

## Features

- Ideally Suited for ESD Protection
- Small Surface Mount Package
- Excellent Clamping Capability, Fast Response Time
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**

## Mechanical Data

- Case: SOD523
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.001 grams (approximate)



Top View

## Ordering Information (Note 3)

Part Number	Case	Packaging
(Type Number)-7* (Note 4)	SOD523	3000/Tape & Reel

\* Add "-7" to the appropriate type number in Electrical Characteristics Table on page 1 example: 5.0V TVS = T5V0S5-7.

- Notes:
1. No purposefully added lead.
  2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
  3. For packaging details, go to our website at <http://www.diodes.com>.
  4. Dispensed in every other cavity of the tape.

## Marking Information



xx = Product Type Marking Code  
(See Electrical Characteristics Table)

### Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
ESD Rating	ESD	Human Body Model	8 kV
		Machine Model	400 V
		IEC61000-4-2 Air Discharge	30 kV
		IEC61000-4-2 Contact Discharge	30 kV

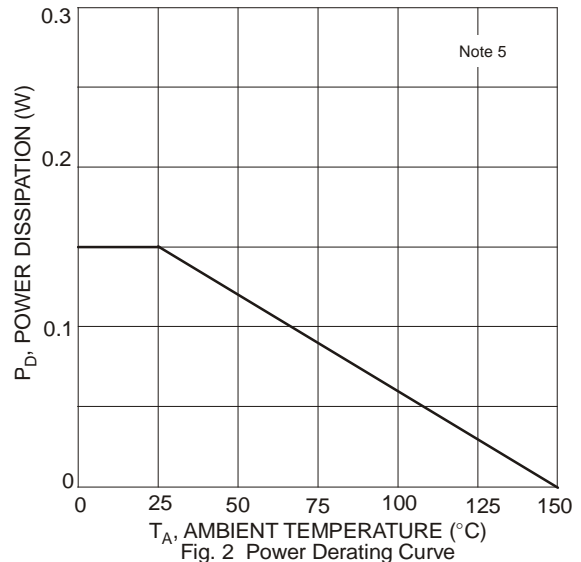
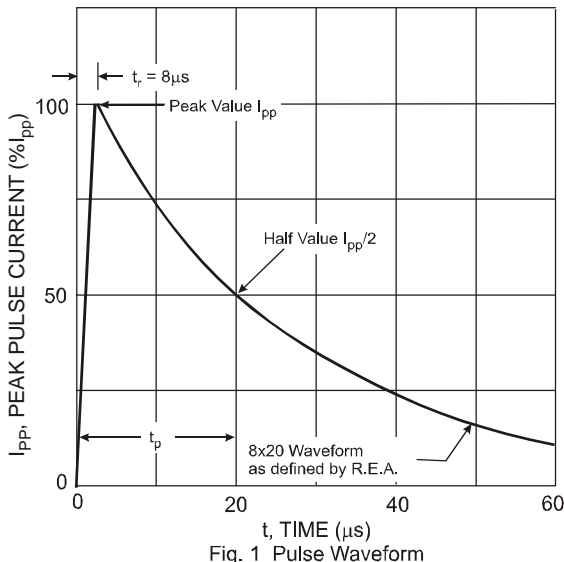
### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5) (See figure 2)	P <sub>D</sub>	150	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	833	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

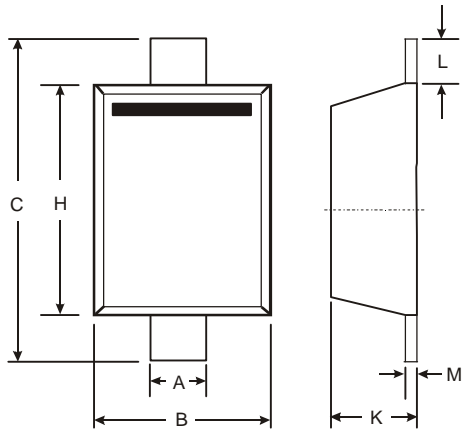
### Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Part Number	Reverse Standoff Voltage	Min. Breakdown Voltage V <sub>BR</sub> @ I <sub>T</sub>	Test Current	Max. Reverse Leakage @ V <sub>RWM</sub> (Note 6)	Typ. Clamping Voltage @ I <sub>PP</sub> = 5A (t <sub>p</sub> = 8 x 20 μs) (See figure 1)	Max. Clamping Voltage V <sub>c</sub> @ I <sub>PP</sub> (t <sub>p</sub> = 8 x 20 μs) (See Figure 1)	Max. Clamping Voltage V <sub>c</sub> @ I <sub>PP</sub> (t <sub>p</sub> = 8 x 20 μs) (See Figure 1)		Peak Power Dissipation (See Figure 1)	Typical Total Capacitance V <sub>R</sub> = 0V f = 1MHz	Marking Code	
	V <sub>RWM</sub> (V)	Min (V)	I <sub>T</sub> (mA)	I <sub>R</sub> (μA)	V <sub>C</sub> (V)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	P <sub>PK</sub> (W)		C <sub>T</sub> (pF)
T3V3S5	3.3	5.0	1.0	1	8.4	14.1	11.2	16	16	220	85	ED
T5V0S5	5.0	6.2	1.0	0.05	15	22	9.4	27	15	260	100	EJ
T6V0S5	6.0	6.8	1.0	0.05	11.2	17	8.8	23	15	260	90	EL
T12S5	12	14.1	1.0	0.01	19.7	25	9.6	28	12	300	60	ES

- Notes: 5. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
6. Short duration pulse test used to minimize self-heating effect.

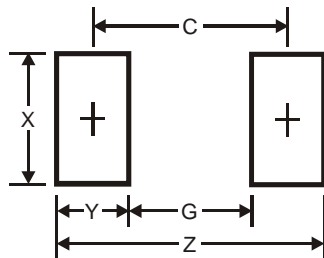


**Package Outline Dimensions**



SOD523		
Dim	Min	Max
A	0.25	0.35
B	0.70	0.90
C	1.50	1.70
H	1.10	1.30
K	0.55	0.65
L	0.10	0.30
M	0.10	0.12
All Dimensions in mm		

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.3
G	1.1
X	0.8
Y	0.6
C	1.7

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