

# T2V5S5 / T3V3S5 / T5V0S5 / T12S5

UNIDIRECTIONAL SURFACE MOUNT TVS

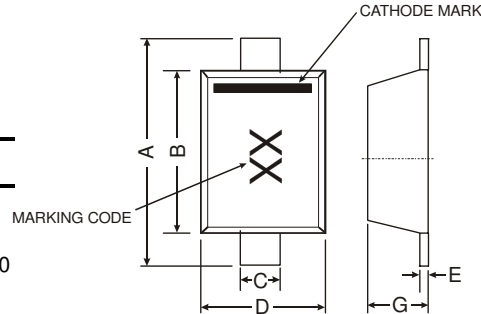
NEW PRODUCT

## Features

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

## Mechanical Data

- Case: SOD-523
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- 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
- Marking & Type Code Information: See Electrical Specifications Table
- Ordering Information: See Page 2
- Weight: 0.001 grams (approximate)



SOD-523		
Dim	Min	Max
A	1.50	1.70
B	1.10	1.30
C	0.25	0.35
D	0.70	0.90
E	0.10	0.20
G	0.55	0.65
All Dimensions in mm		

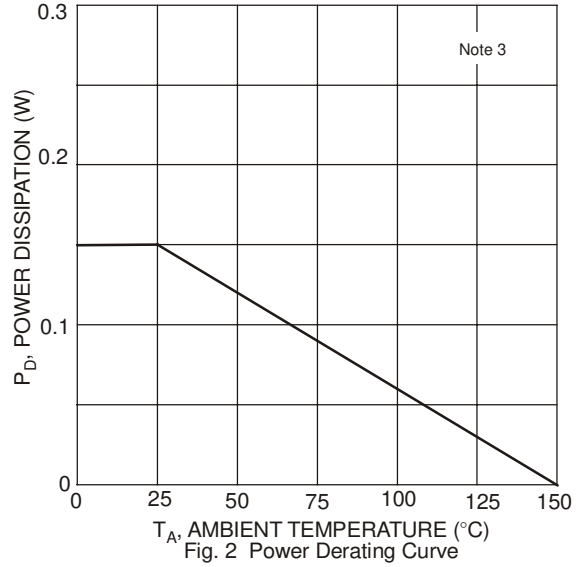
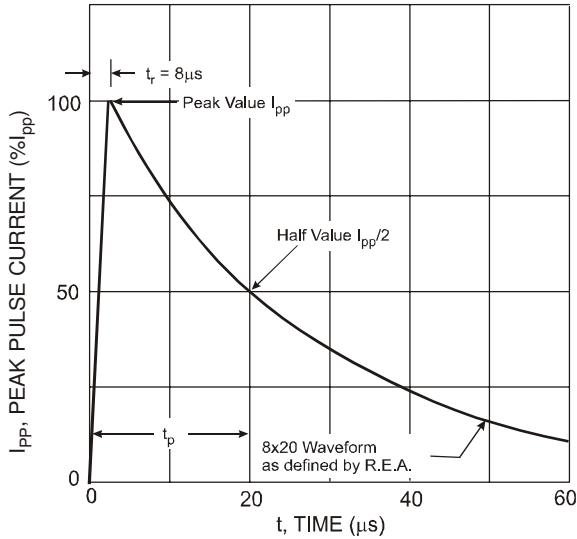
## Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
Power Dissipation (Note 3) (See figure 2)	P <sub>d</sub>	150	mW
Thermal Resistance, Junction to Ambient Air (Note 3)	R <sub>θJA</sub>	833	°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +150	°C
ESD Rating	Human Body Model	8	kV
	Machine Model	400	V
	IEC61000-4-2 Air Discharge	30	kV
	IEC61000-4-2 Contact Discharge	30	kV

## 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 4)	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> (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)
T2V5S5	2.5	4.0	1.0	12	6.5	8.1	8.9	-	-	70	110	EB
T3V3S5	3.3	5.0	1.0	4	8.4	14.1	11.2	16	16	220	85	ED
T5V0S5	5.0	6.2	1.0	2	15	22	9.4	27	15	260	60	EJ
T12S5	12	14.1	1.0	0.8	19.7	25	9.6	28	12	300	60	ES

- Notes:
1. No purposefully added lead.
  2. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  3. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  4. Short duration pulse test used to minimize self-heating effect.



## Ordering Information (Note 5)

Device	Packaging	Shipping
(Type Number)-7*	SOD-523	3000/Tape & Reel

\* Add "-7" to the appropriate type number in Table 1 above example: 2.5V TVS = T2V5S5-7.

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

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