

BIDIRECTIONAL ESD PROTECTION DIODES

Features

- 310 Watts Peak Pulse Power per Line ($t_p = 8/20\mu s$)
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage:5V
- Bidirectional Configuration

Applications

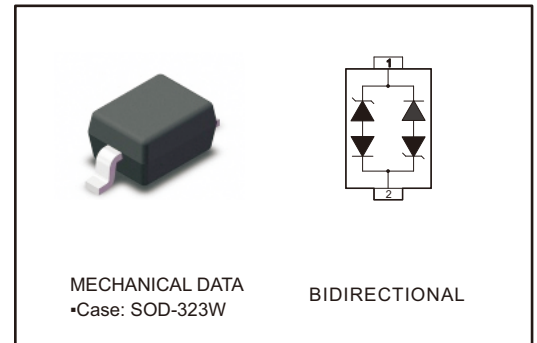
- Ethernet - 10/100/1000 Base T
- Cellular Phones
- Handheld - Wireless Systems
- Personal Digital Assistant(PDA)
- USB Interface

Mechanical Characteristics

- SOD323W package
- Marking : Marking Code
- RoHS Compliant
- Packaging: Tape and Reel per EIA 481

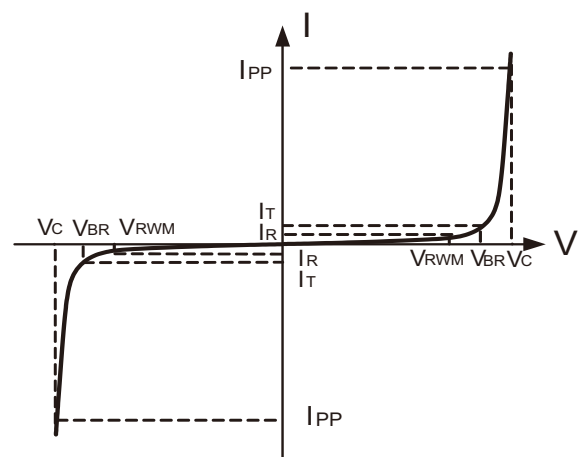
PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



Electrical Parameters (T=25°C)

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand- Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current





Absolute Ratings

(Tamb=25°C)

Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power (t _p =8/20μs)	P _{PP}	310	W
Peak Pulse Current (t _p =8/20μs)	I _{PP}	17	A
Operating Temperature	T _J	-55 to +125	°C
Storage Temperature	T _{STG}	-55 to +150	°C

Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

ESDBLC5V0D3P						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V _{RWM}				5	V
Reverse Breakdown Voltage	V _{BR}	I _T =1mA	6		9	V
Reverse Leakage Current	I _R	V _{RWM} =5V ,T=25°C			500	nA
Clamping Voltage	V _C	I _{PP} =17A,t _p =8/20us		15.5	18.3	V
Dynamic Resistance ^{1,2}	R _{DYN}	TLP=0.2/100ns		0.3		Ω
ESD Clamping Voltage ¹	V _C	I _{PP} = 4A t _p = 0.2/100ns		9.5		V
ESD Clamping Voltage ¹	V _C	I _{PP} = 16A t _p = 0.2/100ns		13.2		V
Junction Capacitance	C _j	V _R = 0V, f = 1MHz		1.0	1.35	pF

Note: 1、 TLP Setting: t_p=100ns,t_r=0.2ns, I_{TLP} and V_{TLP} sample window:t₁=70ns to t₂=90ns

2、 Dynamic resistance calculated from I_{PP}=4A to I_{PP}=16A using "Best Fit"



Fig.1 Peak Pulse Power vs. Pulse Time

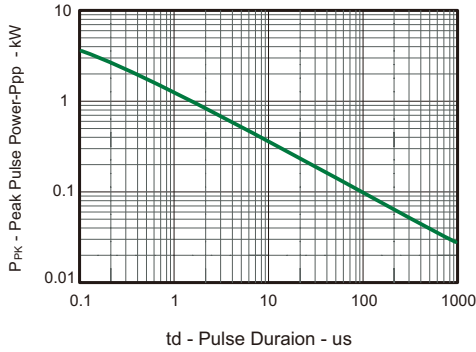


Fig.2 Power Derating Curve

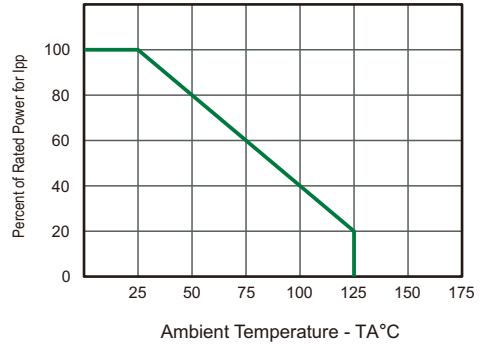


Fig.3 Clamping voltage vs Ipp

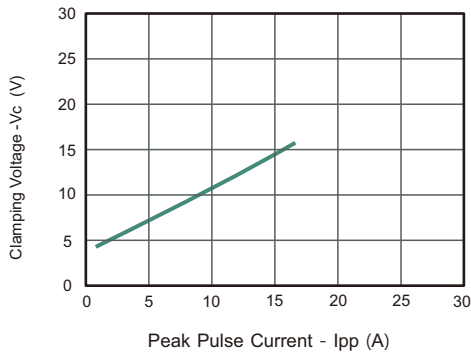


Fig.4 Normalized Junction Capacitance vs,Reverse Voltage

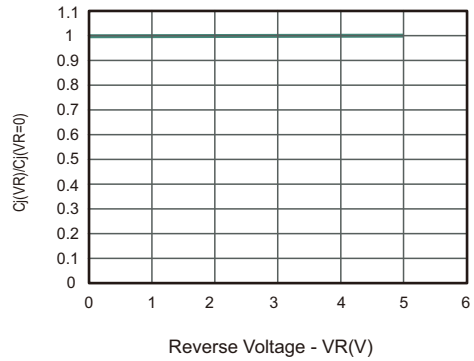


Figure 5: TLP Positive I - V Curve

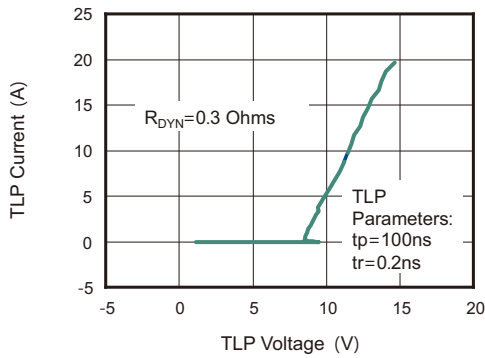
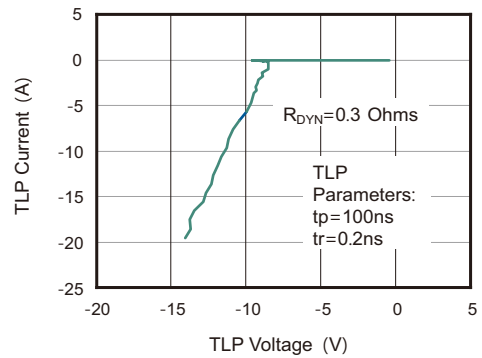


Figure 6: TLP Negative I - V Curve

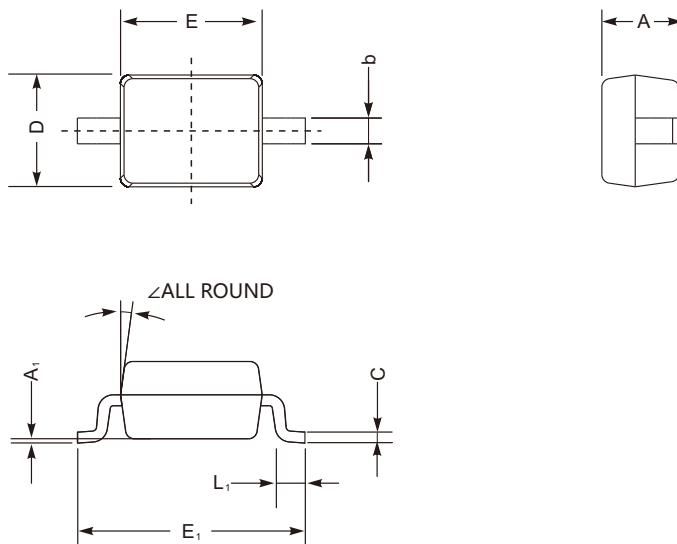




PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

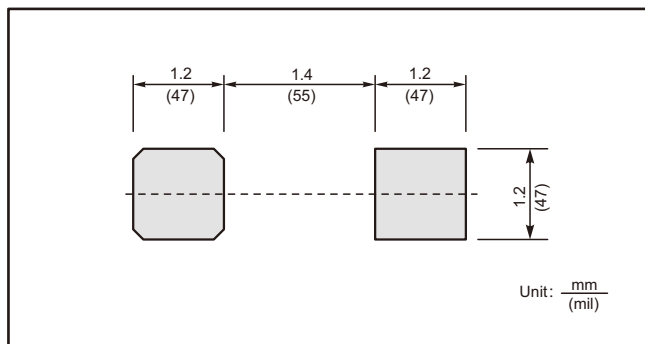
SOD-323W



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
ESDBLC5V0D3P	5A

