

### 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.

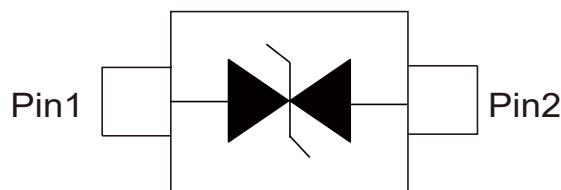
### 2. Applications

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

### 3. Features

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- Protects bi-directional line
- Peak power dissipation of 150W under 8/20µs waveform
- Working voltage: 5V
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn 260~270°C

### 4. Pinning information



**SOD-523**



## 5. Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Peak pulse power ( $t_p=8/20\mu s$ waveform)	$I_{PP}$	150	W
ESD voltage (Contact discharge)	$V_{ESD}$	$\pm 8$	kV
ESD voltage (Air discharge)		$\pm 15$	kV
Storage & Junction temperature range	$T_{STG}, T_J$	-55 to 150	°C

## 6. Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$				5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	5.6		8	V
Reverse Leakage Current	$I_R$	$V_{RWM}=5\text{V}$			5	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}$			9.8	V
Off state junction capacitance	$C_J$	0Vdc, $f=1\text{MHz}$		30		pF



## 7. Typical characteristic

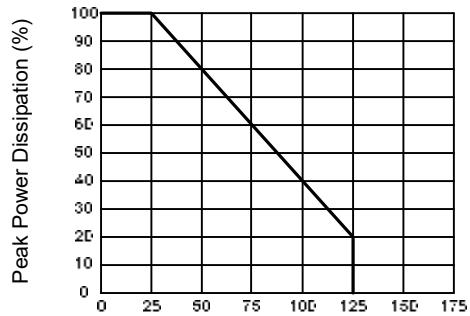


Figure 1: Power Derating Curve

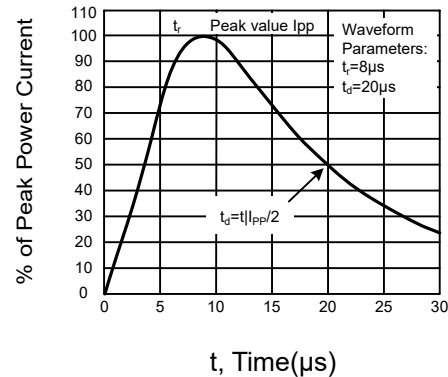


Figure 2: % of Peak Power Current

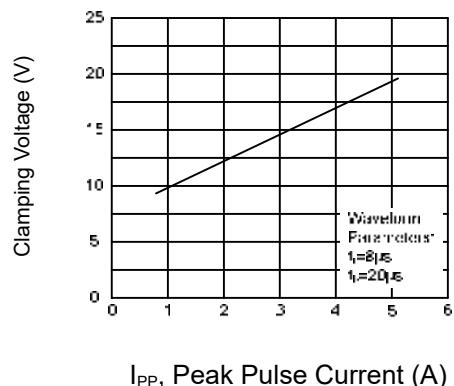


Figure 3: Clamping Voltage vs. Peak Pulse Current

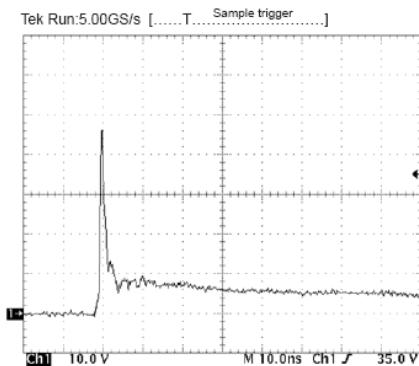
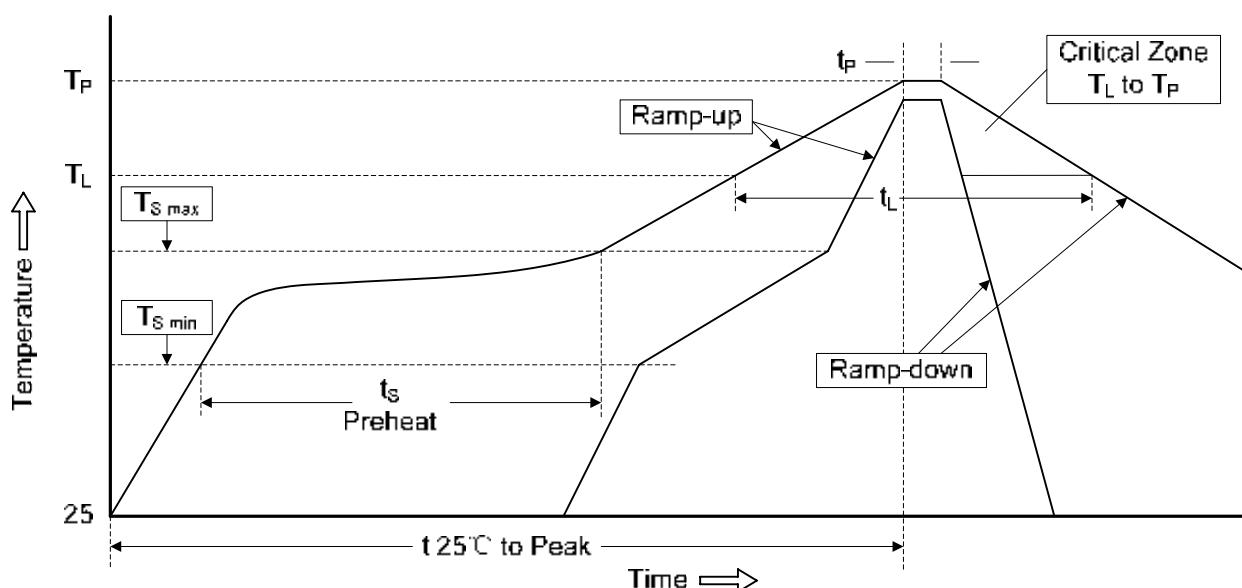


Figure 4: ESD Clamping (8kV Contact IEC61000-4-2)



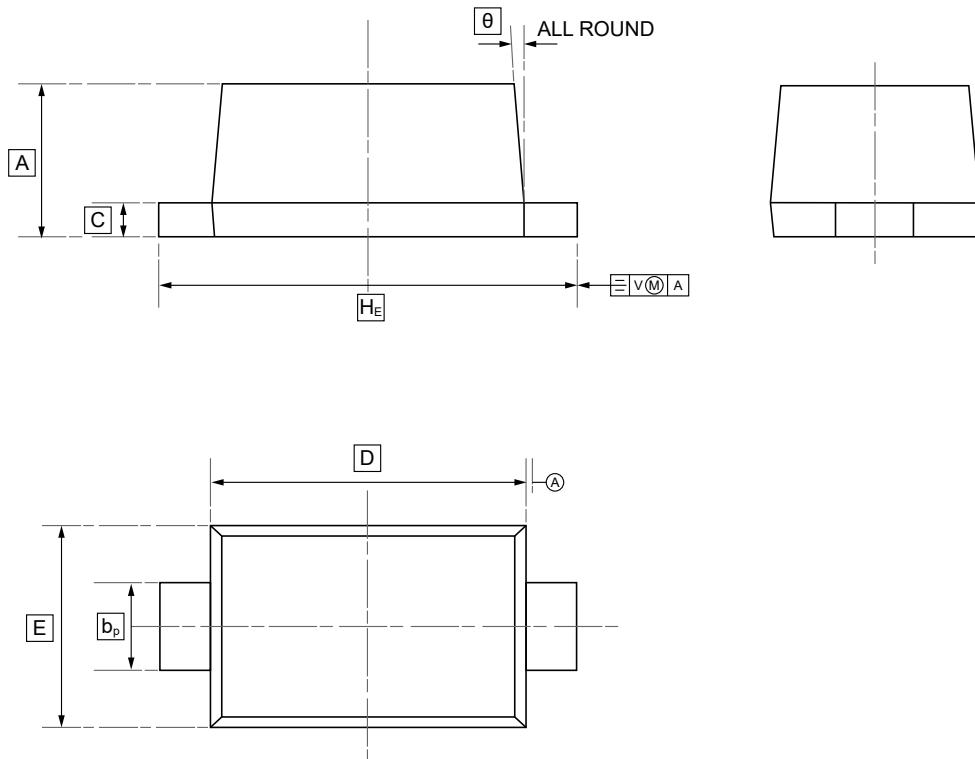
## 8. Recommended Soldering Conditions

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

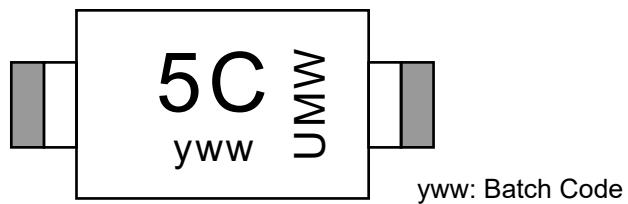


### DIMENSIONS (mm are the original dimensions)

Symbol	A	$b_p$	C	D	E	$H_E$	$\theta$
<b>Min</b>	0.58	0.3	0.100	1.15	0.75	1.5	5°
<b>Max</b>	0.68	0.4	0.135	1.25	0.85	1.7	



## 10.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW SBD52C05L01	SOD-523	3000	Tape and reel



## 11.Disclaimer

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