

1. Descriptions

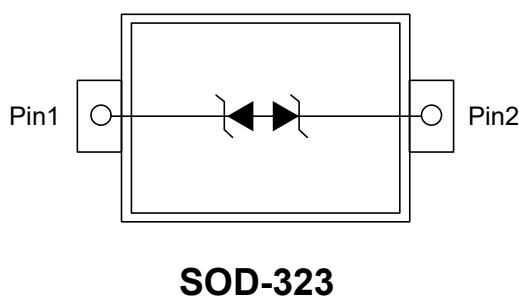
The ESD56151Wxx is a transient voltage suppressor designed to protect power interfaces. It is suitable to replace multiple discrete components in portable electronics.

The ESD56151Wxx is specifically designed to protect power lines.

2. Features

- Reverse stand-off voltage: 4.5V ~ 5V
- Surge protection according to IEC61000-4-5 see Table 4
- ESD protection according to IEC61000-4-2 $\pm 30\text{kV}$ (contact and air discharge)
- Low clamping voltage
- Solid-state silicon technology

3. Pinning information

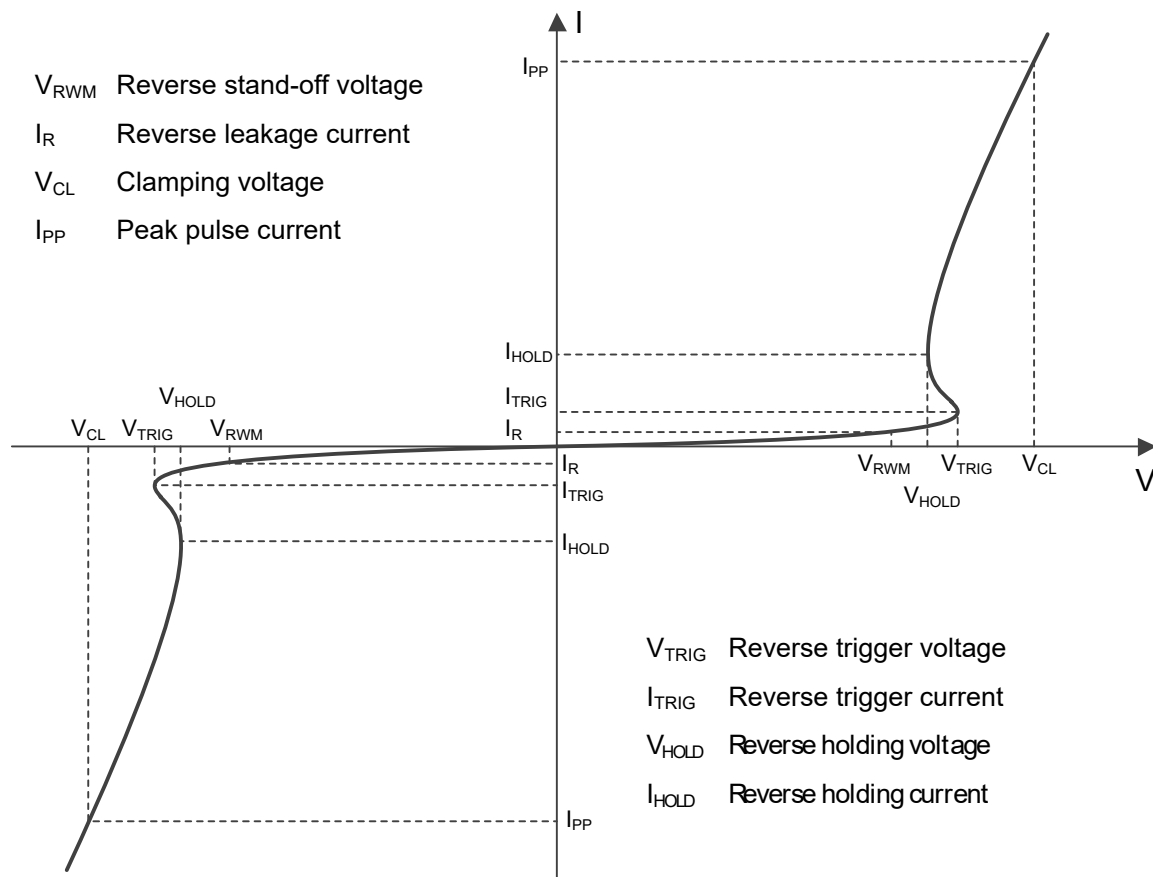


4. Absolute Maximum Ratings $T_A = 25^\circ\text{C}$

Parameter	Symbol	Maximum	Units
Peak Pulse Power ($t_p=8/20\text{s}$)	P_{PK}	2400	W
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	kV
ESD according to IEC61000-4-2 contact discharge		± 30	kV
Junction Temperature	T_J	125	$^\circ\text{C}$
Operating temperature	T_{OP}	-40 to 85	$^\circ\text{C}$
Lead temperature	T_L	260	$^\circ\text{C}$
Storage temperature	T_{STG}	-55 to 150	$^\circ\text{C}$



5. Electrical Characteristic ($T_A=25^\circ\text{C}$ unless otherwise noted)



Definitions of electrical characteristics



6. Electrical Characteristic ($T_A=25^\circ\text{C}$ unless otherwise noted)

Type number	V_{RWM} (V)	Breakdown voltage $V_{BR}(V)$ $I_{BR}=1\text{mA}$			Reverse leakage current $I_{RM}(\mu\text{A})$ at V_{RWM}		Junction capacitance $F=1\text{MHz}$, $V_R=0\text{V}(\text{pF})$	
	Max.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.
ESD56151W04	4.5	4.7	5.3	6.4		0.1	280	350
ESD56151W05	5	5.3	6.3	7.1		0.1	400	450

Type number	Rated peak pulse current I_{PP} (A) ¹⁾³⁾	Clamping voltage $V_{CL}(V)$ at $I_{PP}(A)$ ¹⁾³⁾	Clamping voltage $V_{CL}(V)$ at $I_{PP}=16\text{A}$, $t_p=100\text{ns}$ ²⁾³⁾	Clamping voltage $V_{CL}(V)$ at $V_{ESD} = 8\text{kV}$ ²⁾³⁾
ESD56151W04	150	16	6.5	7
ESD56151W05	145	16	6.7	7.5

Notes:

- 1) Non-repetitive current pulse, according to IEC61000-4-5. (8/20 μs current waveform)
- 2) Non-repetitive current pulse, according to IEC61000-4-2.
- 3) Measured from pin 1 to pin 2.



7. Typical characteristic

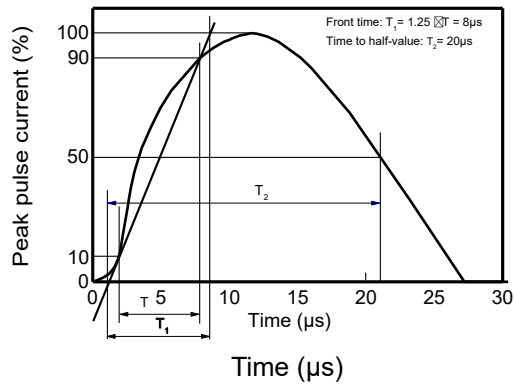
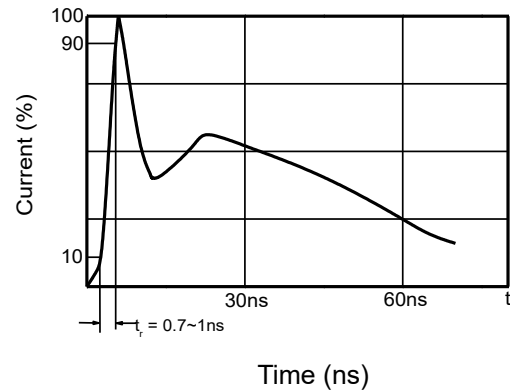
Figure 1: 8/20 μ s waveform per IEC61000-4-5

Figure 2: Contact discharge current waveform per IEC61000-4-2

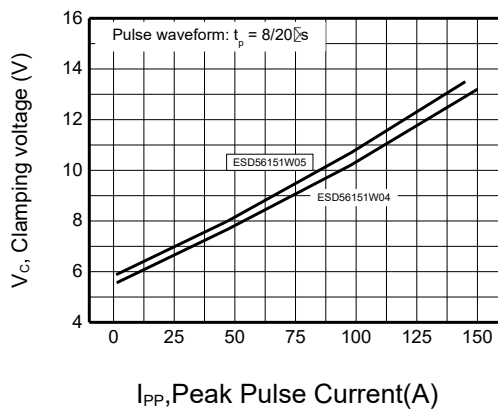


Figure 3: Clamping voltage vs. Peak pulse current

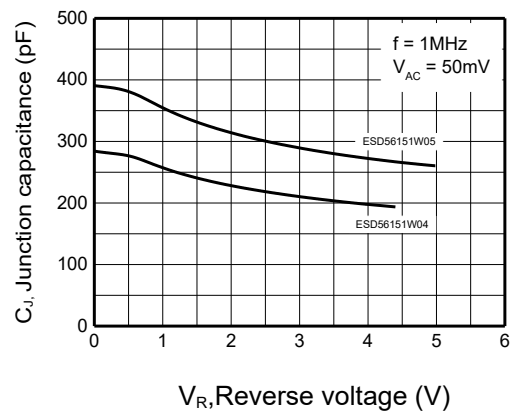


Figure 4: Capacitance vs. Reverse voltage

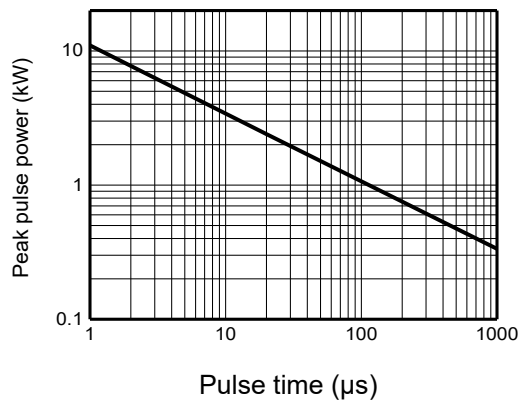


Figure 5: Non-repetitive peak pulse power vs. Pulse time

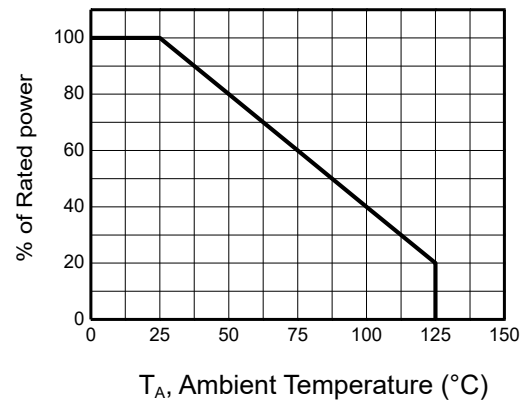
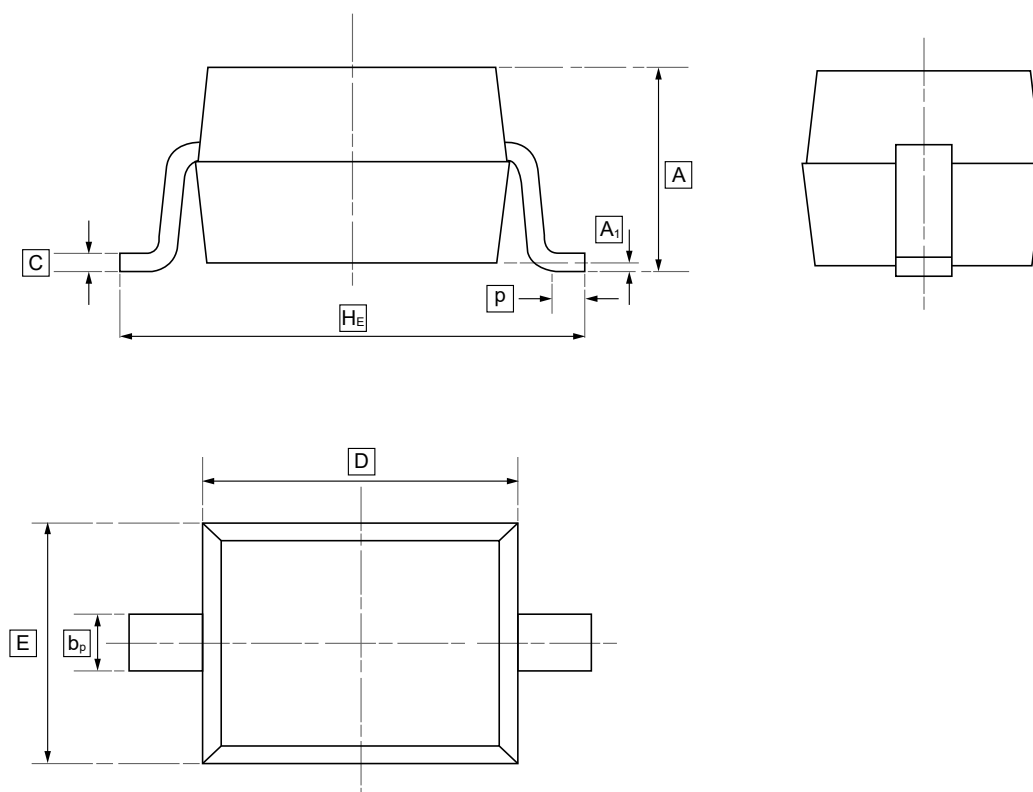


Figure 6: Power derating vs. Ambient temperature



8.SOD-323 Package Outline Dimensions

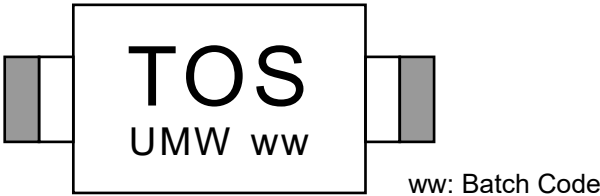


DIMENSIONS (mm are the original dimensions)

Symbol	A	b_p	C	D	E	H_E	A_1	p
Min	0.90	0.25	0.10	1.60	1.15	2.30	0.01	0.20
Max	1.20	0.40	0.15	1.80	1.35	2.80	0.10	0.50



9.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW ESD56151W04	SOD-323	3000	Tape and reel
UMW ESD56151W05	SOD-323	3000	Tape and reel



10.Disclaimer

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