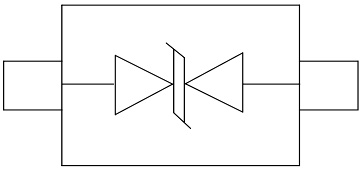
## Description

The AZ5125-01H is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The AZ5125-01H complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make AZ5125-01H an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

**SOD-523**

## Features

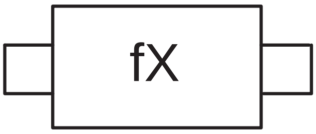
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - – IEC61000-4-5 (Lightning) 8A (8/20μs)
- RoHS Compliant



**Circuit diagram**

## Mechanical Characteristics

- Package: SOD-523
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below



fX= Device code

**Marking (Top View)**

## Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

## Ordering Information

| Part Number | Packaging | Reel Size |
|---|---|---|
| AZ5125-01H | 3000/Tape & Reel | 7 inch |

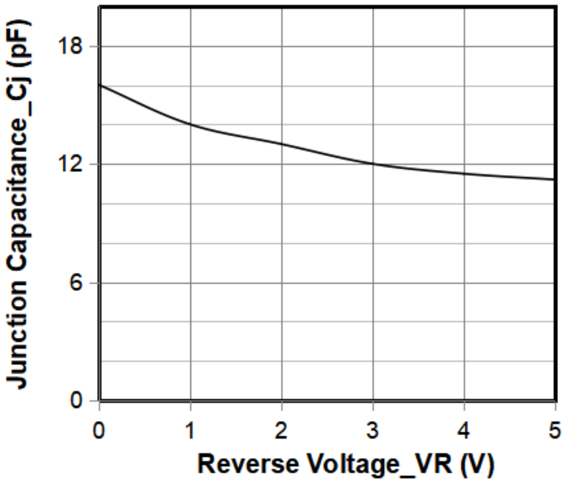
## Absolute Maximum Ratings ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power (8/20μs) | Ppk | 80 | W |
| Peak Pulse Current (8/20μs) | $I_{PP}$ | 8 | A |
| ESD per IEC 61000−4−2 (Air)<br>ESD per IEC 61000−4−2 (Contact) | $V_{ESD}$ | ±30<br>±30 | kV |
| Operating Temperature Range | $T_J$ | −55 to +125 | °C |
| Storage Temperature Range | Tstg | −55 to +150 | °C |

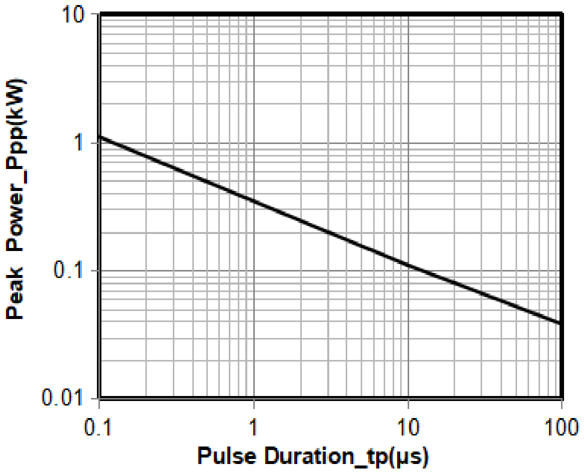
## Electrical Characteristics ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $V_{RWM}$ | | | 5 | V | |
| Breakdown Voltage | $V_{BR}$ | 5.6 | 6.5 | 8 | V | $I_T$ = 1mA |
| Reverse Leakage Current | $I_R$ | | | 0.1 | μA | $V_{RWM}$ = 5V |
| Clamping Voltage | $V_C$ | | | 8 | V | $I_{PP}$ = 1A |
| Clamping Voltage | $V_C$ | | | 10 | V | $I_{PP}$ = 8A |
| Junction Capacitance | $C_J$ | | 15 | | pF | VR = 0V, f = 1MHz |

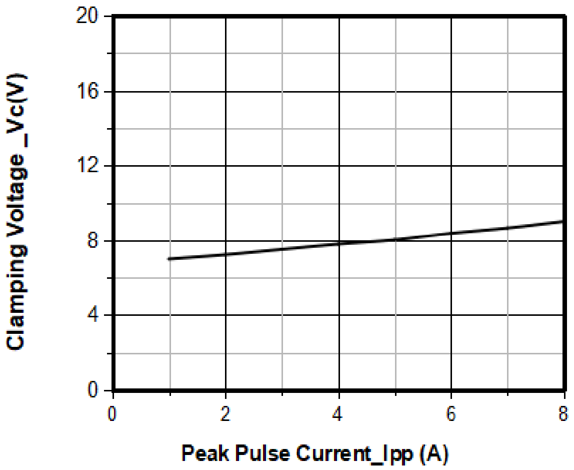
## Typical Performance Characteristics (TA=25°C unless otherwise Specified)



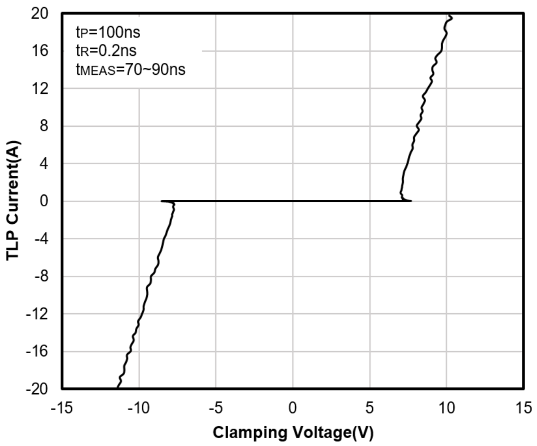
Junction Capacitance vs. Reverse Voltage



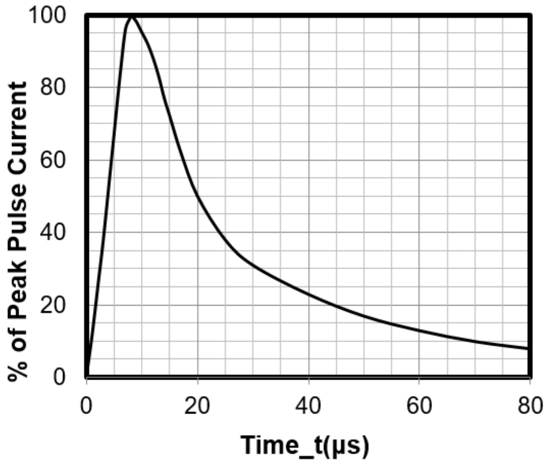
Peak Pulse Power vs. Pulse Time



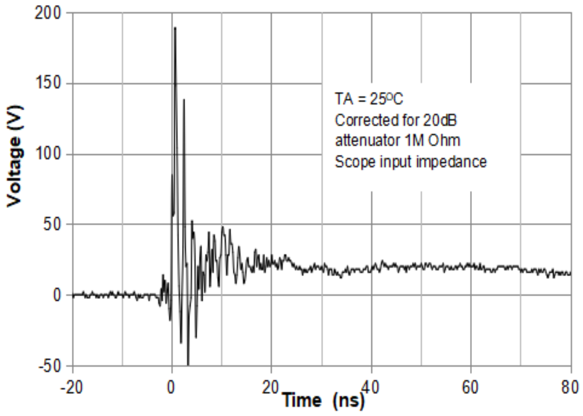
Clamping Voltage vs. Peak Pulse Current (tp = 8/20us)



Transmission Line Pulsing (TLP) Voltage (V)



8 X 20μs Pulse Waveform



ESD Clamping Voltage

8 kV Contact per IEC61000−4−2