

## Features

- ❑ IEC61000-4-2 (ESD)  $\pm 30\text{kV}$  (air),  
 $\pm 30\text{kV}$  (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- ❑ Peak Pulse Current( $t_p=8/20\mu\text{s}$ ) 15A
- ❑ Protects one I/O line (bidirectional)
- ❑ Working voltages : 5.0V
- ❑ Low leakage current
- ❑ ROHS compliant

## Description

The TS0501NEX is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium. This series has been specifically designed to protect sensitive components which are connected to power data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

## Applications

- ❑ Cell Phone Handsets and Accessories
- ❑ Microprocessor based equipment
- ❑ Personal Digital Assistants (PDA's)
- ❑ Notebooks, Desktops, and Servers
- ❑ Portable Instrumentation
- ❑ Networking and Telecom
- ❑ Serial and Parallel Ports.
- ❑ Peripherals

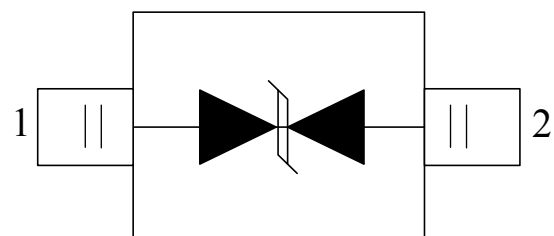
## Mechanical Characteristics

- ❑ SOD-323 package
- ❑ Flammability Rating: UL 94V-0
- ❑ Packaging: Tape and Reel
- ❑ High temperature soldering guaranteed:  $260^\circ\text{C}/10\text{s}$
- ❑ Reel size: 7 inch

## Circuit Diagram



## Pin Configuration



SOD-323  
(Top View)

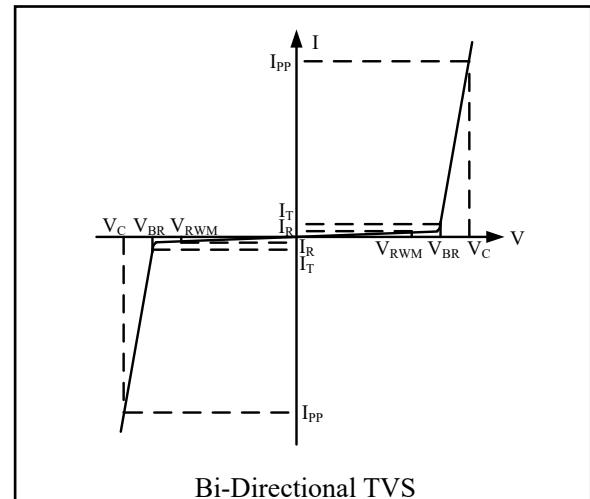


### Absolute Maximum Rating

Symbol	Parameter	Value	Units
$V_{ESD}$	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$\pm 30$ $\pm 30$	kV
$I_{PP}$	Peak Pulse Current(8/20us)	15	A
$T_{OPT}$	Operating Temperature	-55/+150	°C
$T_{STG}$	Storage Temperature	-55/+150	°C
$T_L$	Lead Soldering Temperature	260 (10 sec.)	°C

### Electrical Characteristics (T = 25°C)

Symbol	Parameter
$V_{RWM}$	Nominal Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Reverse Breakdown Voltage @ $I_T$
$I_T$	Test Current for Reverse Breakdown
$V_C$	Clamping Voltage @ $I_{PP}$
$I_{PP}$	Maximum Peak Pulse Current
$C_{ESD}$	Parasitic Capacitance
$V_R$	Reverse Voltage
f	Small Signal Frequency



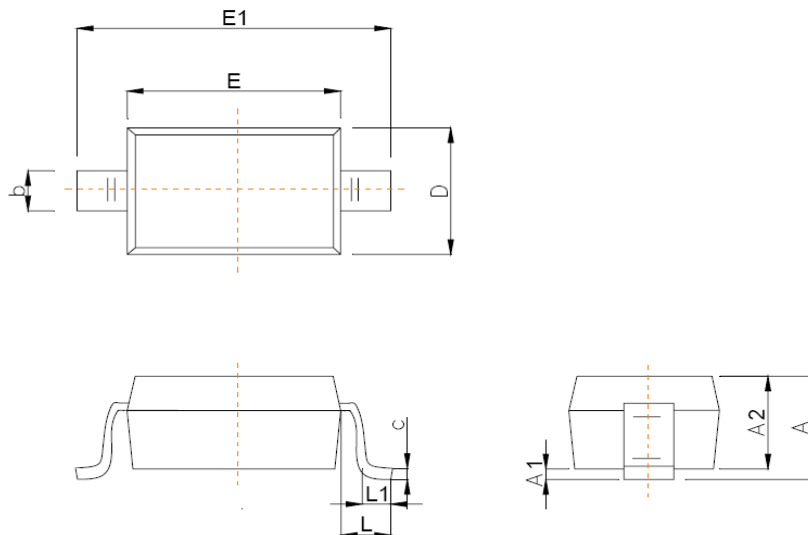
Symbol	Test Condition	Minimum	Typical	Maximum	Units
$V_{RWM}$				5.0	V
$I_R$	$V_{RWM} = 5V, T = 25^\circ C$			0.1	$\mu A$
$V_{BR}$	$I_T = 1mA$	6.0			V
$V_C$	$I_{PP} = 1A, t_p = 8/20\mu s$			6.5	V
$V_C$	$I_{PP} = 15A, t_p = 8/20\mu s$			15	V
$C_{ESD}$	$V_R = 0V, f = 1MHz$		28		pF

## Package Outline

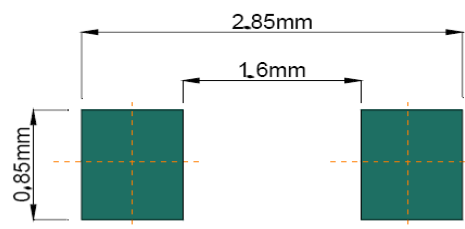
□ SOD-323 package



## Package Outline Dimensions

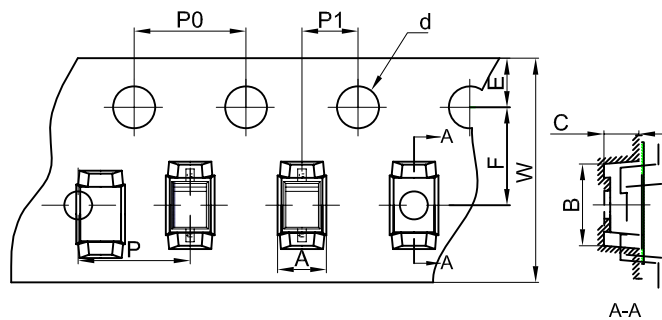


Symbol	Dimensions In Millimeters	
	Min	Max
A		1.00
A1	0.000	0.100
A2	0.800	0.900
b	0.250	0.350
c	0.080	0.150
D	1.200	1.400
E	1.600	1.800
E1	2.500	2.700
e	1.800	2.040
L	0.475 REF	
L1	0.250	0.400
θ	0°	8°



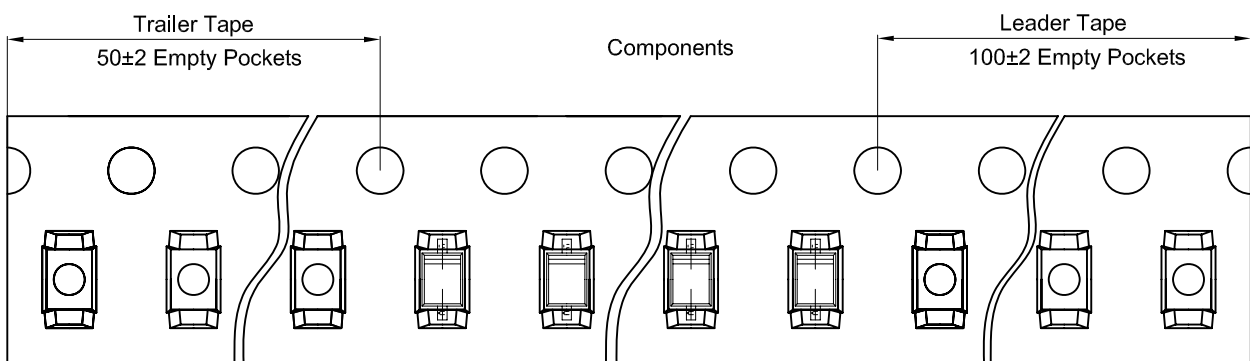
**Recommended Pad outline**

## Tape and Reel Specification

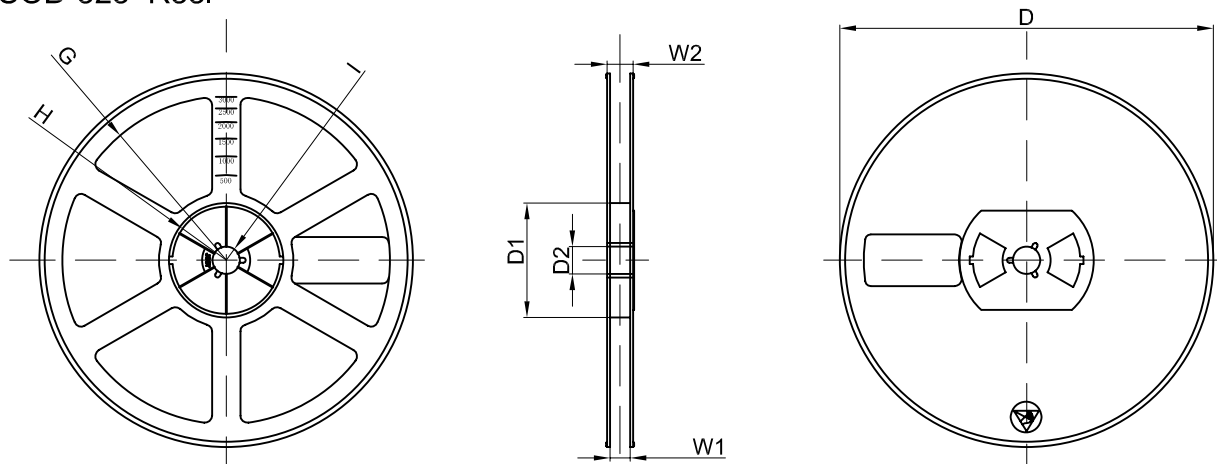


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOD-323	1.46	2.90	1.25	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
(Tolerance)	+/-0.05	+/-0.05	+/-0.05	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+0.3/-0.1

## SOD-323 Tape Leader and Trailer

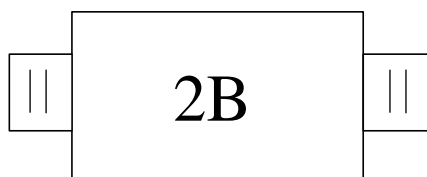


## SOD-323 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	+/-2	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	

**Marking Codes**

Note:

(1) “2B” is part number, fixed

**Ordering Information**

Part Number	Working Voltage	Quantity Per Reel	Reel Size
TS0501NEX	5.0V	3,000	7 Inch