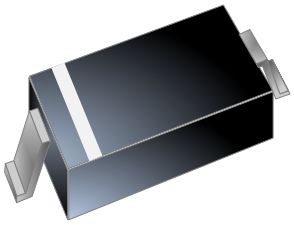
WS15DLC

Transient Voltage Suppressor

Features

- 490 Watts Peak Pulse Power per Line (tp = 8/20μs)
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage: 15V
- Low Leakage Current



SOD-323

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) 14A (8/20μs)**

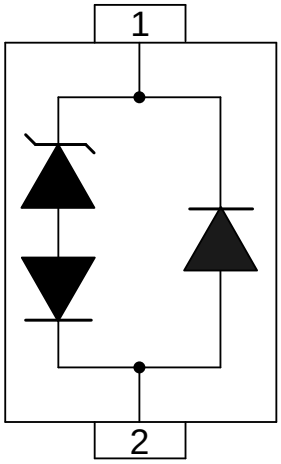
Mechanical Characteristics

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

Applications

- Ethernet - 10/100/1000 Base T
- Cellular Phones
- Handheld - Wireless Systems
- Personal Digital Assistant (PDA)
- USB Interface

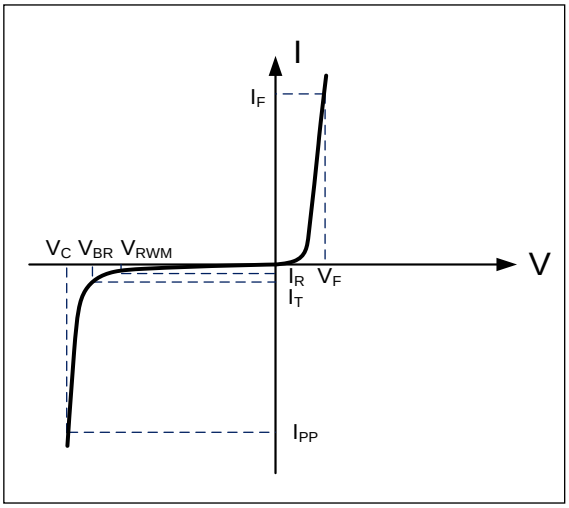
PIN Configuration



Absolute Maximum Rating			
Rating	**Symbol**	**Value**	**Units**
Peak Pulse Power (t_p = 8/20μs)	P_{PP}	490	Watts
Peak Pulse Current (t_p = 8/20μs)	I_{PP}	14	A
Operating Temperature	T_J	-55 to + 150	℃
Storage Temperature	T_{STG}	-55 to +150	℃

Electrical Parameters

Symbo	Parameter
I_{PP}	Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RW}	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)

WS15DLC						
Parameter	**Symbol**	**Conditions**	**Minimum**	**Typical**	**Maximum**	**Units**
Reverse Stand-Off Voltage	V_{RWM}				15	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	16.7			V
Reverse Leakage Current	I_R	V_{RWM}=15V			500	nA
Forward Voltage	V_F	I_F=10mA	0.5		1.2	V
Clamping Voltage	V_C	I_{PP}=14A, t_p=8/20μs		30	35	V
Dynamic Resistance[1,2]	R_{DYN}	TLP=0.2/100ns		0.5		Ω
ESD Clamping Voltage[1]	V_C	IPP = 4A, tp = 0.2/100ns (TLP)		20.6		V
ESD Clamping Voltage[1]	V_C	IPP = 16A, tp = 0.2/100ns (TLP)		26.4		V
Junction Capacitance	C_j	V_R =0V, f =1MHz		1	1.35	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

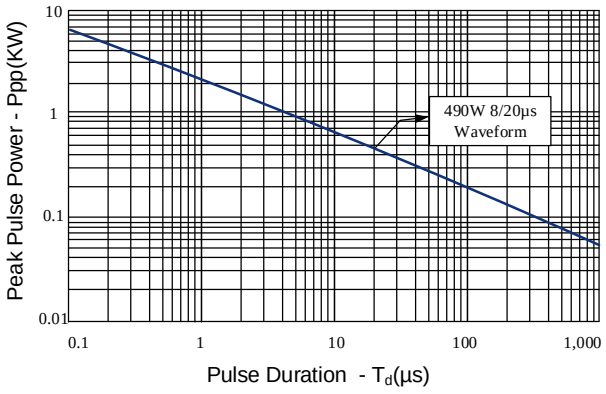


Figure 2: Power Derating Curve

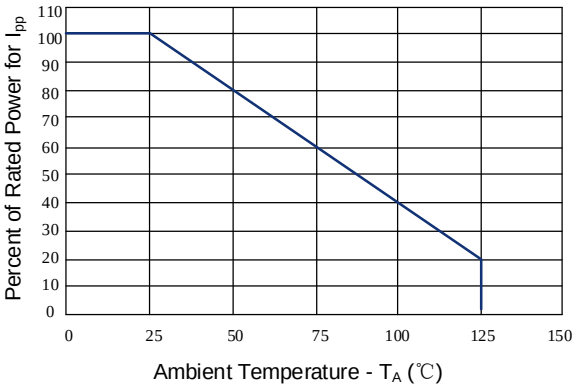


Figure 3: Clamping Voltage vs. Peak Pulse Current

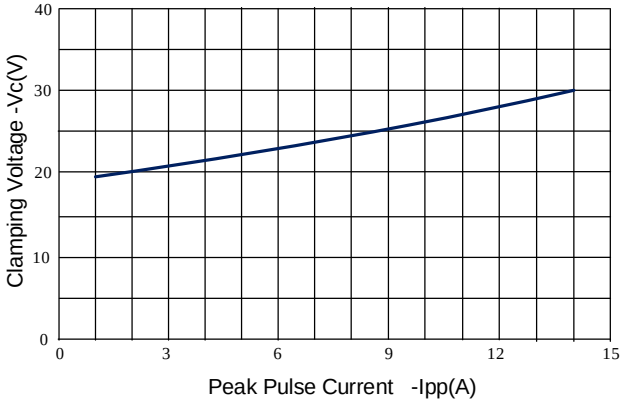


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

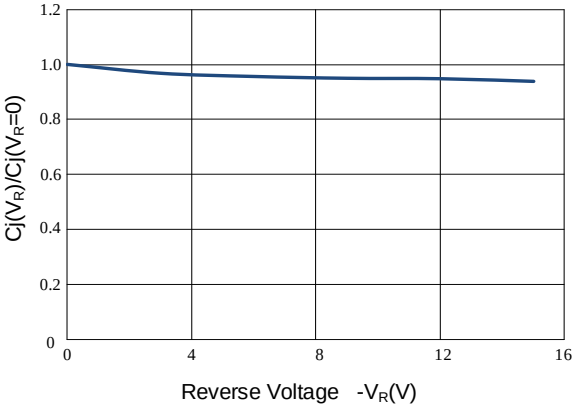


Figure 5: 8/20μs Pulse Waveform

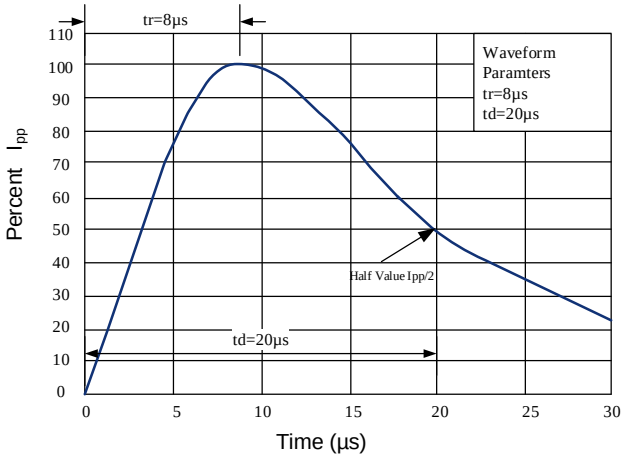
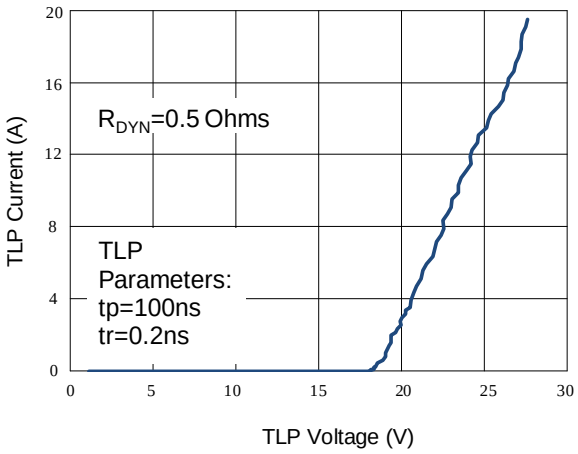
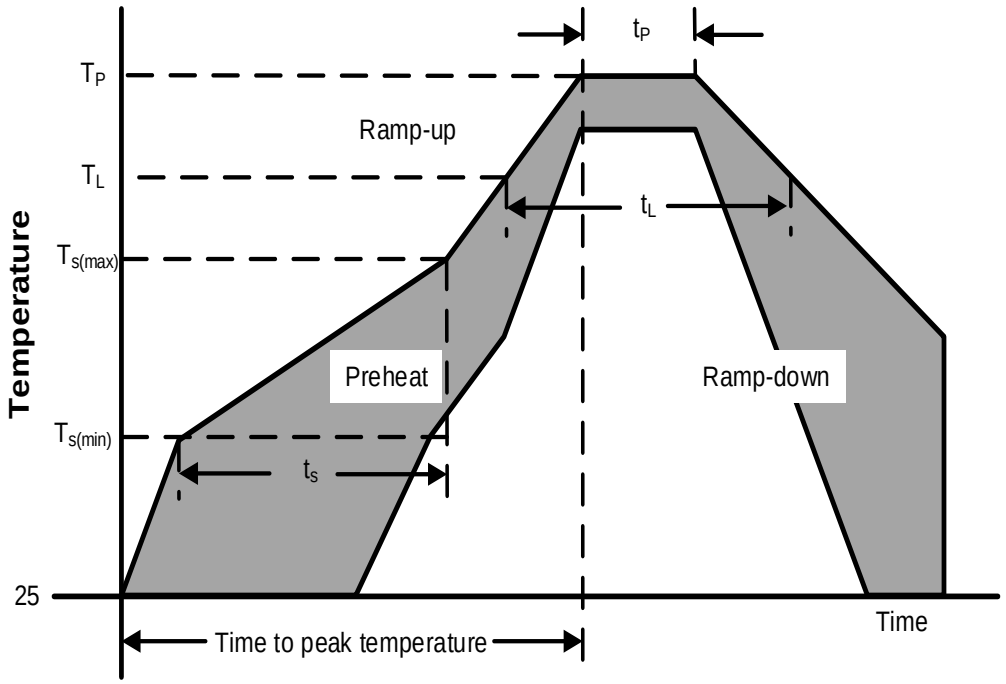


Figure 6: TLP I-V Curve



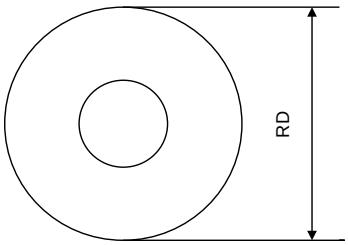
Soldering Parameters

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) (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

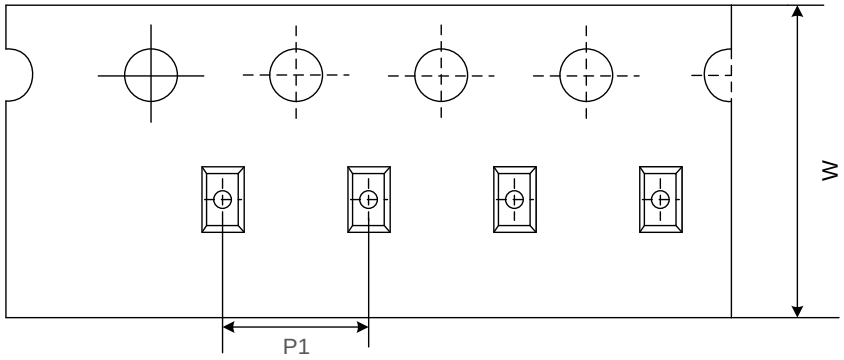


Tape And Reel Information

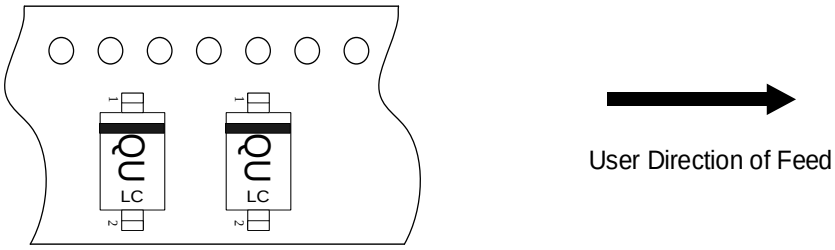
Reel Dimensions



Tape Dimensions



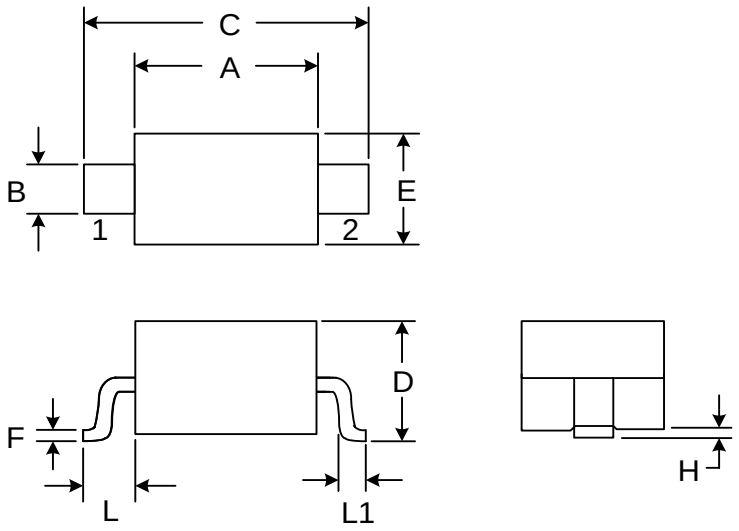
Quadrant Assignments For PIN1 Orientation In Tape

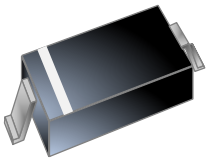


RD	Reel Dimensions	7 inch
W	Overall width of the carrier tape	8 mm
P1	Pitch between successive cavity centers	4mm

Outline Drawing – SOD-323

PACKAGE OUTLINE



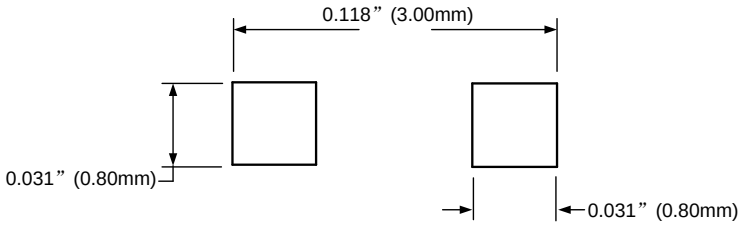


SOD-323

DIMENSIONS

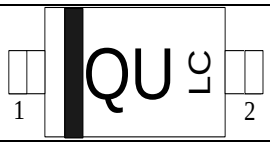
SYMBOL	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.52	1.80	0.060	0.071
B	0.25	0.40	0.010	0.016
C	2.46	2.71	0.097	0.107
D	0.80	1.16	0.031	0.046
E	1.11	1.40	0.044	0.055
F	0.08	0.20	0.003	0.008
L	0.475 REF		0.019REF	
L1	0.25	0.40	0.010	0.016
H	0.00	0.10	0.000	0.004

MOUNTING PAD



Notes:
Controlling Dimension: Millimeter.

Marking Codes

Part Number	WS15DLC
Marking Code	

Package Information

Qty：3k/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
WAYON website: **http://www.way-on.com**

For additional information, please contact your local Sales Representative.

WAYON ® is registered trademark of WAYON Corporation.

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.