

Features

- Low operating voltage: 5V
- Ultra low capacitance: 0.4pF
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- -IEC61000-4-5 (Lightning) 8A (8/20 μs)
- These are Pb-Free Devices
- Response Time is Typically < 1 ns

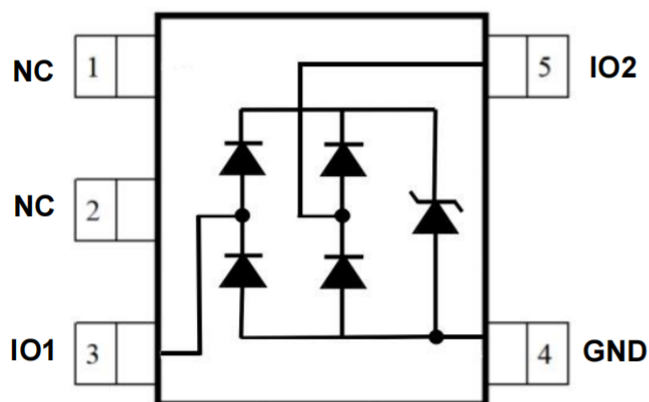
Mechanical Characteristics

- Package: SOT-553
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- -IEC 61000-4-2 (ESD) immunity test

Applications

- PCI Express and Serial SATA Ports
- Digital video interface(DVI)
- USB OTG
- USB 2.0 and USB 3.0 Ports
- Gigabit Ethernet
- IEEE 1394 firewire ports

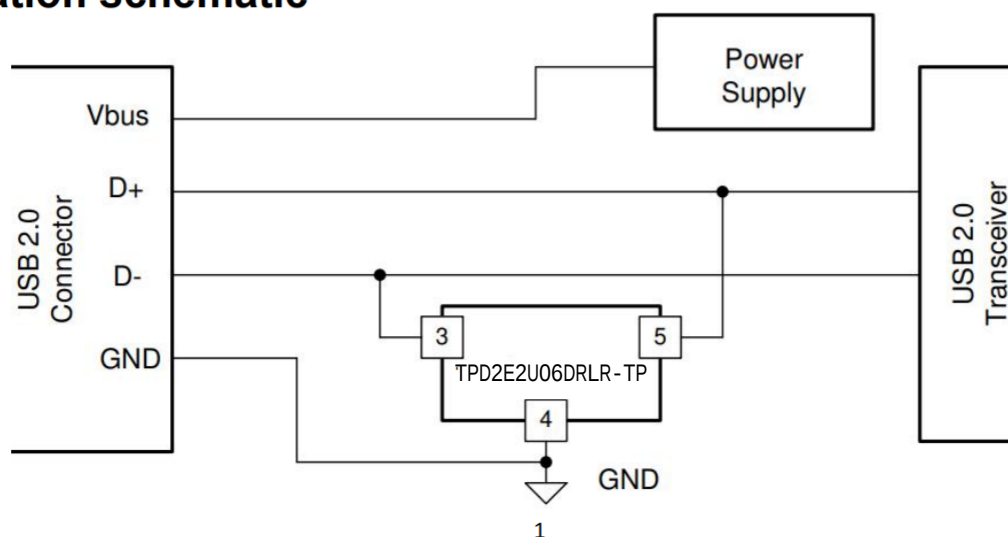
Pin configuration



Pin function

Pin Number	Pin Name	Pin Function
1,2	NC	This pin is not connected and is left floating, grounded, or connected to VCC.
3,5	IO	The IO1 and IO2 pins are an ESD protected channel. Connect these pins to the data line as close to the connector as possible
4	GND	The GND (ground) pin is connected to ground.

Application schematic



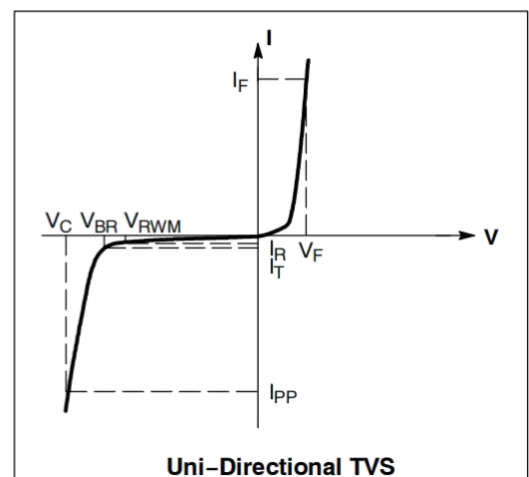
Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{pk}	84	W
Peak Pulse Current (8/20μs)	I _{pp}	8	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±30 ±30	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	V	Any I/O pin to ground
Breakdown Voltage	V _{BR}	6	--	9.5	V	I _T = 1mA, Any I/O pin to ground
Reverse Leakage Current	I _R	--	--	100	nA	V _{RWM} =5V, Any I/O pin to ground
Clamping Voltage	V _C	--	5.5	7	V	I _{pp} =1A (8x 20us pulse)
Clamping Voltage	V _C	--	7.5	9	V	I _{pp} =6A (8x 20us pulse)
Clamping Voltage	V _C	--	8.5	10.5	V	I _{pp} =8A (8x 20us pulse)
Junction Capacitance	C _J	--	0.4	0.65	pF	V _R = 0V, f = 1MHz, C _{vo} -GND

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
I _T	Test Current
I _F	Forward Current
V _F	Forward Voltage @ I _F
P _{pk}	Peak Power Dissipation
C	Capacitance @ V _R = 0 and f = 1.0 MHz



Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

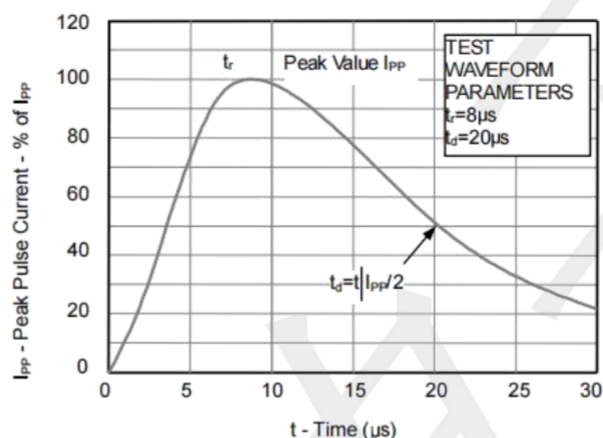


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

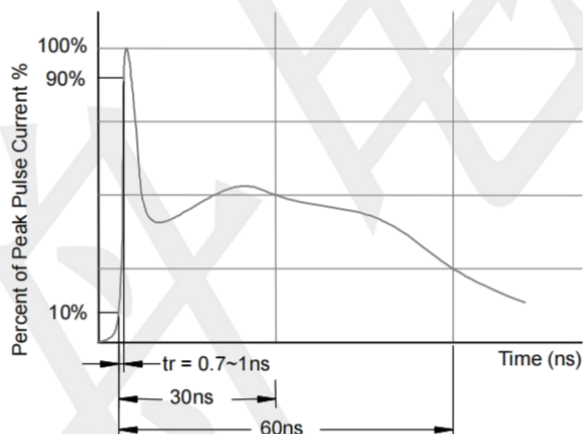
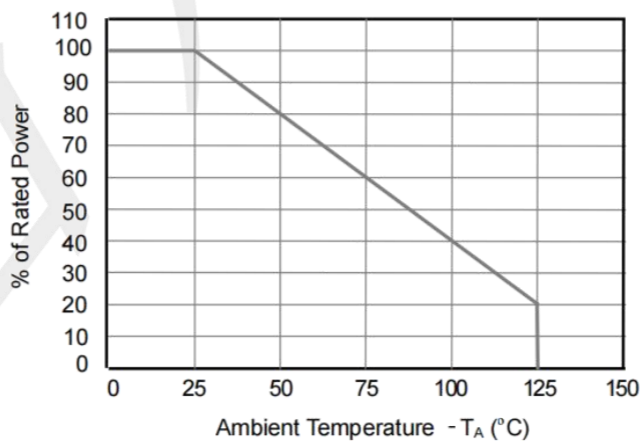
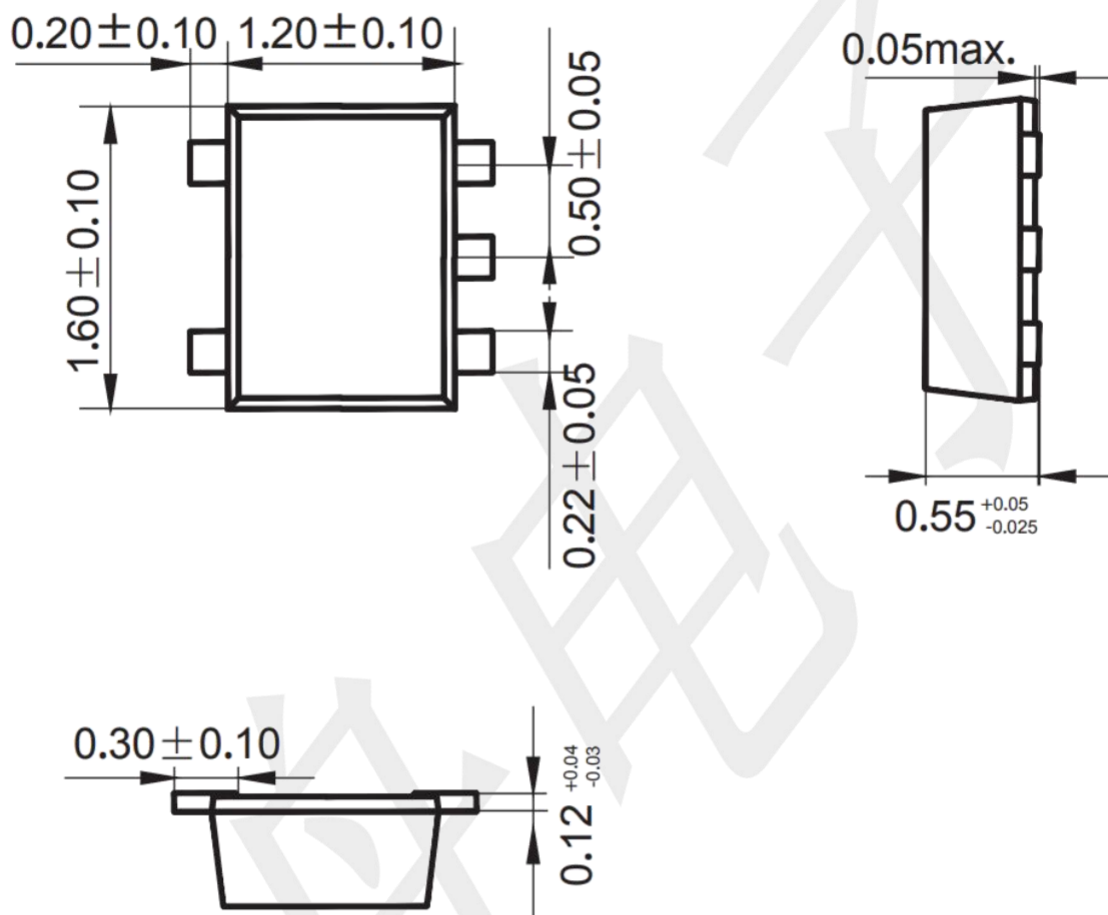


Fig3. Power Derating Curve



Package information(unit: mm)

SOT553



Mounting Pad Layout (unit: mm)

