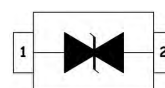


General Description

The PTVSHC3D4V5B is designed to protect voltage sensitive components from damage or latch-up due to surge current. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to surge current protection for board level. Because of its small size and bi-directional design, it is ideal for use in cellular phones and portable applications that require audio line protection.

Specification Features

- Miniaturized packaging size suitable for high-density applications:
nom 0.066" x 0.049" (1.7x1.25mm)
- Low Clamping Voltage: $V_C=18V@I_{PP}=160A$
- Reverse Working (Stand-off) Voltage: 4.5 V
- Low Leakage
- Response Time is Typically < 1 ns
- IEC61000-4-2 Level 4 ESD Protection



SOD-323

Application

- Smartphones, tablet computers, Mobile Internet Devices (MID) and portable devices
- TVs and monitors
- Blu-ray and DVD recorders players
- Notebooks, main board graphic cards and ports
- Set-top boxes and game consoles
- Peripherals

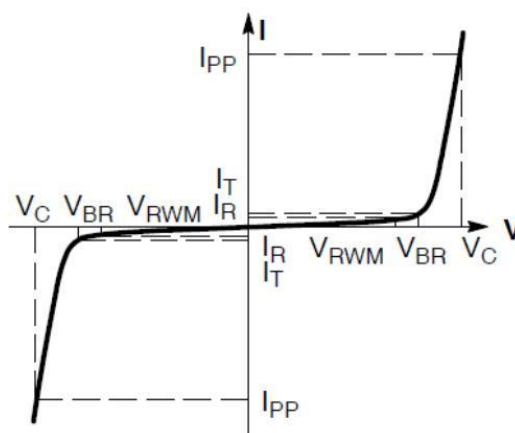
Absolute Maximum Rating

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Contact		±30	kV
Peak Power Per 8 x 20μs Waveform	P_{PK}	2800	W
Junction Temperature Range	T_J	-40 to +85	°C
Storage Temperature Range	T_{stg}	-55 to +150	
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	°C

Note: FR-5 = 1.0*0.75*0.062inch (25.4*19.05*1.58mm).

Electrical Characteristics

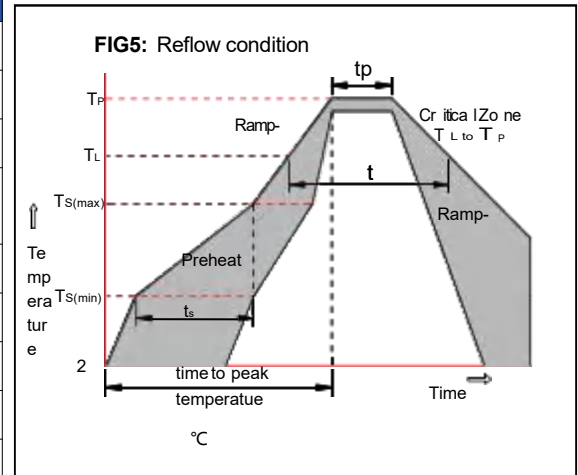
Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
P_{PK}	Peak Power Dissipation
C	Max. Capacitance @ $V_R = 0$ and freq.=1 MHz



Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				4.5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	4.6		6.0	V
Reverse Leakage Current	I_R	$V_{RWM}=4.5V$			0.5	μA
Clamping Voltage	V_C	$I_{PP}=40A$ $t_p=8/20\mu s$			8	V
		$I_{PP}=160A$ $t_p=8/20\mu s$			18	
Junction Capacitance	C_J	$V_R=0V$, $f = 1MHz$			480	pF

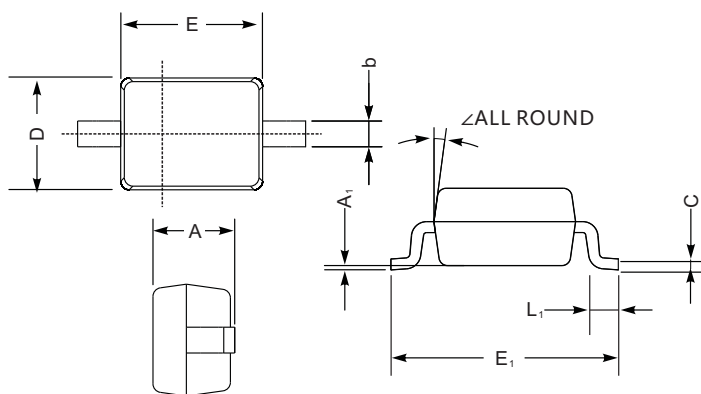
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



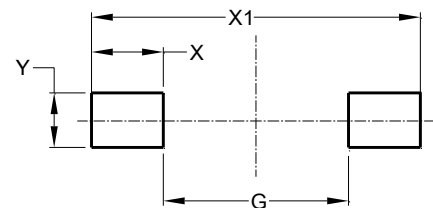
Package Dimensions & Suggested Pad Layout

SOD323



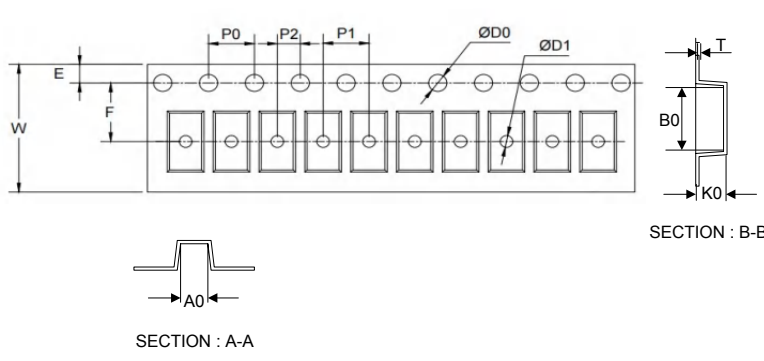
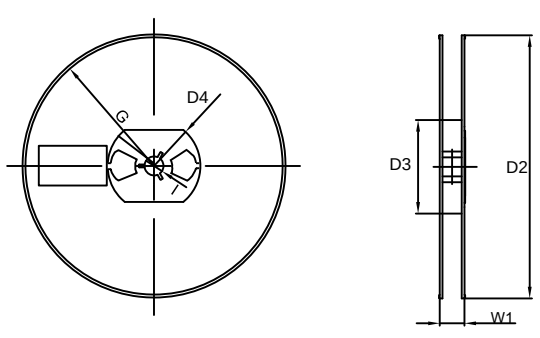
SOD-323 mechanical data

UNIT		A	C	D	E	E ₁	b	L ₁	A ₁	∠
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2	9°
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—	
mil	max	43	5.9	55	70	108	16	16	8	
	min	32	3.1	47	63	100	9.8	7.9	—	



Dimensions	Value (in mm)
G	1.40
X	1.20
X1	3.80
Y	1.00

Tape & reel specification

Tape 	Symbol	Dimension (mm)
	P0	4.00±0.20
	P1	4.00±0.20
	P2	2.00±0.20
	D0	1.55±0.20
	D1	1.00±0.20
	E	1.55±0.25
	F	3.60±0.20
	W	8.00±0.20
	A0	2.00±0.20
	B0	3.25±0.20
	K0	1.35±0.20
	T	0.23±0.10
7" Reel 	D2	177.0±5.0
	D3	55Min.
	D4	R24.6±2.0
	G	R82.0±2.0
	I	13.0±2.0
	W1	10.20±3.0
	Quantity: 3000PCS	