

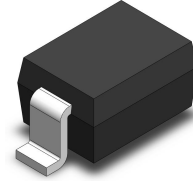


Transient Voltage Suppressors Array for ESD Protection

Features

- ◆ Working voltages : 15.0V
- ◆ Low leakage current: 1 μ A @ V_{RWM}
- ◆ Low clamping voltage
- ◆ Response Time is < 1 ns

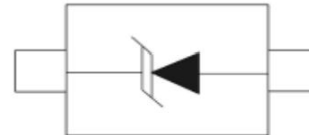
SOD-323



Applications

- ◆ Cell phone handsets and accessories
- ◆ Microprocessor based equipment
- ◆ Personal digital assistants (PDA's)
- ◆ Notebooks, desktops, and servers
- ◆ Portable instrumentation
- ◆ Power lines
- ◆ Peripherals

PIN Configuration



Mechanical Characteristics

- ◆ DFN1610-2L package
- ◆ SOD-323 package
- ◆ Molding compound flammability rating: UL 94V-0
- ◆ Weight 5 milligrams (approximate)
- ◆ Quantity per reel: 3,000pcs
- ◆ Lead finish: lead free

Protection Solution To Meet

- ◆ IEC61000-4-2 (ESD) ± 30 kV (air), ± 30 kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lightning) 55A (8/20 μ s)

Absolute Maximum Rating ($T_A=25^\circ\text{C}$, RH=45%-75%, unless otherwise noted)

Symbol	Parameter	Value	Units
t_{STG}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_J	Operating Temperature Range	-55 to +125	$^\circ\text{C}$
T_L	Lead soldering temperature	260 (10 sec.)	$^\circ\text{C}$
V_{ESD}	ESD per IEC 61000-4-2(Air)	± 30	KV
	ESD per IEC 61000-4-2 (Contact)	± 30	

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Electrical Characteristics (@ T_A=25 ℃)

Parameter	Symbol	Test Condition	Minimum	Typical	Maximum	Unit
Reverse working voltage	V _{RWM}	--	--	--	15.0	V
Reverse breakdown voltage	V _{BR}	I _T = 1mA	16.0	17.2	20.0	V
Reverse leakage current	I _R	V _{RWM} =15V	--	--	1.0	μA
Peak pulse current	I _{PP}	t _p =8/20μs	--	--	55.0	
Clamping voltage	V _C	I _{PP} =25A, t _p =8/20 μ s	--	22.0	25.0	V
		I _{PP} =50A, t _p =8/20μs	--	26.0	28.0	
		I _{PP} =55A, t _p =8/20μs		27.0	30.0	
Junction capacitance	C _J	V _{RWM} =0V, f=1MHZ	--	330.0	400.0	pF

Ratings and V-I Characteristics Curves (T_A=25 ℃, unless otherwise noted)

Fig1. V- I curve characteristics((Uni-directional)

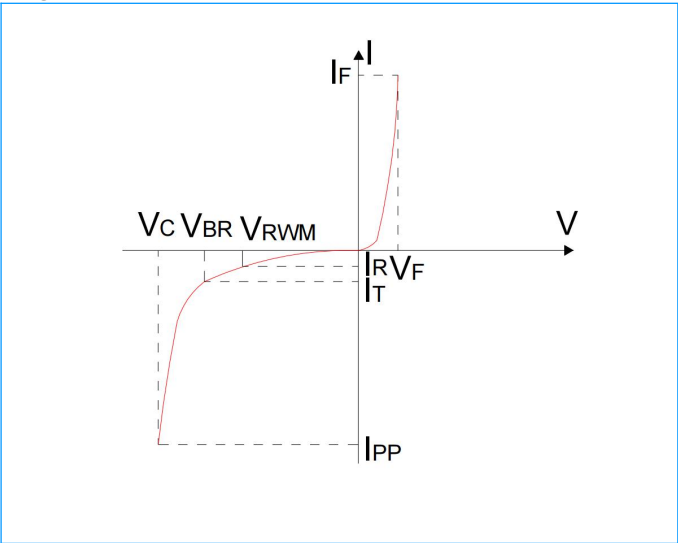
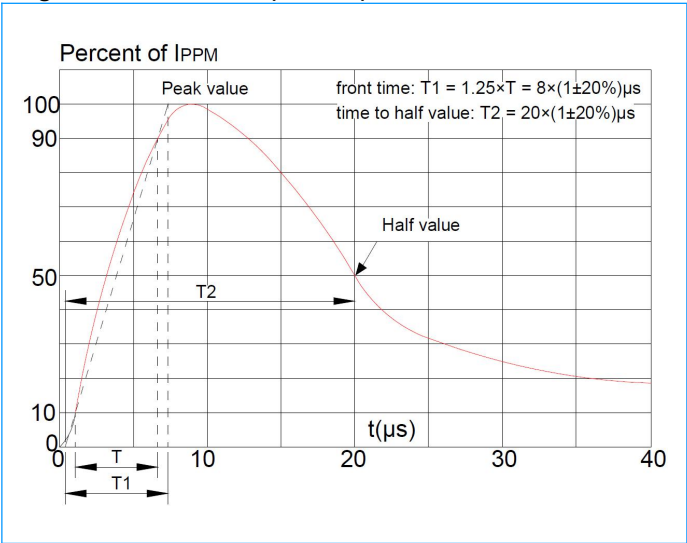


Fig2. Pulse waveform (8/20 μ s)



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Ratings and V-I Characteristics Curves ($T_A=25^{\circ}\text{C}$, unless otherwise noted) (Continue)

Fig3. Pulse derating curve

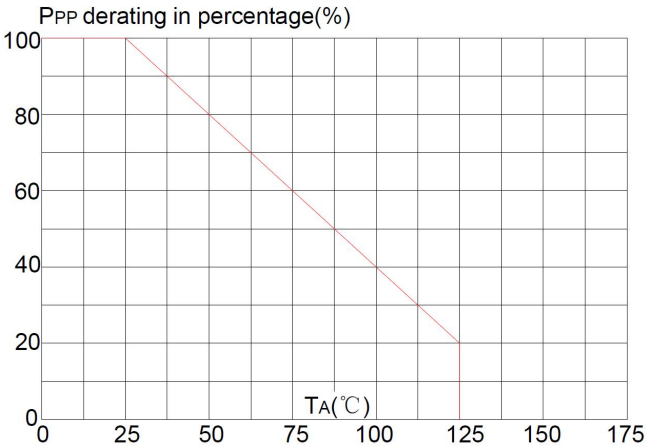


Fig4. ESD clamping (30KV contact)

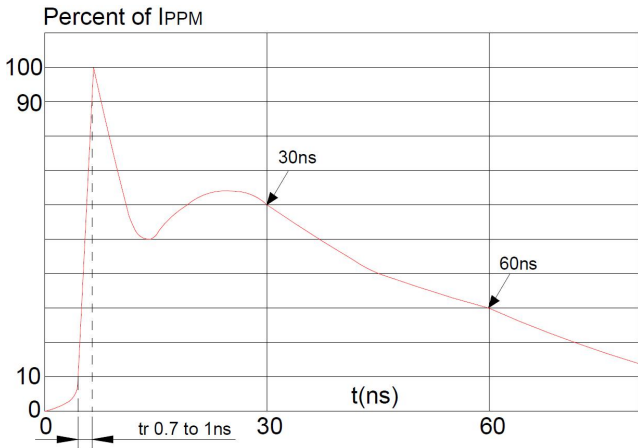


Fig5:Clamping voltage vs.peak pulse current

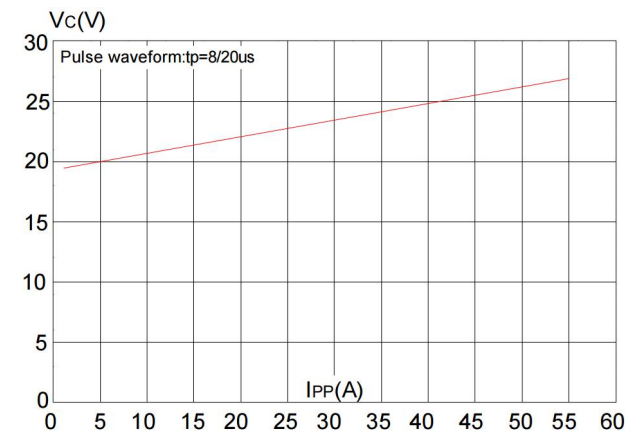
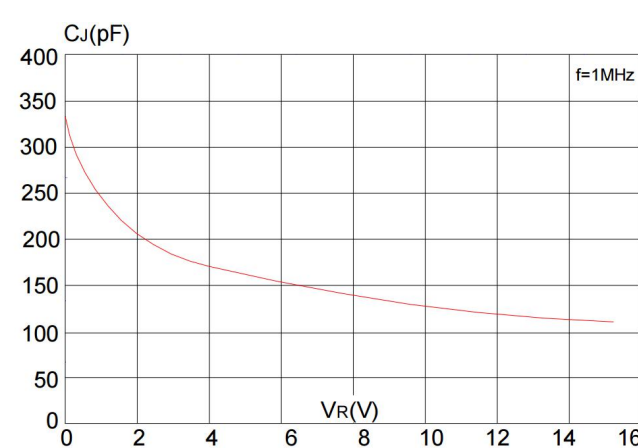


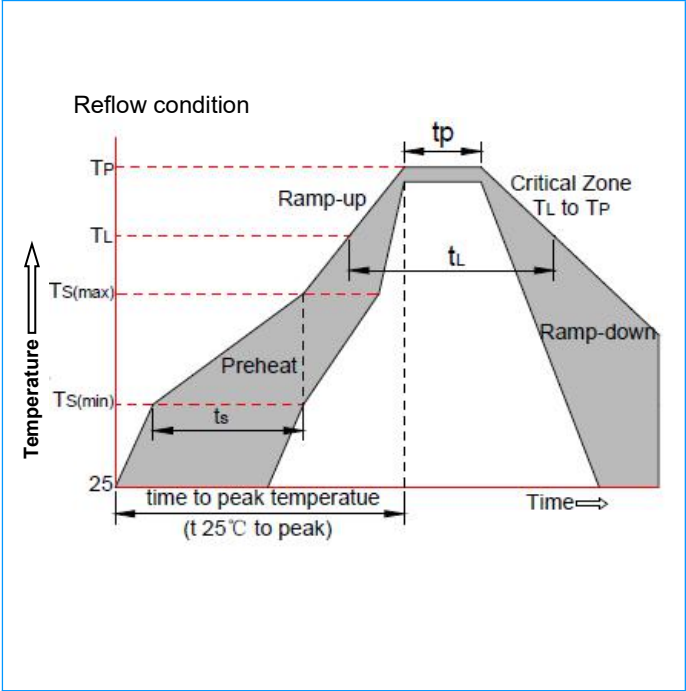
Fig6:Capacitance vs.reverse voltage



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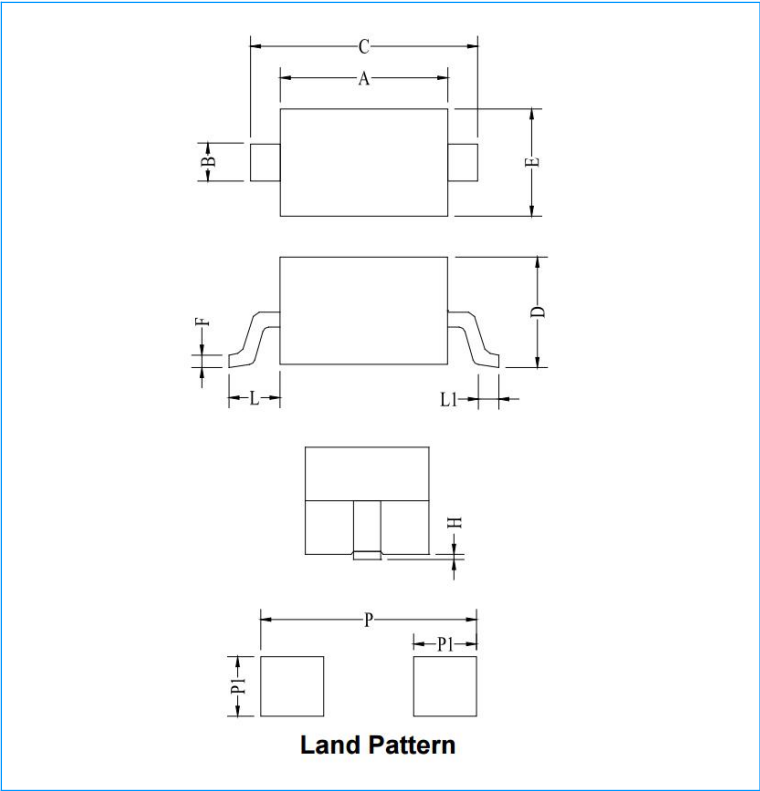
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Soldering Parameters



Reflow Condition		Pb-Free assembly
Pre Heat	-Temperature Min (T _{s(min)})	+150°C
	-Temperature Max (T _{s(max)})	+200°C
	-Time (min to max) (ts)	60 -180 Seconds
Average ramp up rate (Liquidus Temp (TL) to peak)		3°C/Second Max
T _{s(max)} to T _L - Ramp-up Rate		3°C/Second Max
Reflow	- Temperature (TL) (Liquidus)	+217°C
	-Temperature (tL)	60 -150 Seconds
Peak Temperature (TP)		+260(+0/-5)°C
Time within 5°C of actual peak Temperature (tp)		20-40 Seconds
Ramp-down Rate		6°C/Second Max
Time 25°C to peak Temperature (TP)		8 minutes Max
Do not exceed		+260°C

Package Mechanical Date

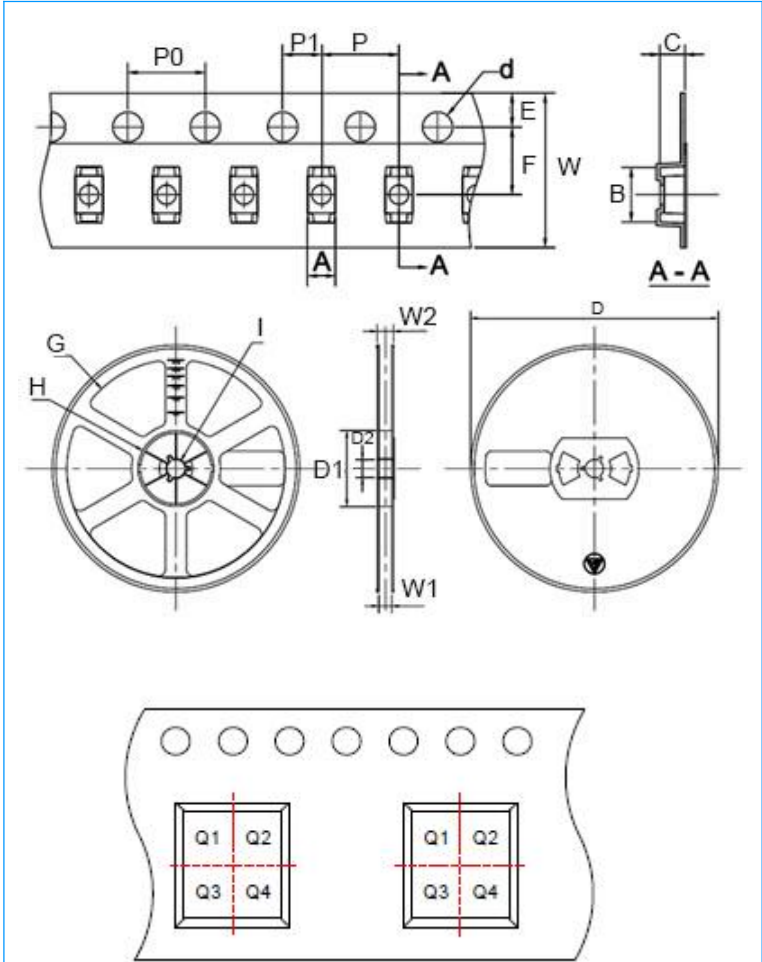


Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.60	1.70	1.80	0.063	0.067	0.071
B	0.25	0.32	0.40	0.010	0.013	0.016
C	2.30	2.60	2.80	0.091	0.102	0.110
D	0.80	0.95	1.10	0.031	0.037	0.043
E	1.20	1.30	1.40	0.047	0.051	0.055
F	0.08	0.13	0.18	0.003	0.005	0.007
L	0.475REF			0.019REF		
L1	0.25	0.33	0.40	0.010	0.013	0.016
H	0.00	0.06	0.14	0.000	0.002	0.006
P	3.00			0.118		
P1	0.80			0.031		

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Tape and Reel Information -SOD-323



Pin 1 quadrant:Q1&Q2

Packaging Description:
SOD-323 parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. The reels are blue in color and made of recyclable plastic.

Symbol	Millimeters	Inches
	Typ.	Typ.
A	1.46	0.057
B	2.90	0.114
C	1.25	0.049
d	Ø 1.50	Ø 0.059
E	1.75	0.069
F	3.50	0.138
P0	4.00	0.157
p	4.00	0.157
P1	2.00	0.079
W	8.00	0.315
D	Ø 178.0	Ø 7.008
D1	54.40	2.142
D2	13.00	0.512
G	R78.0	R3.071
H	R25.60	R1.008
I	R6.50	R0.256
W1	9.50	0.374
W2	12.30	0.484

Packaging Quantity

Part Number	Packaging Option	Quantity
SE15D3W11GN	Tape & Reel	3000 PCS