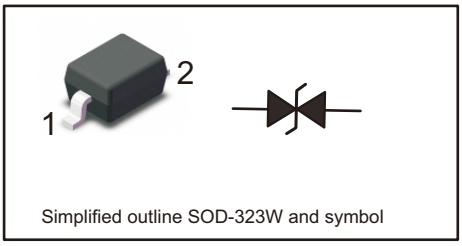
Transient Voltage Suppressors for ESD Protection



Simplified outline SOD-323W and symbol

General Description

The ESDB6V2D3A is designed to protect voltage sensitive components that require ultra-low capacitance 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. Because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed and antenna line applications

FEATURES

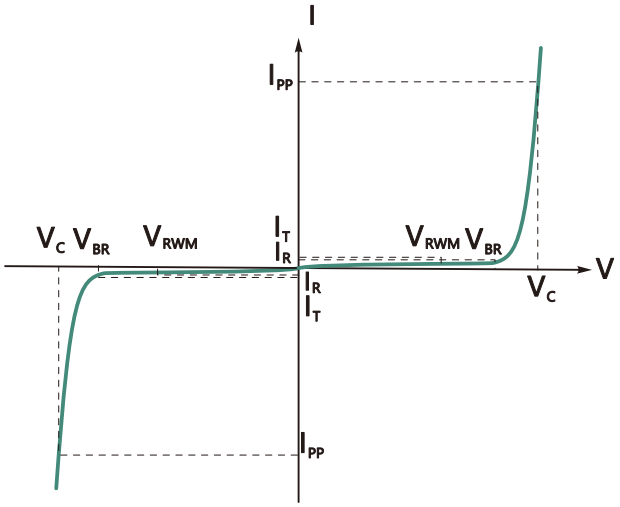
- Stand-off voltage: 6.2V Max.
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact) ±30kV (air)
  IEC61000-4-5(Lightning): 33A (8/20μs)
- Ultra-low capacitance: Cj = 60pF typ.
- Low leakage current

Applications

- Computers and peripherals;
- Audio and video equipment;
- Communication systems;
- Portable electronics.

Electronics Parameter

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



MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μS)	Ppk	429	W
Peak Pulse Current	Ipp	33	A
ESD per IEC 61000-4-2(Air)	VESD	±30	KV
ESD per IEC 61000-4-2(Contact)		±30	
Operating Temperature Range	TJ	-40~+125	℃
Storage Temperature Range	Tstg	-55~+150	℃

ELECTRICAL CHARACTERISTICS(Ta=25℃ unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse Stand-off Voltage	VRWM				6.2	V
Breakdown Voltage	VBR	IT=1mA	6.2	7	8	V
Reverse Leakage Current	IR	V=VRWM,Ta=25℃		100	200	nA
Clamping Voltage	VC	IPP=1A,tp=8/20μs		7.3	9	V
		IPP=10A,tp=8/20μs		7.5	10	
		IPP=20A,tp=8/20μs		8	11	
		IPP=33A,tp=8/20μs		9.5	13	
Junction Capacitance	Cj	VR=0V，f=1MHz		60	100	pF

Typical Characteristics

Fig.1 Power Derating Curve

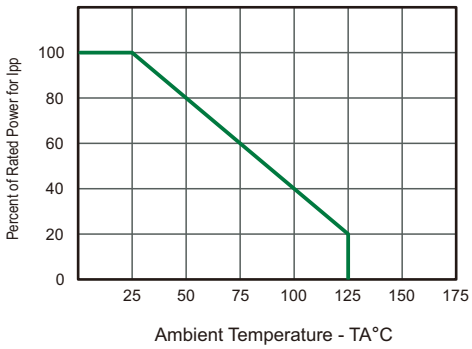
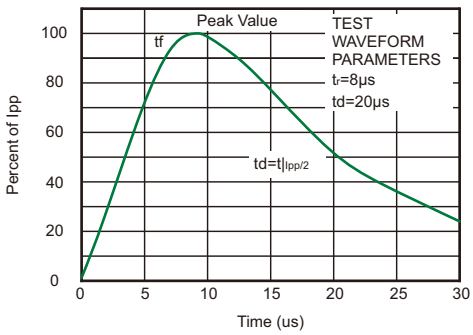


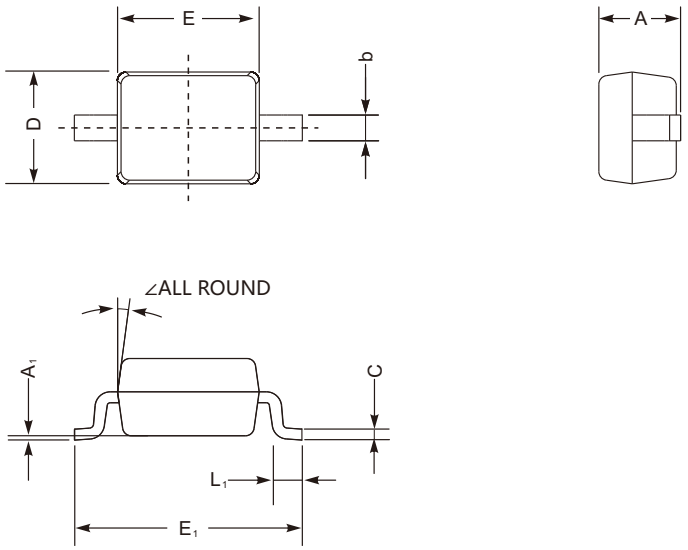
Fig.2 Pulse Waveform



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

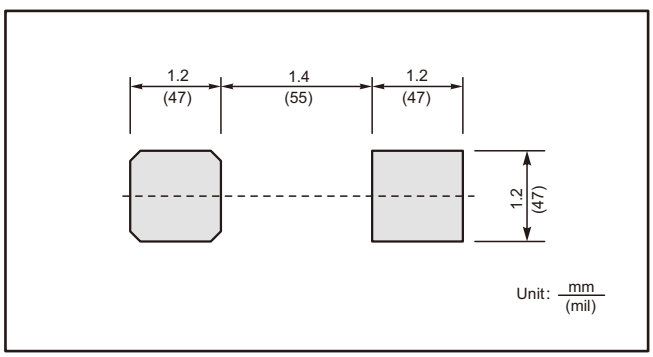
SOD-323W



SOD-323W 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	—	

The recommended mounting pad size



Marking

Type number	Marking code
ESDB6V2D3A	05B

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