

## Bi-Directional Transient Voltage Suppressing Diode

HYESD2025S is a Bi-Directional transient suppressing diode to protection one power line, one control line, or one low speed data line from overvoltage hazard of Electrostatic Discharge ( ESD ), Electrical Fast Transients ( EFT ) and Lightning. The typical application are computer interfaces protection, control signal lines protection etc..

### FEATURES

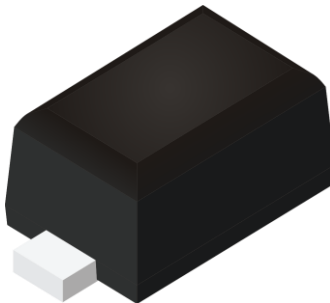
- Bi-Directional TVS
- Provides ESD protection to IEC61000-4-2 level 4
  - $\pm 15\text{KV}$  Air Discharge
  - $\pm 8\text{KV}$  Contact Discharge
- Fast response speed
- Low clamping voltage
- Low operation voltage

### APPLICATION

- Computer interfaces protection
- Serial / parallel ports protection
- Control signal lines protection
- Power lines protection
- Latchup protection

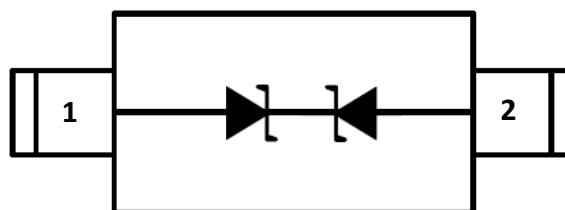
### MECHANICAL INFORMATION

- Case : SOD-523 Package
- Pb-Free, Halogen Free, RoHS/WEEE Compliant



HYESD2025S  
SOD-523

### PIN CONFIGURATION



**Maximum Rating and Thermal Characteristics (  $T_C=25^\circ\text{C}$  )**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{PP}$	200	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{PP}$	8.5	A
ESD per IEC 61000-4-2(Air)	$V_{ESD}$	$\pm 15\text{KV}$	V
ESD per IEC 61000-4-2(Contact)	$V_{ESD}$	$\pm 8\text{KV}$	V
Operating Temperature Range	$T_{OP}$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{STO}$	-55 to +150	$^\circ\text{C}$
Lead Soldering Temperature ( 10sec. )	$T_{SOL}$	260	$^\circ\text{C}$

**Electrical Characteristics (  $T_C=25^\circ\text{C}$ , unless otherwise noted )**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$	$T=25^\circ\text{C}$	-	-	5.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR}=1\text{mA};$ $T=25^\circ\text{C}$	6.0	-	9.0	V
Reverse Leakage Current	$I_R$	$V_{RWM}=5\text{V}, T=25^\circ\text{C};$ I/O pin to GND	-	-	2.5	$\mu\text{A}$
Positive Clamping Voltage	$V_C$	$I_{PP}=5\text{A}, t_p=8/20\mu\text{s};$ $T=25^\circ\text{C}$	-	7.0	8.2	V
Negative Clamping Voltage	$V_C$	$I_{PP}=8.5\text{A}, t_p=8/20\mu\text{s};$ $T=25^\circ\text{C}$	-	13.5	18.6	V
ESD Holding Voltage	$V_{hold}$	IEC61000-4-2 6KV $T=25^\circ\text{C}$ , Contact mode	-	10.5	-	V
Channel Input Capacitance Between Channel	$C_{IN}$	$V_R=0\text{V}, f=1\text{MHz};$ $T=25^\circ\text{C}$	-	13.5	15	pF

**Typical Characteristic Curves (  $T_j=25^{\circ}\text{C}$ , UNLESS OTHERWISE NOTED )**

FIG.1 - Power Derating Curve

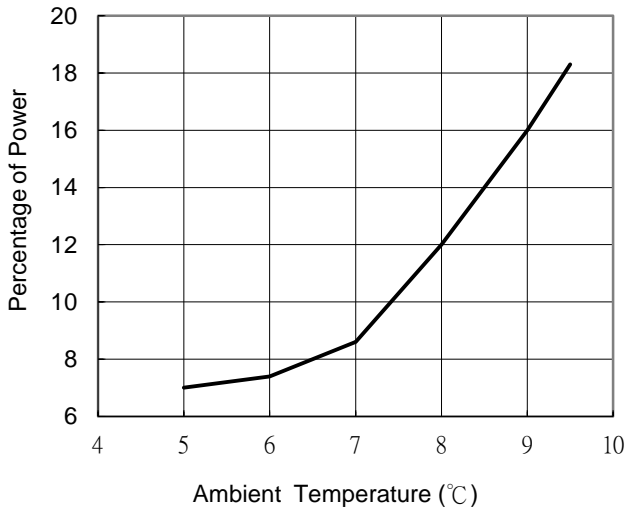


FIG.2 - Pulse Waveform

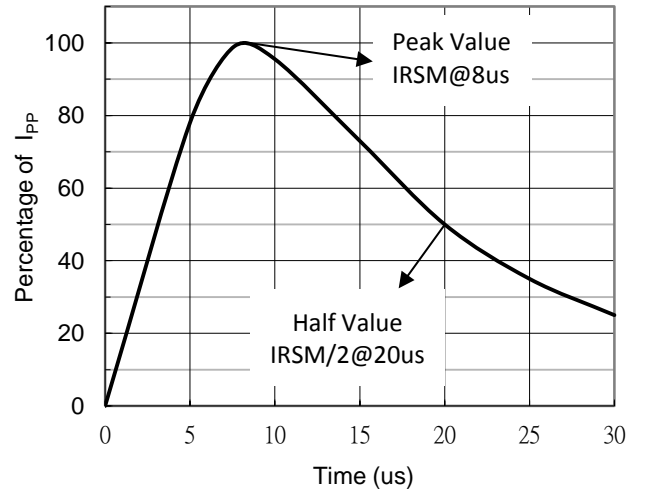


FIG.3 - Junction Capacitance vs. Reverse Voltage

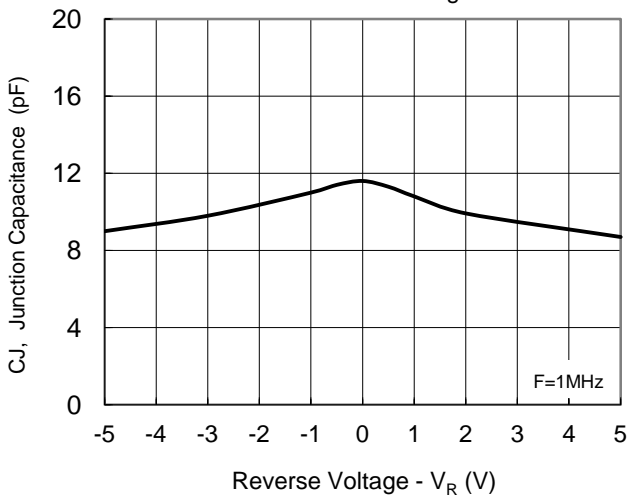
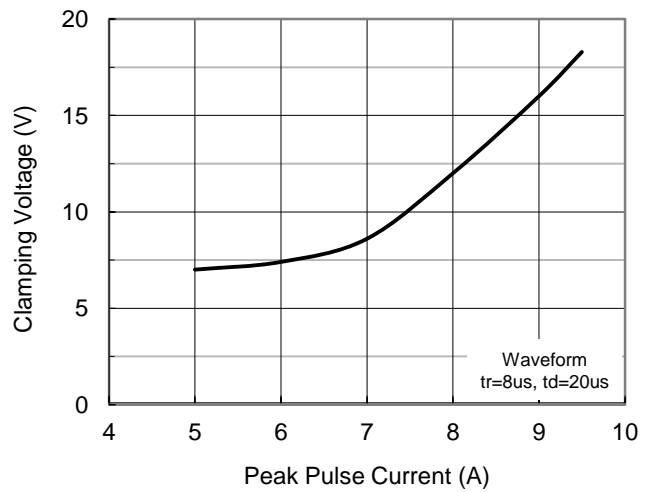


FIG.4 - Clamping Voltage vs. Peak Pulse Current



**Order & Marking Information**

Part Number	Package	Marking	Packing	Q'ty
HYESD2025S	SOD-523	25S	7" Reel	3K

**Package Outline Dimension**

**SOD-523 Package**

