# TPAZ8113-04S

## Low Capacitance TVS Diode Array

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### Features

- Low operating voltage: 3.3V
- Ultra low capacitance: 2pF typical (I/O to I/O)
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test

Air discharge: ±30kV

Contact discharge: ±30kV

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

-IEC61000-4-5(Lightning):30A(8/20μs)

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

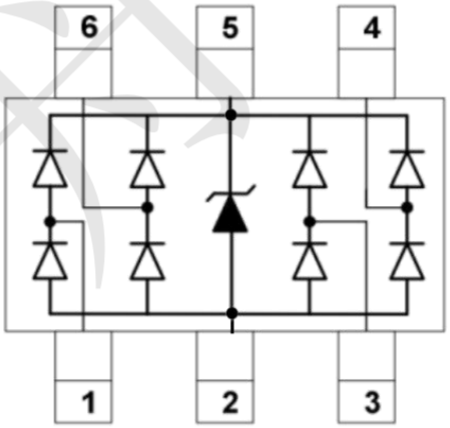
### Mechanical Characteristics

- Package: SOT23-6
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound
- Terminal Connections: See Diagram Below
- - IEC 61000-4-2 (ESD) immunity test

### Applications

- T1/E1 Line Cards
- T3/E3 and DS3 Interfaces
- Low Voltage Interfaces
- ISDN Interfaces

### Dimensions and Pin Configuration




**Circuit and Pin Schematic**

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

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power (8/20μs) | Ppk | 500 | W |
| Peak Pulse Current (8/20μs)Any I/O pin to ground | Ipp | 30 | A |
| Peak Pulse Current (8/20μs)VCC pin to ground | Ipp | 60 | A |
| ESD per IEC 61000−4−2 (Air)<br>ESD per IEC 61000−4−2 (Contact) | VESD | ±30<br>±30 | 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 | -- | -- | 3.3 | V | Any I/O pin to ground |
| Breakdown Voltage | VBR | 4.2 | -- | -- | V | IT= 1mA,Any I/O pin to ground |
| Reverse Leakage Current | IR | -- | -- | 0.1 | uA | VRWM=3.3V,Any I/O pin to ground |
| Forward voltage | VF | -- | 0.7 | 1.2 | V | IF=10mA |
| Clamping Voltage | VC | -- | -- | 10 | V | Ipp=1A(8x 20us pulse),<br>Any I/O pin to ground |
| Clamping Voltage | VC | -- | -- | 12 | V | Ipp=10A(8x 20us pulse),<br>Any I/O pin to ground |
| Clamping Voltage | VC | -- | -- | 16 | V | Ipp=30A(8x 20us pulse),<br>Any I/O pin to ground |
| Clamping Voltage | VC | -- | 20 | -- | V | Ipp=60A(8x 20us pulse),<br>VCC pin to ground |
| Junction Capacitance | Cvo-GND | -- | -- | 5 | pF | VR=0V,f=1MHz,<br>Any I/O to GND |
| | $C_{I/O-I/O}$ | -- | 2 | -- | pF | VR=0V,f=1MHz,<br>between I/O pins |

## Characteristic Curves

**Fig1. 8/20μs Pulse Waveform**

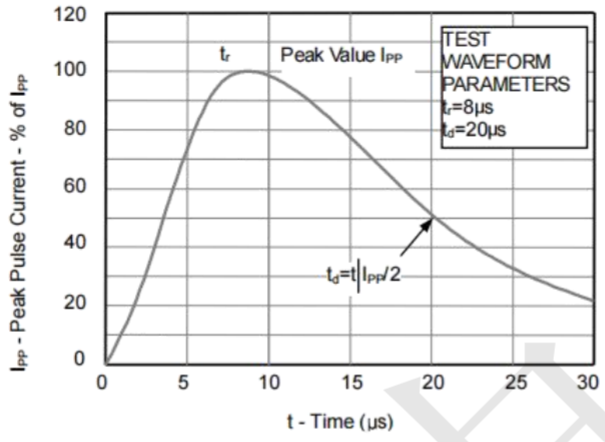



**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**

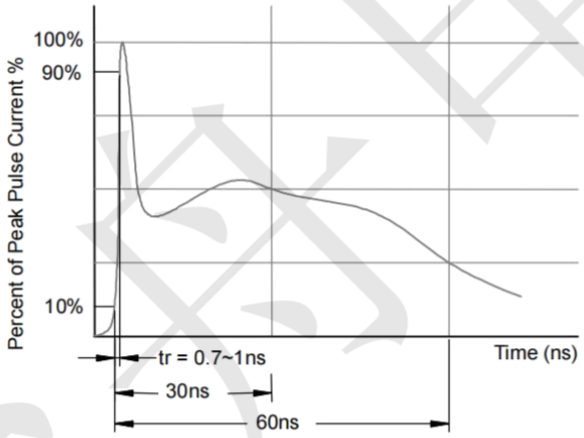
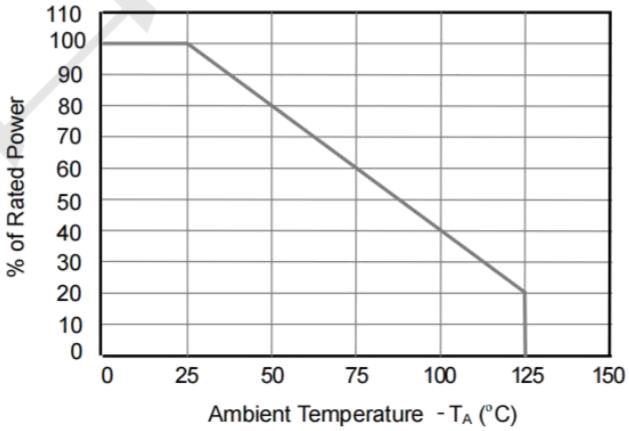
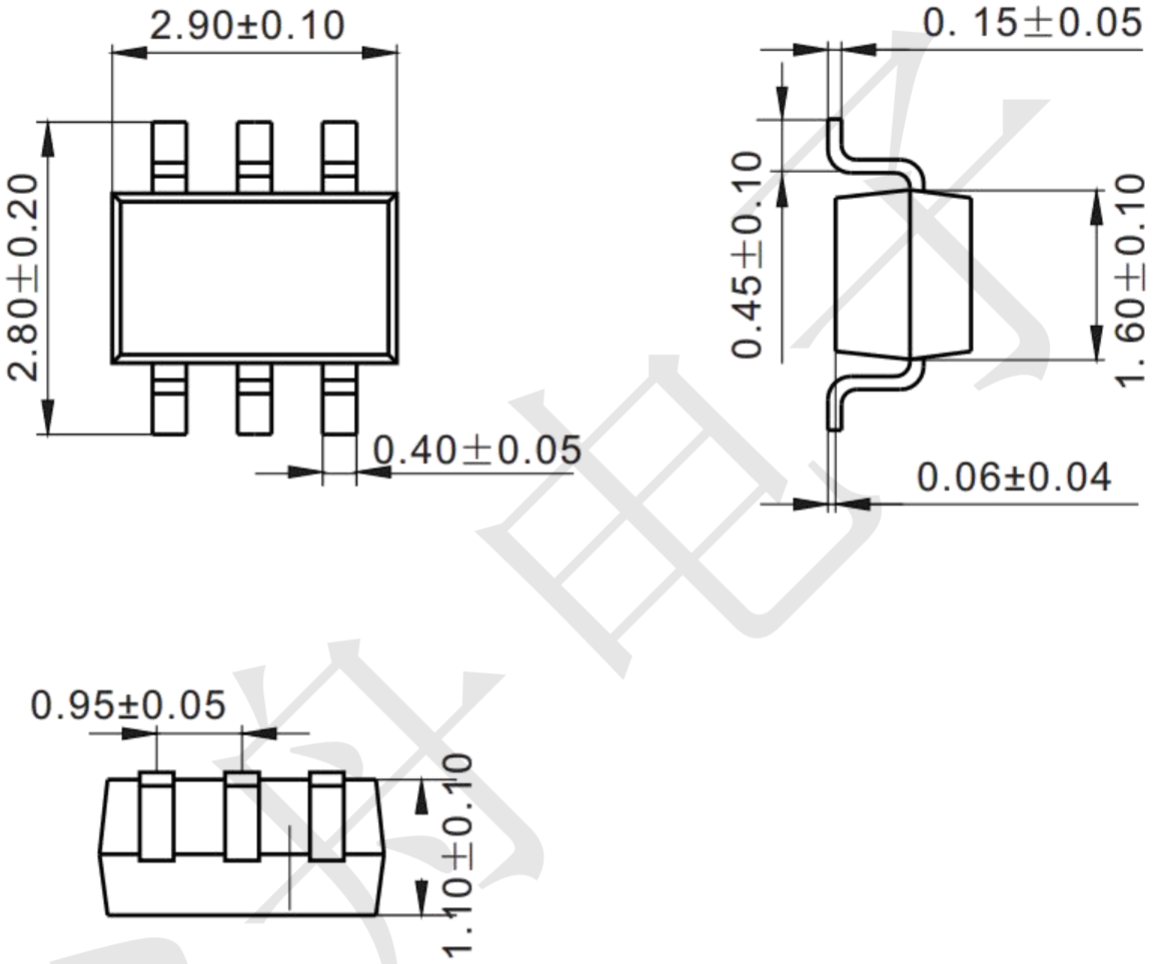



**Fig3. Power Derating Curve**



## Package information (Unit: mm)

**SOT23-6**




## Mounting Pad Layout (unit: mm)

