

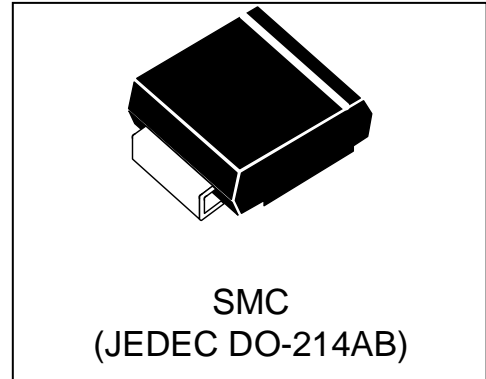


# WSxxP15SMC(-B)-AT

## Automotive Load Dump Protection TVS

### Features

- 1500 watts Peak Pulse Power (10/1000 $\mu$ s)
- Unidirectional and Bidirectional Protection
- Fast Response Time : Typically < 1ns
- Excellent Clamping Capability
- Built-in Strain relief
- Low inductance
- Low profile package
- High temperature solder:260°C/10 seconds at terminal
- AEC-Q101 compliant



### Mechanical Characteristics

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

### Applications

- Auto power system
- Car audio and video
- Automotive instrument
- Car GPS
- Can-bus

| Absolute Maximum Rating   |           |                                |            |
|---|-----------|--------------------------------|------------|
| Rating  | Symbol    | Value                          | Units      |
| Peak Pulse Power ( $t_p = 10/1000\mu s$ ) (see Note1&2)           | $P_{PPM}$ | 1500                           | Watts      |
| Peak pulse current (10/1000 $\mu$ s) (see Note2)                  | $I_{PPM}$ | See Electrical Characteristics | A          |
| Power Dissipation on infinite heat sink $T_L = 50^\circ C$ (Fig4) | $P_D$     | 6.5                            | W          |
| Operating Junction Temperature range                              | $T_J$     | -65 to + 150                   | $^\circ C$ |
| Storage Temperature range   | $T_{STG}$ | -65 to + 150                   | $^\circ C$ |

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

**Note2:** Peak Pulse Power or Current Derated above  $T_A=25^\circ C$  Per Fig. 2 and Non-Repetitive Current Pulse, Per Fig.3.

## Electrical Characteristics

| Part Number   |                 | Marking   |          | Reverse Stand off Voltage $V_{RWM}$ (Volts) | Breakdown Voltage $V_{BR}@I_T$ (Volts) |      | Test Current $I_T$ (mA) | Maximum Clamping Voltage $V_c@I_{FP}$ (Volts) | Maximum Peak Pulse Current $I_{PP}$ (Amps) | Maximum Reverse Leakage $I_R@V_{RWM}$ ( $\mu$ A) |
|---------------|-----------------|-----------|----------|---|--|------|-------------------------|---|--|--|
| UNI-POLAR     | BI-POLAR        | UNI-POLAR | BI-POLAR |   | MIN                                    | MAX  |                         |   |  |  |
| WS15P15SMC-AT | WS15P15SMC-B-AT | CYLP      | CZLP     | 15  | 16.7                                   | 18.5 | 1                       | 24.4  | 61.5                                       | 1  |
| WS16P15SMC-AT | WS16P15SMC-B-AT | CYLQ      | CZLQ     | 16  | 17.8                                   | 19.7 | 1                       | 26.0  | 57.7                                       | 1  |
| WS18P15SMC-AT | WS18P15SMC-B-AT | CYLS      | CZLS     | 18  | 20.0                                   | 22.1 | 1                       | 29.2  | 51.4                                       | 1  |
| WS20P15SMC-AT | WS20P15SMC-B-AT | CYMY      | CZMZ     | 20  | 22.2                                   | 24.5 | 1                       | 32.4  | 46.3                                       | 1  |
| WS22P15SMC-AT | WS22P15SMC-B-AT | CYMM      | CZMM     | 22  | 24.4                                   | 26.9 | 1                       | 35.5  | 42.3                                       | 1  |
| WS24P15SMC-AT | WS24P15SMC-B-AT | CYMO      | CZMO     | 24  | 26.7                                   | 29.5 | 1                       | 38.9  | 38.6                                       | 1  |
| WS26P15SMC-AT | WS26P15SMC-B-AT | CYMQ      | CZMQ     | 26  | 28.9                                   | 31.9 | 1                       | 42.1  | 35.7                                       | 1  |
| WS28P15SMC-AT | WS28P15SMC-B-AT | CYMS      | CZMS     | 28  | 31.1                                   | 34.4 | 1                       | 45.4  | 33.1                                       | 1  |
| WS30P15SMC-AT | WS30P15SMC-B-AT | CYNY      | CZNY     | 30  | 33.3                                   | 36.8 | 1                       | 48.4  | 31.0                                       | 1  |
| WS33P15SMC-AT | WS33P15SMC-B-AT | CYNN      | CZNN     | 33  | 36.7                                   | 40.6 | 1                       | 53.3  | 28.2                                       | 1  |
| WS36P15SMC-AT | WS36P15SMC-B-AT | CYNQ      | CZNY     | 36  | 40.0                                   | 44.2 | 1                       | 58.1  | 25.9                                       | 1  |
| WS40P15SMC-AT | WS40P15SMC-B-AT | CYOY      | CZOY     | 40  | 44.4                                   | 49.1 | 1                       | 64.5  | 23.3                                       | 1  |
| WS43P15SMC-AT | WS43P15SMC-B-AT | CYON      | CZON     | 43  | 47.8                                   | 52.8 | 1                       | 69.4  | 21.7                                       | 1  |

Typical Characteristics

Figure 1: Peak Pulse Power Rating Curve

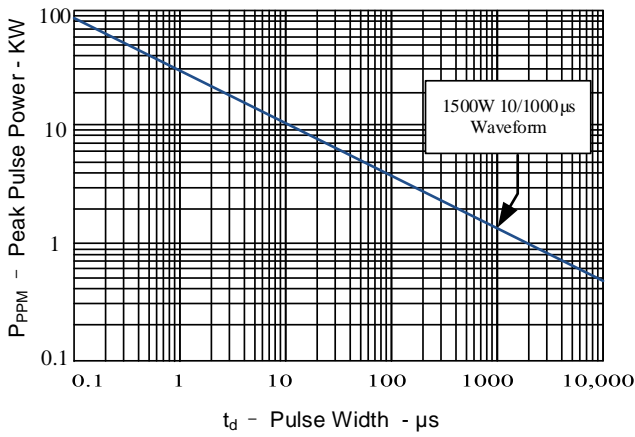


Figure 2: Pulse Derating Curve

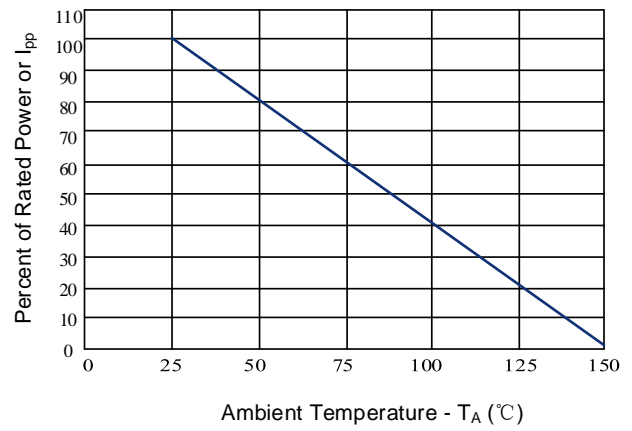


Figure 3: Pulse Waveform

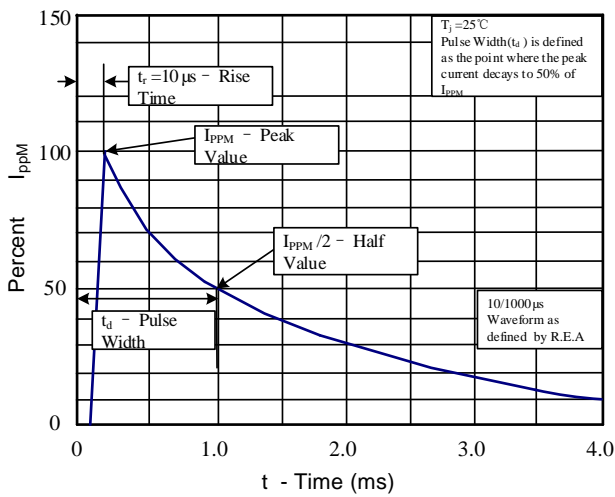
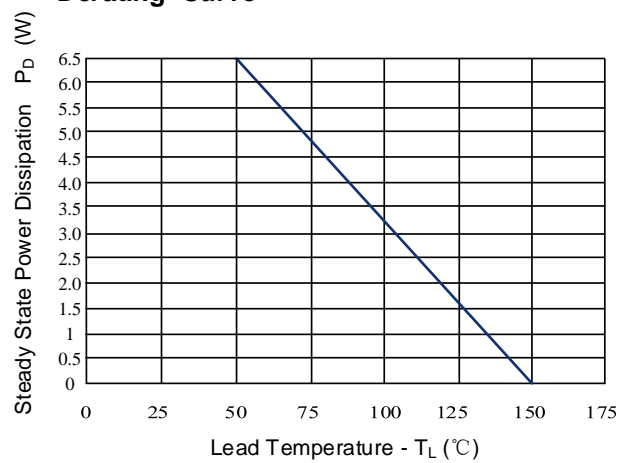
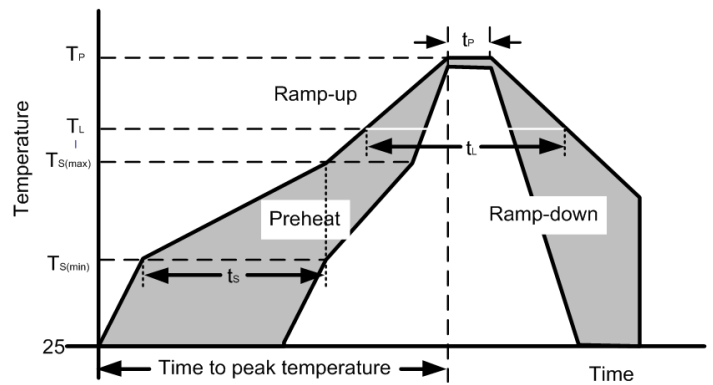


Figure 4: Steady State Power Dissipation Derating Curve



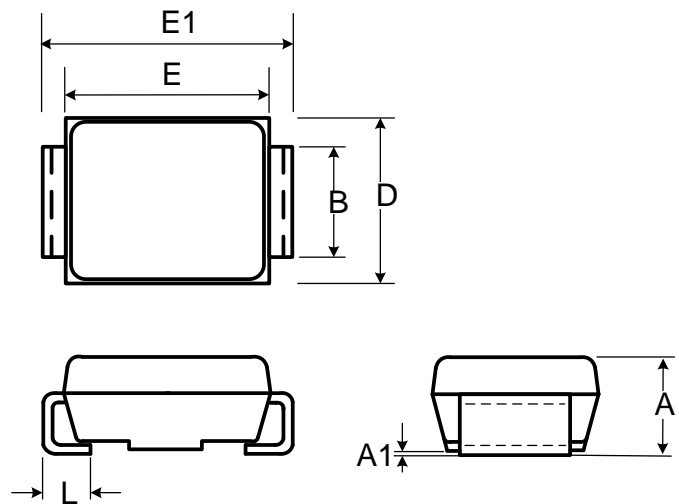
### Soldering Parameters

| 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               |
| 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 <sup>+0/-5</sup> °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                   |

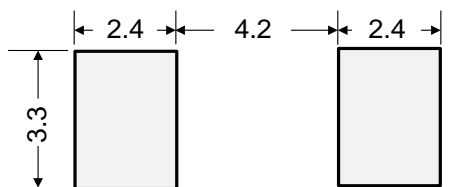


### Outline Drawing – SMC (DO-214AB)

| Ref. (mm) | Millimeters |      |
|-----------|-------------|------|
|           | Min.        | Max. |
| A         | 2.06        | 2.70 |
| A1        | -           | 0.30 |
| B         | 2.90        | 3.20 |
| E         | 6.60        | 7.40 |
| E1        | 7.75        | 8.13 |
| D         | 5.59        | 6.22 |
| L         | 0.76        | 1.52 |

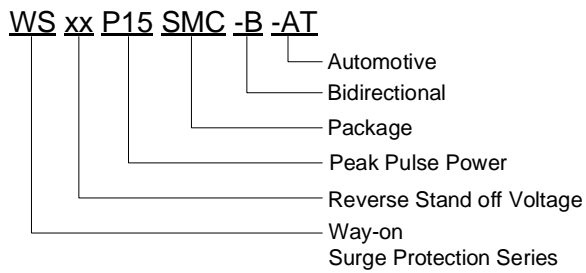


### Recommended Solder Pad Layout

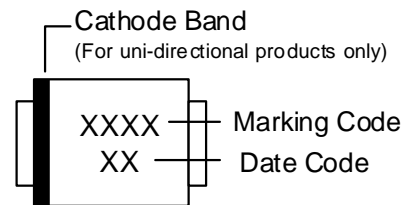


Dimensions in mm

## Part Numbering System



## Part Marking System



## Package Information

| Package Type  | Description                | Quantity (pcs) |
|---------------|----------------------------|----------------|
| SMC(DO-214AB) | Tape & Reel -16mm/13" tape | 3000           |

## 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 trademarks 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.*

单击下面可查看定价，库存，交付和生命周期等信息

[>>WAY-ON\(维安\)](#)