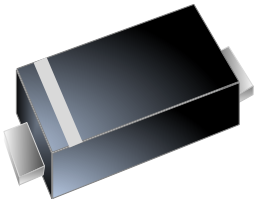
WE18D5

Transient Voltage Suppressor

Features

- Small Body Outline Dimensions
- 270 Watts peak pulse power (t_p = 8/20μs)
- Protects one I/O or power line
- Low clamping voltage
- Working voltage: 18V
- Low leakage current



SOD-523

IEC COMPATIBILITY (EN61000-4)

- **IEC 61000-4-2 (ESD) ±30kV (air), ±30kV (contact)**
- **IEC 61000-4-4 (EFT) 40A (5/50ns)**
- **IEC 61000-4-5 (Lightning) 7.5A (8/20μs)**

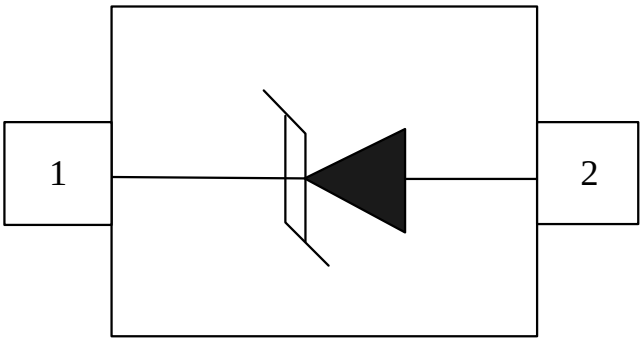
Mechanical Characteristics

- SOD-523 package
- Marking : Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant & HF
- Device meets MSL3 requirement

Applications

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

Schematic & PIN Configuration



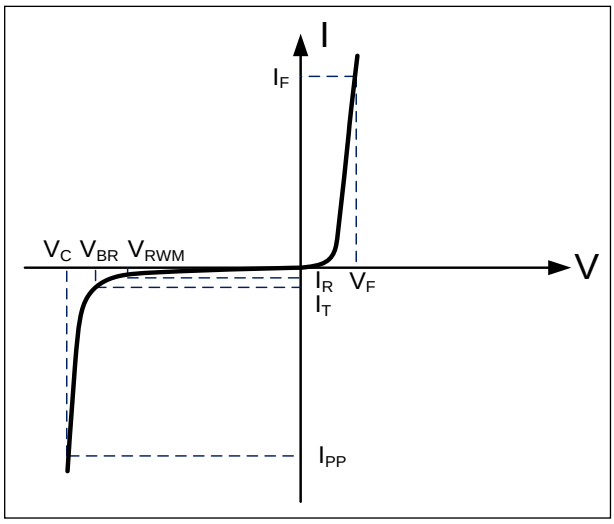
SOD-523 (Top View)

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_p = 8/20μs)	P_{PP}	270	Watts
Peak Pulse Current (t_p = 8/20μs)	I_{PP}	7.5	A
Operating Temperature	T_J	-55 to + 125	℃
Storage Temperature	T_{STG}	-55 to +150	℃

Electrical Parameters

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics(T=25℃ unless otherwise noted)

WE18D5						
Parameter	**Symbol**	**Conditions**	**Minimum**	**Typical**	**Maximum**	**Units**
Reverse Stand-Off Voltage	V_{RWM}				18	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	19			V
Reverse Leakage Current	I_R	V_{RWM}=18V			200	nA
Forward Voltage	V_F	I_F=10mA	0.6		1.2	V
Clamping Voltage	V_C	I_{PP}=1A, t_p=8/20μs			25	V
Clamping Voltage	V_C	I_{PP}=7.5A, t_p=8/20μs		33	36	V
ESD Clamping Voltage[1]	V_C	I_{PP} = 4A t_p = 0.2/100ns		23.3		V
ESD Clamping Voltage[1]	V_C	I_{PP} = 16A t_p = 0.2/100ns		27.6		V
Dynamic Resistance[1,2]	R_{DYN}	TLP=0.2/100ns		0.36		Ω
Junction Capacitance	C_j	V_R =0V, f =1MHz		31	50	pF

Note：1、TLP Setting：t_p=100ns, t_r=0.2ns, I_{TLP} and V_{TLP} sample window:t_1=70ns to t_2=90ns.

2、Dynamic resistance calculated from I_{PP}=4A to I_{PP}=16A using “Best Fit”

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

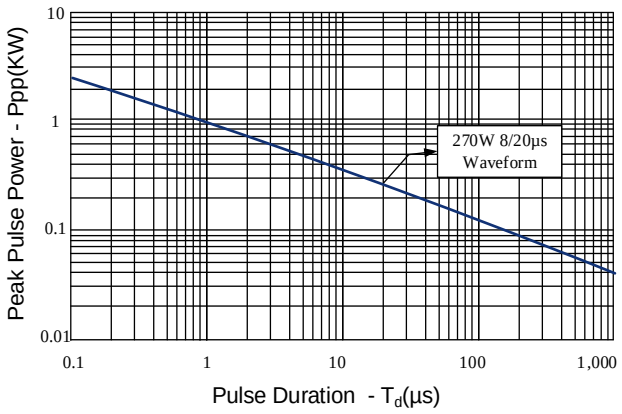


Figure 2: Power Derating Curve

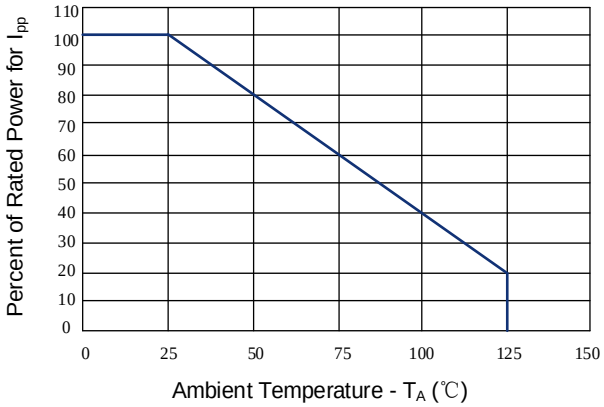


Figure 3: Clamping Voltage vs. Peak Pulse Current

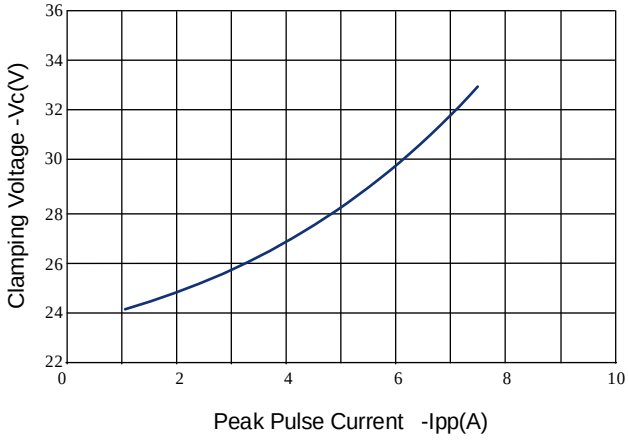


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

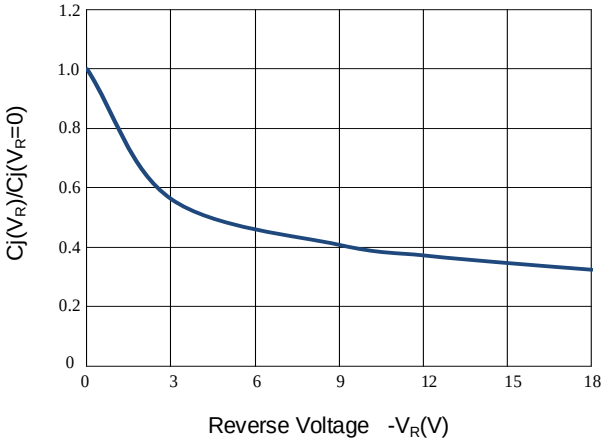


Figure 5: 8/20μs Pulse Waveform

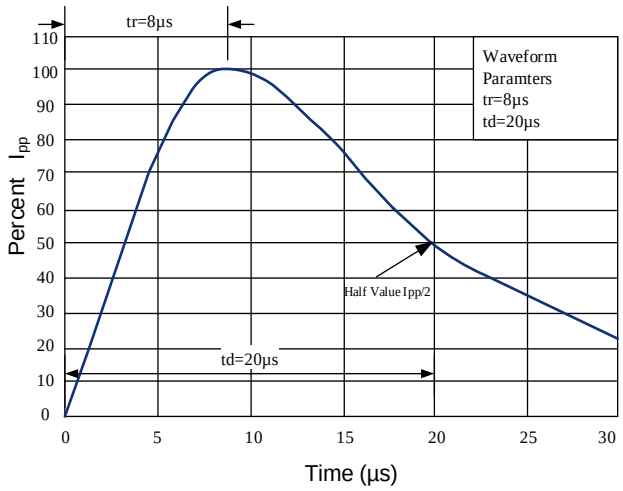
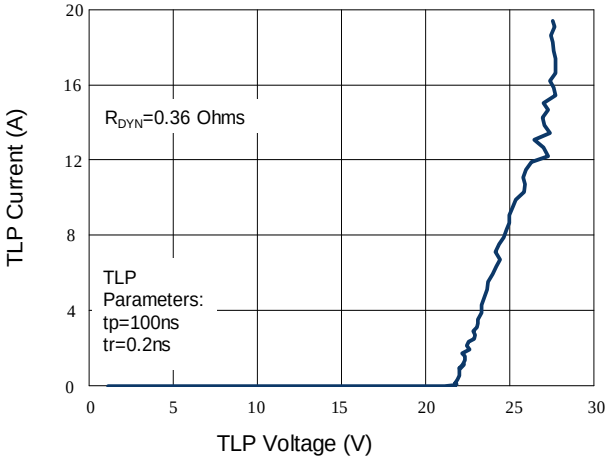
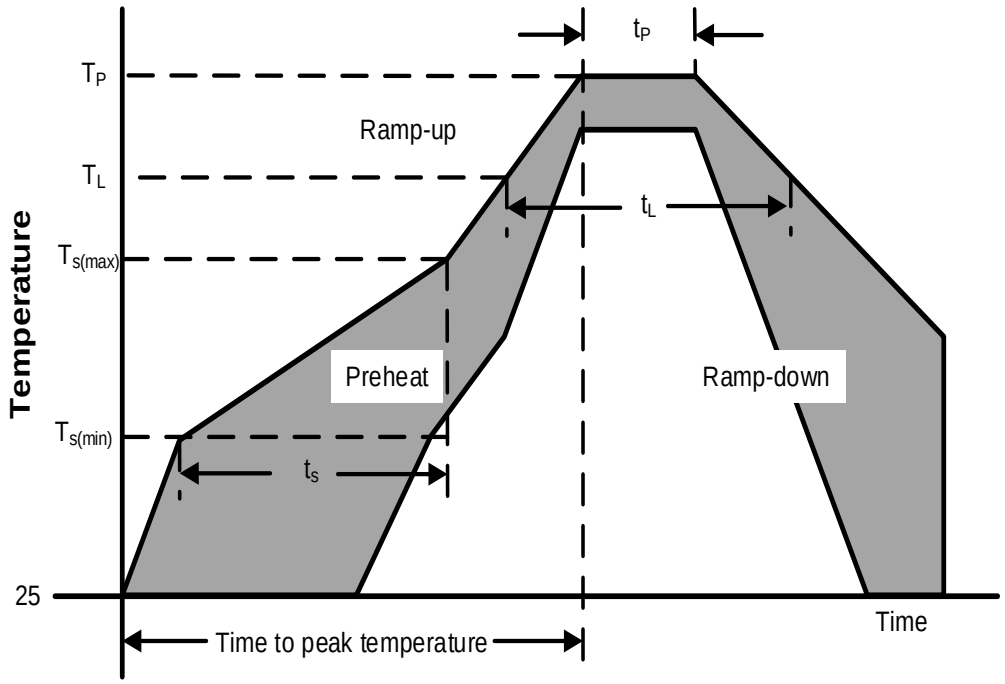


Figure 6: TLP Curve



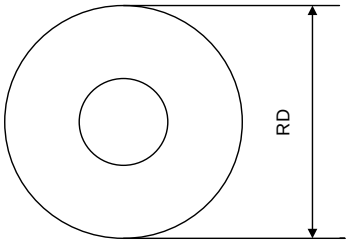
Soldering Parameters

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) (ts)	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

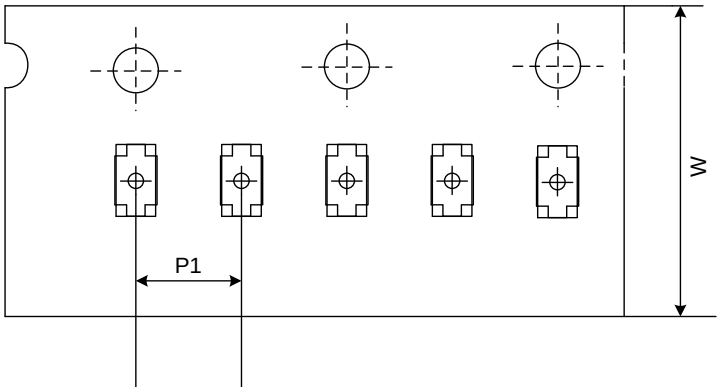


Tape And Reel Information

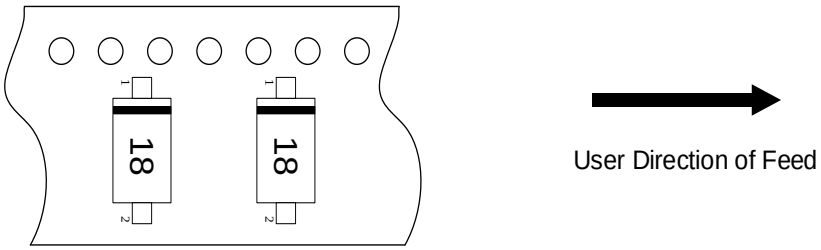
Reel Dimensions



Tape Dimensions



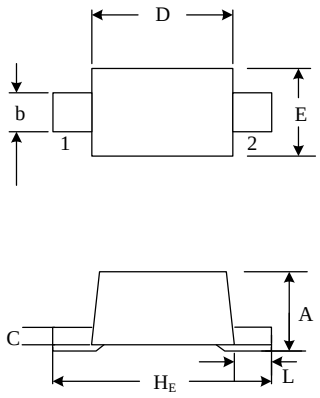
Quadrant Assignments For PIN1 Orientation In Tape

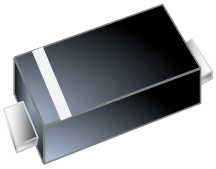


RD	Reel Dimensions	7 inch
W	Overall width of the carrier tape	8 mm
P1	Pitch between successive cavity centers	2mm

Outline Drawing –SOD-523

PACKAGE OUTLINE





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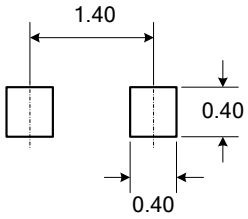
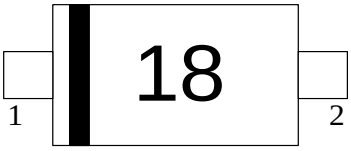
SYMBOL	MILLIMETERS	
	MIN	MAX
A	0.50	0.77
b	0.25	0.35
C	0.07	0.20
D	1.10	1.30
E	0.70	0.90
H_E	1.50	1.70
L	0.15	0.25



DIMENSIONS: MILLIMETERS

Notes:
Controlling Dimension: Millimeter.

Marking Codes

Part Number	WE18D5
Marking Code	

Package Information

Qty：5k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.