

# ESD3BL...WS Series-BL

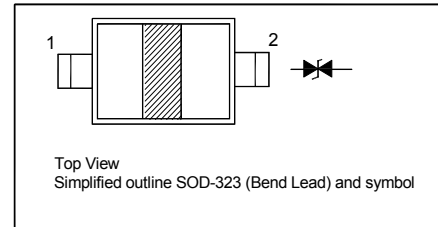
## ESD Protection Diode

### Features

- Low clamping voltage
- Low leakage current

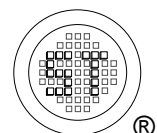
### PINNING

PIN	DESCRIPTION
1	Anode
2	Anode



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

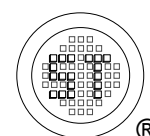
Parameter	Symbol	Value	Unit			
Peak Pulse Power ( $t_p = 8/20 \mu\text{s}$ )	$P_{PK}$	ESD3BL3V3WS ESD3BL5V0WS ESD3BL12WS ESD3BL15WS ESD3BL24WS	500 500 200 200 200	W		
Peak Pulse Current ( $t_p = 8/20 \mu\text{s}$ )		$I_{PP}$	ESD3BL3V3WS ESD3BL5V0WS ESD3BL12WS ESD3BL15WS ESD3BL24WS	18 15 5 5 3	A	
ESD Per IEC 61000-4-2 (Contact)			$V_{ESD}$	ESD3BL3V3WS ESD3BL5V0WS ESD3BL12WS ESD3BL15WS ESD3BL24WS	30 30 30 30 23	KV
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	$\mu\text{A}$
at $V_{RWM} = 5 \text{ V}$		-	-	1	$\mu\text{A}$
at $V_{RWM} = 12 \text{ V}$		-	-	50	nA
at $V_{RWM} = 15 \text{ V}$		-	-	50	nA
at $V_{RWM} = 24 \text{ V}$		-	-	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 $I_{PP} = 15 \text{ A}$		-	-	33	
at $I_{PP} = 5 \text{ A}$		-	-	37	
at $I_{PP} = 5 \text{ A}$		-	-	44	
at $I_{PP} = 3 \text{ A}$		-	-	70	



# ESD3BL...WS Series-BL

## Electrical Characteristics Curves

Fig 1. Pulse Waveform

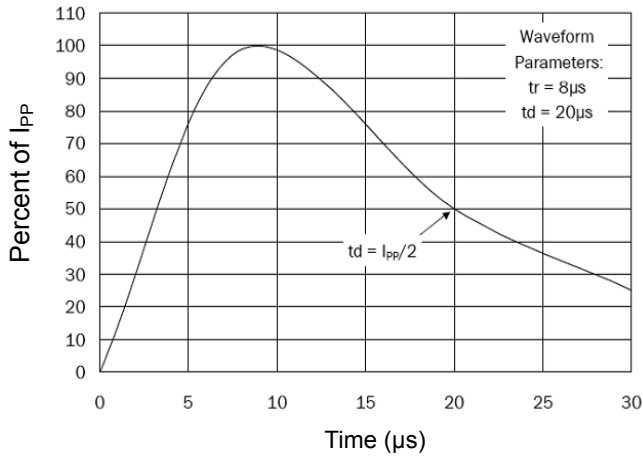


Fig 2. Power Derating Curve

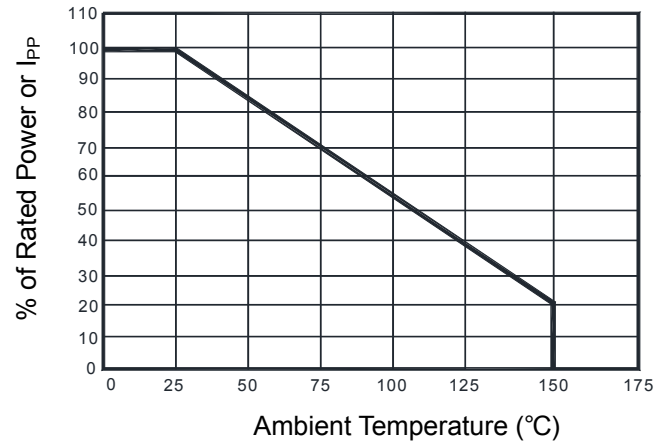


Fig 3. Clamping Voltage Curve

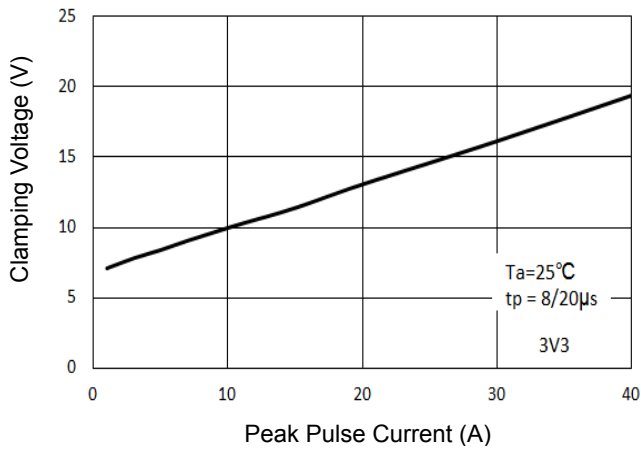


Fig 4. Junction Capacitance

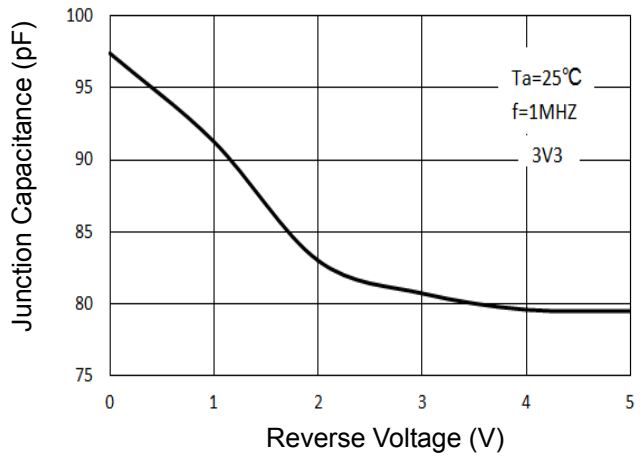


Fig 5. Clamping Voltage Curve

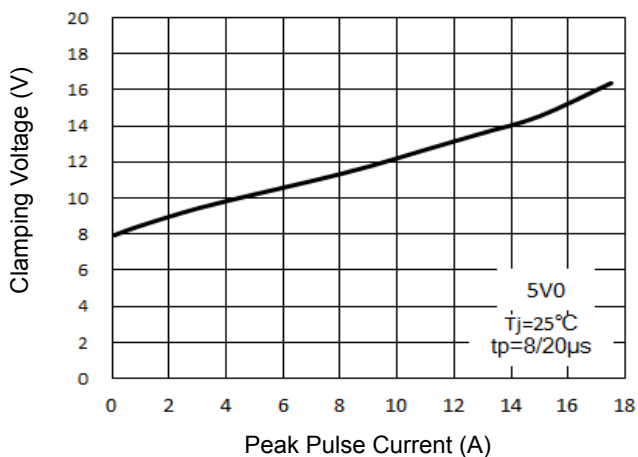
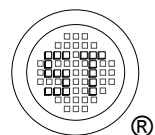
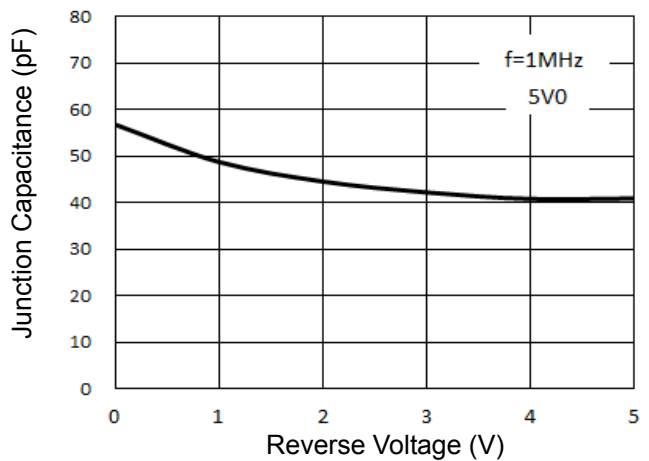


Fig 6. Junction Capacitance



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## Electrical Characteristics Curves

Fig 7. Clamping Voltage Curve

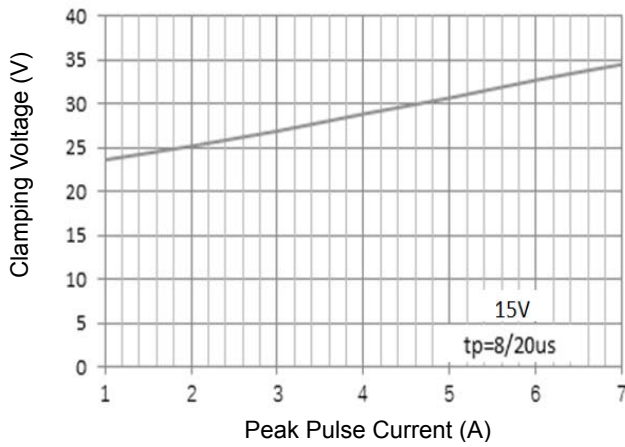


Fig 8. Junction Capacitance

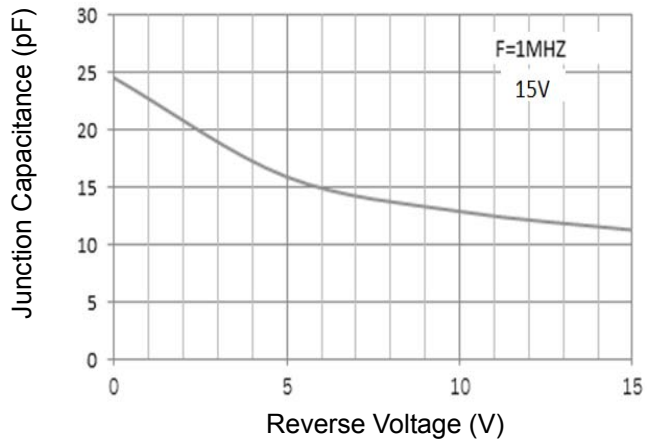


Fig 9. Clamping Voltage Curve

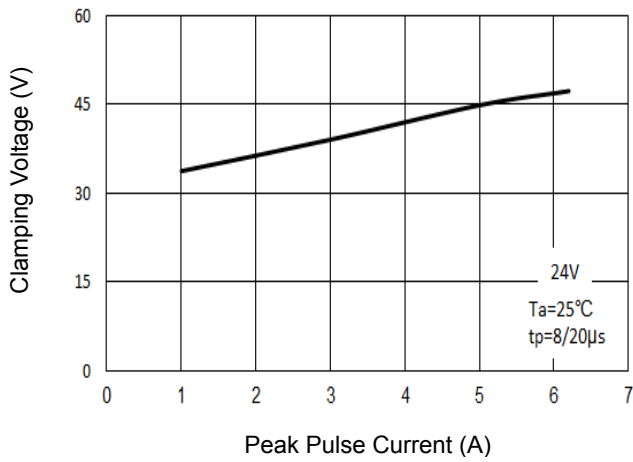


Fig 10. Junction Capacitance

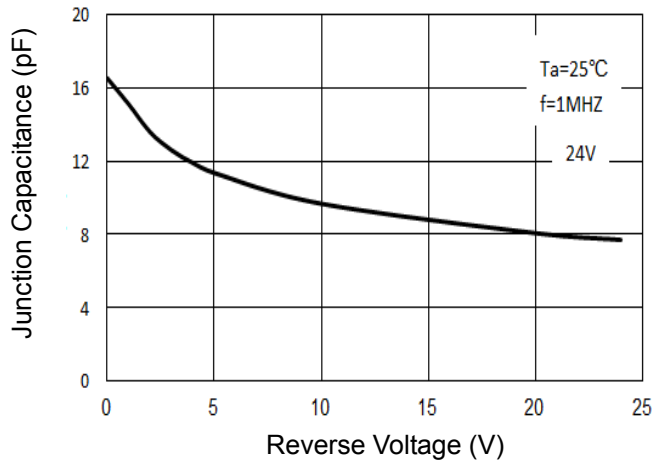


Fig 11 TLP Curve

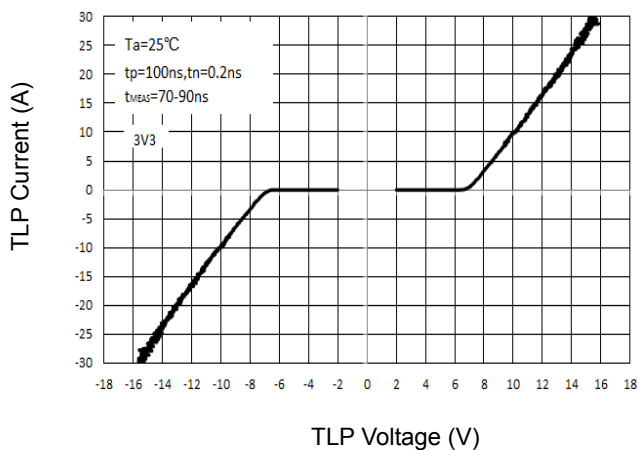
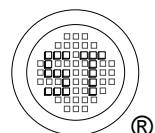
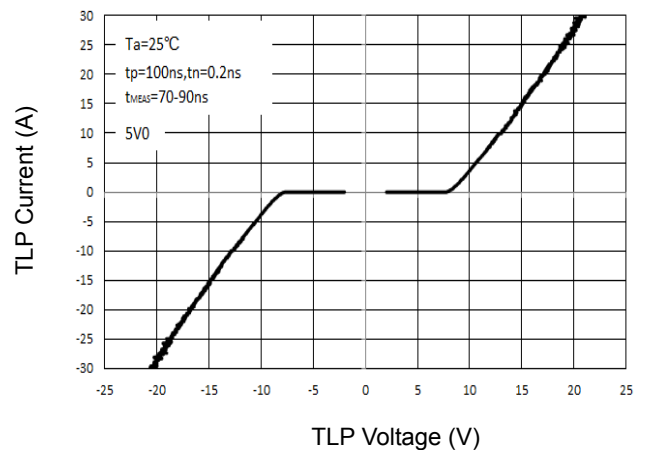


Fig 12 TLP Curve



# ESD3BL...WS Series-BL

## Electrical Characteristics Curves

Fig. 13 TLP Curve

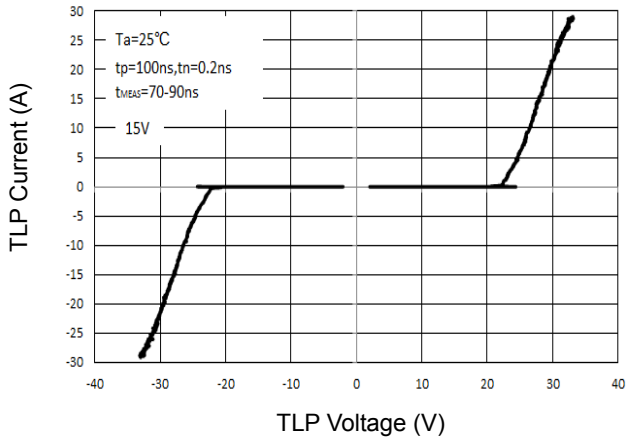
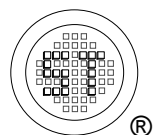
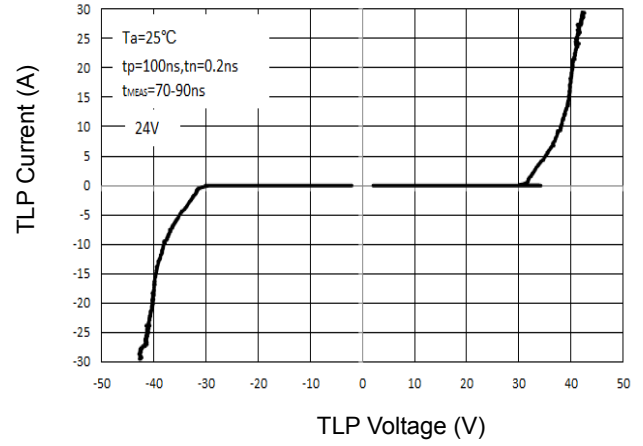


Fig. 14 TLP Curve

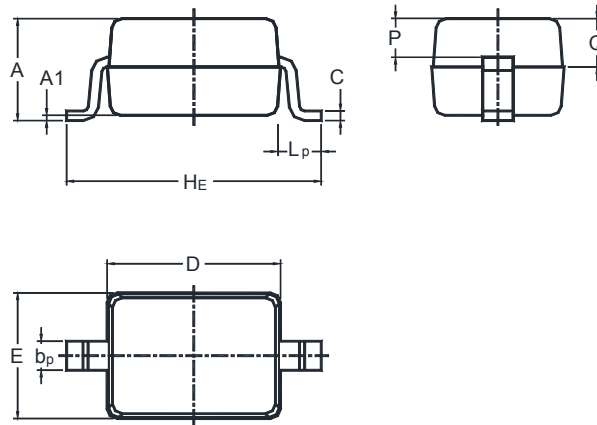


# ESD3BL...WS Series-BL

## PACKAGE OUTLINE

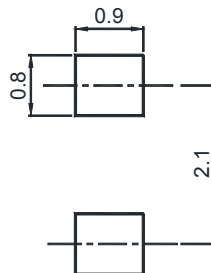
Plastic surface mounted package; 2 leads

SOD-323BL



UNIT	A	A <sub>1</sub>	b <sub>p</sub>	C	D	E	H <sub>E</sub>	L <sub>p</sub>	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

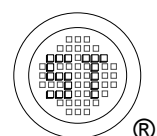
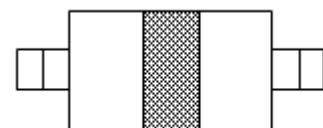


### Packing information

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



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