

## Transient Voltage Suppressor

### Features

- Small Body Outline Dimensions
- Low Body Height: 0.024" (0.6 mm) nom
- Bidirectional ESD protection of one I/O line
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- Solid-state silicon-avalanche technology



### IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)

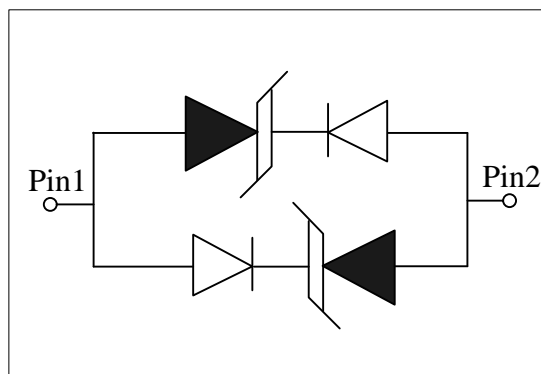
### Mechanical Characteristics

- JEDEC SOD-523 package
- Marking : Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

### Applications

- Cellular Handsets & Accessories
- Personal Digital Assistants (PDAs)
- Notebooks & Handhelds
- Portable Instrumentation
- Digital Cameras
- MP3 players

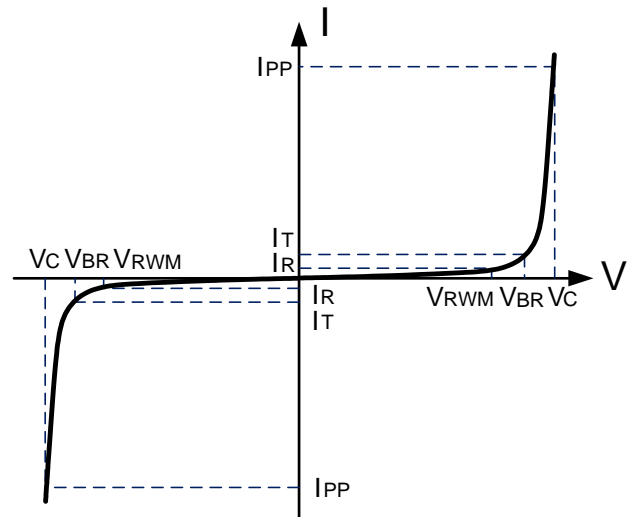
### Schematic & PIN Configuration



Absolute Maximum Rating			
Rating	Symbol	Value	Units
Operating Temperature	T <sub>J</sub>	-55 to + 125	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C

Electrical Parameters (T=25°C)

Symbol	Parameter
I <sub>PP</sub>	Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>RWM</sub>	Reverse Stand-Off Voltage
I <sub>R</sub>	Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current



Electrical Characteristics

WE05D5UC-B						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V <sub>RWM</sub>				5.0	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> =1mA	6.0		10.0	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>RWM</sub> =5V, T=25°C			200	nA
ESD Clamping Voltage <sup>1</sup>	V <sub>C</sub>	I <sub>PP</sub> = 4A t <sub>p</sub> = 0.2/100ns		11.9		V
ESD Clamping Voltage <sup>1</sup>	V <sub>C</sub>	I <sub>PP</sub> = 16A t <sub>p</sub> = 0.2/100ns		23.4		V
Dynamic Resistance <sup>1,2</sup>	R <sub>DYN</sub>	TLP=0.2/100ns		0.95		Ω
Junction Capacitance	C <sub>j</sub>	V <sub>R</sub> =0V, f=1MHz		0.5	1.0	pF

Notes : 1、 TLP Setting : t<sub>p</sub>=100ns, t<sub>r</sub>=0.2ns, I<sub>TLP</sub> and V<sub>TLP</sub> sample window:t<sub>1</sub>=70ns to t<sub>2</sub>=90ns.  
 2、 Dynamic resistance calculated from I<sub>PP</sub>=4A to I<sub>PP</sub>=16A using “Best Fit”.

Typical Characteristics

Figure 1: Normalized Junction Capacitance vs. Reverse Voltage

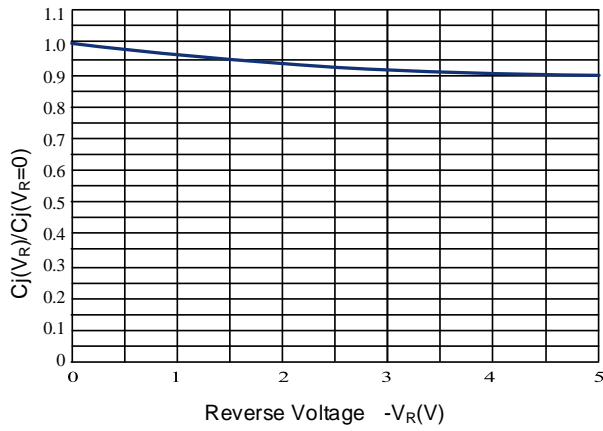


Figure 2: Power Derating Curve

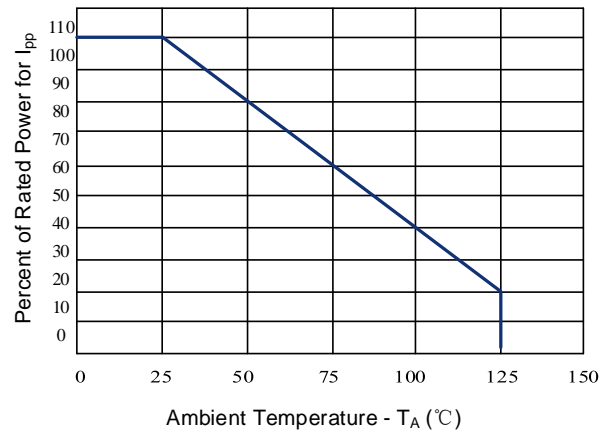


Figure 3: TLP Positive I-V Curve

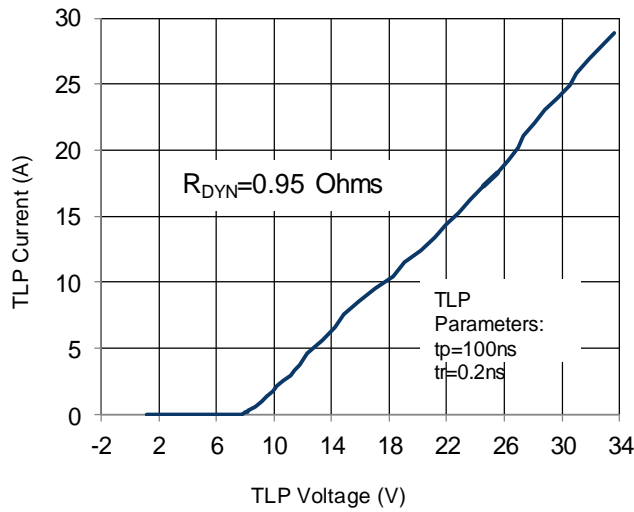
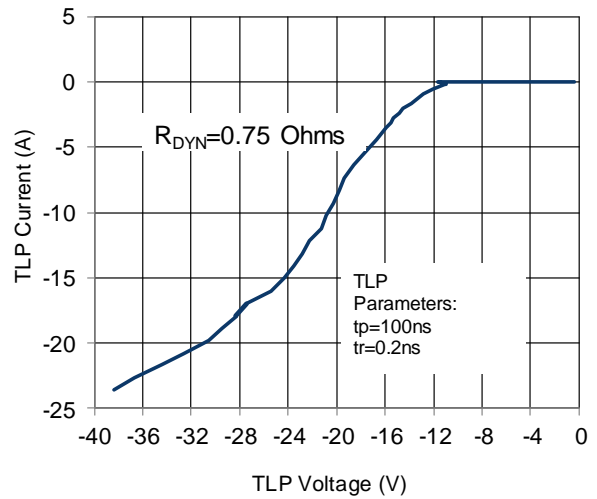
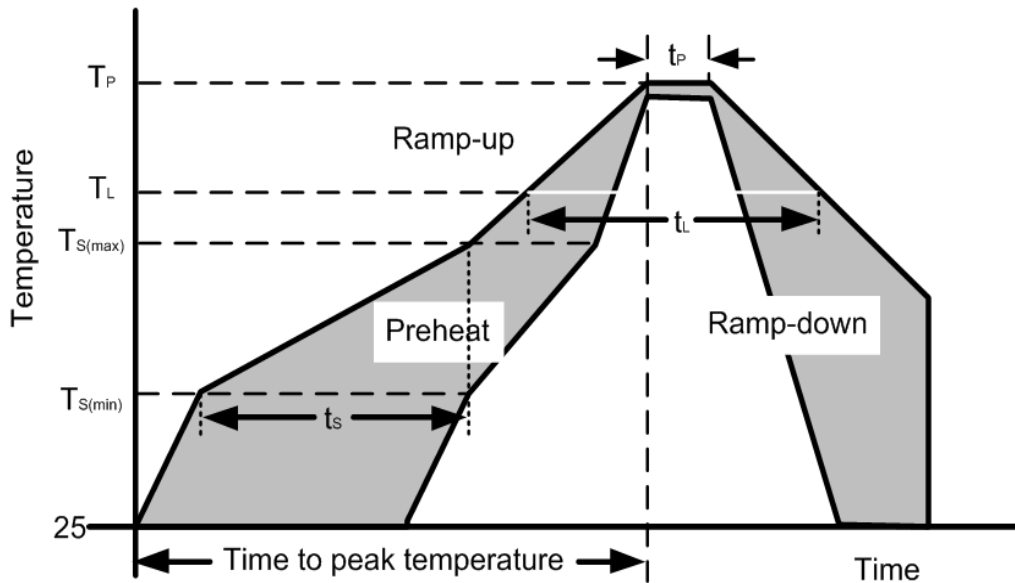


Figure 4: TLP Negative I-V Curve

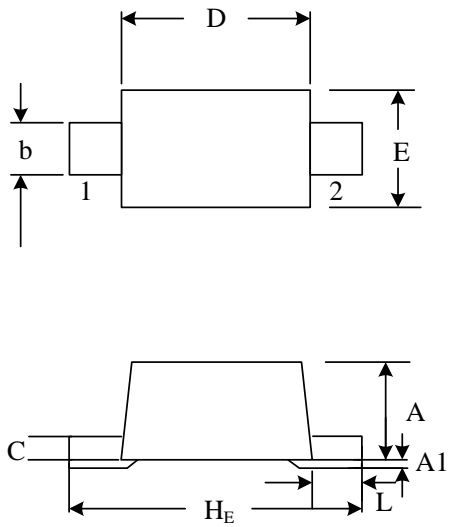
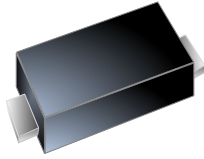
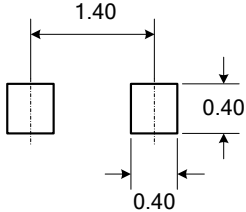


Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	Temperature Min ( $T_{S(min)}$ )	150°C
	Temperature Max ( $T_{S(max)}$ )	200°C
	Time (min to max) ( $t_s$ )	60 – 190 secs
Average ramp up rate (Liquidus Temp) ( $T_L$ ) to peak		5°C/second max
$T_{S(max)}$ to $T_L$ —Ramp-up Rate		5°C/second max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217°C
	Temperature ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_P$ )		260+0/-5 °C
Time within actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature ( $T_P$ )		8 minutes Max.
Do not exceed		280°C



Outline Drawing – SOD-523

<p style="text-align: center;"><b>PACKAGE OUTLINE</b></p> 	 <p><b>SOD-523</b></p>																																																	
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**Marking Codes**

Part Number	WE05D5UC-B
Marking Code	5S

**Package Information**

Qty: 5k/Reel

**CONTACT INFORMATION**

No.1001, Shiwan (7) Road, Pudong District, Shanghai, P.R.China.201207  
 Tel: 86-21-68969993 Fax: 86-21-50757680 Email: [market@way-on.com](mailto:market@way-on.com)  
 WAYON website: <http://www.way-on.com>

For additional information, please contact your local Sales Representative.

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Specifications are subject to change without notice.  
 The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.  
 Users should verify actual device performance in their specific applications.