

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



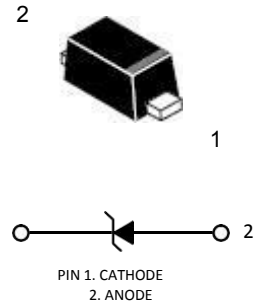
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Product data sheet

[www.msksemi.com](http://www.msksemi.com)

**Specification Features:**

- Ultra Low Capacitance 0.5 pF
- Low Clamping Voltage
- Small Body Outline Dimensions:  
0.039" x 0.024" (1.00 mm x 0.60 mm)
- Low Body Height: 0.016" (0.4 mm)
- Stand-off Voltage: 5 V
- Low Leakage
- Response Time is Typically < 1.0 ns
- IEC61000-4-2 Level 4 ESD Protection
- This is a Pb-Free Device
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



SOD-923

**ELECTRICAL CHARACTERISTICS** (T<sub>A</sub> = 25°C unless otherwise noted, V<sub>F</sub> = 1.0 V Max. @ I<sub>F</sub> = 10 mA for all types)

P/N	V <sub>RWM</sub> (V)	I <sub>R</sub> (μA) @ V <sub>RWM</sub>	V <sub>BR</sub> (V) @ I <sub>T</sub> (Note 2)	I <sub>T</sub>	C (pF)		V <sub>C</sub> (V) @ I <sub>PP</sub> = 1 A (Note 3)	V <sub>C</sub> Per IEC61000-4-2 (Note 4)
	Max	Max	Min	mA	Typ	Max	Max	
ESD9X5.0ST5G-MS	5.0	1.0	5.4	1.0	15	15	9.8	Figures 1 and 2 See Below

2. V<sub>BR</sub> is measured with a pulse test current I<sub>T</sub> at an ambient temperature of 25°C.
3. Surge current waveform per Figure 5.
4. For test procedure see Figures 3 and 4.

**ELECTRICAL CHARACTERISTICS**

(T<sub>A</sub> = 25°C unless otherwise noted)

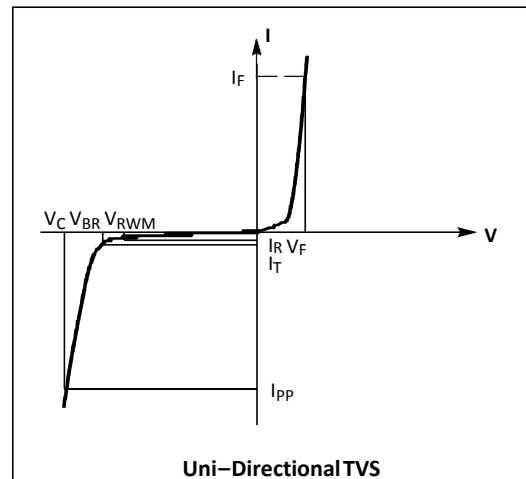
Symbol	Parameter
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>RWM</sub>	Working Peak Reverse Voltage
I <sub>R</sub>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current
I <sub>F</sub>	Forward Current
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>
P <sub>pk</sub>	Peak Power Dissipation
C	Capacitance @ V <sub>R</sub> = 0 and f = 1.0 MHz

**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Contact Air		±10 ±15	kV
Total Power Dissipation on FR-5 Board (Note 1) @ T <sub>A</sub> = 25°C	P <sub>D</sub>	150	mW
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C
Junction Temperature Range	T <sub>J</sub>	-55 to +125	°C
Lead Solder Temperature - Maximum (10 Second Duration)	T <sub>L</sub>	260	°C

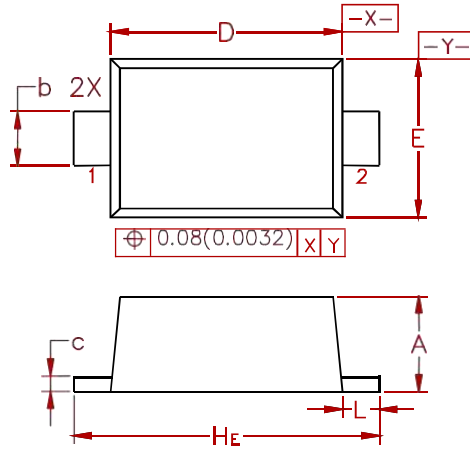
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0 x 0.75 x 0.62 in.



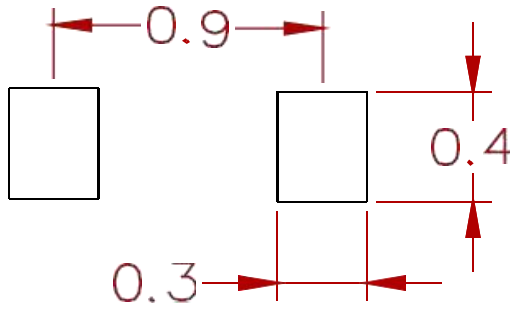
Uni-Directional TVS

**PACKAGE MECHANICAL DATA**



Dim	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.36	0.40	0.43	0.014	0.016	0.017
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
HE	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

**Suggested Pad Layout**



Dimensions: Millimeters

**REEL SPECIFICATION**

P/N	PKG	QTY
ESD9X5.0ST5G-MS	SOD-923	8000

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