

Features

- ◆ Supports USB 3.0 data rates (5 Gbps)
- ◆ Ultra low capacitance: 0.4pF typical I/O to GND
- ◆ Ultra low leakage: nA level
- ◆ Low operating voltage: 5.5V
- ◆ Uni-directional TVS Diode Array
- ◆ Low clamping voltage
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ±18kV
 - Contact discharge: ±15kV
 - IEC61000-4-5 (Lightning)4A (8/20 μs)
 - IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ ROHS Compliant

Ordering Information

Part Number	Qty per Reel	Reel Size
TPD2EUSB30DRTR	8000	7"

Mechanical Characteristics

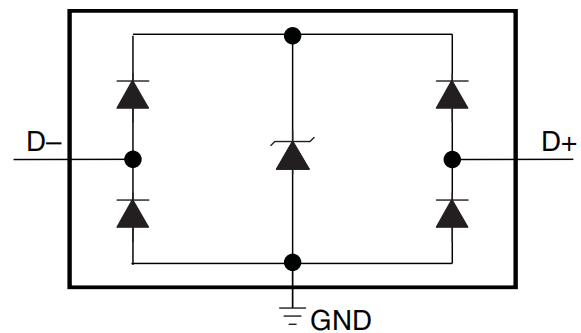
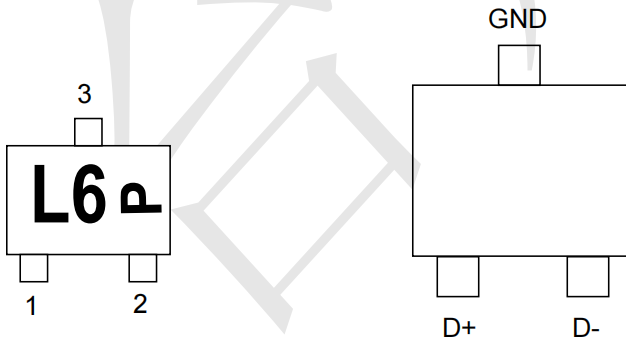
- Package: SOT-9X3
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Shipping Qty : 8000pcs/7Inch Tape & Reel

Applications

- Notebooks
- Set-top boxes
- DVD players
- Media players
- Portable computers

Dimensions and Pin Configuration

Marking





Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	50	W
ESD per IEC61000-4-2 (Air) ESD per IEC61000-4-2 (Contact)	V _{ESD}	±18 ±15	kV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5.5	V	
Breakdown Voltage	V _{BR}	7			V	I _T =1mA
Leakage Current	I _{Leak}			100	nA	V _{RWM} =2.5V
Dynamic resistance	R _{DYN}		0.6		Ω	any I/O pin to GND
Clamping Voltage (I/O-GND)	V _C			13	V	I _{PP} =1A, T _p =8/20 μs
Clamping Voltage (I/O-GND)	V _C			18	V	I _{PP} =3A, T _p =8/20 μs
Junction Capacitance (I/O to GND)	C _J		0.4		pF	V _R =0V, f=1MHz,
Junction Capacitance (I/O to I/O)	C _J		0.2	0.35	pF	V _R =0V, f=1MHz,

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig1. 8/20 μs Pulse Waveform

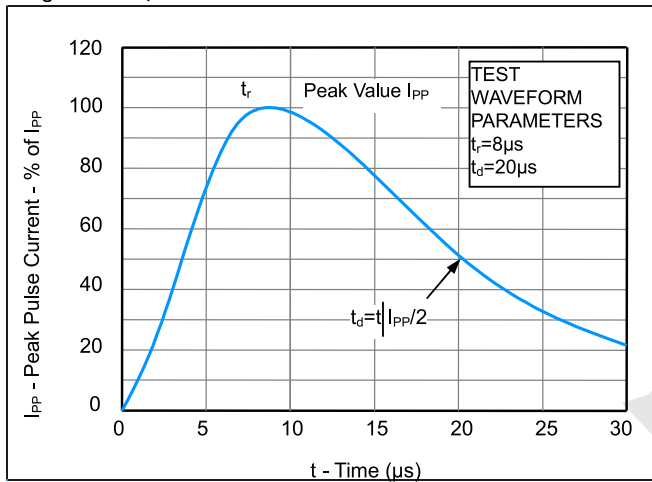


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

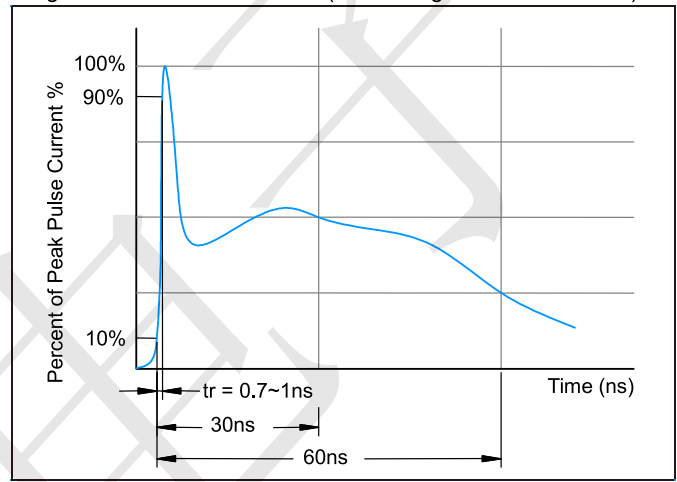
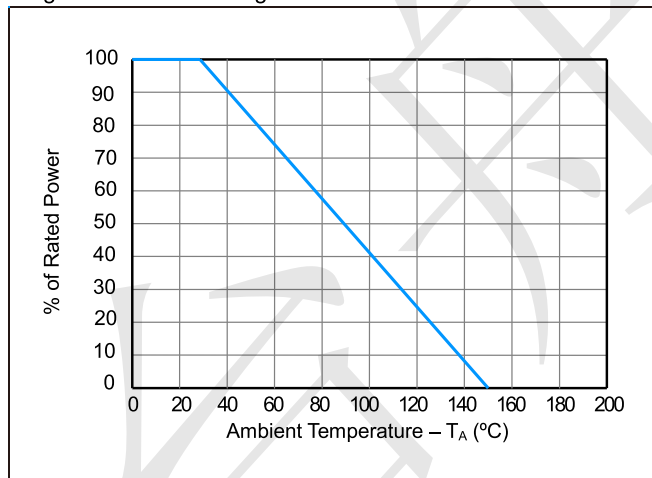


Fig3. Power Derating Curve





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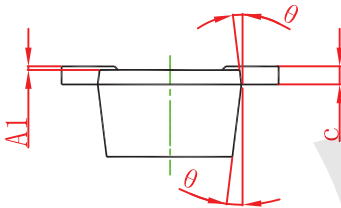
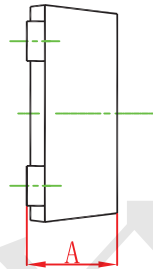
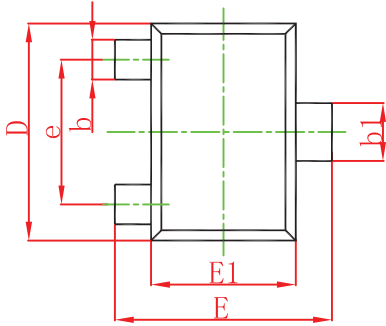
—台舟电子—

TPD2EUSB30DRTR

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

www.sot23.com.tw

SOT-9X3 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

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