# HESD5Z Series

**Transient Voltage Suppressors**

## DESCRIPTION

The HESD5Z Series is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications.

## FEATURES

✧IEC61000-4-2 Level 4 ESD Protection
✧Protects one directional I/O line
✧Low clamping voltage
✧Working voltages : 2.5V,3.3V, 5V,6V,7V,12V,15V
✧Low leakage current

## MACHANICAL DATA

✧SOD-523 package
✧Flammability Rating: UL 94V-0
✧Packaging: Tape and Reel
✧High temperature soldering guaranted:260℃/10s
✧Reel size: 7 inch

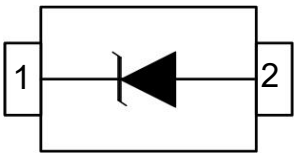
## ORDERING INFORMATION

✧ Device: HESD5ZXXX
✧Package: SOD-523
✧Material: Halogen free
✧Packing: Tape & Reel
✧Quantity per reel: 3,000pcs

## APPLICATIONS

✧Cell Phone Handsets and Accessories
✧Microprocessor based equipment
✧Personal Digital Assistants (PDA's)
✧Notebooks, Desktops, and Servers
✧Portable Instrumentation
✧Peripherals
✧Pagers

## PIN CONFIGURATION




## PACKAGE OUTLINE



## ABSOLUTE MAXIMUM RATING

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{ESD}$ | ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | ±30<br>±22 | kV |
| ESD | ESD Voltage per human body model<br>ESD Voltage per machine model | 16<br>400 | kV<br>V |
| $P_D$ | Total Power Dissipation on FR-5 Board (Note 1) @ Ta=25°C | 150 | mW |
| $T_J$, $T_{STG}$ | Junction and Storage Temperature | -55/+150 | °C |
| $T_L$ | Lead Solder Temperature – Maximum (10 Second Duration) | 260 | °C |

These ratings are limiting values above which the serviceability of the diode may be impaired
Note 1. FR-5=1.0x0.75x0.62 in.

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## ELECTRICAL CHARACTERISTICS (Tamb=25°C)

| PART NUMBER | DEVICE MARKING | $V_{RWM}$ (V) | $I_R$ (μA) | $V_B$ (V) | $I_T$ (mA) | $V_C$ (V) | | $V_C$ (V) | | $P_{PK}$ (W) | $C_J$ (pF) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Max | Max | Min | | Max | @A | Max | @A | Max | Max |
| HESD5Z2V5 | ZD + code | 2.5 | 6.0 | 4.0 | 1 | 9.0 | 5.0 | 11.5 | 9.0 | 104 | 145 |
| HESD5Z3V3 | ZE + code | 3.3 | 0.90 | 5.0 | 1 | 10.0 | 5.0 | 14.0 | 7.5 | 105 | 105 |
| HESD5Z5V0 | ZF + code | 5.0 | 0.08 | 6.2 | 1 | 11.6 | 5.0 | 15.0 | 7.0 | 105 | 80 |
| HESD5Z6V0 | ZG + code | 6.0 | 0.05 | 6.8 | 1 | 13.5 | 5.0 | 17.5 | 6.0 | 105 | 70 |
| HESD5Z7V0 | ZH + code | 7.0 | 0.03 | 7.5 | 1 | 14.0 | 5.0 | 18.0 | 6.0 | 108 | 65 |
| HESD5Z12 | ZM + code | 12.0 | 0.03 | 14.1 | 1 | 20.0 | 1.0 | 26.0 | 4.0 | 104 | 45 |
| HESD5Z15 | ZN + code | 15.0 | 0.50 | 16.0 | 1 | 23.0 | 1.0 | 30.0 | 4.0 | 120 | 28 |

## ELECTRICAL CHARACTERISTICS CURVE

Fig 1 8/20μs Waveform per IEC61000-4-5

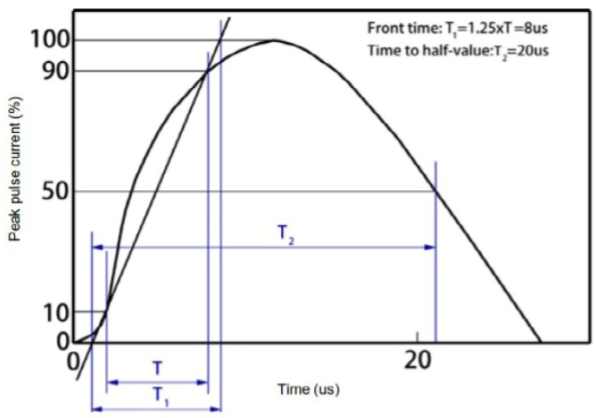



Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

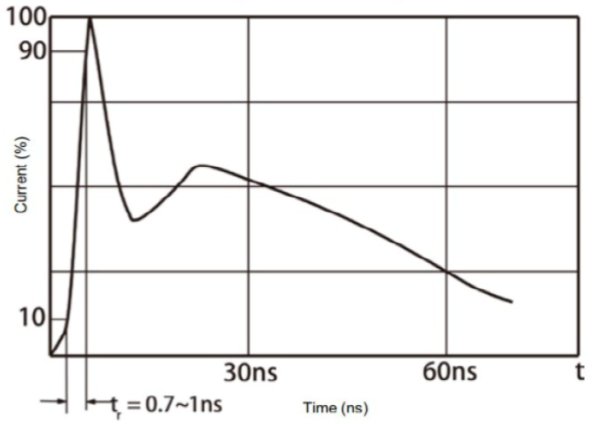



Fig 3 Voltage vs Capacitance

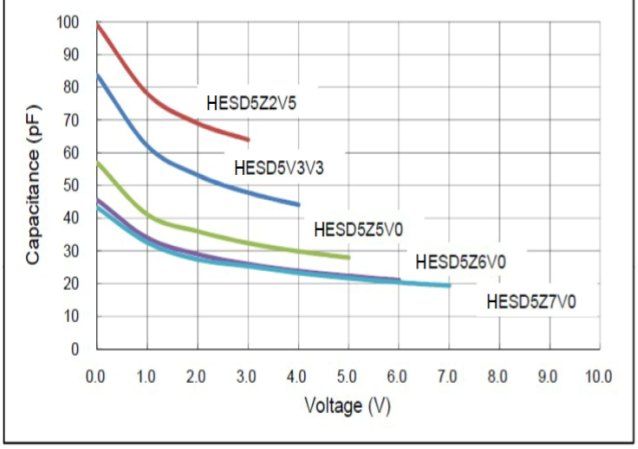
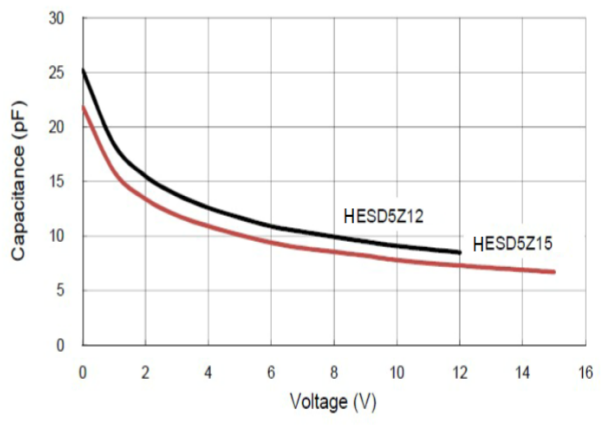



Fig 4 Voltage vs Capacitance



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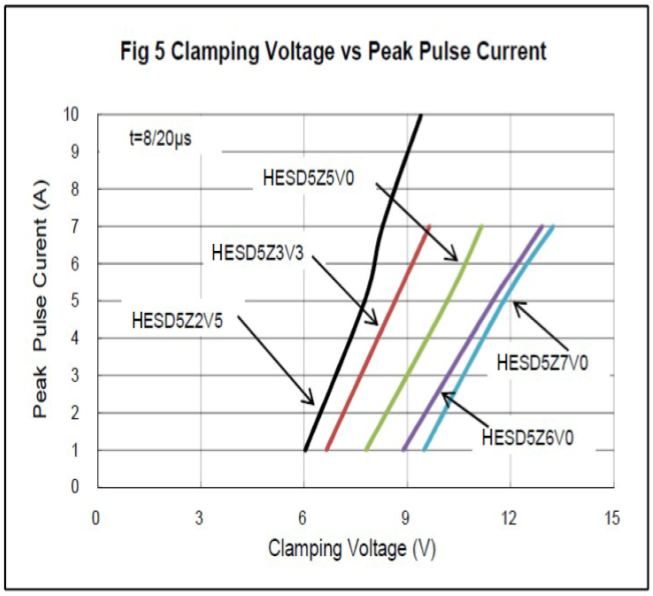
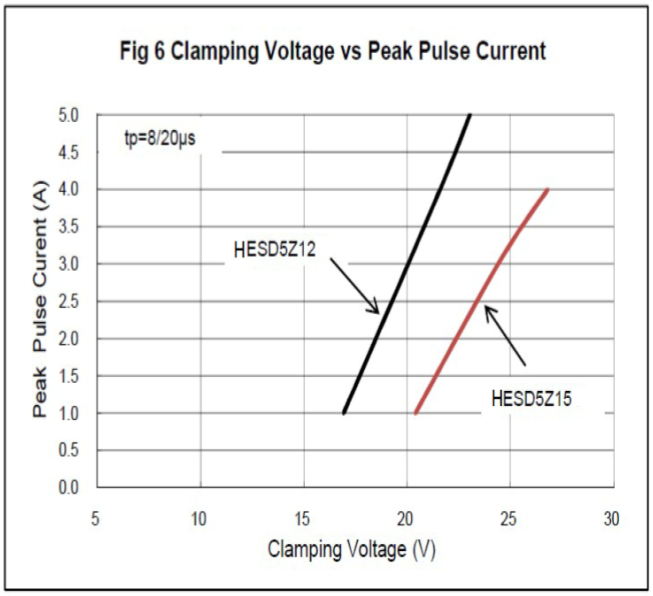
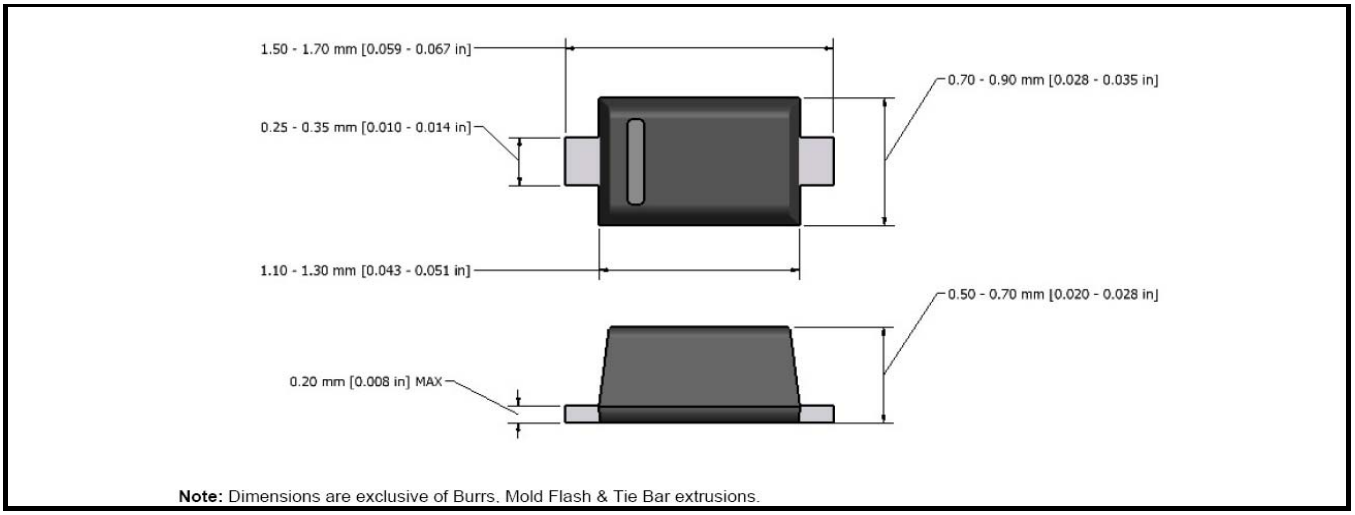



## SOD-523 PACKAGE OUTLINE DIMENSIONS




**Note:** Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.