

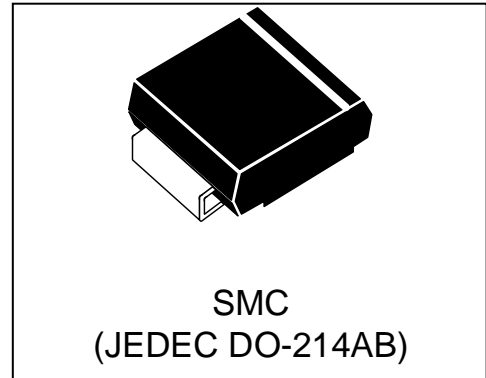


# WSxxP30SMC(-B)-AT

## Automotive Load Dump Protection TVS

### Features

- 3000 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 (tp =10/1000 $\mu$ s) (see Note1&2)	P <sub>PPM</sub>	3000	Watts
Peak pulse current (10/1000 $\mu$ s) (see Note2)	I <sub>PPM</sub>	See Electrical Characteristics	A
Power Dissipation on infinite heat sink T <sub>L</sub> = 50 °C (Fig 4)	P <sub>D</sub>	6.5	W
Operating Junction Temperature range	T <sub>J</sub>	-65 to + 150	°C
Storage Temperature range	T <sub>STG</sub>	-65 to + 150	°C

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

**Note2:** Peak Pulse Power or Current Derated above T<sub>A</sub>=25°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				
WS15P30SMC-AT	WS15P30SMC-B-AT	DYLP	DZLP	15	16.70	18.50	1	24.4	123.0	2
WS16P30SMC-AT	WS16P30SMC-B-AT	DYLQ	DZLQ	16	17.80	19.70	1	26.0	115.4	2
WS18P30SMC-AT	WS18P30SMC-B-AT	DYLS	DZLS	18	20.00	22.10	1	29.2	102.7	2
WS20P30SMC-AT	WS20P30SMC-B-AT	DYMY	DZMZ	20	22.20	24.50	1	32.4	92.6	2
WS22P30SMC-AT	WS22P30SMC-B-AT	DYMM	DZMM	22	24.40	26.90	1	35.5	84.5	2
WS24P30SMC-AT	WS24P30SMC-B-AT	DYMO	DZMO	24	26.70	29.50	1	38.9	77.1	2
WS26P30SMC-AT	WS26P30SMC-B-AT	DYMQ	DZMQ	26	28.90	31.90	1	42.1	71.3	2
WS28P30SMC-AT	WS28P30SMC-B-AT	DYMS	DZMS	28	31.10	34.40	1	45.4	66.1	2
WS30P30SMC-AT	WS30P30SMC-B-AT	DYNY	DZNY	30	33.30	36.80	1	48.4	62.0	2
WS33P30SMC-AT	WS33P30SMC-B-AT	DYNN	DZNN	33	36.70	40.60	1	53.3	56.3	2
WS36P30SMC-AT	WS36P30SMC-B-AT	DYNQ	DZNQ	36	40.00	44.20	1	58.1	51.6	2
WS40P30SMC-AT	WS40P30SMC-B-AT	DYOY	DZOY	40	44.40	49.10	1	64.5	46.5	2
WS43P30SMC-AT	WS43P30SMC-B-AT	DYON	DZON	43	47.80	52.80	1	69.4	43.2	2

Typical Characteristics

Figure 1. Peak Pulse Power Rating Curve

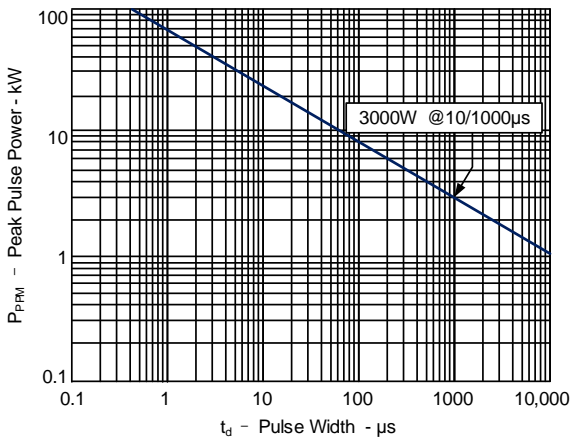


Figure 2. Pulse Derating Curve

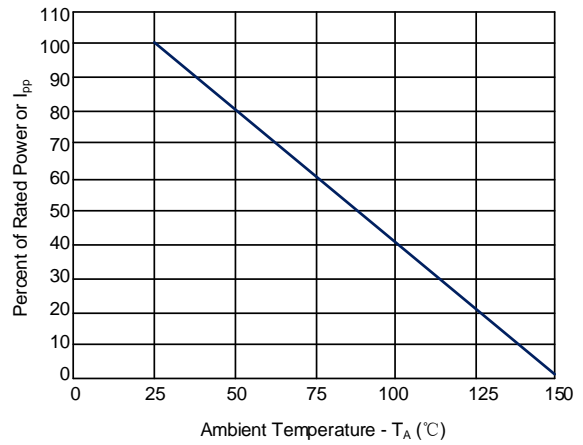


Figure 3. Pulse Waveform

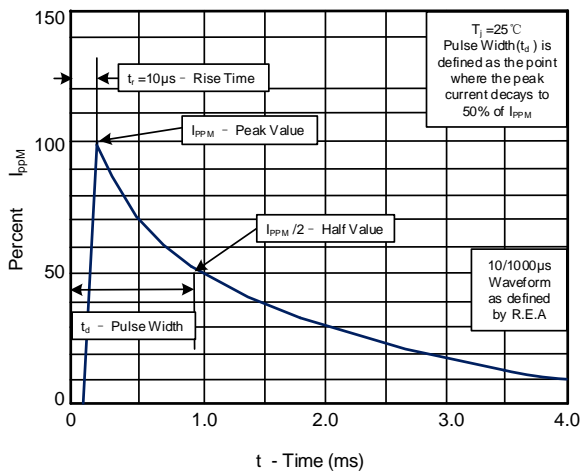
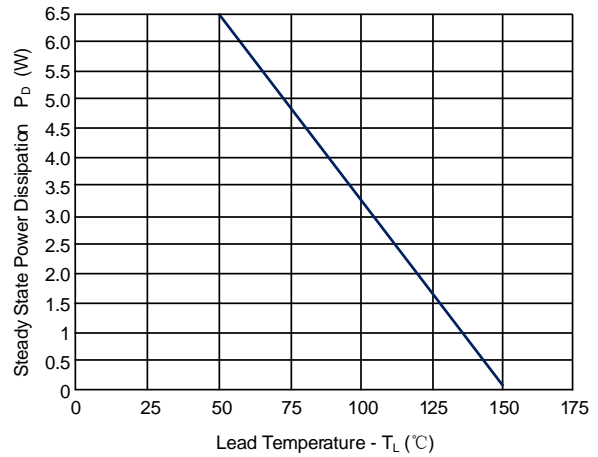
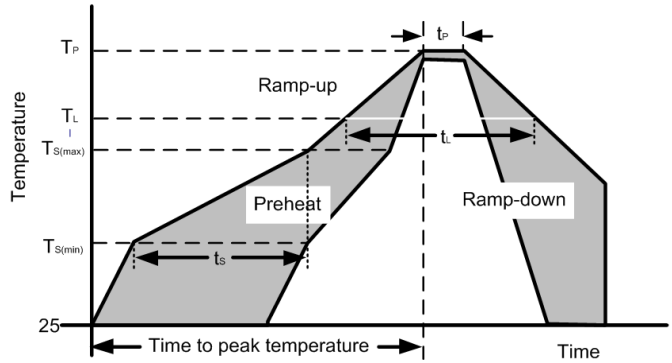


Figure 4. Steady State Power Dissipation Derating Curve



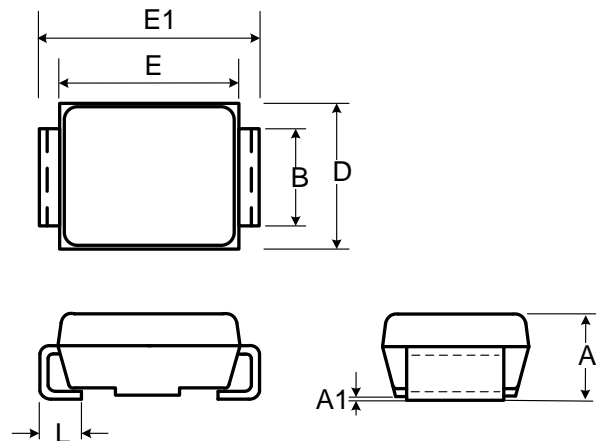
### Soldering Parameters

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		6°C/s max
Time 25°C to peak Temperature ( $T_P$ )		8 minutes max
Do not exceed		260°C

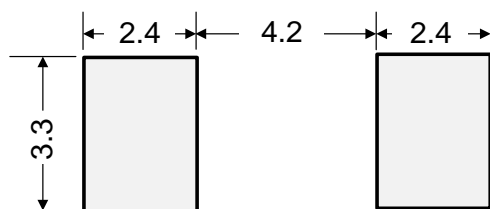


### Outline Drawing – SMC (DO-214AB)

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



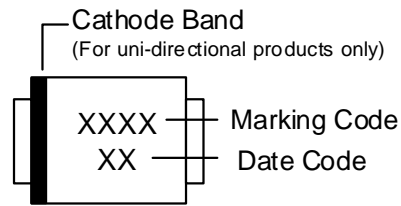
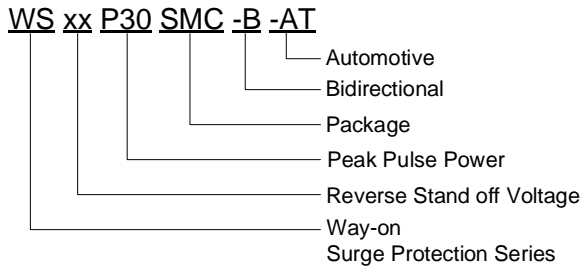
### Recommended Solder Pad Layout



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

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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.*

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[>>WAY-ON\(维安\)](#)