TECH PUBLIC
台舟电子

TPD2E001DRLR-TP

Low-Capacitance 2-Channel ESD-Protection for High-Speed Date Interfaces

WWW.TECHPUBLIC.COM

Features

- Low operating voltage: 5.5V
- Ultra low capacitance: 1.5pF
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test

Air discharge: ±20kV

Contact discharge: ±15kV

-IEC61000-4-4 (EFT) 40A (5/50ns)

-IEC61000-4-5(Lightning):5A(8/20μs)

- These are Pb−Free Devices
- Response Time is Typically < 1 ns

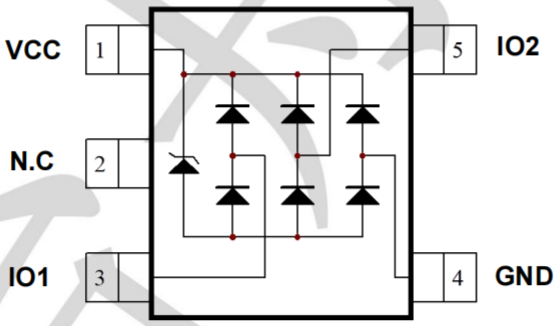
Mechanical Characteristics

- Package: SOT-553
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound
- Terminal Connections: See Diagram Below
- - IEC 61000-4-2 (ESD) immunity test
- Moisture Sensitivity: Level 3 per J-STD-020

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

Dimensions and Pin Configuration



Marking:2AZ Or 2AR

Circuit and Pin Schematic

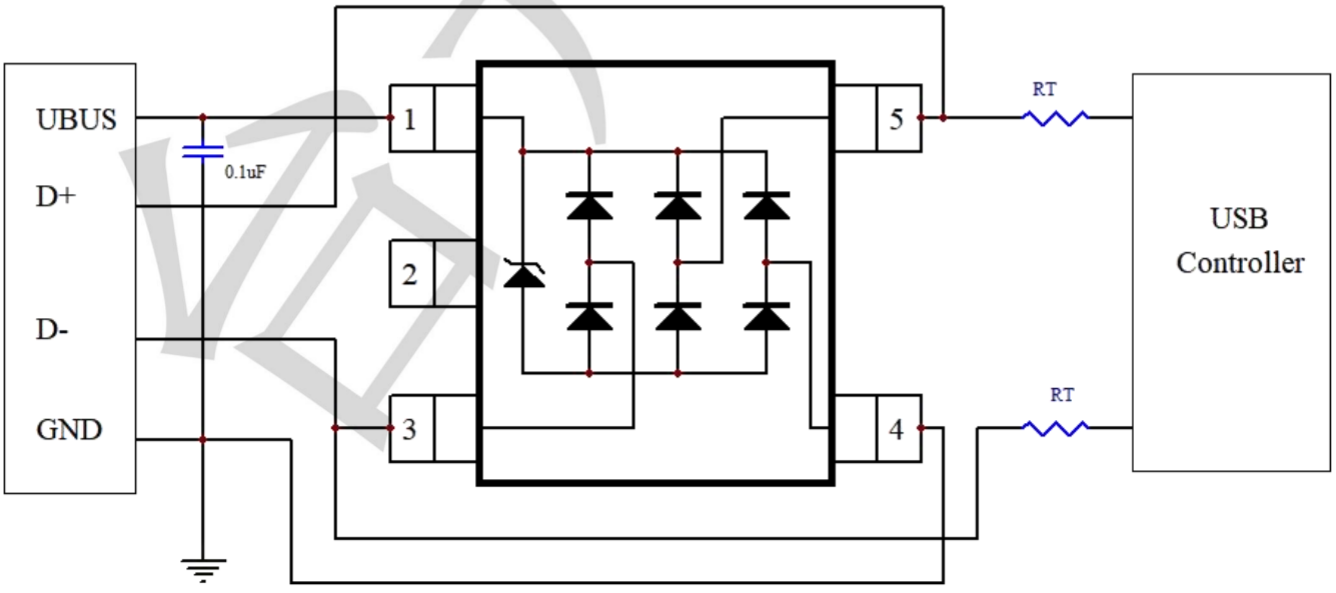
Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	75	W
Peak Pulse Current (8/20μs)	Ipp	5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±20 ±15	KV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	--	--	5.5	V	Any I/O pin to ground
Breakdown Voltage	VBR	6.5	8.0	11	V	IT= 1mA,Any I/O pin to ground
Reverse Leakage Current	IR	--	--	0.1	uA	VRWM=5V,Any I/O pin to ground
Clamping Voltage	VC	--	--	12	V	Ipp=1A(8x 20us pulse)
Clamping Voltage	VC	--	--	15	V	Ipp=5A(8x 20us pulse)
Forward Voltage	VF	--	0.6	1.2	V	1/20 s@ 25 °C, IF = 10 mA
Junction Capacitance	Cvo-GND	--	--	1.5	pF	VR=0V,f=1MHz

Application Schematic



Characteristic Curves

Fig1. 8/20μs Pulse Waveform

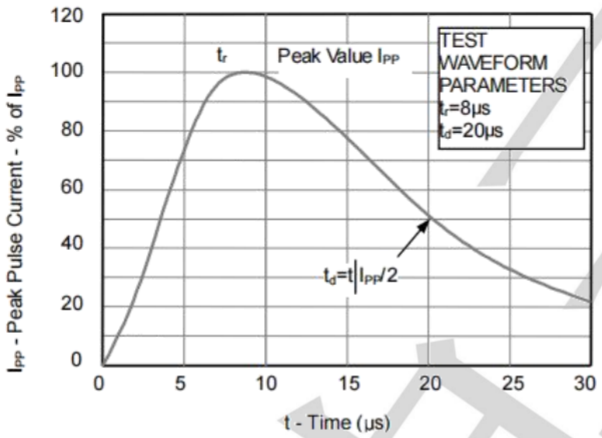


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

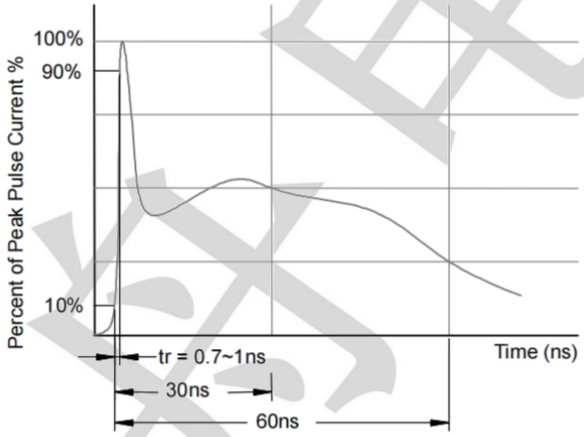
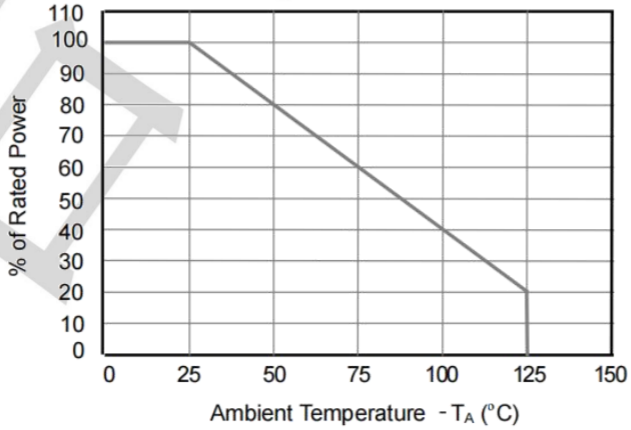
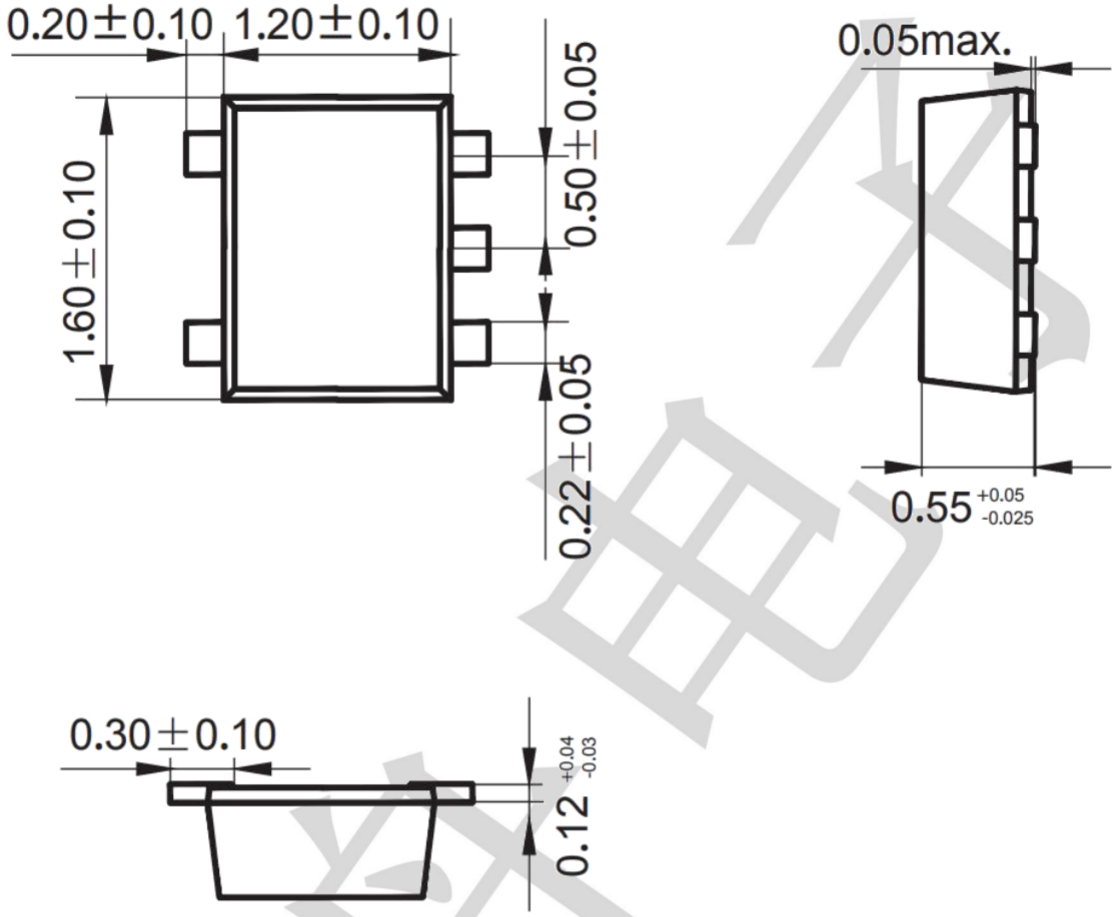


Fig3. Power Derating Curve



Package informantion(unit: mm)

SOT553



Mounting Pad Layout (unit: mm)