

## DESCRIPTION

The ESD5Z 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.

## APPLICATIONS

- ◇ Cellular phones.
- ◇ Portable devices.
- ◇ Digital cameras.
- ◇ Power supplies.

## FEATURES

- ◇ Small Body Outline Dimensions.
- ◇ Low Body Height.
- ◇ Peak Power up to 200Watts @ 8 x20  $\mu$ s Pulse.
- ◇ Low Leakage current.
- ◇ Response Time is Typically < 1 ns.

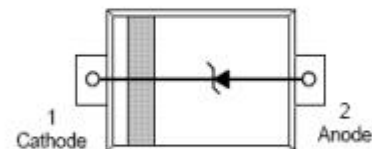
## COMPLIES WITH THE FOLLOWING STANDARDS

- ◇ IEC61000-4-2.
- ◇ Level 4 30 kV (air discharge)  
30 kV(contact discharge) .
- ◇ MIL STD 883E - Method 3015-7 Class 3  
25 kV HBM (Human Body Model) .

### SOD-523



### PIN CONFIGURATION

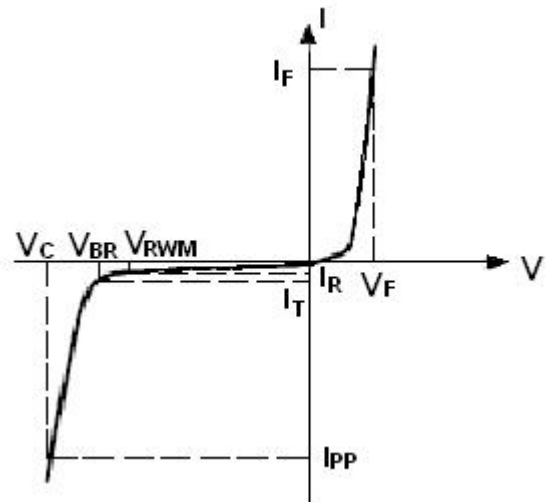


**DEVICE CHARACTERISTICS**

Absolute Ratings (T <sub>amb</sub> =25°C)			
Symbol	Parameter	Value	Units
P <sub>pp</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20μs)	200	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 contact discharge	±30 ±30	kV
	IEC61000-4-4 (EFT)	40	A
	ESD Voltage Per Human Body Model	25	kV
	Per Machine Model	400	V

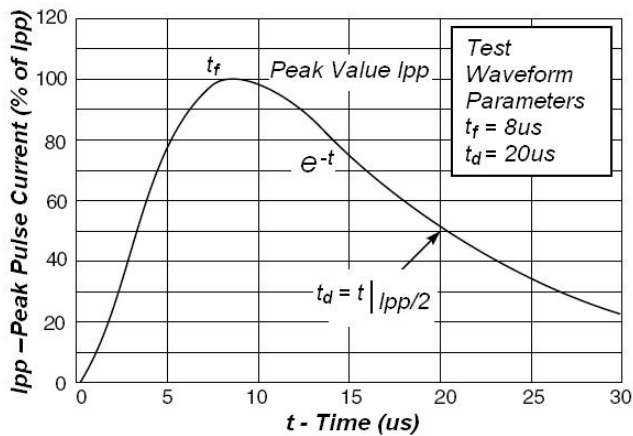
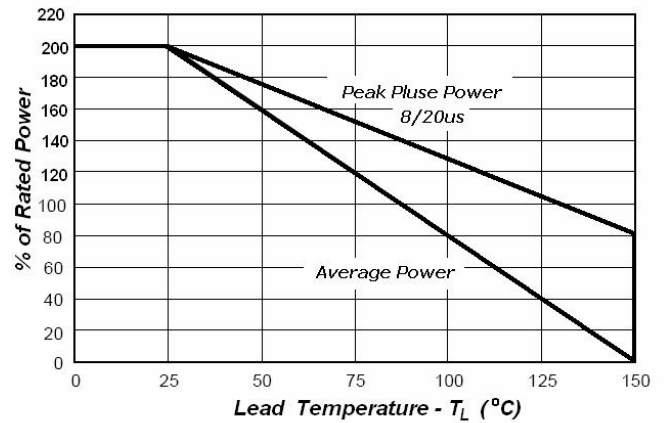
**ELECTRICAL PARAMETER**

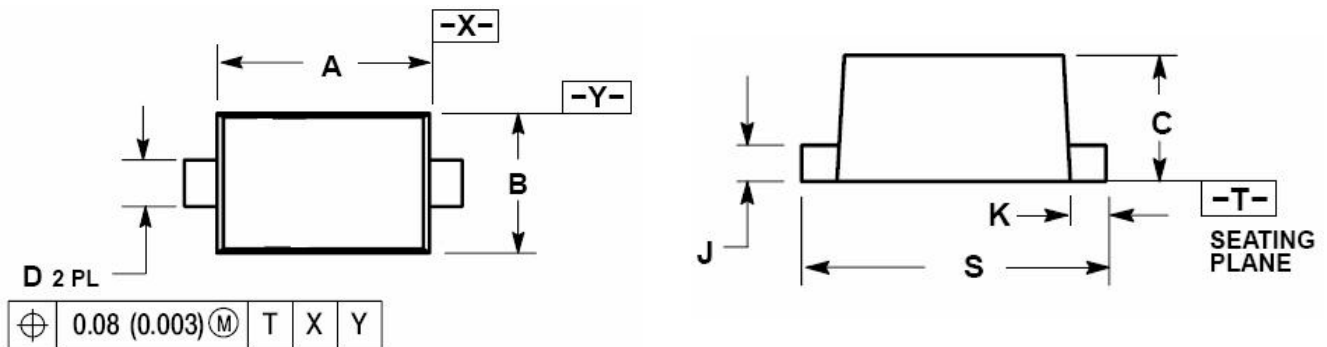
Symbol	Parameter
I <sub>pp</sub>	Maximum Reverse Peak Pulse Current
V <sub>c</sub>	Clamping Voltage @ I <sub>pp</sub>
V <sub>RWM</sub>	Working Peak Reverse Voltage
I <sub>R</sub>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>
I <sub>T</sub>	Test Current
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>



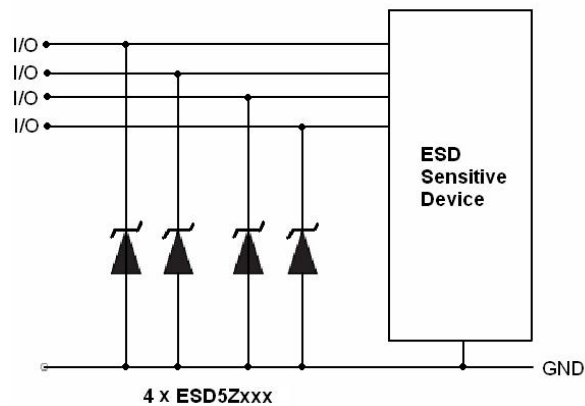
**ELECTRICAL CHARACTERISTICS**

PART NUMBER	V <sub>RWM</sub> (V) (max.)	I <sub>R</sub> (μA) (max.)	V <sub>B</sub> (V) (min.)	I <sub>T</sub> (mA)	V <sub>C@5A</sub> (V) (max.)	V <sub>C</sub> (V) (@A)	P <sub>PK</sub> (W) (max.)	C <sub>J</sub> (pF) (max.)
ESD5Z2V5	2.5	6.00	4.0	1	8.5	10.9	120	145
ESD5Z3V3	3.3	0.90	5.0	1	9.4	14.1	158	105
ESD5Z5V	5.0	0.08	6.2	1	11.6	18.6	174	80
ESD5Z6V	6.0	0.05	6.8	1	12.4	20.5	181	70
ESD5Z7V	7.0	0.03	7.5	1	13.5	22.7	200	65
ESD5Z12V	12.0	0.03	14.1	1	23.0	29.0	174	45

**TYPICAL CHARACTERISTICS**

**Fig1. Pulse Waveform**

**Fig2. Power Derating Curve**

**SOD-523 MECHANICAL DATA**


Dim	Millimeters			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.10	1.20	1.30	0.043	0.047	0.051
B	0.70	0.80	0.90	0.028	0.032	0.035
C	0.50	0.60	0.70	0.020	0.024	0.028
D	0.25	0.30	0.35	0.010	0.012	0.014
J	0.07	0.14	0.20	0.0028	0.0055	0.0079
K	0.15	0.20	0.25	0.006	0.008	0.010
S	1.50	1.60	1.70	0.059	0.063	0.067


 Website: <http://www.jksemi.com>

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