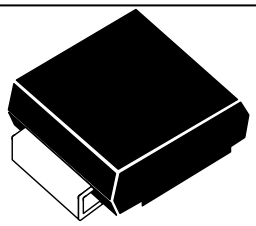
WS15P4SMA-BH

Power Transient Voltage Suppressor

Features

- 400 watts Peak Pulse Power (10/1000μs)
- Bidirectional Protection
- Fast Response Time : Typically < 1ns
- Excellent Clamping Capability
- Built-in Strain relief
- Low inductance
- Low profile package
- High temperature solder:260℃/10 seconds at terminal



SMA
(JEDEC DO-214AC)

Mechanical Characteristics

- JEDEC DO-214AC package
- Molding compound flammability rating: UL 94V-0
- Marking: see marking code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computers &Consumer Electronics
- Industrial Electronics

Absolute Maximum Rating			
Rating	**Symbol**	**Value**	**Units**
Peak pulse power (tp=10/1000μs) (see Note1,2& 3)	P_{PPM}	400	Watts
Peak pulse current (tp=10/1000μs) (see Note2&3)	I_{PPM}	16.4	A
Peak Forward surge current (see Note4)	I_{FSM}	40	A
Power Dissipation on infinite heat sink T_L = 50 °C (Fig4)	P_D	3.3	W
Operating Junction Temperature range	T_J	-55 to +150	℃
Storage Temperature range	T_{STG}	-55 to +150	℃

Note1: Peak Pulse Power Rating as Pulse Width ,per Fig1.

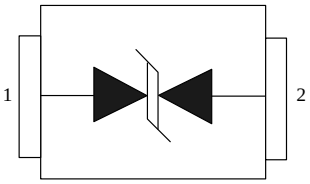
Note2: Peak Pulse Power or Current Derated above T_A=25℃ Per Fig. 2 and Non-Repetitive Current Pulse,Per Fig.3.

Note3: Mounted on 5.0x5.0mm^2 copper pad to each terminal.

Note4: 8.3ms Single Half Sine Wave or Equivalent Square Wave.

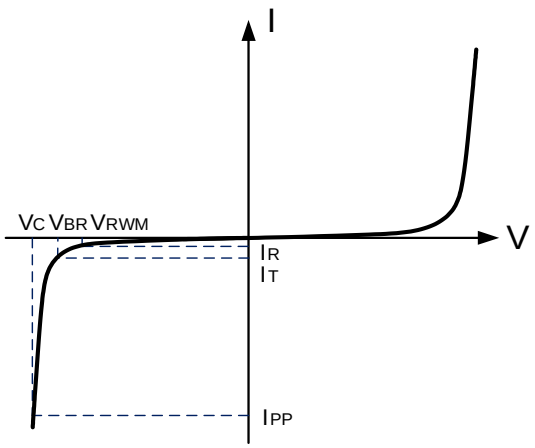
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Pin Configuration



Electrical Characteristics

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current



WS15P4SMA-BH					
Parameter	**Symbol**	**Conditions**	**Minimum**	**Maximum**	**Units**
Reverse Stand-Off Voltage	V_{RWM}			15	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	16.7	18.5	V
Reverse Leakage Current	I_R	V_{RWM}=15V		1	μA
Clamping Voltage	V_C	I_{PP}=16.4A, t_p=10/1000μs		24.4	V
Clamping Voltage	V_{C1}	I_{PP}=500A, t_p=8/20μs		32	V

Typical Characteristics

Figure 1: Peak Pulse Power Rating Curve

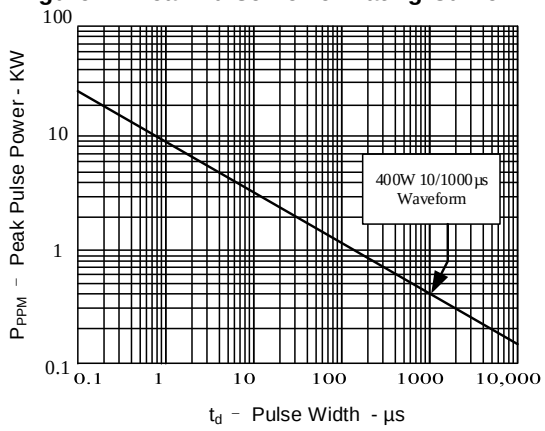


Figure 2: Pulse Derating Curve

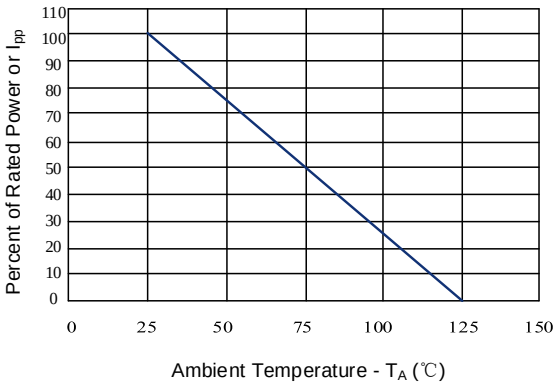


Figure 3: Pulse Waveform

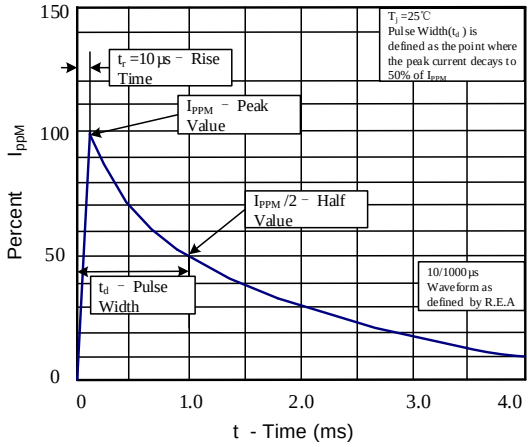
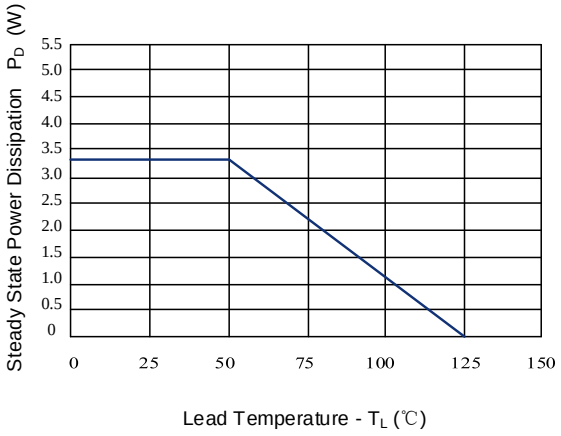
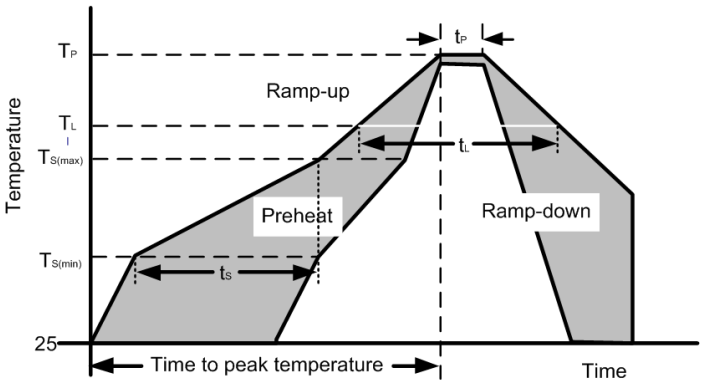


Figure 4: Steady State Power Dissipation Derating Curve



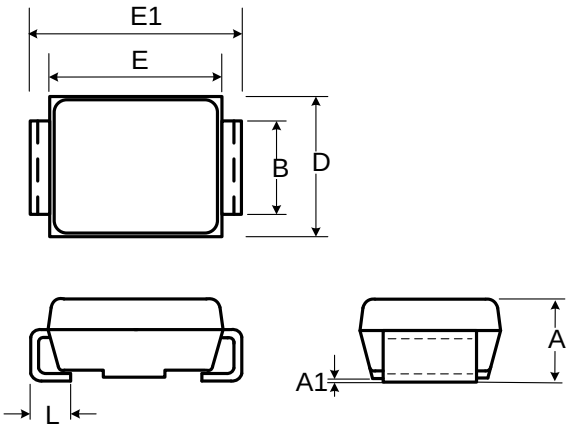
Soldering Parameters

Reflow Condition		
Pre Heat	Temperature min ($T_{s(min)}$)	150°C
	Temperature max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60-190 s
Average ramp up rate (Liquidus Temp) (T_L) to peak		3°C/s max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/s max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60-150 s
Peak Temperature (T_P)		$260^{+0/-5}$ °C
Time within 5°C of actual peak Temperature (t_p)		20-40 s
Ramp-down Rate		5°C/s max
Time 25°C to peak Temperature (T_P)		8 minutes max
Do not exceed		260°C

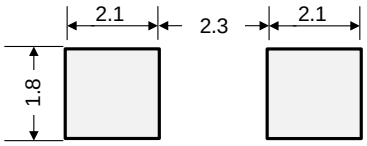


Outline Drawing – SMA(DO-214AC)

Ref.（mm）	Millimeters	
	Min.	Max.
A	1.980	2.290
A1	-	0.203
B	1.250	1.650
E	3.990	4.500
E1	4.930	5.280
D	2.540	2.790
L	0.780	1.520

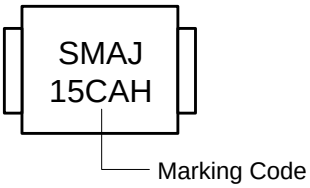


Recommended Solder Pad Layout



Dimensions in mm

Marking Code



Package Information

Package Type	Description	Quantity（pcs）
SMA(DO-214AC)	Tape & Reel -12mm/13″ tape	5000

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.

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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.