



WS07D3HP

Transient Voltage Suppressor

Features

- 2000 Watts Peak Pulse Power per Line ($t_p = 8/20\mu s$)
- Replacement for MLV (0805)
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage: 7V
- Low Leakage Current



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 100A (8/20 μs)

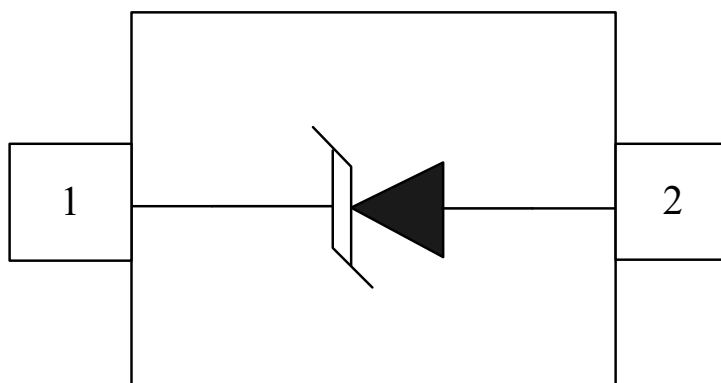
Mechanical Characteristics

- JEDEC SOD-323F package
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant & HF
- Device meets MSL3 requirement

Applications

- Laptop Computers
- Cellular Phones
- Digital Cameras
- Personal Digital Assistants (PDAs)

Schematic & PIN Configuration

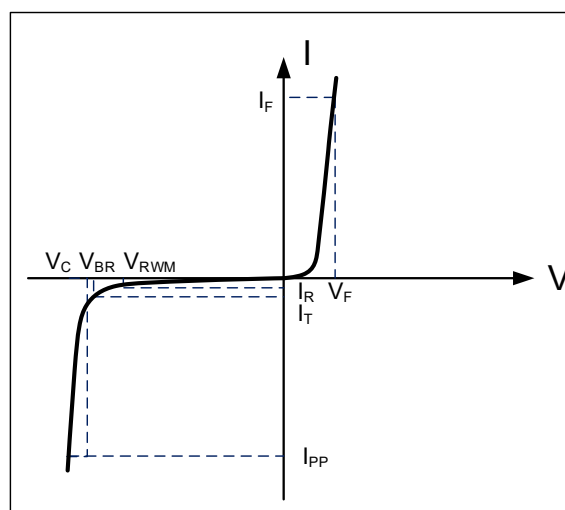


SOD-323F (Top View)

Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{PP}	2000	Watts
Peak Pulse Current ($t_p=8/20\mu s$)	I_{PP}	100	A
Operating Temperature	T_J	-55 to + 125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

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°C unless otherwise noted)

WS07D3HP						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				7.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	7.7			V
Reverse Leakage Current	I_R	$V_{RWM}=7V, T=25^\circ C$			200	nA
Forward Voltage	V_F	$I_F=10mA$	0.6		1.0	V
Clamping Voltage	V_C	$I_{PP}=100A, t_p=8/20\mu s$		16	20	V
Dynamic Resistance ^{1,2}	R_{DYN}	$TLP=0.2/100ns$		0.12		Ω
ESD Clamping Voltage ¹	V_C	$I_{PP}=4A, t_p=0.2/100ns (TLP)$		8.7		V
ESD Clamping Voltage ¹	V_C	$I_{PP}=16A, t_p=0.2/100ns (TLP)$		10.1		V
Junction Capacitance	C_j	$V_R=0V, f=1MHz$		700	1000	pF

Notes: 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

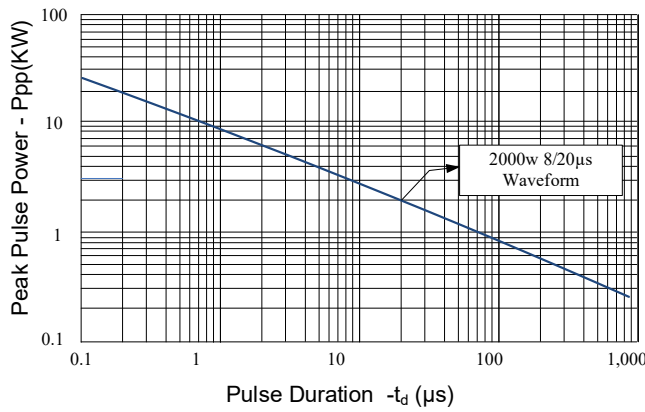


Figure 2: Power Derating Curve

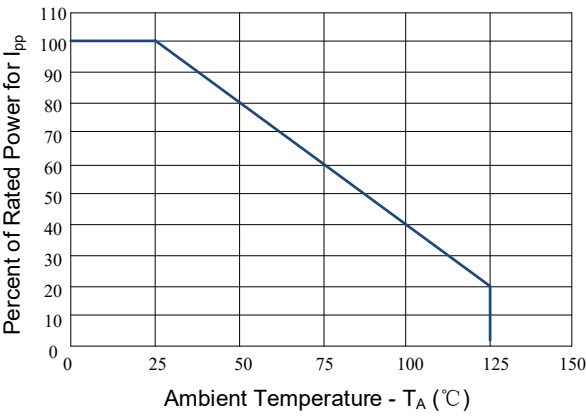


Figure 3: Clamping Voltage vs. Peak Pulse Current

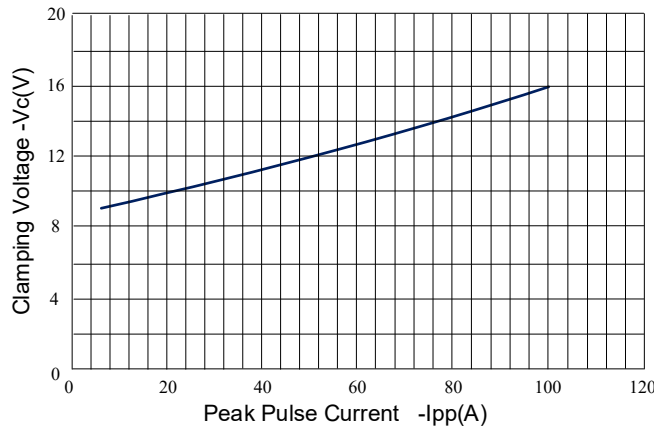


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

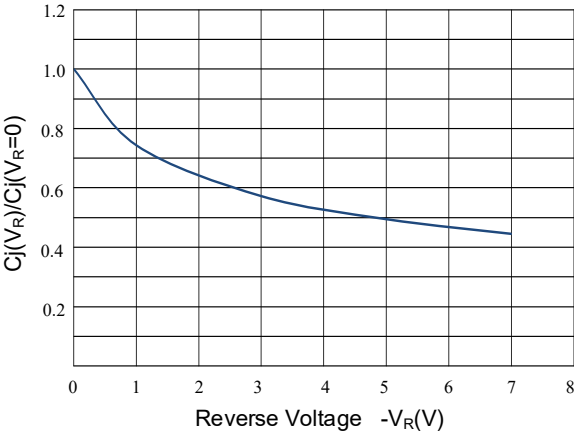


Figure 5: 8/20μs Pulse Waveform

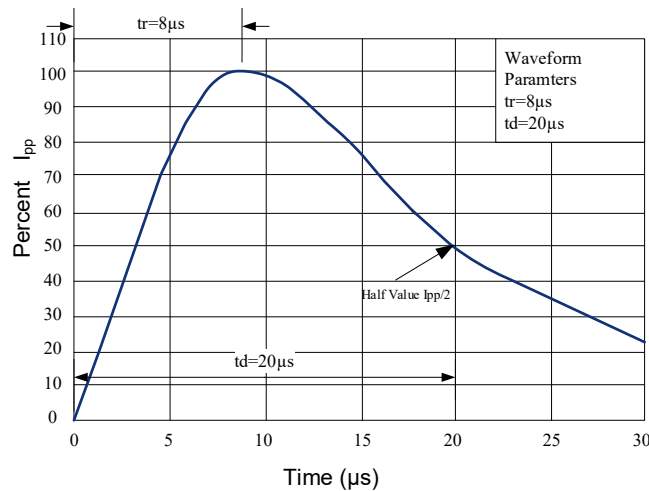
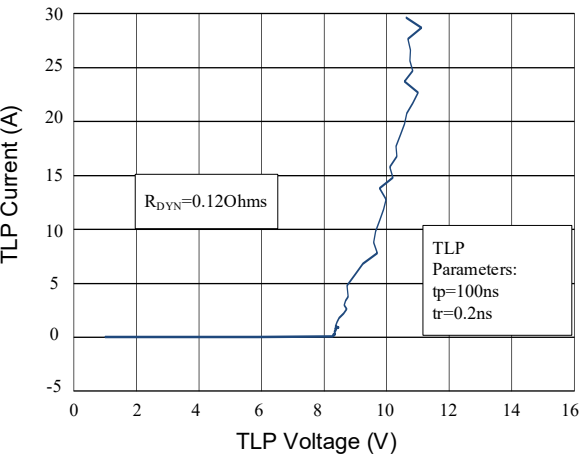
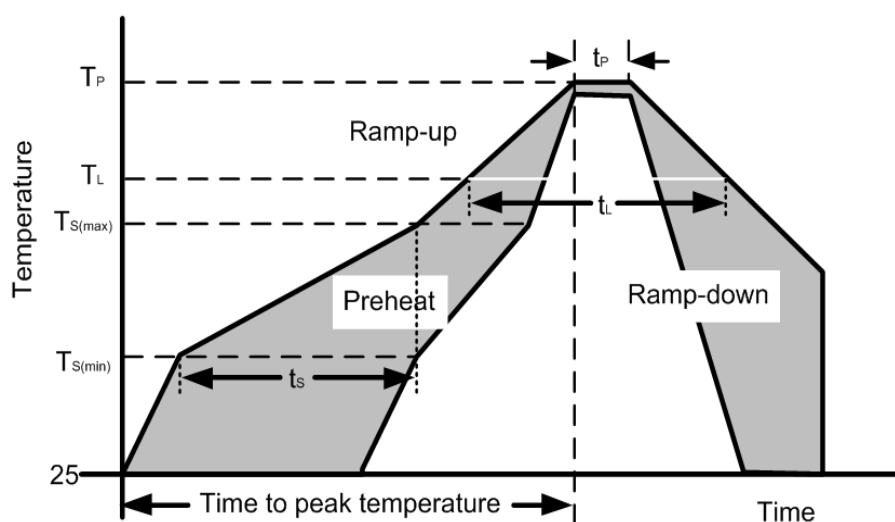


Figure 6: TLP Curve



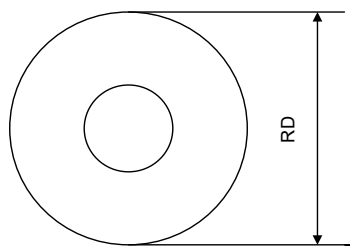
Soldering Parameters

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) (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

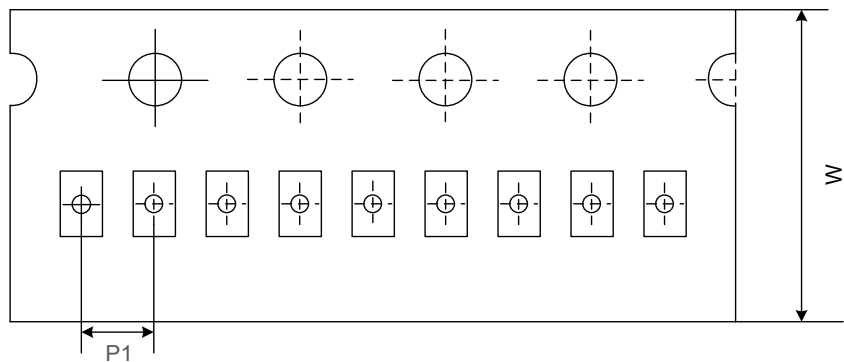


Tape And Reel Information

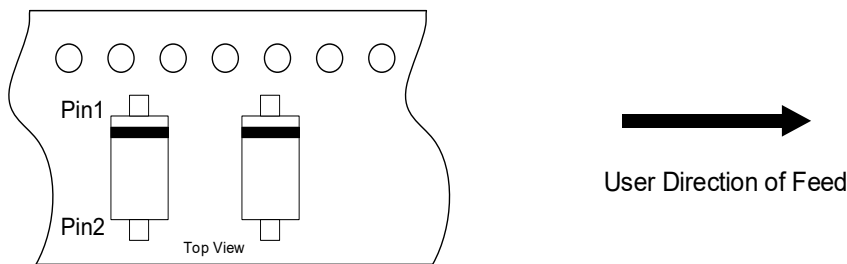
Reel Dimensions



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	4mm

Outline Drawing – SOD-323F

Outline Drawing SOD-323F

PACKAGE OUTLINE

Top view of the SOD-323F package. It shows a central rectangular body with two leads extending from the sides. Dimension D is the width of the central body. Dimension b is the width of each lead. The leads are labeled 1 and 2.

Side view of the SOD-323F package. It shows the profile of the package. Dimension A is the total height. Dimension C is the height of the leads. Dimension H_E is the height of the central body. Dimension L is the length of the leads.

3D perspective view of the SOD-323F package, showing its rectangular shape and the two leads.

SOD-323F

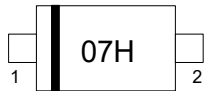
SYMBOL	MILLIMETERS		
	MIN	TYP	MAX
A	0.60	0.65	0.75
b	0.25	0.30	0.40
C	0.06	0.13	0.21
D	1.60	1.70	1.80
E	1.15	1.25	1.35
H _E	2.30	2.50	2.70
L	0.30	0.40	0.50

Dimensional drawing showing a 3.00mm width and 0.80mm height for a specific feature. The drawing shows two rectangular blocks. The top block has a width of 3.00mm and a height of 0.80mm. The bottom block has a width of 0.80mm and a height of 0.80mm.

DIMENSIONS: MILLIMETERS

Notes:
Controlling Dimension: Millimeter.

Marking Codes

Part Number	Marking Code
WS07D3HP	

Package Information


Qty: 3k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.


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Product Specification Statement

1. The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.
2. The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.
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4. Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.
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