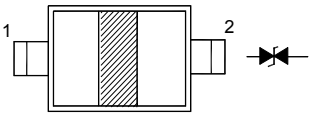
ESD3BL...WS Series-BL-AH

Transient Voltage Suppressors

Bi-directional for ESD Protection

PINNING

PIN	DESCRIPTION
1	Anode
2	Anode



Top View
Simplified outline SOD-323 (Bend Lead) and symbol

Features

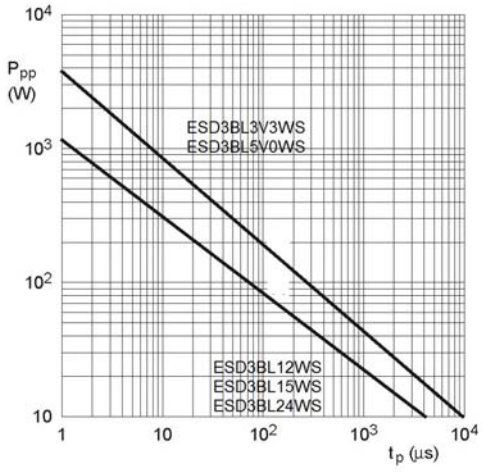
- Low clamping voltage
- Low leakage current
- AEC-Q101 Qualified and PPAP Capable
- Halogen and Antimony Free(HAF), RoHS compliant

Absolute Maximum Ratings (T_a = 25°C)

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

Characteristics at T_a = 25°C

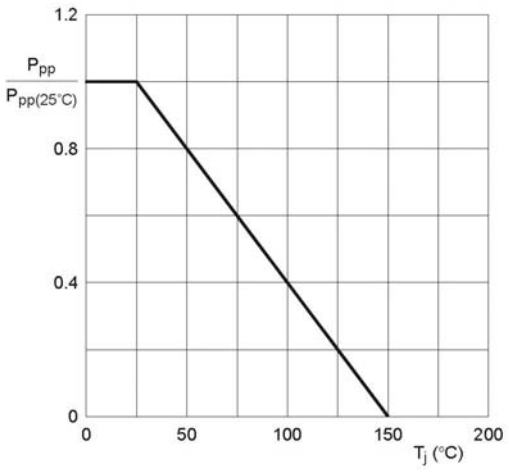
Parameter		Symbol	Min.	Typ.	Max.	Unit
Reverse Stand-Off Voltage						
	ESD3BL3V3WS	V_{RWM}	-	-	3.3	V
	ESD3BL5V0WS		-	-	5	
	ESD3BL12WS		-	-	12	
	ESD3BL15WS		-	-	15	
	ESD3BL24WS		-	-	24	
Reverse Breakdown Voltage						
at I_R = 5 mA	ESD3BL3V3WS	$V_{(BR)R}$	5.8	-	6.9	V
	ESD3BL5V0WS		7	-	8.2	
	ESD3BL12WS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



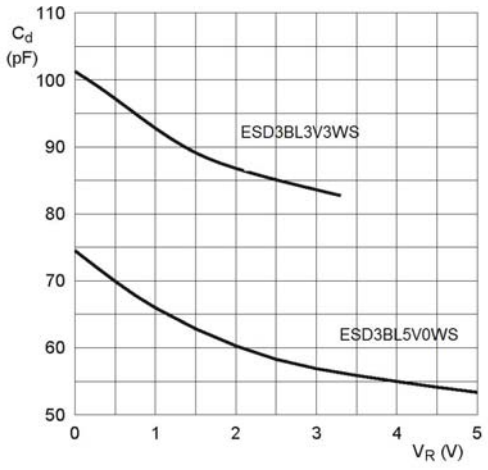
T_{amb} = 25 °C.

t_p = 8/20 µs exponential decay waveform;

Peak pulse power dissipation as a function of pulse time; typical values.

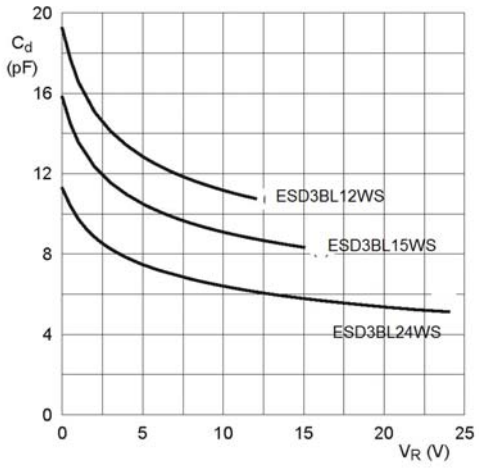


Relative variation of peak pulse power as a function of junction temperature; typical values.



T_{amb} = 25 °C; f = 1 MHz.

Diode capacitance as a function of reverse voltage; typical values.

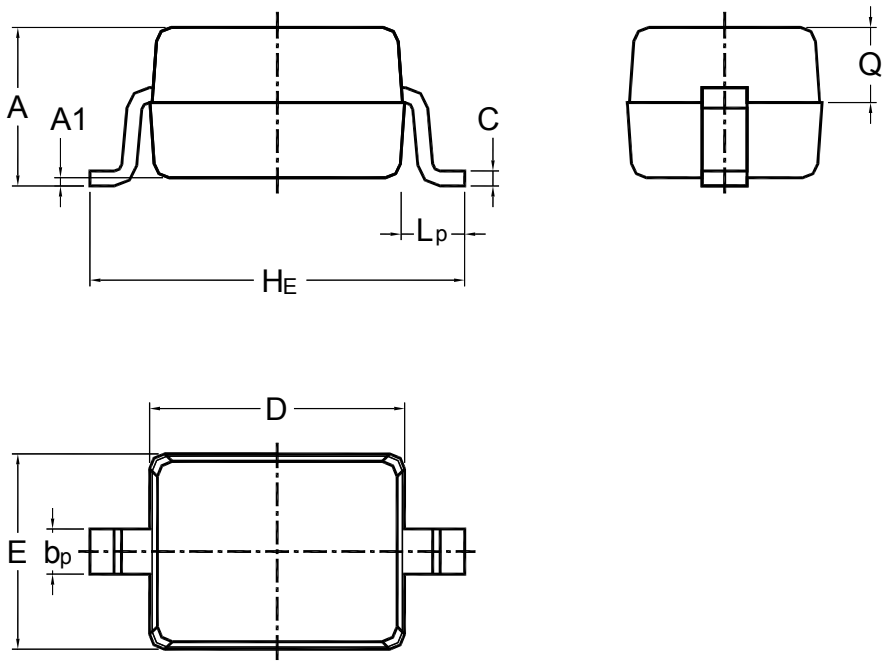


T_{amb} = 25 °C; f = 1 MHz.

Diode capacitance as a function of reverse voltage; typical values.

Plastic surface mounted package; 2 leads

SOD-323 (Bend Lead)



UNIT	A	A_1	b_p	C	D	E	H_E	L_p	Q
mm	1.1 0.8	0.1 0	0.4 0.25	0.15 0	1.8 1.6	1.35 1.15	2.8 2.3	0.5 0.1	0.5 0.3