# HESDUC5VB1CL-C
ESD PROTECTION DIODE

## 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) |
|---|---|---|
| HESDUC5VB1CL-C | SOD-523 | 3000 |

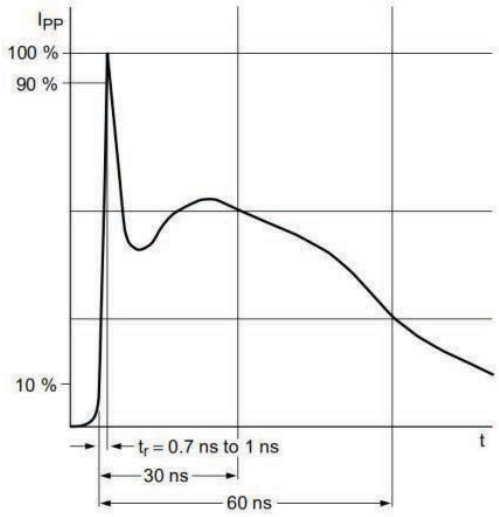
## Absolute Ratings(Tamb = 25°C)

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $P_{PP}$ | Peak Pulse Power ($t_p$ = 8/20 μ s) | 80 | W |
| $T_L$ | Maximum lead temperature for soldering during 10s | 260 | °C |
| $T_{stg}$ | Storage Temperature Range | -55 to +155 | °C |
| $T_{op}$ | Operating Temperature Range | -40 to +125 | °C |
| $T_j$ | Maximum junction temperature | 150 | °C |
| | IEC61000-4-2 (ESD) air discharge<br>contact discharge | ±20<br>±15 | KV |

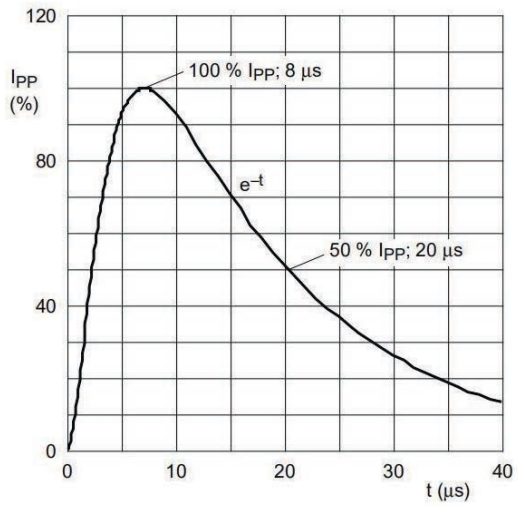
## Electrical Characteristics

| 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, $t_p$ = 8/20μs | | | 20.0 | V |
| $C_J$ | Junction Capacitance | $V_R$ = 0V, f = 1MHz | | 0.35 | 0.40 | pF |

## Typical Characteristics

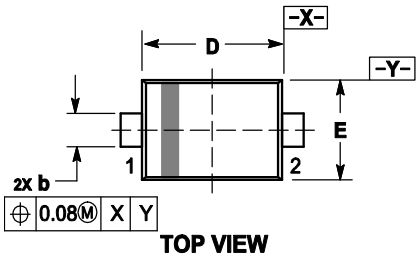



IEC61000−4−2 Waveform

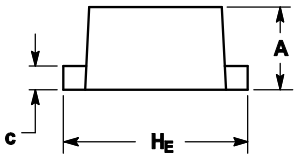



IEC 61000-4-5 Waveform( 8/20μs pulse)

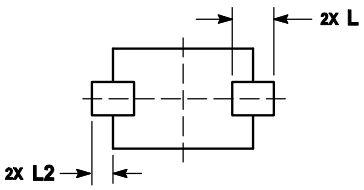
## Outline And Dimensions




TOP VIEW




SIDE VIEW



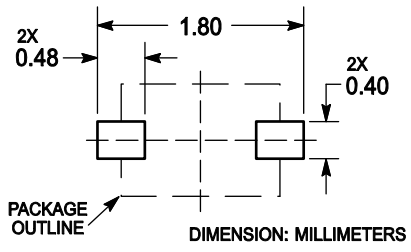

BOTTOM VIEW

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.

| | MILLIMETERS | | | INCHES | | |
|---|---|---|---|---|---|---|
| DIM | 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 |
| $H_E$ | 1.50 | 1.60 | 1.70 | 0.059 | 0.063 | 0.067 |
| L | 0.30 REF | | | 0.012 REF | | |
| $L_2$ | 0.15 | 0.20 | 0.25 | 0.006 | 0.008 | 0.010 |

## Soledering Footprint




DIMENSION: MILLIMETERS

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