

ESD3BL...WS Series-BL

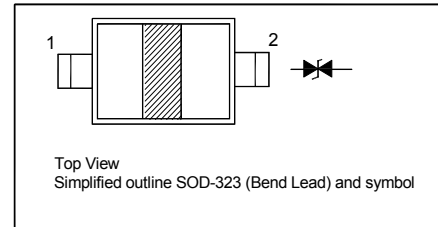
ESD Protection Diode

Features

- Low clamping voltage
- Low leakage current

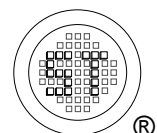
PINNING

PIN	DESCRIPTION
1	Anode
2	Anode



Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

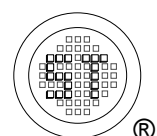
Parameter	Symbol	Value	Unit	
Peak Pulse Power ($t_p = 8/20 \mu\text{s}$)	P_{PK}	ESD3BL3V3WS	500	W
		ESD3BL5V0WS	500	
		ESD3BL12WS	200	
		ESD3BL15WS	200	
		ESD3BL24WS	200	
Peak Pulse Current ($t_p = 8/20 \mu\text{s}$)	I_{PP}	ESD3BL3V3WS	18	A
		ESD3BL5V0WS	15	
		ESD3BL12WS	5	
		ESD3BL15WS	5	
		ESD3BL24WS	3	
ESD Per IEC 61000-4-2 (Contact)	V_{ESD}	ESD3BL3V3WS	30	KV
		ESD3BL5V0WS	30	
		ESD3BL12WS	30	
		ESD3BL15WS	30	
		ESD3BL24WS	23	
Operating Junction Temperature	T_j	150	$^\circ\text{C}$	
Storage Temperature Range	T_{stg}	- 65 to + 150	$^\circ\text{C}$	



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Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
Reverse Stand-Off Voltage						
ESD3BL3V3WS	V_{RWM}	-	-	3.3	V	
ESD3BL5V0WS		-	-	5		
ESD3BL12WS		-	-	12		
ESD3BL15WS		-	-	15		
ESD3BL24WS		-	-	24		
Reverse Breakdown Voltage at $I_R = 5 \text{ mA}$						
ESD3BL3V3WS	$V_{(BR)R}$	5.8	-	6.9	V	
ESD3BL5V0WS		7	-	8.2		
ESD3BL12WS		14.2	-	16.7		
ESD3BL15WS		17.1	-	20.3		
ESD3BL24WS		25.4	-	30.3		
Reverse Current						
at $V_{RWM} = 3.3 \text{ V}$	I_R	-	-	2	μA	
at $V_{RWM} = 5 \text{ V}$		ESD3BL5V0WS	-	-	1	μA
at $V_{RWM} = 12 \text{ V}$		ESD3BL12WS	-	-	50	nA
at $V_{RWM} = 15 \text{ V}$		ESD3BL15WS	-	-	50	nA
at $V_{RWM} = 24 \text{ V}$		ESD3BL24WS	-	-	50	nA
Diode Capacitance at $V_R = 0 \text{ V}$, $f = 1 \text{ MHz}$						
ESD3BL3V3WS	C_{tot}	-	101	-	pF	
ESD3BL5V0WS		-	75	-		
ESD3BL12WS		-	19	-		
ESD3BL15WS		-	16	-		
ESD3BL24WS		-	11	-		
Clamping Voltage at $I_{PP} = 1 \text{ A}$						
ESD3BL3V3WS	V_C	-	-	8	V	
ESD3BL5V0WS		-	-	10		
ESD3BL12WS		-	-	20		
ESD3BL15WS		-	-	25		
ESD3BL24WS		-	-	40		
Clamping Voltage at $I_{PP} = 18 \text{ A}$	V_C	-	-	26	V	
at $I_{PP} = 15 \text{ A}$		ESD3BL5V0WS	-	-		33
at $I_{PP} = 5 \text{ A}$		ESD3BL12WS	-	-		37
at $I_{PP} = 5 \text{ A}$		ESD3BL15WS	-	-		44
at $I_{PP} = 3 \text{ A}$		ESD3BL24WS	-	-		70



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Electrical Characteristics Curves

Fig 1. Pulse Waveform

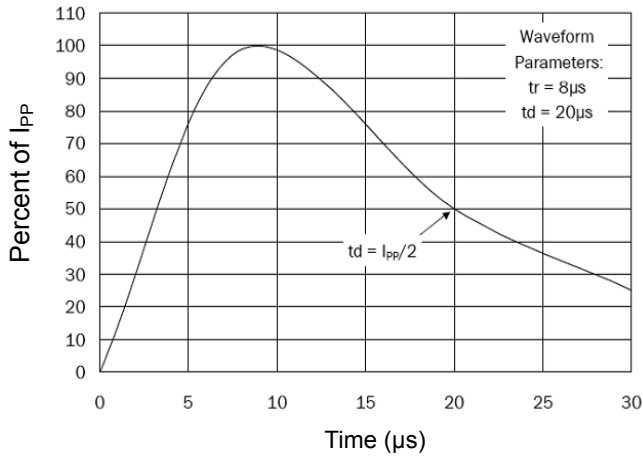


Fig 2. Power Derating Curve

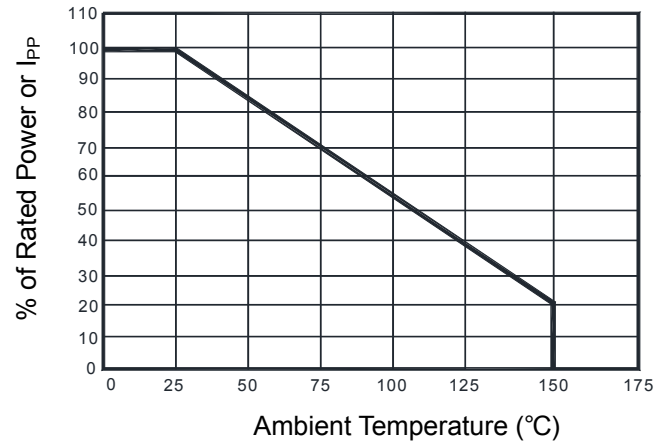


Fig 3. Clamping Voltage Curve

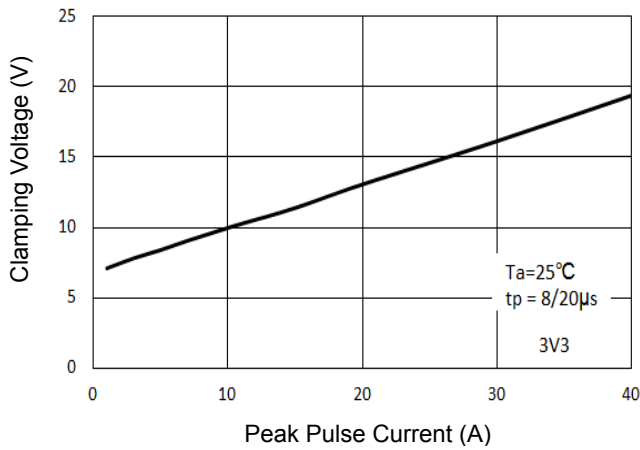


Fig 4. Junction Capacitance

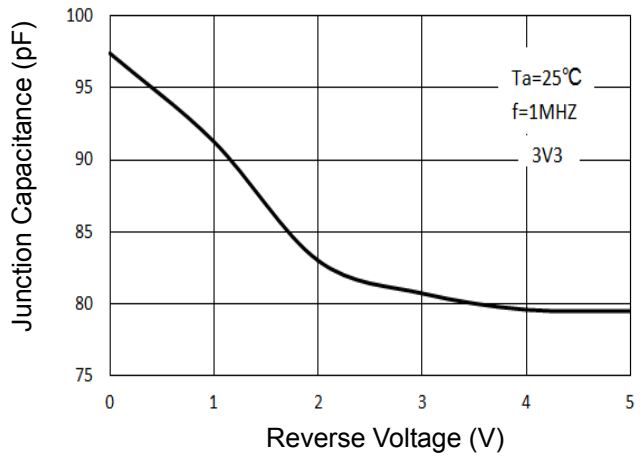


Fig 5. Clamping Voltage Curve

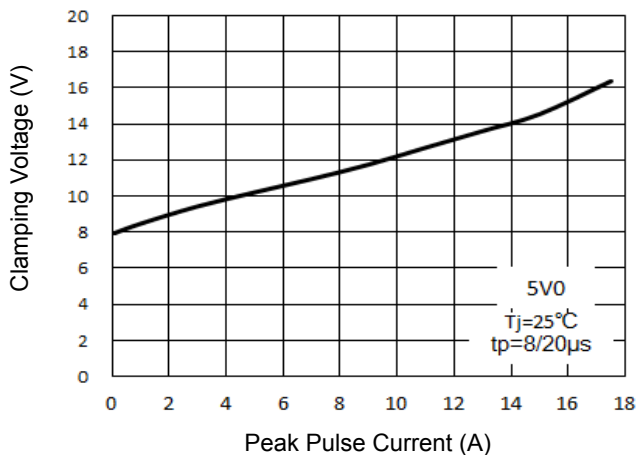
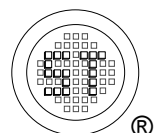
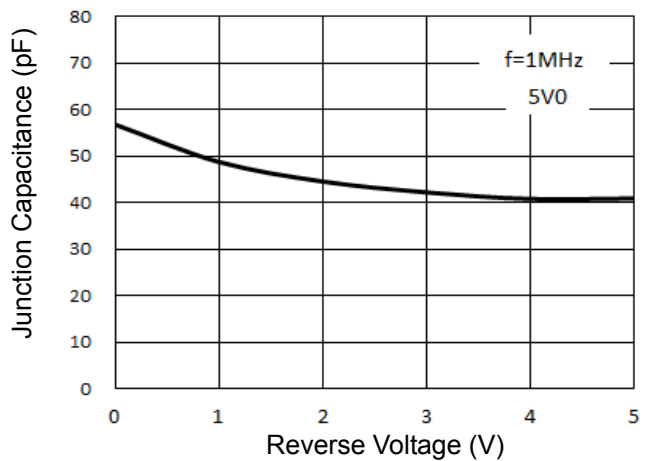


Fig 6. Junction Capacitance



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Fig 7. Clamping Voltage Curve

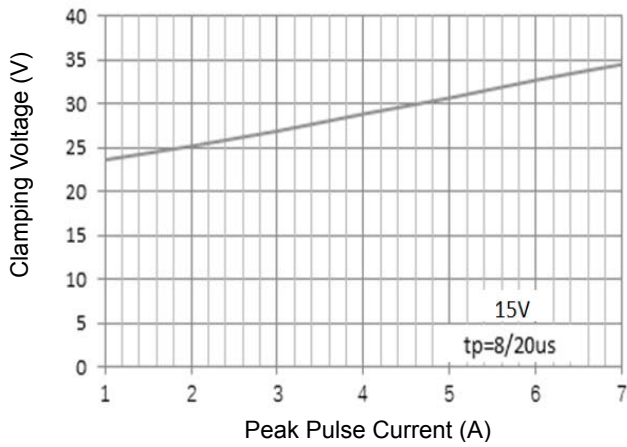


Fig 8. Junction Capacitance

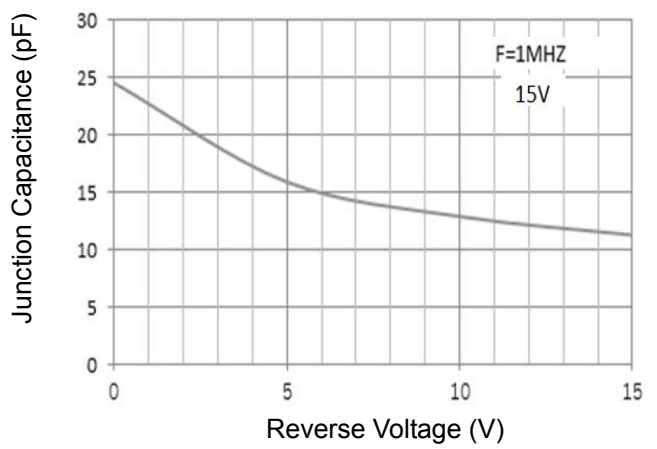


Fig 9. Clamping Voltage Curve

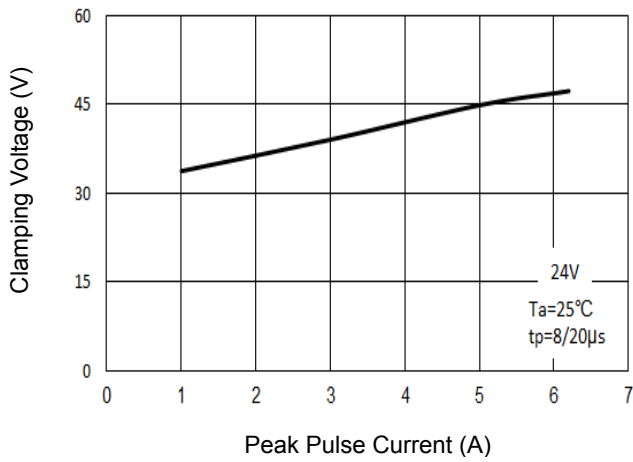


Fig 10. Junction Capacitance

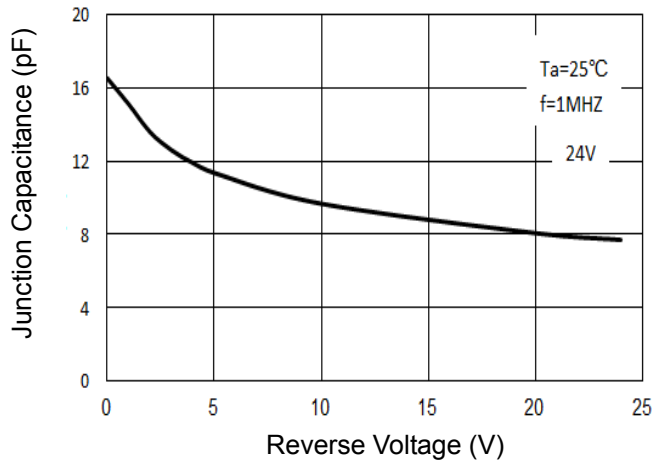


Fig 11 TLP Curve

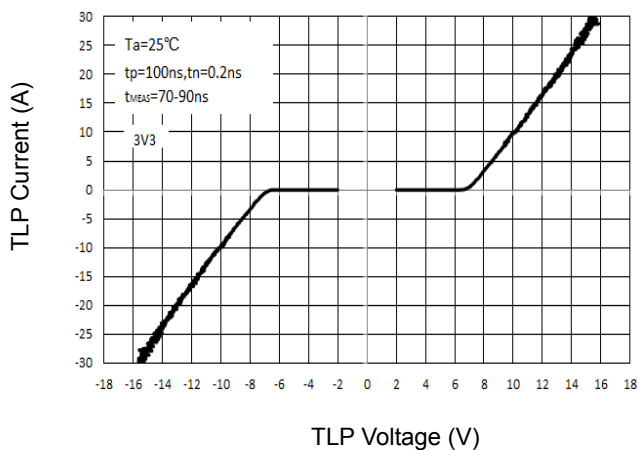
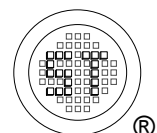
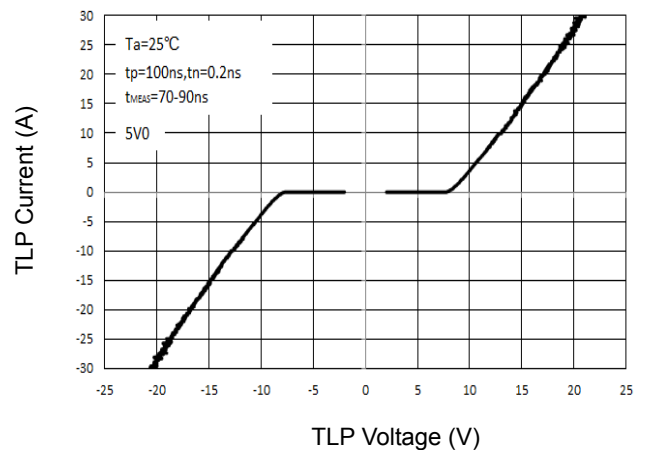


Fig 12 TLP Curve



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Electrical Characteristics Curves

Fig. 13 TLP Curve

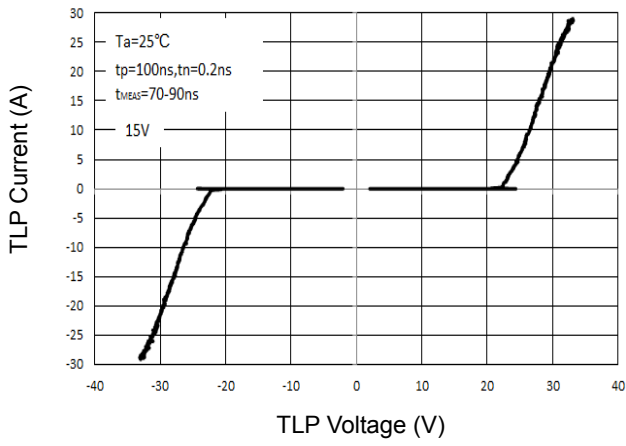
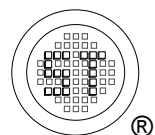
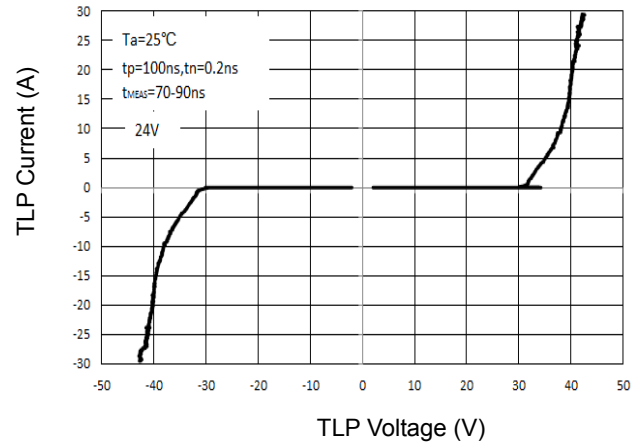


Fig. 14 TLP Curve

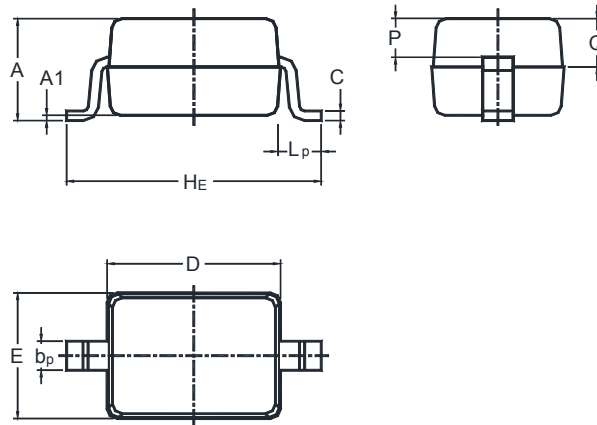


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PACKAGE OUTLINE

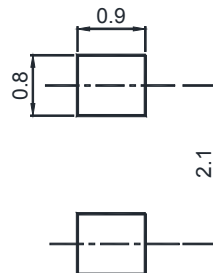
Plastic surface mounted package; 2 leads

SOD-323BL



UNIT	A	A ₁	b _p	C	D	E	H _E	L _p	Q	P
mm	1.1 0.8	0.1 0	0.4 0.25	0.18 0.09	1.8 1.6	1.35 1.15	2.8 2.3	0.5 0.1	0.5 0.3	0.4 0.3

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOD-323BL	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

" III ": Polarity marking

