UMW ESD56151Wxx

1-Line,Bi-directional,Transient Voltage Suppressor

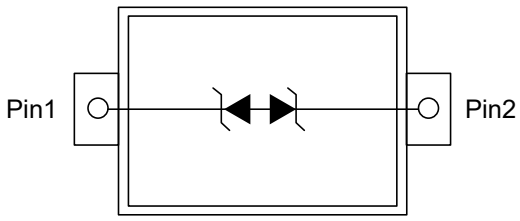
1.Descriptions

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 ±30kV (contact and air discharge)
- Low clamping voltage
- Solid-state silicon technology

3.Pinning information

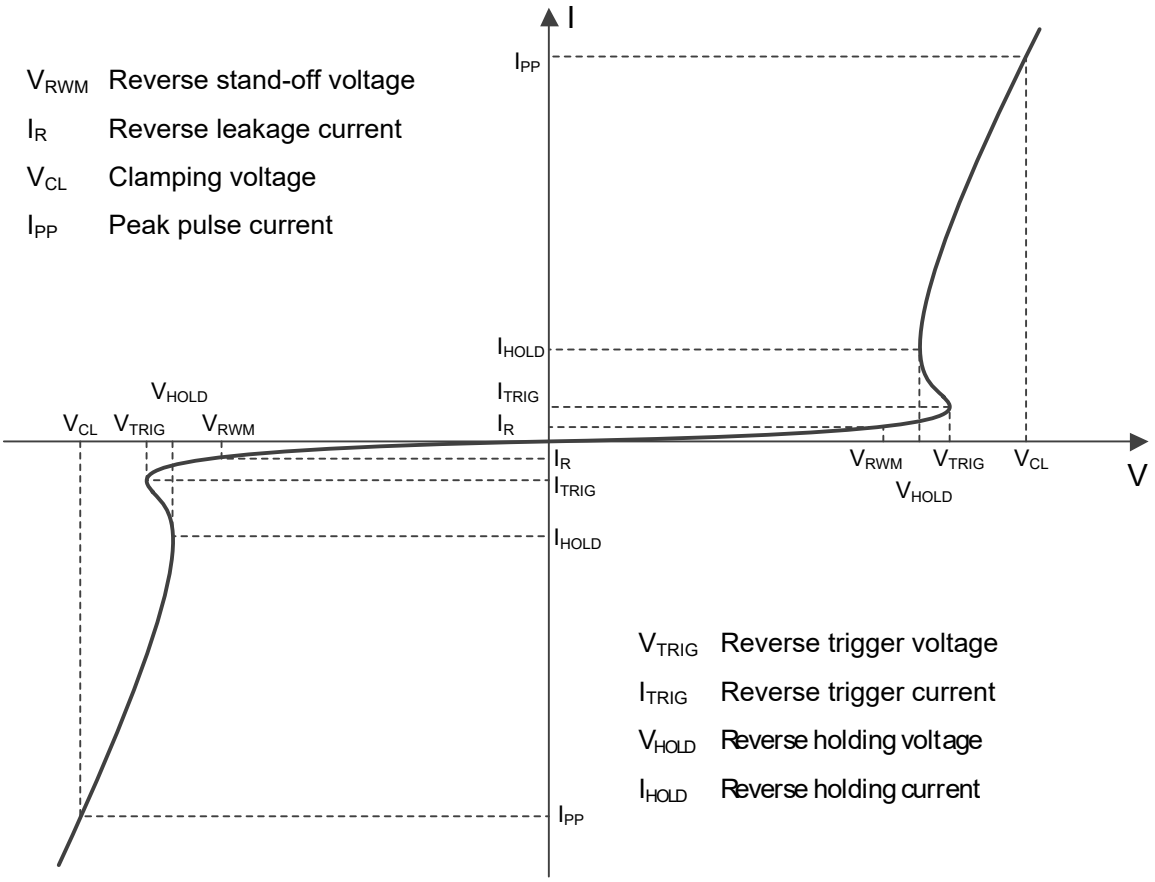


SOD-323

4.Absolute Maximum Ratings T_A= 25°C

Parameter	Symbol	Maximum	Units
Peak Pulse Power (tp=8/20s)	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	°C
Operating temperature	T_{OP}	-40 to 85	°C
Lead temperature	T_L	260	°C
Storage temperature	T_{STG}	-55 to 150	°C

5.Electrical Characteristic (T_A=25°C unless otherwise noted)



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6.Electrical Characteristic (T_A=25°C unless otherwise noted)

Type number	V_{RWM} (V)	Breakdown voltage V_{BR}(V) I_{BR}=1mA			Reverse leakage current I_{RM}(μA) at V_{RWM}		Junction capacitance F=1MHz, V_R=0V(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}=16A, t_p=100ns 2)3)	Clamping voltage V_{CL}(V) at V_{ESD} = 8kV 2)3)
ESD56151W04	150	16	6.5	7
ESD56151W05	145	16	6.7	7.5

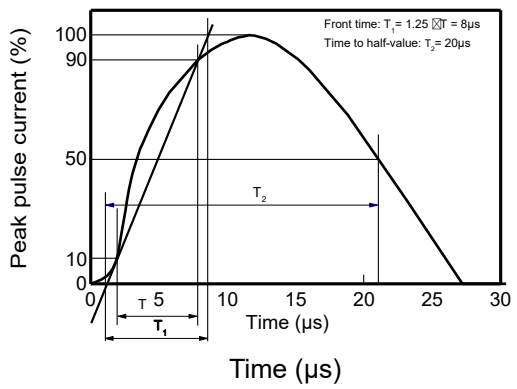
Notes:

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

2) Non-repetitive current pulse, according to IEC61000-4-2.

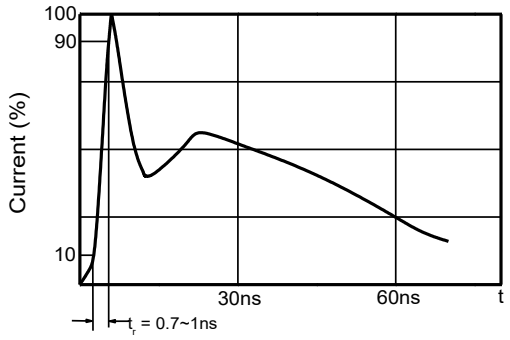
3) Measured from pin 1 to pin 2.

7.Typical characteristic



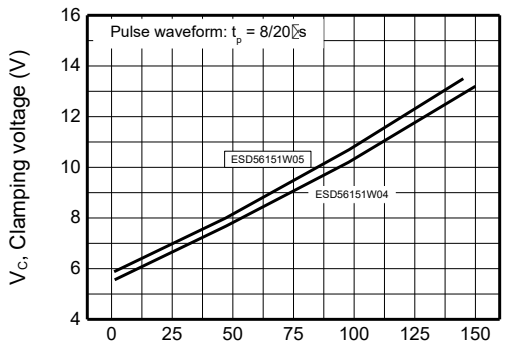
Time (μs)

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



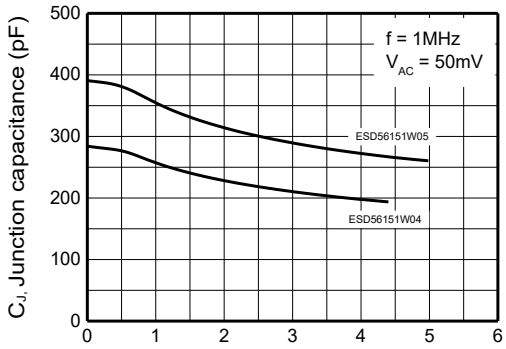
Time (ns)

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



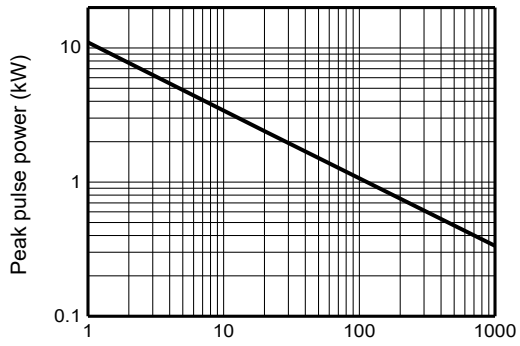
I_{PP},Peak Pulse Current(A)

Figure 3: Clamping voltage vs. Peak pulse current



V_R,Reverse voltage (V)

Figure 4: Capacitance vs. Reverse voltage



Pulse time (μs)

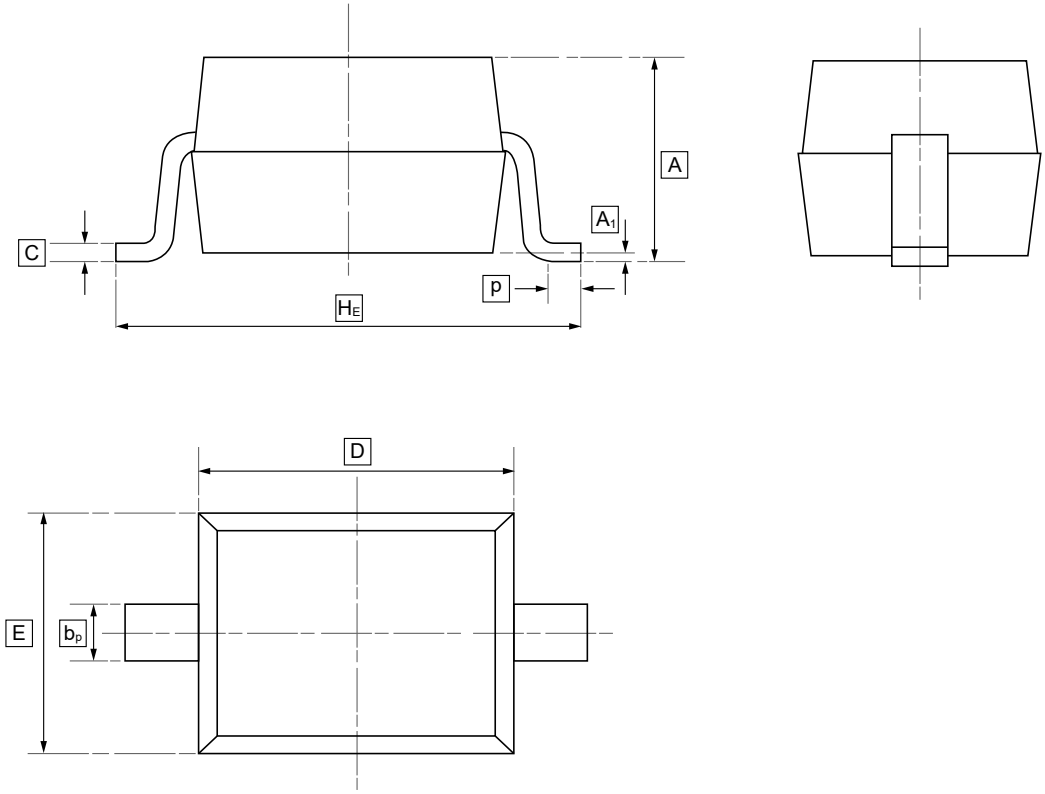
Figure 5: Non-repetitive peak pulse power vs. Pulse time



T_A, Ambient Temperature (°C)

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	0.80	0.25	0.10	1.50	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



ww: Batch Code

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

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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