


# SPECIFICATIONS

<b>Customer</b>	
<b>Product Name</b>	ESD保护管
<b>Oyd Part</b>	OYDESD2V5TI
<b>Package</b>	SOD-523

Approved By	Checked By	Issued By
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## Shenzhen Ouyada Electronics Co., Ltd.

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**【For Customer approval Only】** Date: \_\_\_\_\_

Qualification Status:  Full  Restricted  Rejected

Approved By	Verified By	Re-checked By	Checked By

Comments: \_\_\_\_\_

# Transient Voltage Suppressors for ESD Protection

## General Description

The OYDESD2V5T1 Series 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

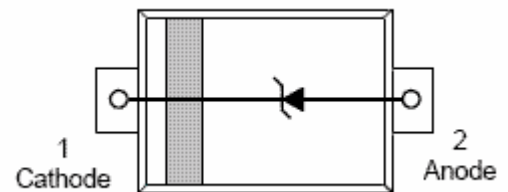
## Features

- Small Body Outline Dimensions
- Low Body Height
- Stand-off Voltage: 2.5 V – 12 V
- Peak Power up to 200 Watts @ 8 x 20  $\mu$ s Pulse
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- IEC61000-4-4 Level 4 EFT Protection
- We declare that the material of product compliance with RoHS requirements.

## OYDESD2V5T1 SERIES



**SOD-523**



## ORDERING INFORMATION

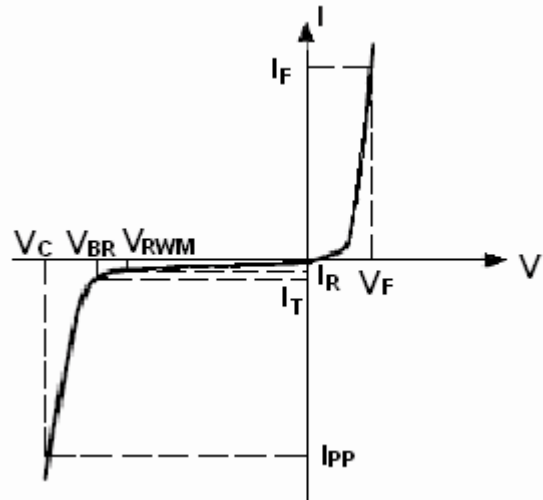
Device	Package	Shipping
OYDESD2V5T1 SERIES	SOD-523	3000/Tape & Reel

## Absolute Ratings (T<sub>amb</sub>=25°C)

Symbol	Parameter	Value	Units	
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20 $\mu$ s)	200	W	
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C	
T <sub>stg</sub>	Storage Temperature Range	-55 to +150	°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	$\pm 15$ $\pm 8$	KV
	IEC61000-4-4 (EFT)		40	A
	ESD Voltage	Per Human Body Model	16	KV

## Electrical Parameter

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$I_T$	Test Current
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



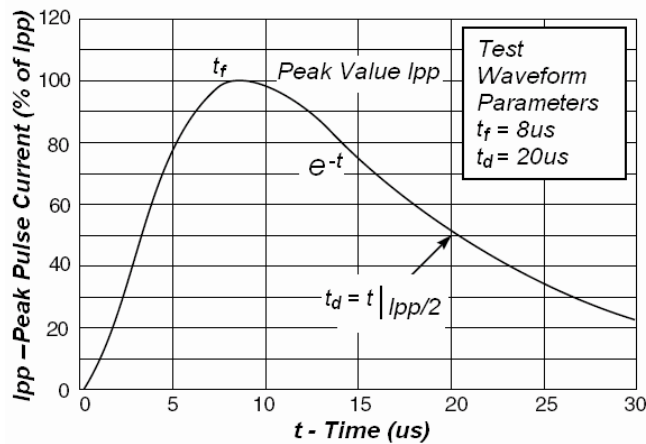
## Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.  $V_F = 0.9V$  at  $I_F = 10mA$

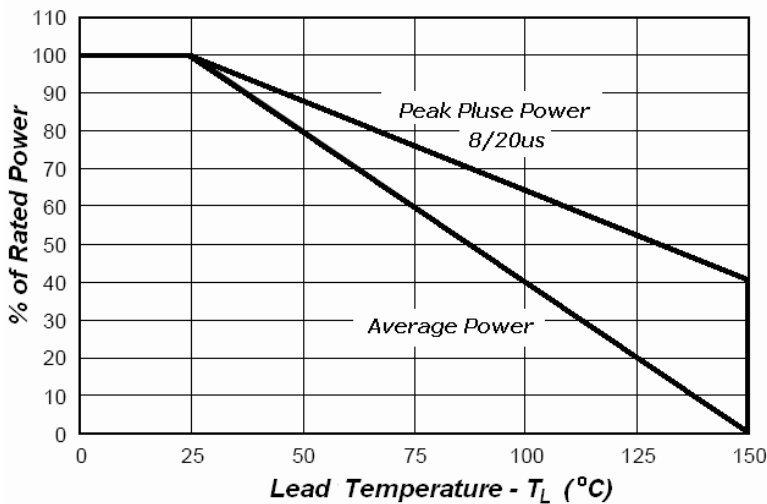
Device	Device Marking	$V_{RWM}$ (V)	$I_R$ (uA) @ $V_{RWM}$	$V_{BR}$ (V) @ $I_T$ (Note 1)	$I_T$	$V_C$ (V) @ $I_{PP}=5 A^*$	$V_C$ (V) @ Max $I_{PP}^*$	$I_{PP}$ (A)*	$P_{PK}$ (W)*	$C$ (pF)
		Max	Max	Min	mA	Typ	Max	Max	Max	Typ
OYDESD2V5T1	ZD	2.5	6.0	4.0	1.0	6.5	10.9	11.0	120	145
OYDESD3V3T1	ZE	3.3	1.0	5.0	1.0	8.4	14.1	11.2	158	105
OYDESD5V0T1	ZF	5.0	1.0	6.2	1.0	11.6	18.6	9.4	174	80
OYDESD6V0T1	ZG	6.0	1.0	6.8	1.0	12.4	20.5	8.8	181	70
OYDESD7V0T1	ZH	7.0	1.0	7.5	1.0	13.5	22.7	8.8	200	65
OYDESD12VT1	ZM	12	1.0	13.5	1.0	17	25	9.6	240	55

\*Surge current waveform per Figure 1.

1.  $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of 25°C.



**Fig1. Pulse Waveform**



**Fig3. Power Derating**

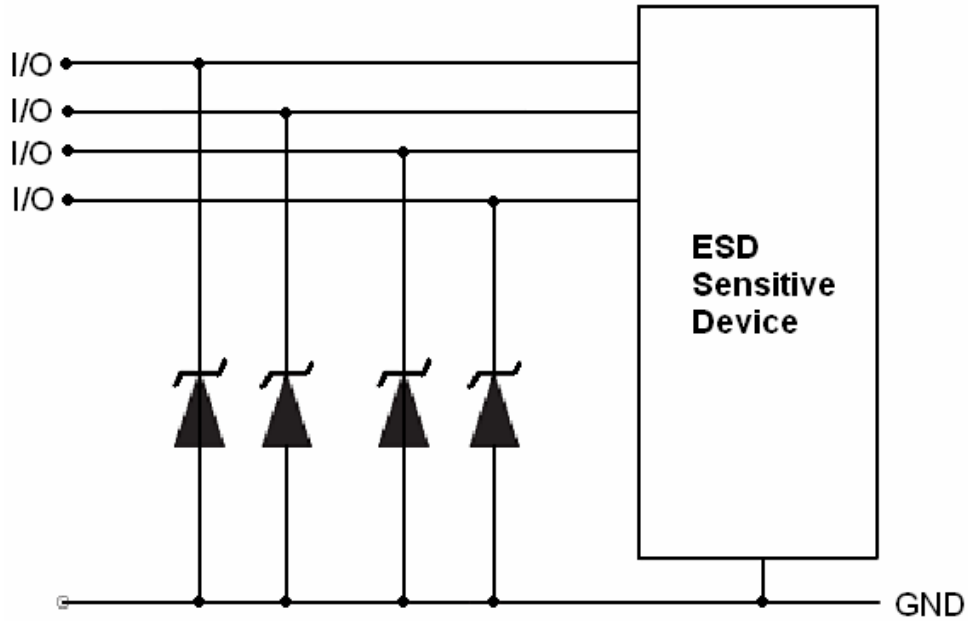
## Application Note

Electrostatic discharge (ESD) is a major cause of failure in electronic systems. Transient Voltage Suppressors (TVS) are an ideal choice for ESD protection. They are capable of clamping the incoming transient to a low enough level such that damage to the protected semiconductor is prevented.

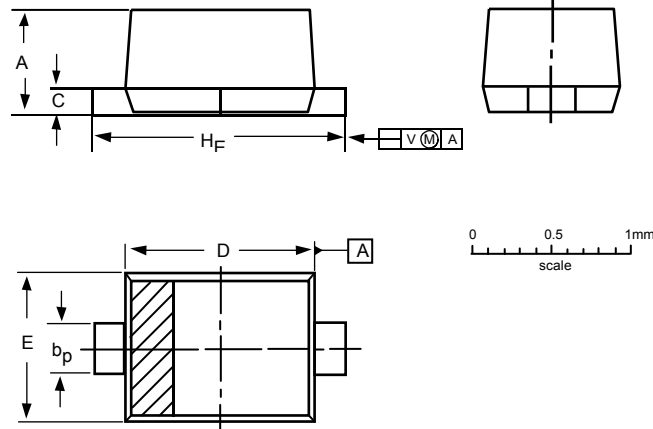
Surface mount TVS offer the best choice for minimal lead inductance. They serve as parallel protection elements, connected between the signal line to ground. As the transient rises above the operating voltage of the device, the TVS becomes a low impedance path diverting the transient current to ground. The OYDESD2V5T1 is the ideal board level protection of ESD sensitive semiconductor components.

The tiny SOD523 package allows design flexibility in the design of high density boards where the space saving is at a premium. This enables to shorten the routing and contributes to hardening against ESD.

# OYDES2V5T1 SERIES



SC-79/SOD-523



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	b <sub>p</sub>	c	D	E	H <sub>E</sub>	V
mm	0.7	0.35	0.2	1.3	0.9	1.7	0.15
	0.5	0.25	0.1	1.1	0.7	1.5	

**Note**

1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOD523			SC-79		98-11-25