TECH PUBLIC
台舟电子

# ESD5V0U05-923

**Low Capacitance Uni-directional TVS Diode**

www.sot23.com.tw

## Features

- Ultra low capacitance: 0.5pF typical
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 3-pin leadless package
- Up to 2-line protects
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±25kV
  - IEC61000-4-5 (Lightning) 4A (8/20μs)
  - IEC61000-4-4 (EFT) 40A (5/50ns)
- RoHS Compliant

## Mechanical Characteristics

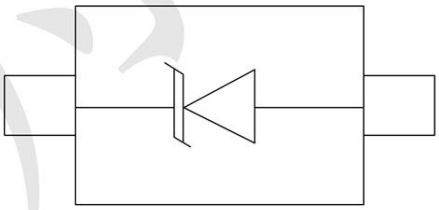
- Package：SOD-923(0402)
- Ultra low leakage: nA level
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020

Shipping Qty :8000 Or 10000 /7Inch Tape & Reel

## Applications

- Mobile Phones and Accessories
- Battery Protection
- USB VBus
- Power Line Protection
- Hand Held Portable Applications

## Dimensions and Pin Configuration



**Marking:** X

**SOD923**

**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) | IPP | 4.5 | A |
| ESD per IEC 61000−4−2 (Air)<br>ESD per IEC 61000−4−2 (Contact) | VESD | ±20<br>±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 | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $V_{RWM}$ | | | | 5 | V |
| Breakdown Voltage | $V_{BR}$ | $I_T$ = 1mA(Pin1-Pin2) | 5.4 | 6.7 | 8.5 | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$ = 5. 0V(Pin2-Pin1) | | | 0.08 | μA |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 1A (8 x 20us pulse) (Pin1-Pin2) | | | 9 | V |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 4A (8 x 20us pulse) (Pin1-Pin2) | | | 15 | V |
| Junction Capacitance | $C_J$ | VR = 0V, f = 1MHz | | 0.5 | | pF |

## Characteristic Curves

**Fig1. 8/20μs Pulse Waveform**

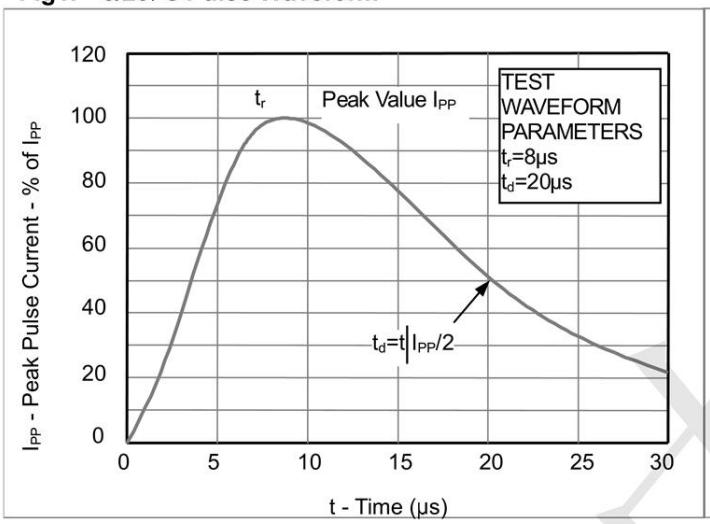



**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**

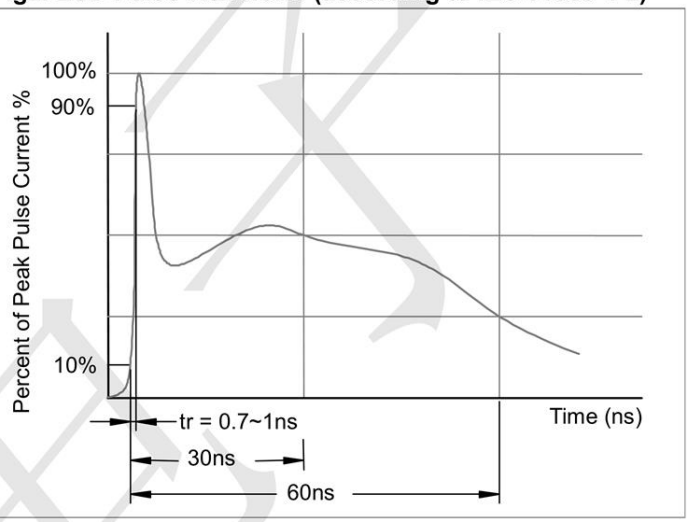
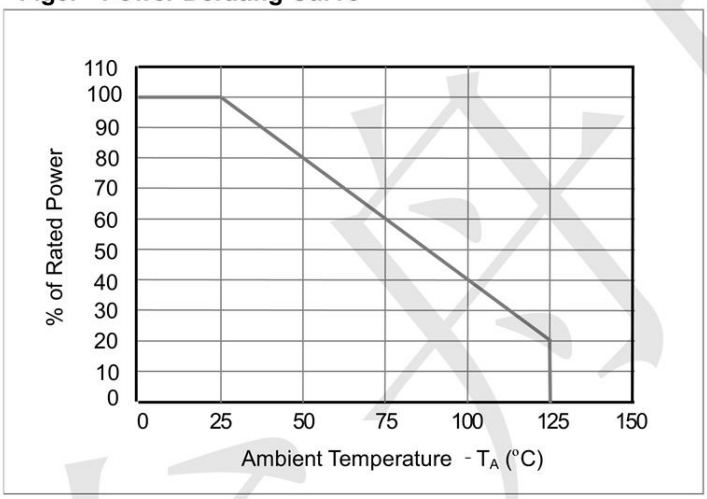
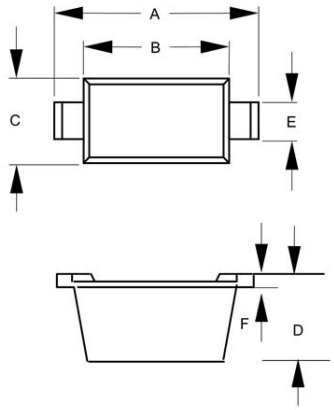



**Fig3. Power Derating Curve**



## Outline Drawing - SOD-923(0402)




| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| DIM | INCHES | | MM | | NOTE |
| | MIN | MAX | MIN | MAX | |
| A | .037 | .041 | 0.95 | 1.05 | |
| B | .030 | .033 | 0.75 | 0.85 | |
| C | .022 | .026 | 0.55 | 0.65 | |
| D | .014 | .017 | 0.36 | 0.43 | |
| E | .006 | .010 | 0.15 | 0.25 | |
| F | .003 | .007 | 0.07 | 0.17 | |

## Land Pattern - SOD-923(0402)

