UMW SFD52AxxL01

1.Description

The SBD52 series of Transient Voltage Suppressors (TVS) are designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computer, and PDAs. They offer superior electrical characteristics such as lower clamping voltage and no device degradation when compared to MLVs.

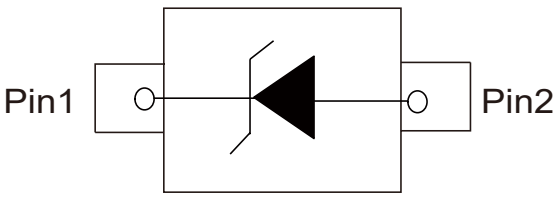
2.Applications

- Cellular handsets & Accessories
- Cordless phones
- Personal digital assistants (PDAs)
- Notebooks & Handhelds
- Portable instrumentation
- Digital cameras
- Peripherals
- MP3 players

3.Features

- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance
- Protects one I/O line
- Working voltage: 5V,7V
- Low leakage current
- Low operating and clamping voltages
- Solder reflow temperature: Pure Tin-Sn 260~270°C

4.Pinning information



SOD-523

5.Absolute Maximum Ratings

Parameter	Symbol	Value	Units
ESD voltage (Contact discharge)	V_{ESD}	±30	kV
ESD voltage (Air discharge)		±30	kV
Storage & Junction temperature range	T_{STG}, T_J	-55 to 150	°C

6.1Electrical Characteristics (SFD52A05L01)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse stand-off voltage	V_{RWM}				5	V
Reverse breakdown voltage	V_{BR}	I_{BR}=1mA	6			V
Reverse leakage current	I_R	V_R=5V			1	μA
Clamping voltage (t_p=8/20μs)	V_C	I_{PP}=1A			9.8	V
Clamping voltage (t_p=8/20μs)	V_C	I_{PP}=18A			25	V
Peak pulse current (t_p=8/20μs)	I_{PP}				18	A
Off state junction capacitance	C_J	0Vdc, f=1MHz		200		pF

6.2Electrical Characteristics (SFD52A07L01)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse stand-off voltage	V_{RWM}				7	V
Reverse breakdown voltage	V_{BR}	I_{BR}=1mA	7.5			V
Reverse leakage current	I_R	V_R=7V			1	μA
Clamping voltage (t_p=8/20μs)	V_C	I_{PP}=1A			12	V
Clamping voltage (t_p=8/20μs)	V_C	I_{PP}=16A			25	V
Peak pulse current (t_p=8/20μs)	I_{PP}				16	A
Off state junction capacitance	C_J	0Vdc, f=1MHz		190		pF

7.Typical characteristic

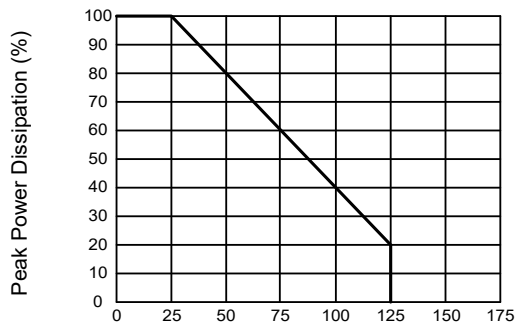


Figure 1: Power Derating Curve

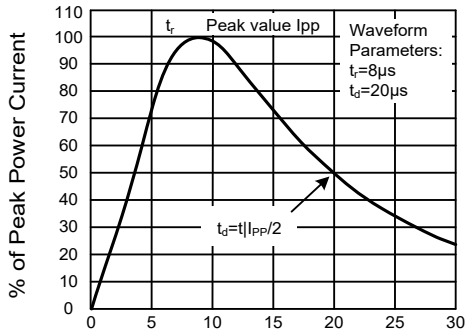


Figure 2: Pulse Waveforms

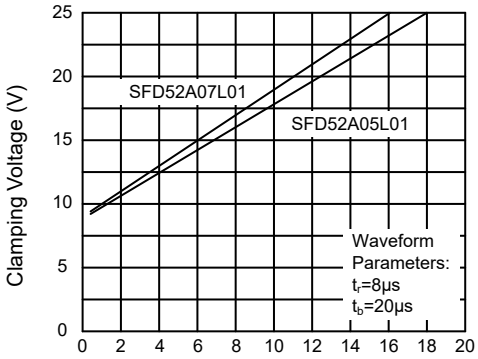
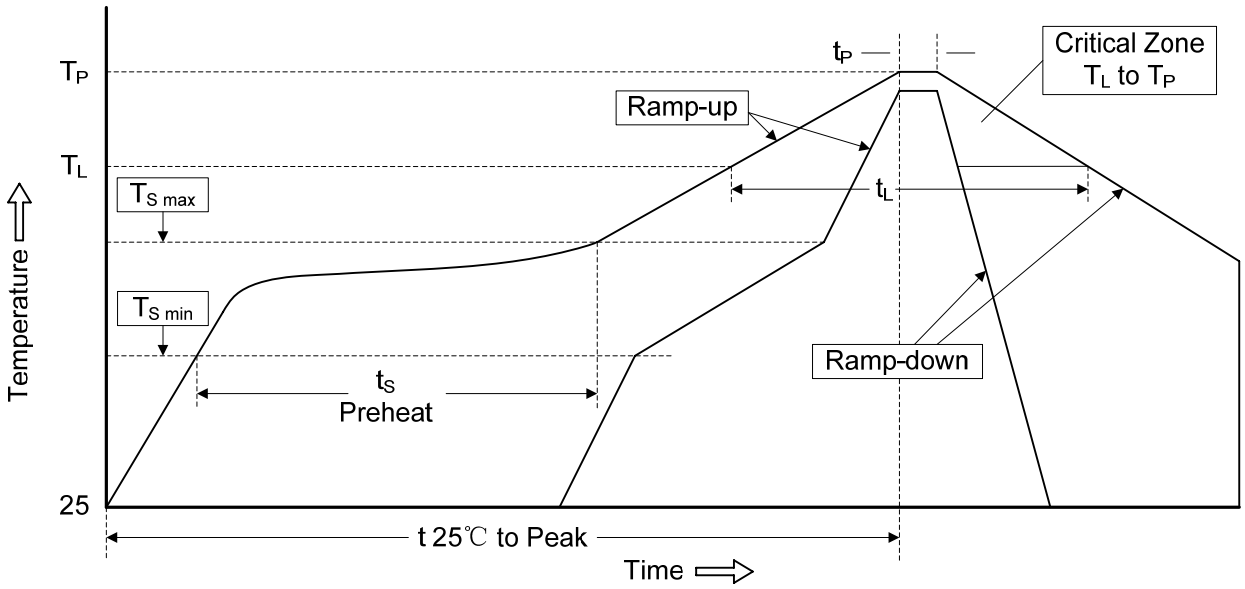


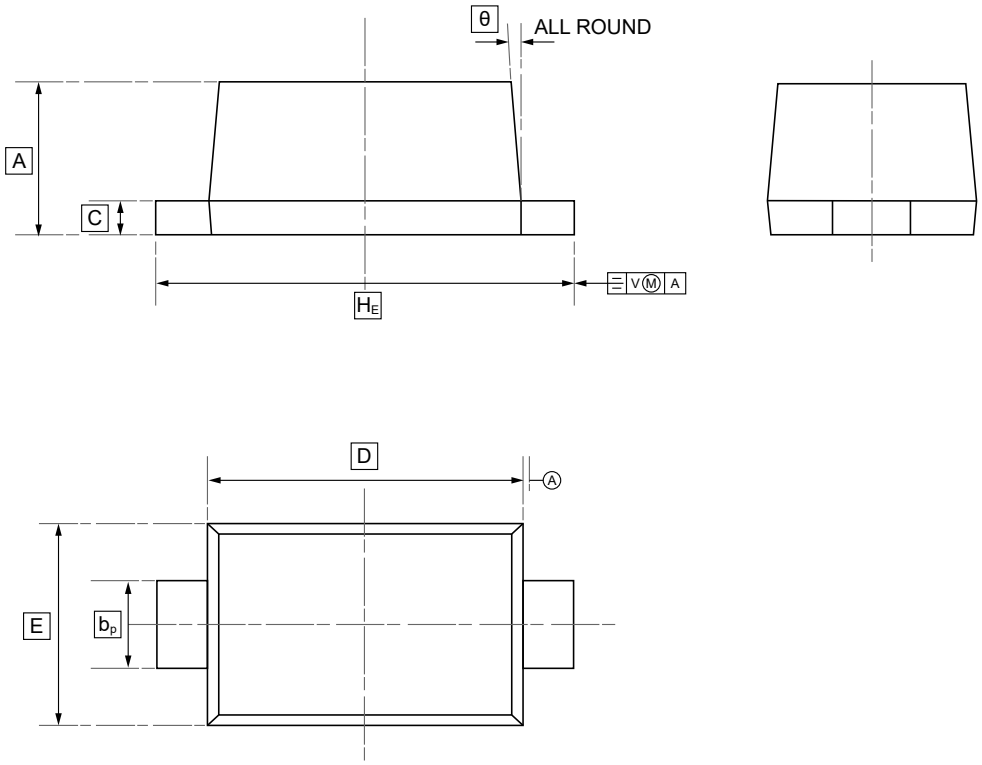
Figure 3: Clamping Voltage vs. Peak Pulse Current

8.Recommended Soldering Conditions

Profile Feature		Pb-Free Assembly
Average ramp-up rate (T_L to T_P)		3°C/second max.
Preheat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	-Time (Min to Max) (t_s)	60-180 secs.
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Time maintained above	-Temperature (T_L)	217°C
	-Time (T_L)	60-150 secs.
Peak Temperature (T_p)		260°C
Time within 5°C of actual Peak Temperature (T_p)		20-40 seconds
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temperature		8 min. Max



9.SOD-523 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	b_p	C	D	E	H_E	θ
Min	0.58	0.3	0.100	1.15	0.75	1.5	5°
Max	0.68	0.4	0.135	1.25	0.85	1.7	

10.Ordering information

ww: Batch Code

Order Code	Marking	Package	Base QTY	Delivery Mode
UMW SFD52A05L01	BG	SOD-523	3000	Tape and reel
UMW SFD52A07L01	BH	SOD-523	3000	Tape and reel

11.Disclaimer

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