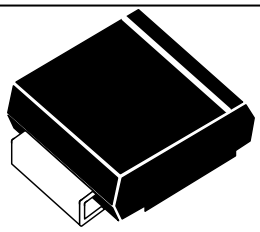
WS15P4SMAS

Power Transient Voltage Suppressor

Features

- 400 watts Peak Pulse Power (10/1000μs)
- Unidirectional Protection
- Fast Response Time: Typically < 1ns
- Excellent Clamping Capability
- Built-in Strain relief
- Low inductance
- Low profile package
- IEC 61000-4-2 (ESD) ±30kV(air), ±30kV(contact)
- MSL: Level 1



SMA
(JEDEC DO-214AC)

Mechanical Characteristics

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

Applications

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

Absolute Maximum Rating

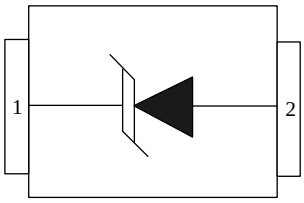
Rating	Symbol	Value	Units
Peak Pulse Power (tp =10/1000μs) (see Note1,2)	P_{PPM}	400	Watts
Peak pulse current (10/1000μs) (see Note2)	I_{PPM}	16.4	A
Power Dissipation on infinite heat sink T_L = 50 °C (Fig4)	P_D	3.3	W
Operating junction temperature range	T_J	-65 to + 150	℃
storage temperature range	T_{STG}	-65 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.

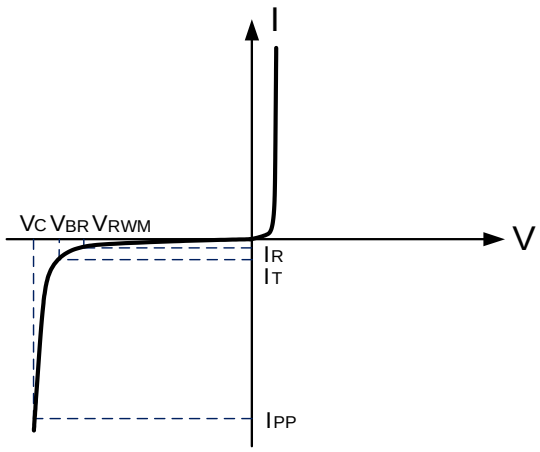
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Pin Configuration



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



WS15P4SMAS					
Parameter	**Symbol**	**Conditions**	**Minimum**	**Maximum**	**Units**
Reverse Stand-Off Voltage	V_{RWM}			15	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	16.7	19.7	V
Reverse Leakage Current	I_R	V_{RWM}=15V, T=25°C		1	μA
Clamping Voltage	V_C	I_{PP}=16.4A, t_p=10/1000μs		26	V

Typical Characteristics

Figure 1: Peak Pulse Power Rating Curve

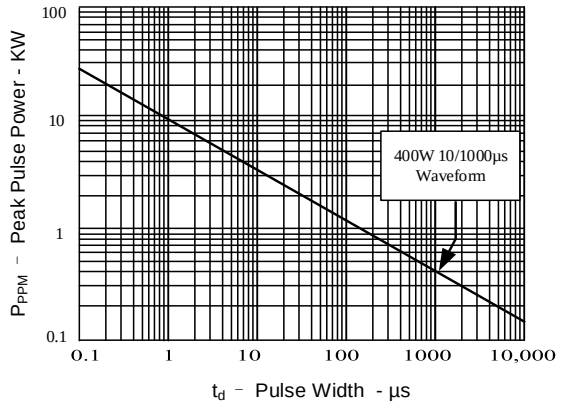


Figure 2: Pulse Derating Curve

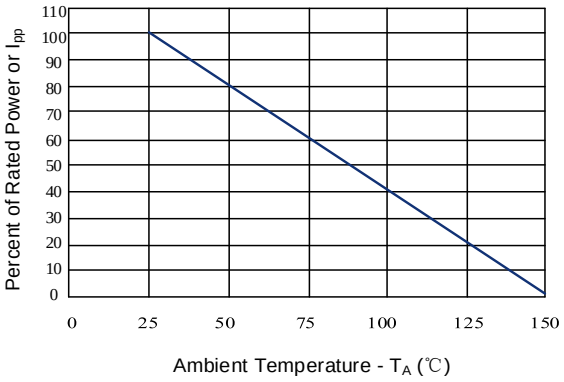


Figure 3: Pulse Waveform

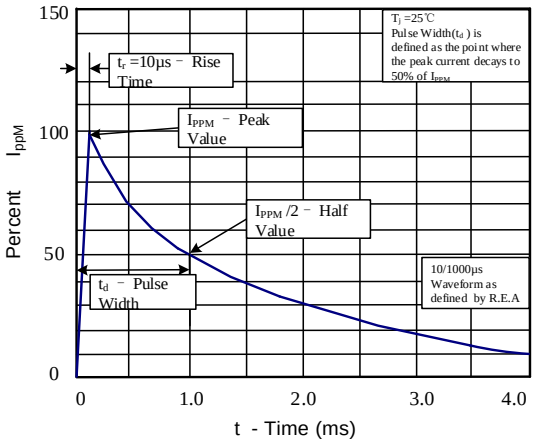
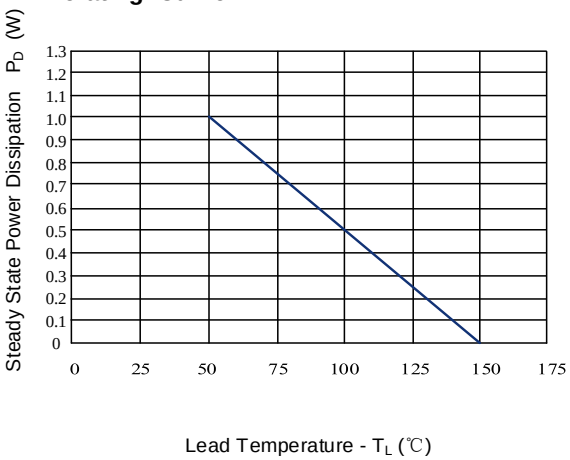


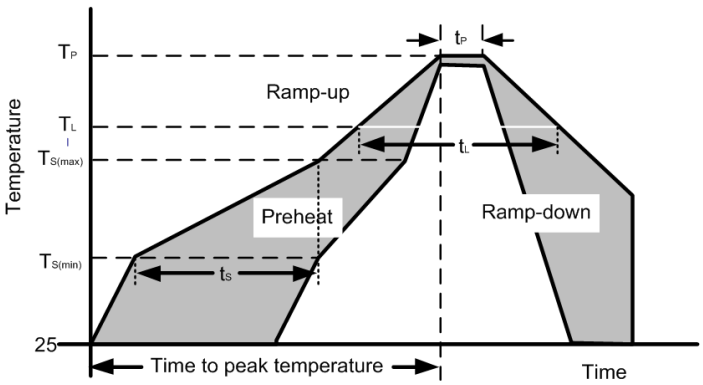
Figure 4: Steady State Power Dissipation Derating Curve



Note: The above typical parameters or typical characteristics are only indicative and do not make specific guarantees. If detailed values are required, additional communication and provision are required.

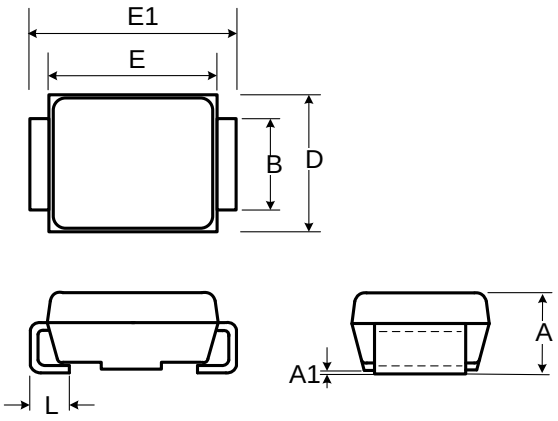
Recommended Soldering Parameters

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
Ts(max) to TL - 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 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

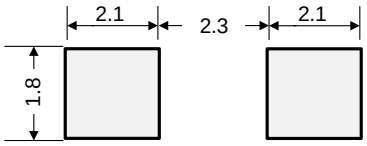


Outline Drawing – SMA (DO-214AC)

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

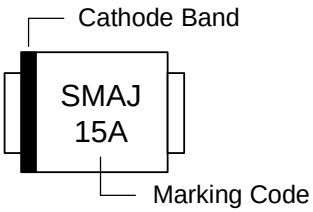


Recommended Solder Pad Layout



Dimensions in mm

Marking Code

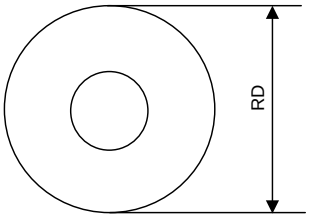


Package Information

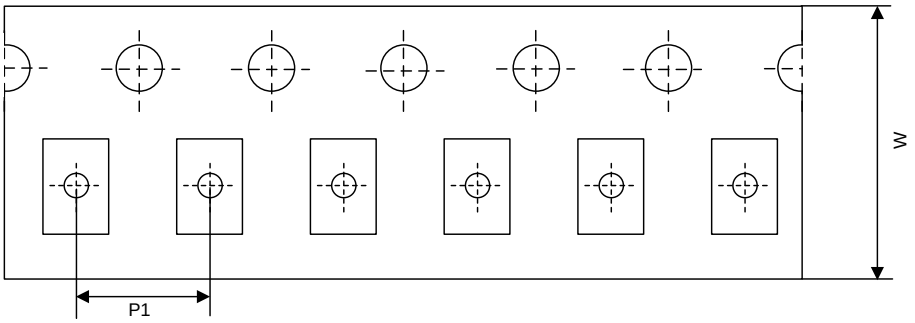
Package Type	Description	Quantity（pcs）	Standard
SMA(DO-214AC)	Tape & Reel -12mm/13″ tape	5000	EIA-481-D

Tape and Reel Information

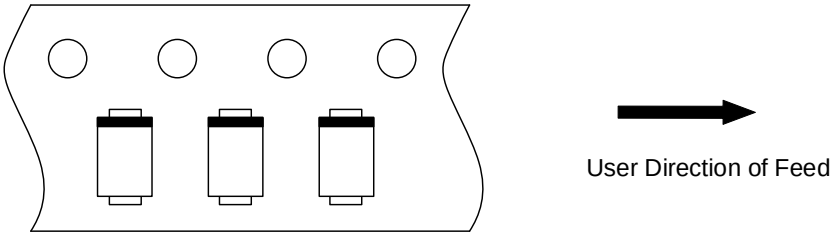
Reel Dimensions



Tape Dimensions



Quadrant Assignments for PIN1 Orientation in tape



Top View

RD	Reel Dimensions	13
W	Overall width of the carrier tape	12
P1	Pitch between successive cavity centers	4

Contact Information

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WAYON website: **http://www.way-on.com**
For additional information, please contact your local Sales Representative.

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Product Specification Statement

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.

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.

WAYON strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, WAYON cannot guarantee that the information provided in the product specification is entirely accurate and error-free. WAYON shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications. WAYON reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with WAYON to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult WAYON in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

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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