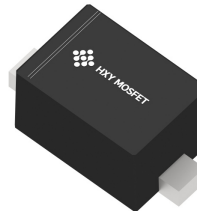




## Discription

Low capacitance bidirectional ElectroStatic Discharge (ESD) protection diode in a ultra-small and flat lead SOD-523 plastic package designed to protect one signal line from the damage caused by ESD and other transients.



SOD-523

## Features

- ★ Ultra Low Capacitance 0.35 pF(Typ)
- ★ Reverse stand-off voltage: 5V Max
- ★ Low leakage current: nA Level
- ★ Response time is typically < 1 ns
- ★ IEC61000-4-2 Level 4 ESD Protection

## Applications

- ★ High-speed data lines
- ★ Smart phones
- ★ Display Ports
- ★ MDDI Ports
- ★ USB Ports
- ★ Digital Video Interface (DVI)
- ★ PCI Express and Serial SATA Ports



Circuit Diagram

## Ordering Information

| Product ID | Pack    | Qty(PCS) |
|------------|---------|----------|
| AR0521D5   | SOD-523 | 3000     |

## Absolute Ratings(Tamb = 25°C)

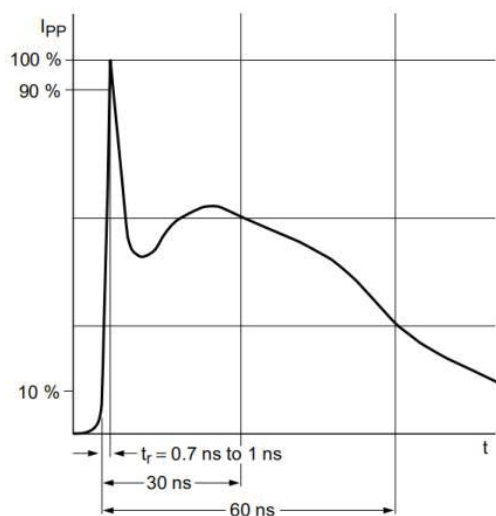
| Symbol           | Parameter                                         | Value                              | Units            |
|------------------|---------------------------------------------------|------------------------------------|------------------|
| P <sub>PP</sub>  | Peak Pulse Power (t <sub>p</sub> = 8/20 μ s)      | 80                                 | W                |
| T <sub>L</sub>   | Maximum lead temperature for soldering during 10s | 260                                | °C               |
| T <sub>stg</sub> | Storage Temperature Range                         | -55 to +155                        | °C               |
| T <sub>op</sub>  | Operating Temperature Range                       | -40 to +125                        | °C               |
| T <sub>j</sub>   | Maximum junction temperature                      | 150                                | °C               |
|                  | IEC61000-4-2 (ESD)                                | air discharge<br>contact discharge | ±20<br>±15<br>KV |



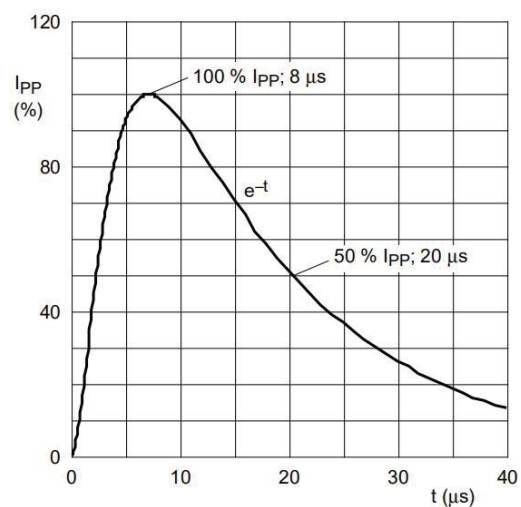
## Electrical Characteristics

| Symbol    | Parameter                 | Test Condition                    | Min | Typ  | Max  | Units |
|-----------|---------------------------|-----------------------------------|-----|------|------|-------|
| $V_{RWM}$ | Reverse Working Voltage   |                                   |     |      | 5.0  | V     |
| $V_{BR}$  | Reverse Breakdown Voltage | $I_T = 1mA$                       | 6.5 |      | 8.5  | V     |
| $I_R$     | Reverse Leakage Current   | $V_{RWM} = 5.0V$                  |     |      | 100  | nA    |
| $V_C$     | Clamping Voltage          | $I_{PP} = 4A$ , $t_p = 8/20\mu s$ |     |      | 20.0 | V     |
| $C_J$     | Junction Capacitance      | $V_R = 0V$ , $f = 1MHz$           |     | 0.35 | 0.40 | pF    |

## Typical Characteristics



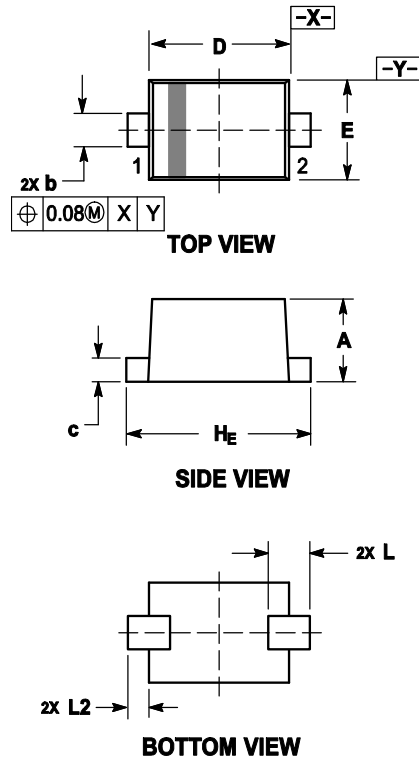
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform( 8/20μs pulse)



## Outline And Dimensions



### Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

| DIM            | MILLIMETERS |      |      | INCHES    |       |       |
|----------------|-------------|------|------|-----------|-------|-------|
|                | MIN         | NOM  | MAX  | MIN       | NOM   | MAX   |
| A              | 0.50        | 0.60 | 0.70 | 0.020     | 0.024 | 0.028 |
| b              | 0.25        | 0.30 | 0.35 | 0.010     | 0.012 | 0.014 |
| c              | 0.07        | 0.14 | 0.20 | 0.003     | 0.006 | 0.008 |
| D              | 1.10        | 1.20 | 1.30 | 0.043     | 0.047 | 0.051 |
| E              | 0.70        | 0.80 | 0.90 | 0.028     | 0.031 | 0.035 |
| H <sub>E</sub> | 1.50        | 1.60 | 1.70 | 0.059     | 0.063 | 0.067 |
| L              | 0.30 REF    |      |      | 0.012 REF |       |       |
| L <sub>2</sub> | 0.15        | 0.20 | 0.25 | 0.006     | 0.008 | 0.010 |

## Soledering Footprint





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