

### Features

- ◆ Ultra low capacitance: 0.1 pF typical (I/O to I/O)
- ◆ Ultra low leakage: nA level
- ◆ Low operating voltage: 1.5V
- ◆ Low clamping voltage
- ◆ Up to 4 data lines and one power line protects
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 20\text{kV}$   
Contact discharge:  $\pm 20\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) : 4 A(8/20 $\mu\text{s}$ )
- ◆ ROHS Compliant

### Mechanical Characteristics

- ◆ Package: DFN2510-10 (2.5 $\times$ 1.0 $\times$ 0.5mm)
- ◆ Ultra low leakage: nA level
- ◆ Case Material: “Green” Molding Compound.
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below

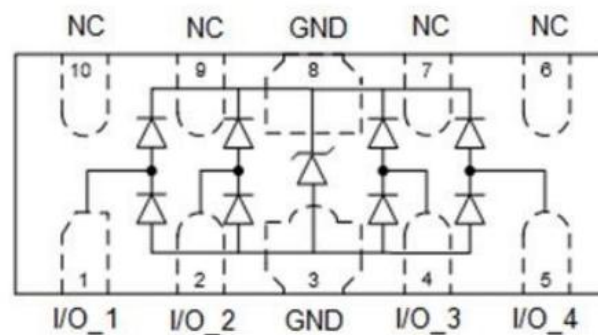
### Applications

- ◆ High Definition Multimedia Interface (HDMI)
- ◆ Digital Visual Interface (DVI)
- ◆ Unified Display Interface (UDI)
- ◆ MDDI Ports
- ◆ PCI Express
- ◆ Serial ATA

### Ordering Information

Part Number	Qty per Reel	Reel Size
TPAZ176S-04F	3000	7"

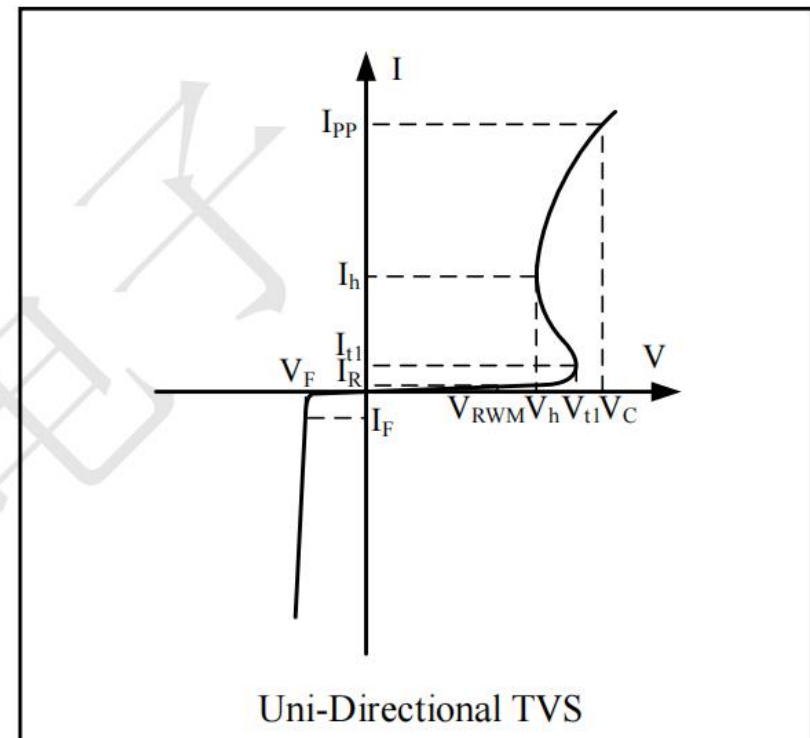
### Dimensions and Pin Configuration



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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20µs)	Ppk	80	W
Peak Pulse Current (8/20µs)	I <sub>PP</sub>	4	A
ESD per IEC 61000-4-2 (Air)	VESD	± 20	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

Symbol	Parameter
V <sub>RWM</sub>	Nominal Reverse Working Voltage
I <sub>R</sub>	Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>t1</sub>	Trigger Voltage
I <sub>t1</sub>	Trigger Current @ V <sub>t1</sub>
V <sub>h</sub>	Holding Voltage
I <sub>h</sub>	Holding Current @ V <sub>h</sub>
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
I <sub>PP</sub>	Maximum Peak Pulse Current
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>
C <sub>ESD</sub>	Parasitic Capacitance



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

Symbol	Min	Typ	Max	Unit	Test Condition
V <sub>RWM</sub>			1.5	V	Any I/O pin to ground
V <sub>h</sub>	1.6		2.3	V	I <sub>T</sub> = 1mA, any I/O pin to ground
I <sub>R</sub>			0.1	µA	V <sub>RWM</sub> = 1.5V, any I/O pin to ground
V <sub>t1</sub>	3.0		4.0	V	I <sub>PP</sub> = 1A (8 x 20µs pulse), any I/O pin to ground
V <sub>C</sub>		3		V	I <sub>PP</sub> = 4A (8 x 20µs pulse), any I/O pin to ground
V <sub>C</sub>		4.7		V	I <sub>PP</sub> = 16.0A, t <sub>p</sub> = 100ns <sup>(1)</sup> any I/O pin to ground
C <sub>J</sub>		0.17		pF	V <sub>R</sub> = 0V, f = 1MHz, between I/O pins
C <sub>J</sub>		0.1	0.15	pF	V <sub>R</sub> = 0V, f = 1MHz, any I/O pin to ground



## Characteristic Curves

Fig1. 8/20 $\mu$ s Pulse Waveform

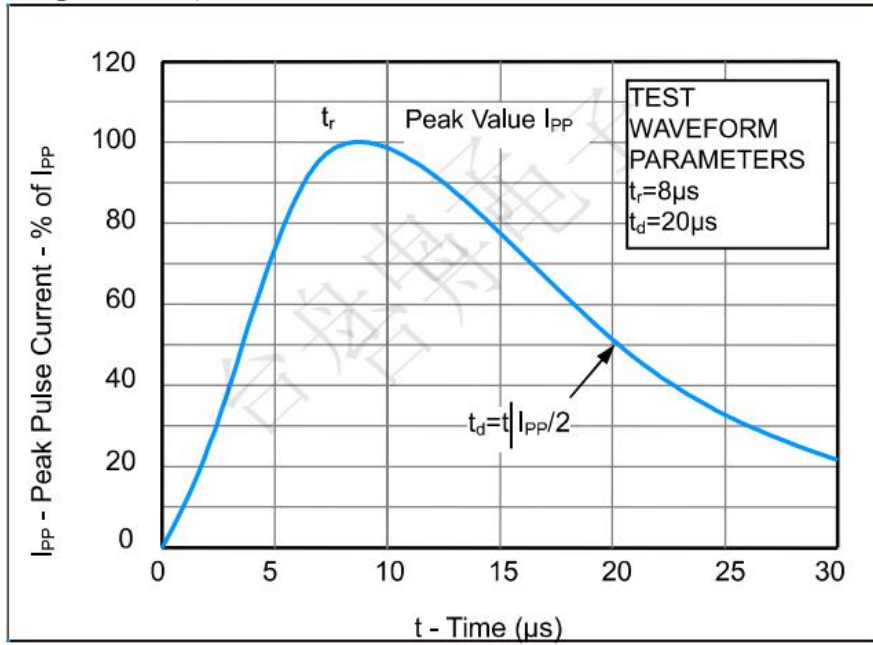


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

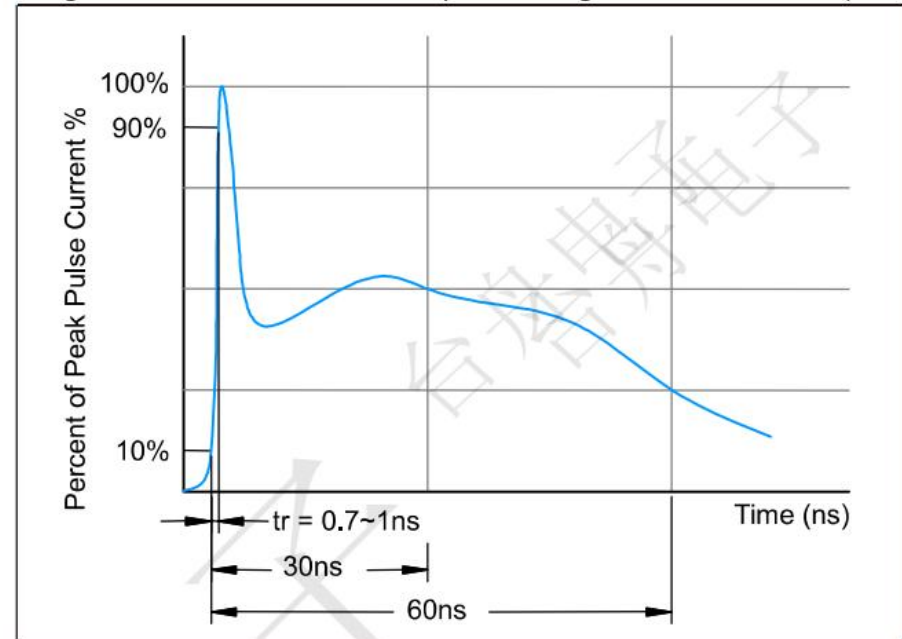
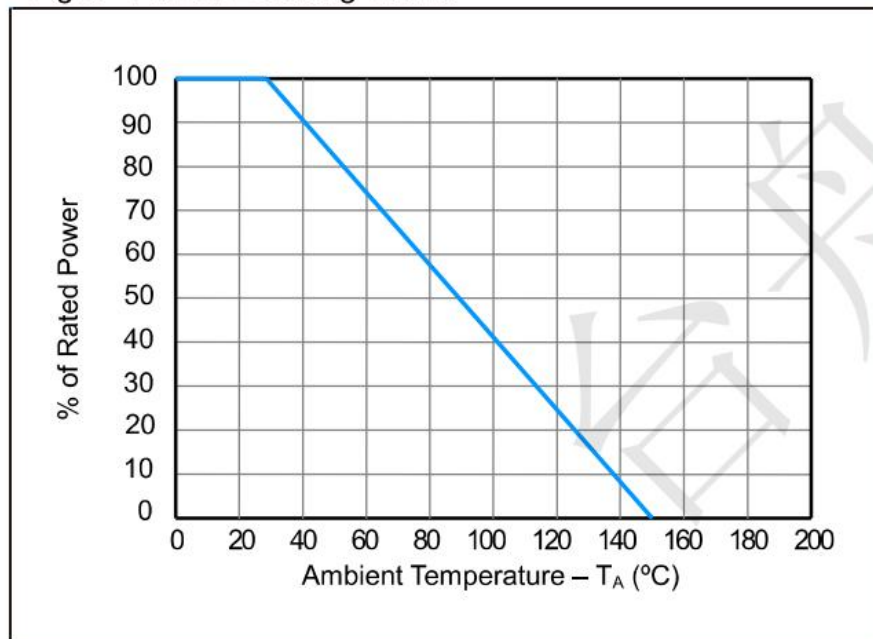
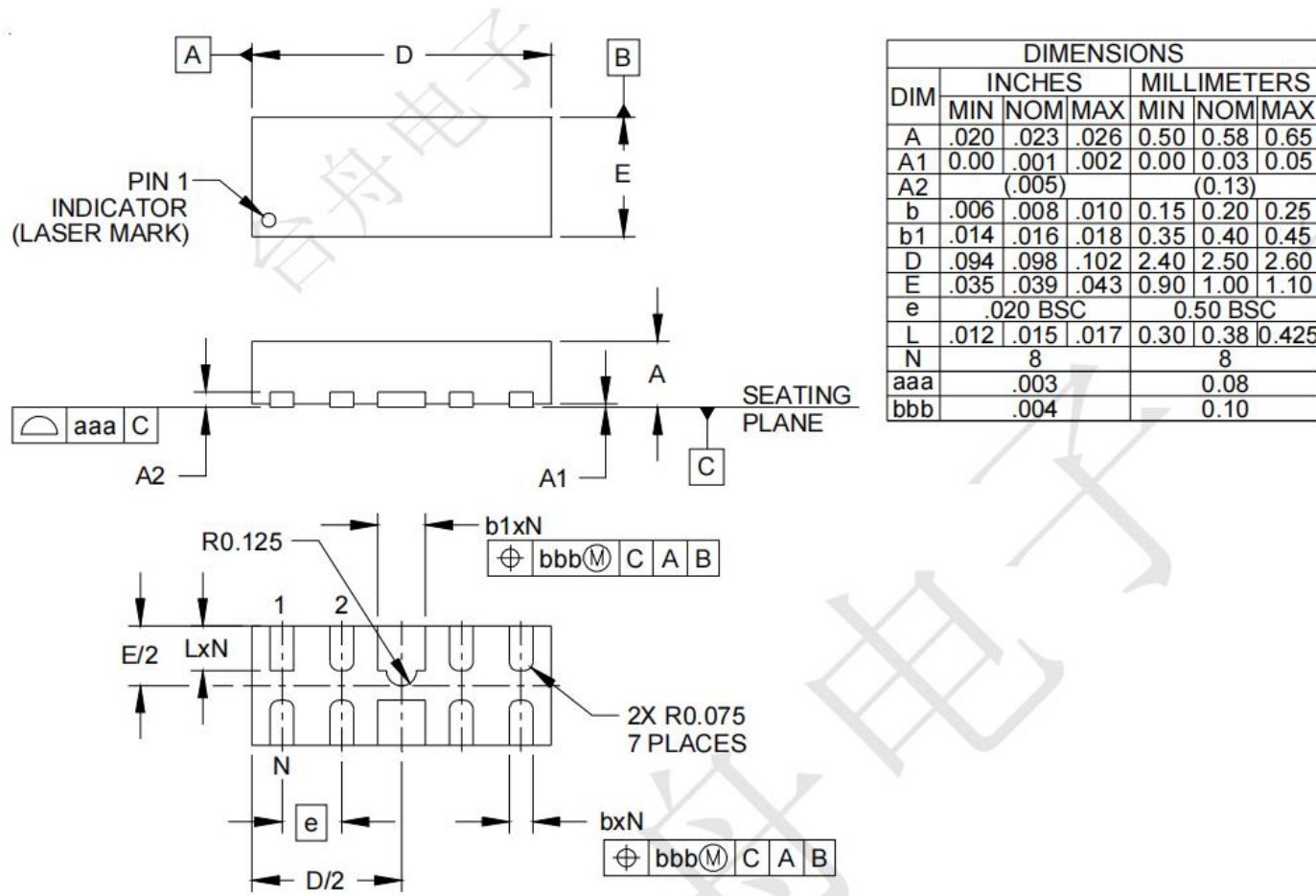


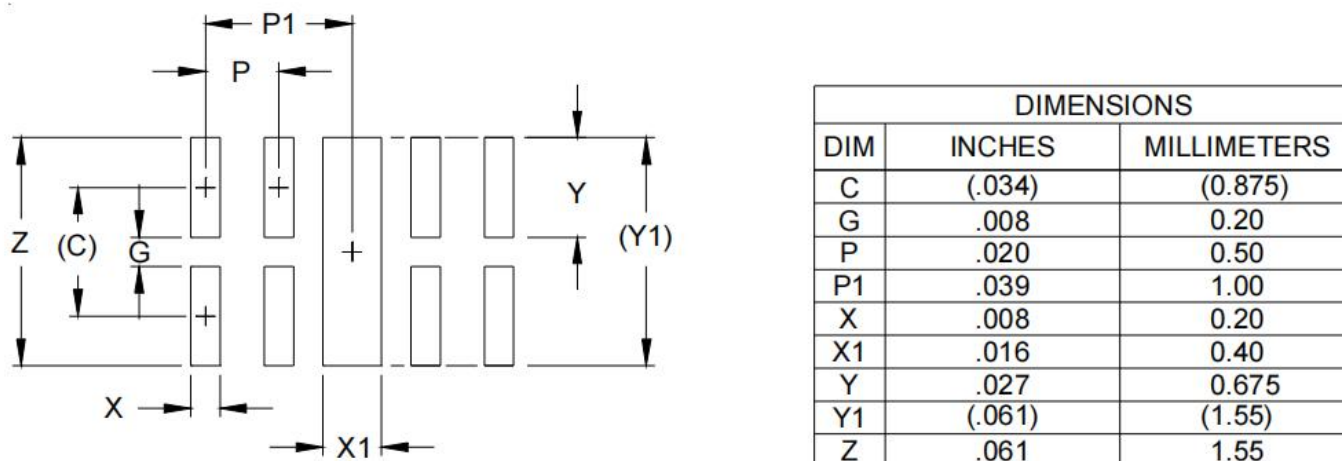
Fig3. Power Derating Curve



**Outline Drawing - DFN2510-10**



**Land Pattern - DFN2510-10**



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:*

*Click to view products by [TECH PUBLIC](#) manufacturer:*

Other Similar products are found below :

[60KS200C](#) [D18V0L1B2LP-7B](#) [D5V0F4U5P5-7](#) [DESD5V0U1BB-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE39CA-TP](#) [P6KE8.2A](#)  
[SA110CA](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#) [SMBJ33CATR](#) [SMBJ8.0A](#) [ESD101-B1-02ELS E6327](#) [ESD105-B1-02EL E6327](#) [ESD112-B1-02EL E6327](#) [ESD119B1W01005E6327XTSA1](#) [ESD5V0L1B02VH6327XTSA1](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-HF](#)  
[3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [DESD5V0U1BL-7B](#) [DRTR5V0U4SL-7](#)  
[SCM1293A-04SO](#) [ESD200-B1-CSP0201 E6327](#) [SM12-7](#) [SMLJ45CA-TP](#) [CEN955 W/DATA](#) [82350120560](#) [VESD12A1A-HD1-GS08](#)  
[CPDUR5V0R-HF](#) [CPDQC5V0U-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#) [D1213A-01LP4-7B](#) [D1213A-02WL-7](#) [MMAD1108/TR13](#)  
[5KP100A](#) [5KP15A](#) [5KP18A](#) [5KP48A](#) [5KP90A](#) [5KP90CA](#)