PTVSHC3D4V5B

Bidirectional surge current protection with suitable capacitance

General Description

The PTVSHC3D4V5B is designed to protect voltage sensitive components form 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.

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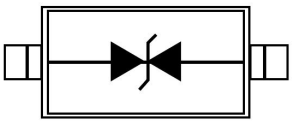

Schematic Diagram

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

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

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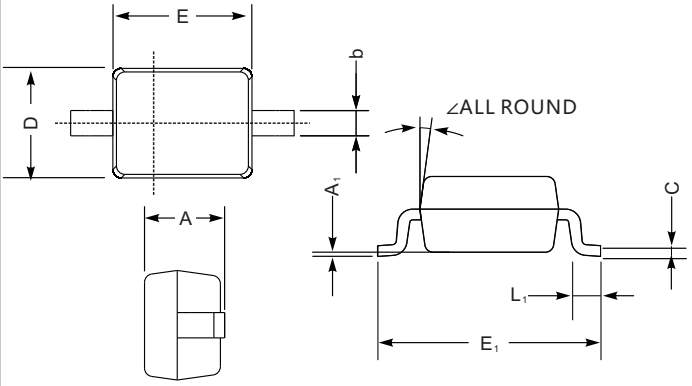

SOD-323 mechanical data

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	—	

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).

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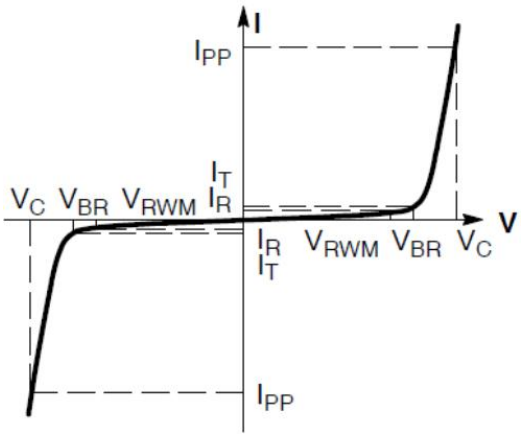
Characteristics(T_J =25℃ unless otherwise specified)

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	uA
Clamping Voltage	V_C	I_{PP}=40A tp=8/20us			8	V
		I_{PP}=160A tp=8/20us			18	
Junction Capacitance	C_J	V_R=0V, f = 1MHz			480	pF