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# **PRODUCT SPECIFICATION**

**DOCUMENT NO. ENS000015540**

<b>DESCRIPTION</b>	<b>DRAWN BY</b>	<b>DESIGNED BY</b>	<b>CHECKED BY</b>	<b>APPROVED BY</b>
TVN S523 01 AB0	Sandy	Hancock	C.P	YuChiaChang

## TVN S523 01 AB0 Engineering Specification

### 1. Scope

TVN S523 01 AB0's are TVS diodes designed to protect one power/control line or one low speed signal line from overvoltage hazard of Electrostatic Discharge (**ESD**), Electrical Fast Transients (**EFT**) and **Lightning**.

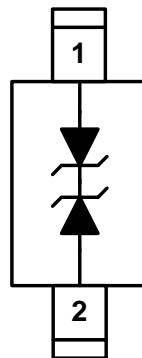
These interfaces can be used in computer interfaces protection, microprocessors protection, serial and parallel ports protection, control signal lines protection, power lines on PCB protection, latchup protection, etc. The ESD protection of TVS arrays meets the immunity standard of IEC 61000-4-2, level 4 ( $\pm 15\text{kV}$  air,  $\pm 8\text{kV}$  contact discharge).

### 2. Explanation of Part Number

<u>TV</u>	<u>N</u>	<u>S523</u>	<u>01</u>	<u>AB0</u>
(1)	(2)	(3)	(4)	(5)

- (1) Product Type : TV=TVS Diode
- (2) Capacitance Code : N=Normal Capacitance
- (3) Package Size Code
- (4) Channel Code : 01=1 Channels
- (5) Specialized Specification Code

### 3.. Circuit Diagram /Pin Configuration



SOD-523 (Top View)

## 4.. Specifications

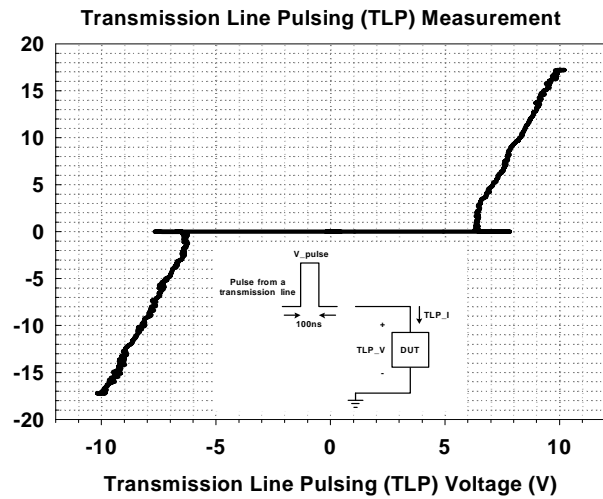
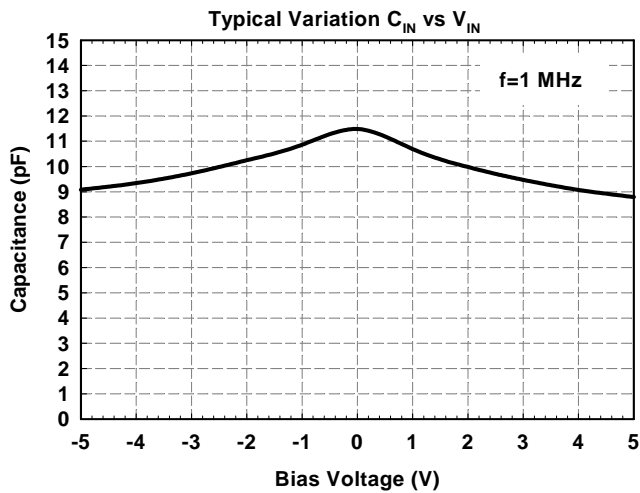
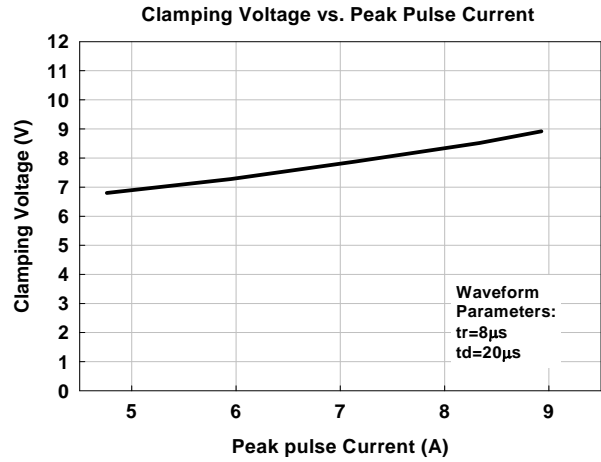
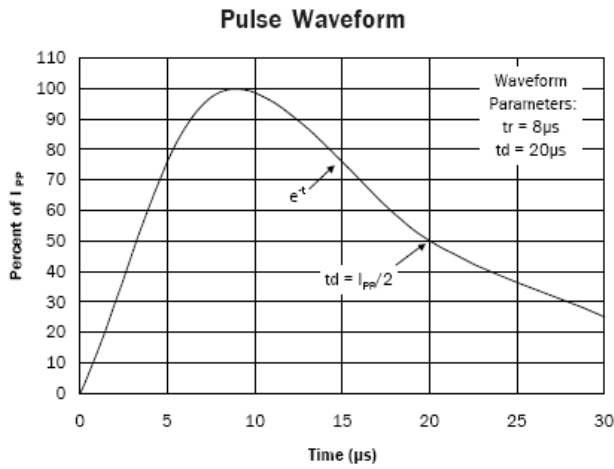
### 4.1. ABSOLUTE MAXIMUM RATINGS

PARAMETER	PARAMETER	RATING	UNITS
Peak Pulse Current (tp =8/20 $\mu$ s)	$I_{PP}$	8.5	A
Operating Supply Voltage (pin-1,-2 to pin-3)	$V_{DC}$	6	V
ESD per IEC 61000-4-2 (Air)	$V_{ESD-1}$	$\pm 22$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 15$	
Lead Soldering Temperature	$T_{SOL}$	260 (10 sec.)	$^{\circ}C$
Operating Temperature	$T_{OP}$	-55 to +125	$^{\circ}C$
Storage Temperature	$T_{STO}$	-55 to +150	$^{\circ}C$

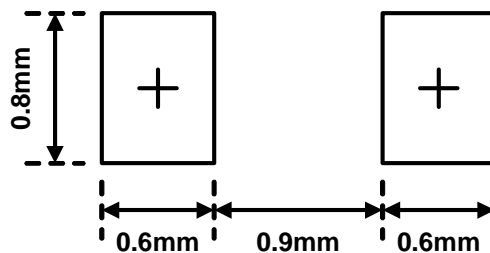
### 4.2. ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	CONDITIONS	MINI	TYP	MAX	UNITS
Reverse Stand-Off Voltage	$V_{RWM}$	$T=25^{\circ}C$ .			5	V
Reverse Leakage Current	$I_{Leak}$	$V_{RWM} = 5V, T=25^{\circ}C$ .			2.5	$\mu A$
Reverse Breakdown Voltage	$V_{BV}$	$I_{BV} = 1mA, T=25^{\circ}C$ .	6.1		9	V
Clamping Voltage	$V_{CL}$	$I_{PP}=5A, tp=8/20 \mu s, T=25^{\circ}C$ .		7	8	V
Clamping Voltage	$V_{CL}$	$I_{PP}=7A, tp=8/20 \mu s, T=25^{\circ}C$ .		8	9	V
ESD Holding Voltage	$V_{hold}$	IEC 61000-4-2 6kV, $T=25^{\circ}C$ , Contact mode.		10.5		V
Channel Input Capacitance	$C_{IN}$	$V_R = 0V, f = 1MHz, T=25^{\circ}C$ .		11.5	13.5	pF

### 4.3. TYPICAL CHARACTERISTICS



### 5.. LAND LAYOUT



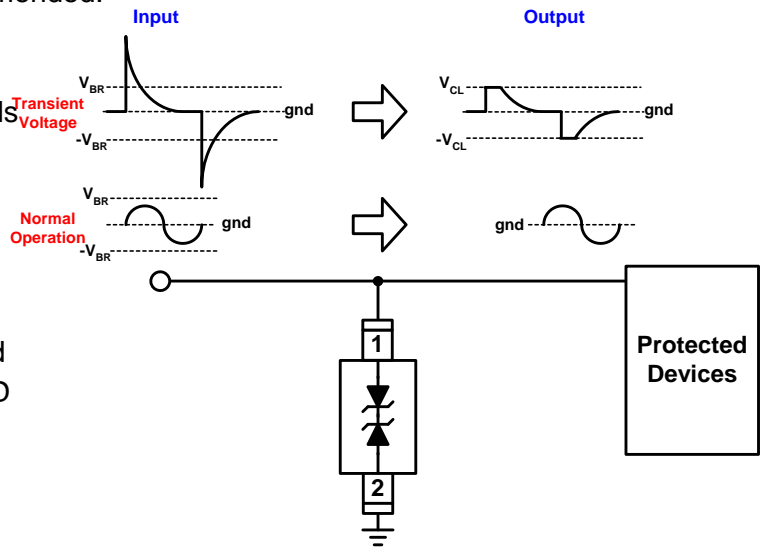
Notes: This LAND LAYOUT is for reference purposes only. Please consult your manufacturing partners to ensure your company's PCB design guidelines are met.

### 6.. Application information

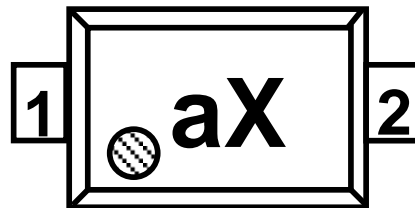
In order to obtain enough suppression of ESD induced transient, good circuit board is critical.

Thus, the following guidelines are recommended:

- Minimize the path length between the protected lines and this device.
- Place this device near the input terminals or connectors to restrict transient coupling.
- The ESD current return path to ground should be kept as short as possible.
- Use ground planes whenever possible.
- NEVER route critical signals near board edges and near the lines which the ESD transient easily injects to.



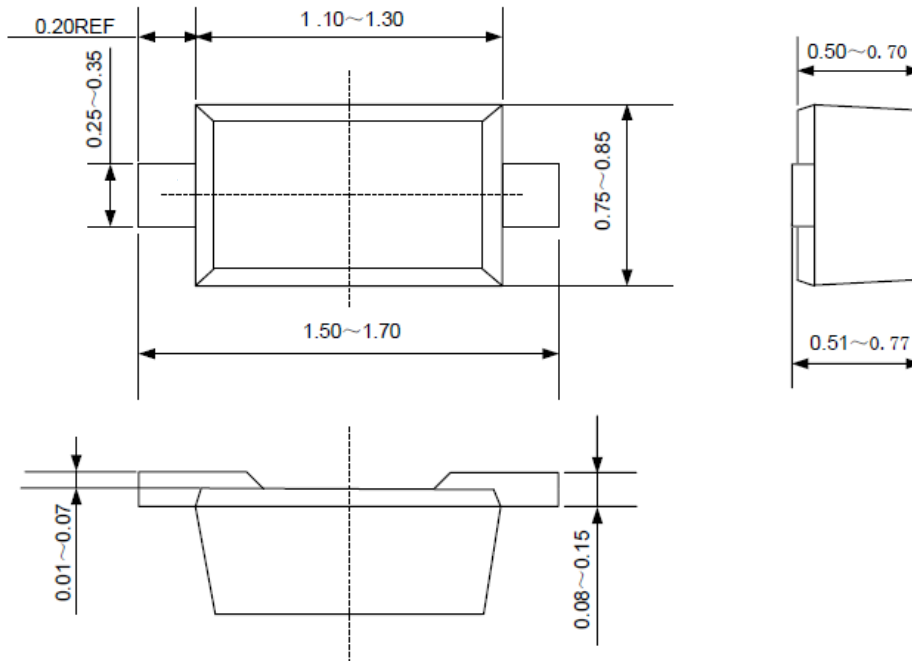
### 7.. MARKING CODE: Marking Code:aX



a = Device Code  
X = Date Code

## 8.. Mechanical Details

### SOD-523 PACKAGE DIAGRAMS



- 8.1. Taping Quantity:  
3,000pcs/ Reel ( for 7" Reel)

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