

ESD3Z...BWS Series-HAF

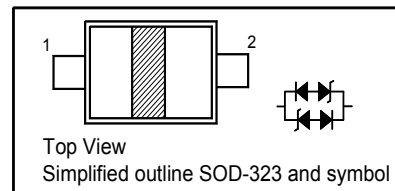
ESD Protection Diode

Features

- Low clamping voltage
- Low capacitance
- Halogen and Antimony Free(HAF),
RoHS compliant

PINNING

PIN	DESCRIPTION
1	Cathode
2	Cathode



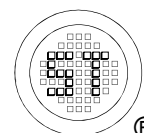
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20 \mu\text{s}$)	P_{PK}	350	W
ESD (IEC61000-4-2) Air Contact	V_{ESD}	± 15 ± 8	KV
Operating Junction Temperature Range	T_j	- 55 to + 125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

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

Type	Reverse Stand-off Voltage	Reverse Current	Breakdown Voltage		Clamping Voltage ¹⁾				Capacitance		
	V_{RWM}	I_R at V_{RWM}	V_{BR}	at I_{BR}	V_C	at I_{PP}	V_C	at I_{PP}	C_j	at f	at V_R
	Max. (V)	Max.(μA)	Min.(V)	mA	Max.(V)	A	Max.(V)	A	Max.(pF)	MHz	V
ESD3Z3V0BWS	3	20	3.3	1	7.5	1	20	20	3	1	0
ESD3Z5V0BWS	5	5	6.1	1	9.8	1	20	18	3	1	0
ESD3Z8V0BWS	8	1	8.6	1	13.4	1	24	18	3	1	0
ESD3Z12BWS	12	1	13.5	1	19	1	28.6	12	3	1	0
ESD3Z15BWS	15	1	17.39	1	24	1	31.8	10	3	1	0
ESD3Z24BWS	24	1	27.27	1	43	1	56	6	3	1	0

¹⁾ $t_p = 8/20 \mu\text{s}$.



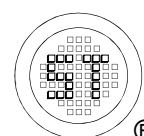
ESD3Z...BWS Series-HAF

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

Type	Clamping Voltage		Clamping Voltage		Dynamic Resistance ¹⁾
	V_{CL}	at I_{TLP} ²⁾	V_{CL}	at I_{TLP} ²⁾	R_{dyn}
	Typ.(V)	(A)	Typ.(V)	(A)	(Ω)
ESD3Z3V0BWS	8.5	4	12.5	16	0.33
ESD3Z5V0BWS	10.2	4	15.2	16	0.42
ESD3Z8V0BWS	12.5	4	17	16	0.38

¹⁾ Dynamic Resistance calculated from $I_{TLP} = 4\text{A}$ to $I_{TLP} = 16\text{A}$.

²⁾ $t_p = 0.2/100\text{ ns}$



ESD3Z...BWS Series-HAF

Electrical Characteristics Curves

Fig 1. Pulse Waveform

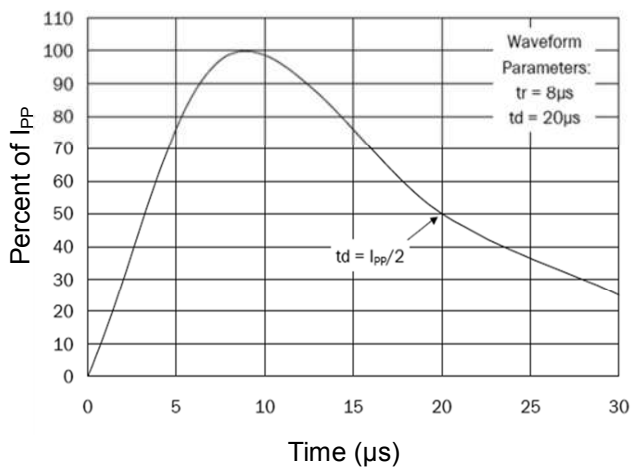


Fig 2. Power Derating Curve

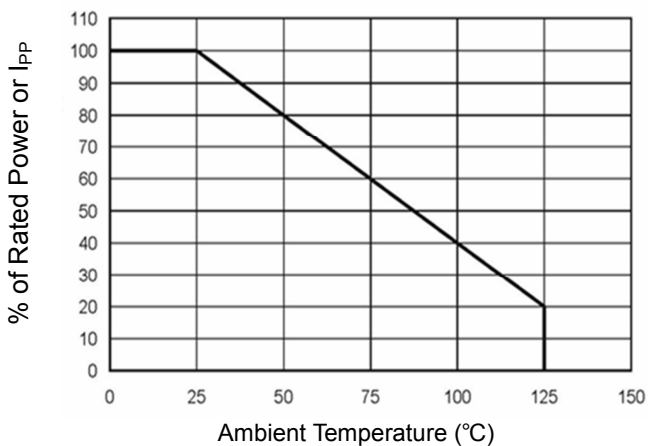


Fig 3. Clamping Voltage Curve

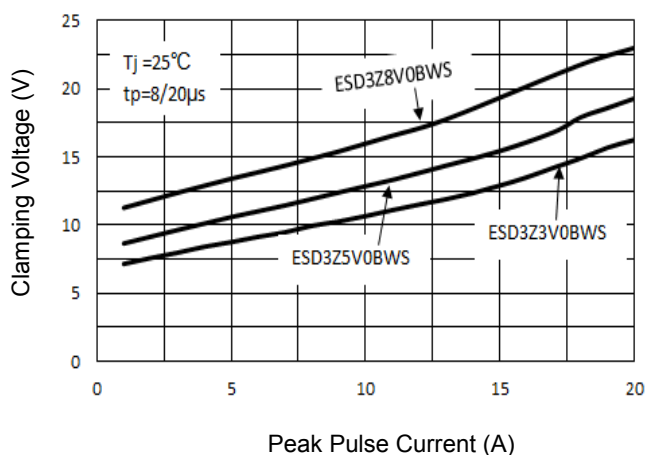


Fig 4. Junction Capacitance

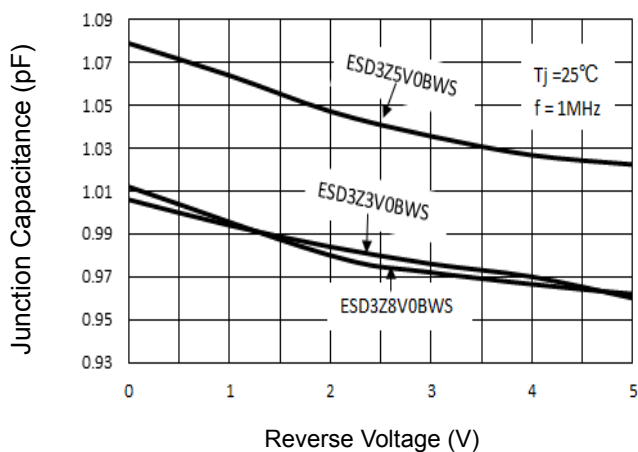


Fig 5. TLP Curve

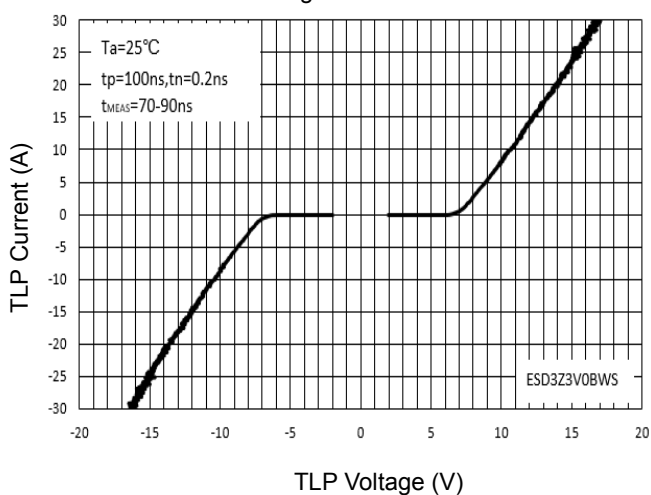
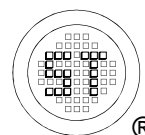
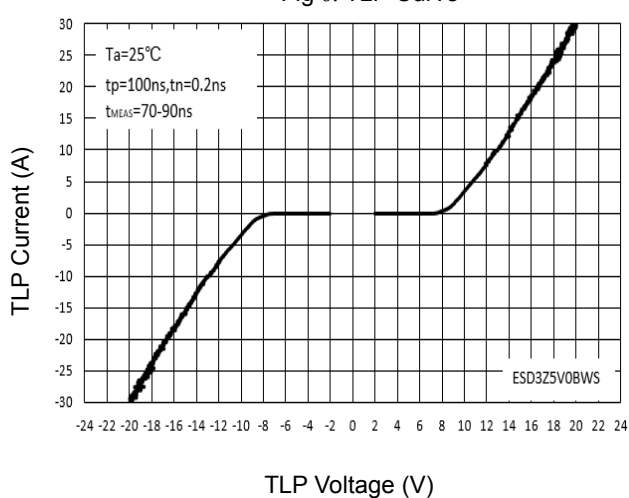


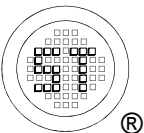
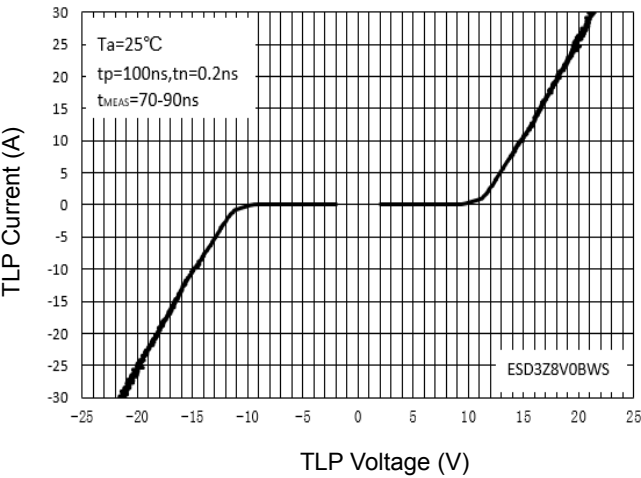
Fig 6. TLP Curve



ESD3Z...BWS Series-HAF

Electrical Characteristics Curves

Fig 7. TLP Curve

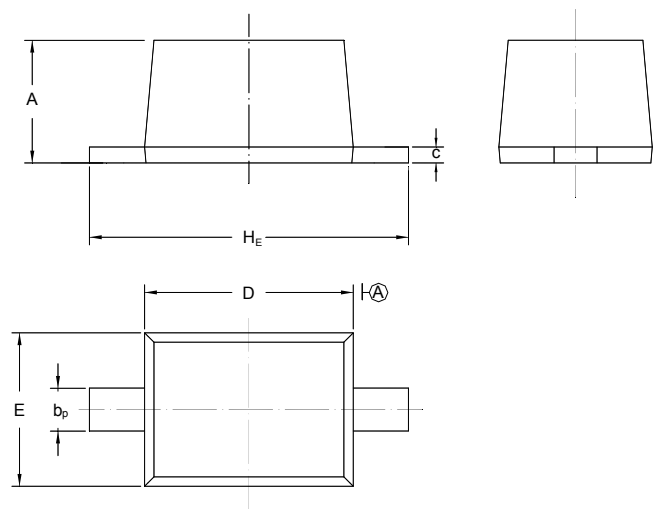


ESD3Z...BWS Series-HAF

PACKAGE OUTLINE

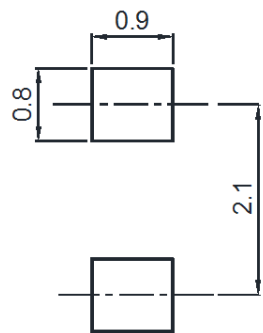
Plastic surface mounted package; 2 leads

SOD-323



UNIT	A	b _p	C	D	E	H _E
mm	1.10 0.80	0.40 0.25	0.15 0.10	1.80 1.60	1.35 1.15	2.80 2.30

Recommended Soldering Footprint



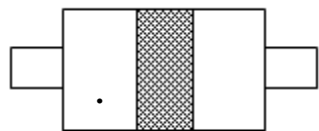
Packing information

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

Marking information

" III ": Marking Line

" • " = HAF (Halogen and Antimony Free)



Disclaimer: Our company reserve the right to make modifications, enhancements, improvements, corrections or other changes to improve product design, functions and reliability, anytime without notice. Semtech Electronics Limited makes no warranties, representations or warranties regarding the suitability of its products for any particular purpose, and does not accept any liability arising from the application or use of any product or circuit such as: Apply to medical, military, aircraft, space or life support equipment and expressly waive any and all liability, including but not limited to special, consequential or collateral damage.

