NEW PRODUCT

T2V5S5 / T3V3S5 / T5V0S5 / T12S5

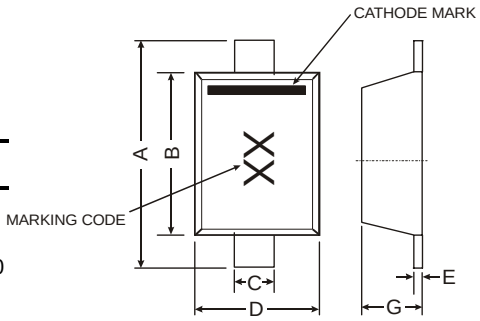
UNIDIRECTIONAL SURFACE MOUNT TVS

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_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Forward Voltage @ I_F = 10mA		V_F	0.9	V
Power Dissipation (Note 3) (See figure 2)		P_d	150	mW
Thermal Resistance, Junction to Ambient Air (Note 3)		$R_{\theta JA}$	833	°C/W
Operating and Storage Temperature Range		T_j, T_{STG}	-65 to +150	°C
ESD Rating	Human Body Model	ESD	8	kV
	Machine Model		400	V
	IEC61000-4-2 Air Discharge		30	kV
	IEC61000-4-2 Contact Discharge		30	kV

Electrical Characteristics @T_A = 25°C unless otherwise specified

Part Number	Reverse Standoff Voltage	Min. Breakdown Voltage V_{BR} @ I_T	Test Current	Max. Reverse Leakage @ V_{RWM} (Note 4)	Typ. Clamping Voltage @ I_{PP} =5A (t_p = 8 x 20 µs) (See figure 1)	Max. Clamping Voltage V_c @ I_{PP} (t_p = 8 x 20 µs) (See Figure 1)		Max. Clamping Voltage V_c @ I_{PP} (t_p = 8 x 20 µs) (See Figure 1)		Peak Power Dissipation (See Figure 1)	Typical Total Capacitance V_R = 0V f = 1MHz	Marking Code
	V_{RWM} (V)	Min (V)	I_T (mA)	I_R (µA)	V_C (V)	V_C (V)	I_{PP} (A)	V_C (V)	I_{PP} (A)	P_{PK} (W)	C_T (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.
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.

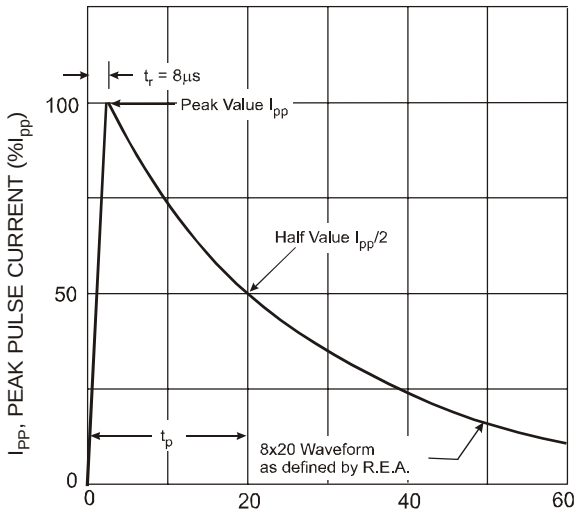


Fig. 1 Pulse Waveform

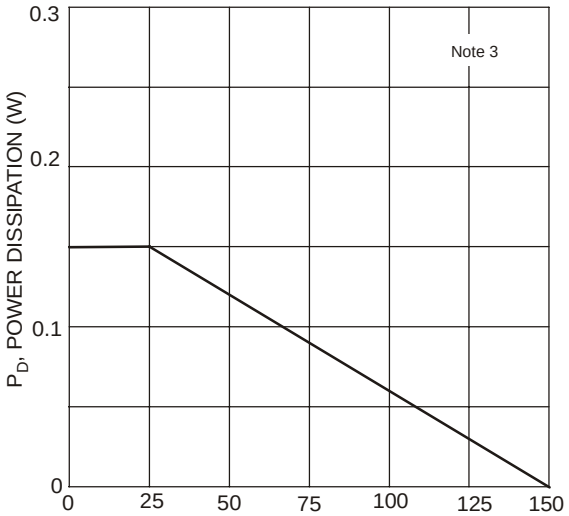


Fig. 2 Power Derating Curve

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.