8pF typical
- Ultra low Leakage : nA level
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 20kV$
 - Contact discharge: $\pm 15kV$
 - IEC 61000-4-5 Surge 5A(8/20us)
- ROHS Compliant

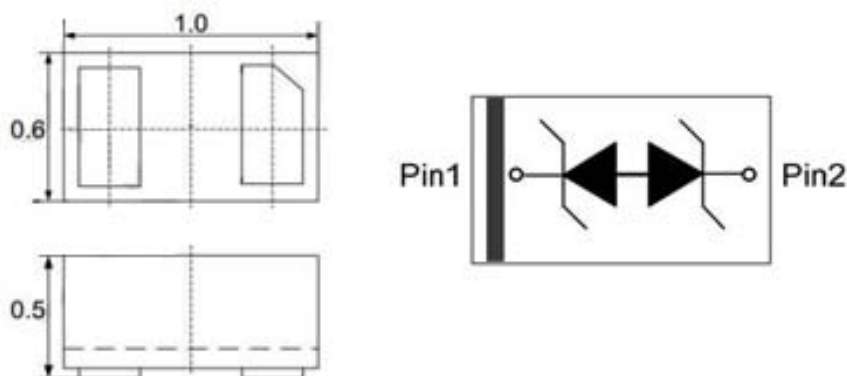
Mechanical Characteristics

- Package: X1SON
- Lead Finish: NiPdAu
- Case Material: "Green" Molding Compound
- UL Flammability Classification rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connection: See Diagram Below

Applications

- Cellular Handsets & Accessories
- Personal Digital Assitants
- Display Port
- MDDI Port
- Audio Players
- PCI Express
- Serial ATA

Dimensions and Pin Configuration





FPD1E10B09DPYR

Absolute Maximum Ratings (TA=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20µs)	Ppk	100	W
Peak Pulse Current(8/20µs)	Ipp	5	A
ESD per IEC61000-4-2 (Air) ESD per IEC61000-4-2 (Contact)	V _{ESD}	±20 ±20	kV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			9	V	
Breakdown Voltage	V _{BR}	10	13.7		V	I _T =1mA
Leakage Current	I _{Leak}			100	nA	V _{IO} =9V
Clamping Voltage	V _C			13	V	I _{PP} =1A, T _p =8/20µs
Clamping Voltage	V _C			20	V	I _{PP} =5A, T _p =8/20µs
Junction Capacitance	C _J		8	12	pF	V _R =0V, f=1MHz,

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

Fig1. 8/20μs Pulse Waveform

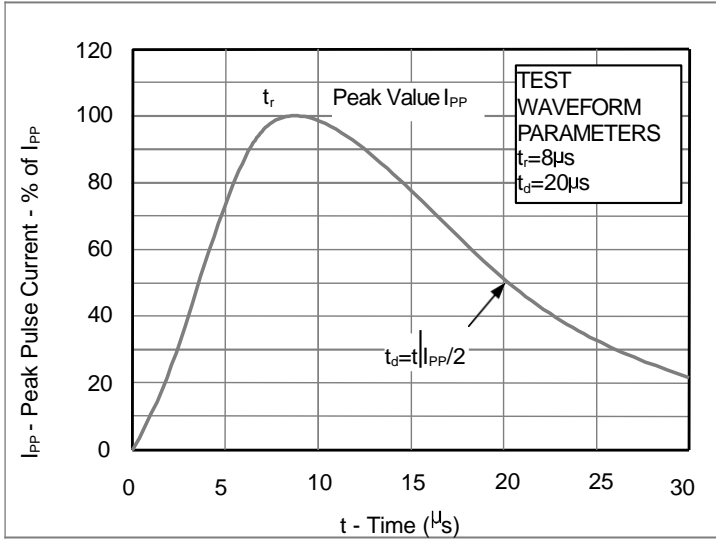


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

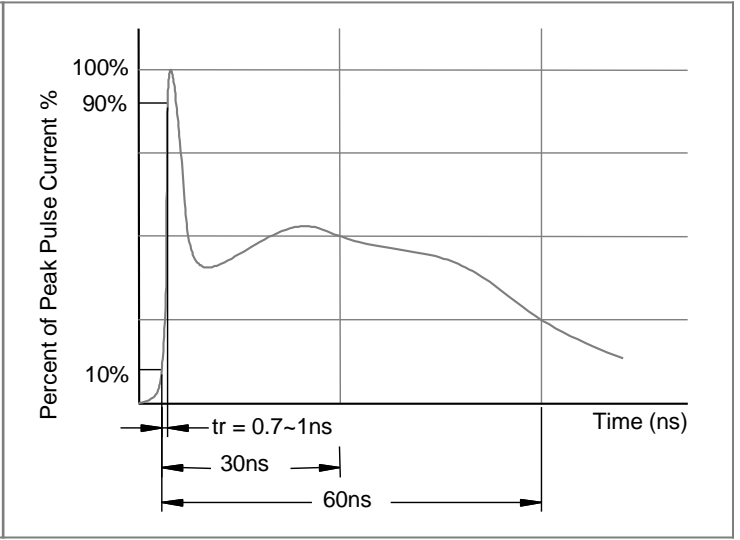
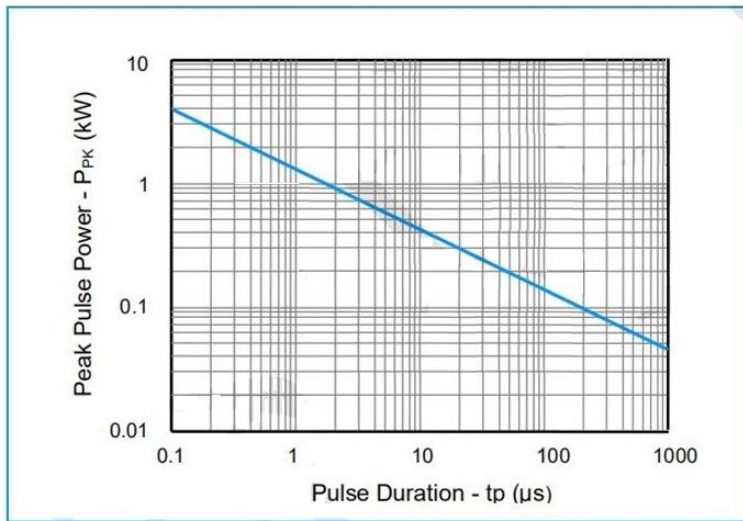
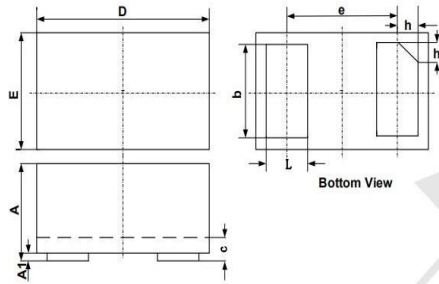


Fig3. Non- Repetitive Peak Pulse Power vs Pulse Time

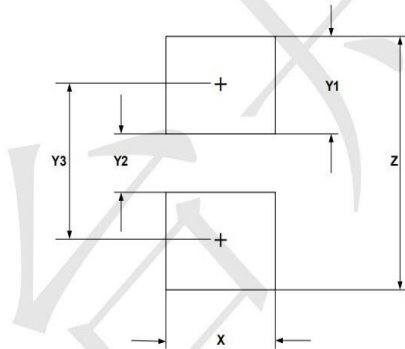


Outline Drawing - X1SON



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	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
c	0.12	0.15	0.18	0.005	0.006	0.007
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
h	0.07	0.12	0.17	0.003	0.005	0.007

Land Pattern - X1SON



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052