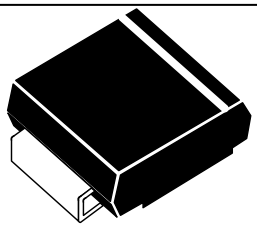
5.0SMDJxx(C)A-AT

Automotive Load Dump Protection TVS

Features

- 5000 watts Peak Pulse Power (10/1000μs)
- Unidirectional and Bidirectional 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
- AEC-Q101 compliant



SMC
(JEDEC DO-214AB)

Mechanical Characteristics

- JEDEC DO-214AB package
- Molding compound flammability rating: UL 94V-0
- Marking : Marking Code
- RoHS & HF Compliant

Applications

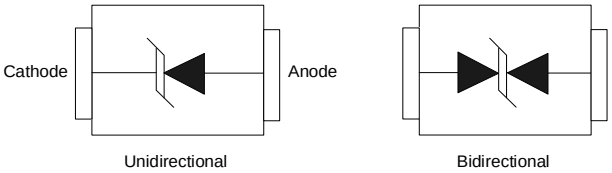
- Auto power system
- Car audio and video
- Automotive instrument
- Car GPS
- Can-bus

Absolute Maximum Rating (TA=25℃ unless otherwise noted)			
Rating	**Symbol**	**Value**	**Units**
Peak Pulse Power (tp =10/1000μs) (see Note1&2)	P_{PPM}	5000	Watts
Peak pulse current (10/1000μs) (see Note2)	I_{PPM}	See Electrical Characteristics	A
Power Dissipation on infinite heat sink T_L = 50 °C (Fig4)	P_D	6.5	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.

Pin Configuration



Electrical Characteristics (TA=25℃ unless otherwise noted)

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 $V_C@I_{PP}$ (Volts)	Maximum Peak Pulse Current I_{pp} (Amps)	Maximum Reverse Leakage $I_R@V_{RWM}$ (μA)
UNI-POLAR	BI-POLAR	UNI-POLAR	BI-POLAR		MIN	MAX				
5.0SMDJ15A-AT	5.0SMDJ15CA-AT	EYLP	EZLP	15	16.70	18.50	1	24.4	205.0	100
5.0SMDJ16A-AT	5.0SMDJ16CA-AT	EYLQ	EZLQ	16	17.80	19.70	1	26.0	193.0	50
5.0SMDJ18A-AT	5.0SMDJ18CA-AT	EYLS	EZLS	18	20.00	22.10	1	29.2	172.0	10
5.0SMDJ20A-AT	5.0SMDJ20CA-AT	EYMY	EZMZ	20	22.20	24.50	1	32.4	155.0	5
5.0SMDJ22A-AT	5.0SMDJ22CA-AT	EYMM	EZMM	22	24.40	26.90	1	35.5	141.0	5
5.0SMDJ24A-AT	5.0SMDJ24CA-AT	EYMO	EZMO	24	26.70	29.50	1	38.9	129.0	5
5.0SMDJ26A-AT	5.0SMDJ26CA-AT	EYMQ	EZMQ	26	28.90	31.90	1	42.1	119.0	5
5.0SMDJ28A-AT	5.0SMDJ28CA-AT	EYMS	EZMS	28	31.10	34.40	1	45.4	110.0	5
5.0SMDJ30A-AT	5.0SMDJ30CA-AT	EYNY	EZNZ	30	33.30	36.80	1	48.4	103.0	5
5.0SMDJ33A-AT	5.0SMDJ33CA-AT	EYNN	EZNN	33	36.70	40.60	1	53.3	93.9	5
5.0SMDJ36A-AT	5.0SMDJ36CA-AT	EYNQ	EZNQ	36	40.00	44.20	1	58.1	86.1	5
5.0SMDJ40A-AT	5.0SMDJ40CA-AT	EYOY	EZOZ	40	44.40	49.10	1	64.5	77.6	5
5.0SMDJ43A-AT	5.0SMDJ43CA-AT	EYON	EZON	43	47.80	52.80	1	69.4	72.1	5
5.0SMDJ45A-AT	5.0SMDJ45CA-AT	EYOP	EZOP	45	50.0	55.3	1	72.7	68.8	5
5.0SMDJ48A-AT	5.0SMDJ48CA-AT	EYOS	EZOS	48	53.3	58.9	1	77.4	64.7	5
5.0SMDJ51A-AT	5.0SMDJ51CA-AT	EYPL	EZPL	51	56.7	62.7	1	82.4	60.7	5
5.0SMDJ54A-AT	5.0SMDJ54CA-AT	EYPO	EZPO	54	60.0	66.3	1	87.1	57.5	5
5.0SMDJ58A-AT	5.0SMDJ58CA-AT	EYPS	EZPS	58	64.4	71.2	1	93.6	53.5	5
5.0SMDJ60A-AT	5.0SMDJ60CA-AT	EYQY	EZQZ	60	66.7	73.7	1	96.8	51.7	5
5.0SMDJ64A-AT	5.0SMDJ64CA-AT	EYQO	EZQO	64	71.1	78.6	1	103.0	48.6	5
5.0SMDJ70A-AT	5.0SMDJ70CA-AT	EYRY	EZRZ	70	77.8	86.0	1	113.0	44.3	5
5.0SMDJ75A-AT	5.0SMDJ75CA-AT	EYRP	EZRP	75	83.3	92.1	1	121.0	41.4	5
5.0SMDJ78A-AT	5.0SMDJ78CA-AT	EYRS	EZRS	78	86.7	95.8	1	126.0	39.7	5
5.0SMDJ85A-AT	5.0SMDJ85CA-AT	EYSP	EZSP	85	94.4	104.0	1	137.0	36.5	5
5.0SMDJ90A-AT	5.0SMDJ90CA-AT	EYTY	EZTZ	90	100.0	111.0	1	146.0	34.3	5
5.0SMDJ100A-AT	5.0SMDJ100CA-AT	ELYY	ELZZ	100	111.0	123.0	1	162.0	30.9	5
5.0SMDJ110A-AT	5.0SMDJ110CA-AT	ELLY	ELLZ	110	122.0	135.0	1	177.0	28.3	5
5.0SMDJ120A-AT	5.0SMDJ120CA-AT	ELMY	ELMZ	120	133.0	147.0	1	193.0	26.0	5
5.0SMDJ130A-AT	5.0SMDJ130CA-AT	ELNY	ELNZ	130	144.0	159.0	1	209.0	24.0	5
5.0SMDJ150A-AT	5.0SMDJ150CA-AT	ELPY	ELPZ	150	167.0	185.0	1	243.0	20.6	5
5.0SMDJ160A-AT	5.0SMDJ160CA-AT	ELQY	ELQZ	160	178.0	197.0	1	259.0	19.3	5
5.0SMDJ170A-AT	5.0SMDJ170CA-AT	ELRY	ELRZ	170	189.0	209.0	1	275.0	18.2	5

Typical Characteristics

Figure 1: Peak Pulse Power Rating Curve

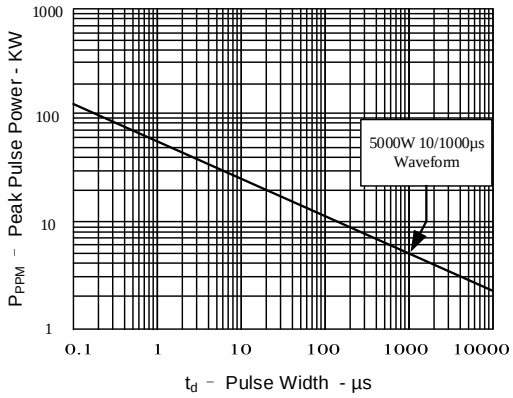


Figure 2: Pulse Derating Curve

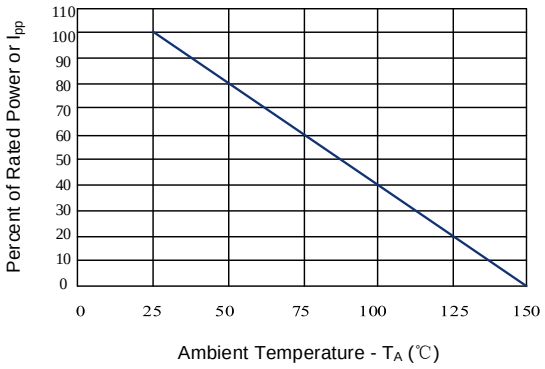


Figure 3: Pulse Waveform

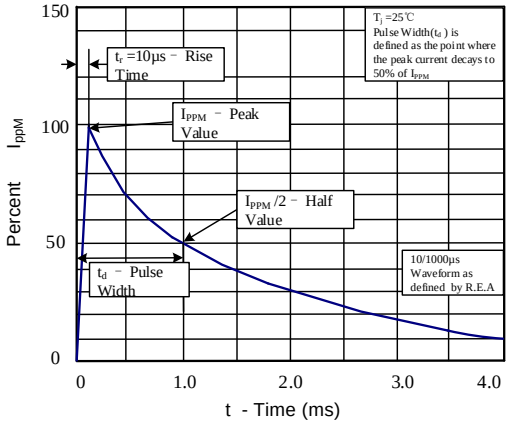
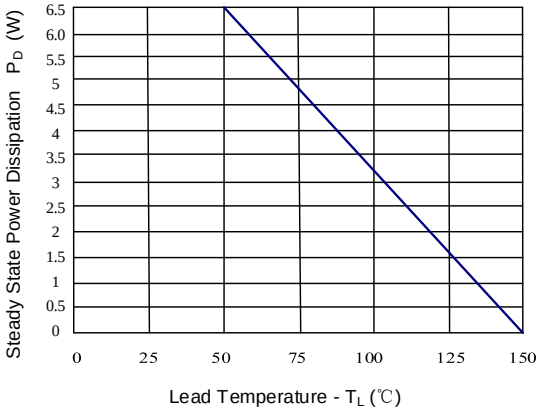


Figure 4: Steady State Power Dissipation Derating Curve

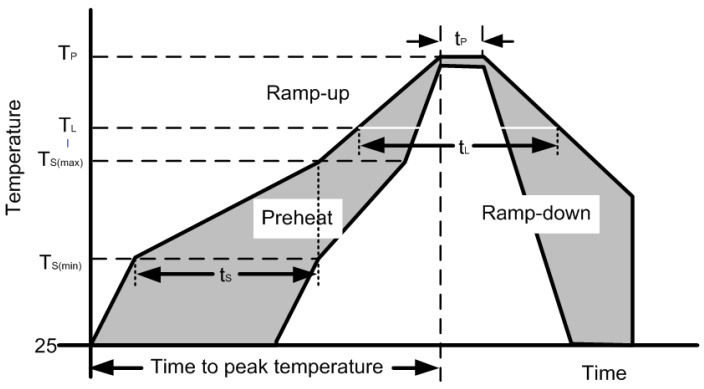


Note: The above typical parameters or typical characteristics are only indicative and do not make specific guarantees.

If detailed values are required, additional communication and provision are required.

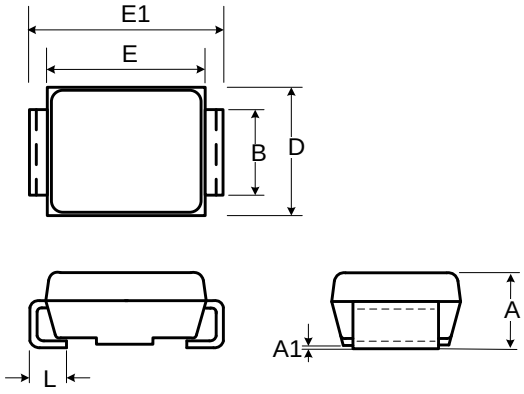
Soldering Parameters

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

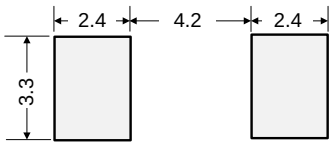


Outline Drawing – SMC (DO-214AB)

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

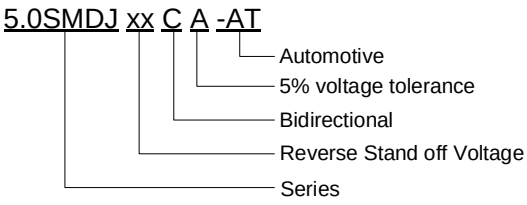


Recommended Solder Pad Layout

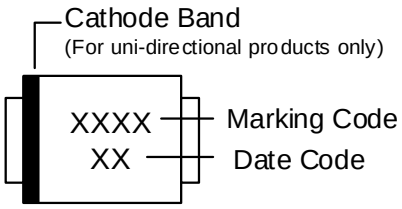


Dimensions in mm

Part Numbering System



Part Marking System

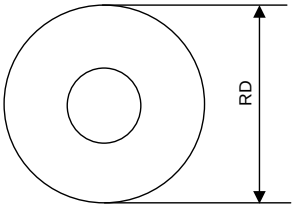


Package Information

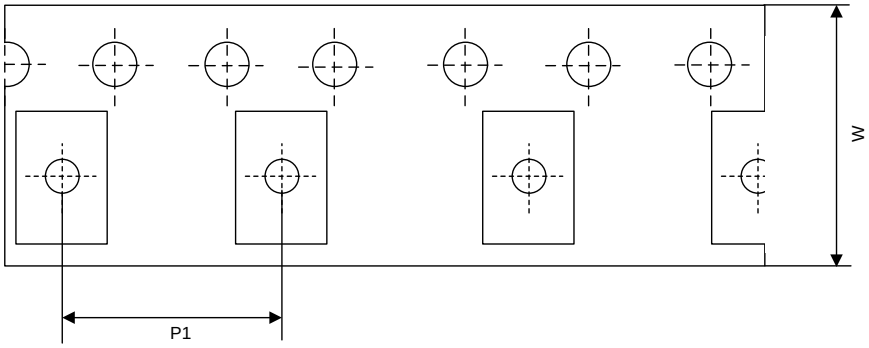
Package Type	Description	Quantity（pcs）
SMC(DO-214AB)	Tape & Reel -16mm/13″ tape	3000

Tape and Reel Information

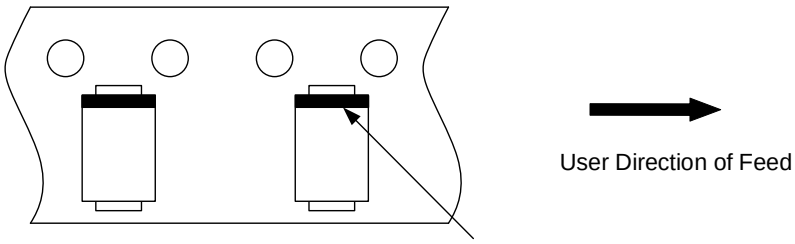
Reel Dimensions



Tape Dimensions



Quadrant Assignments for PIN1 Orientation in tape



RD	Reel Dimensions	13
W	Overall width of the carrier tape	16
P1	Pitch between successive cavity centers	8

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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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.

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