

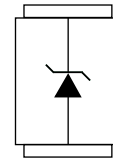
### Description

The 5.0SMDJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

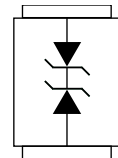
### Feature

- 5000W peak pulsepower capability at 10 x 1000µs waveform, repetition rate (duty cycle): 0.01%
- Glass Passivated chip junction
- For surface mounted applications to optimize board space
- Low profile package
- Built-in strain relief
- Low incremental surge resistance
- Excellent clamping capability
- Plastic package has UL flammability classification 94V-O
- Fast response time: typically less than 1.0ps from 0 Volts to BV min
- Typical IR less than 5uA above 22V
- High temperature soldering: 260°C/40 seconds at terminals
- IEC-61000-4-2 ESD 15KV(Air),8KV(Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2(IEC801-2)
- EFT protection of data lines in accordance with IEC61000-4-4(IEC801-4)

Unidirectional



Bidirectional



### Applications

TVS device are ideal for the protection of I/O interfaces, V<sub>CC</sub> bus and other vulnerable circuits used in telecom, computer industrial and consumer electronic application.

### Maximum Ratings and Thermal Characteristics(T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at T <sub>A</sub> =25°C by 10*1000µs waveform(Fig.2) (Note 1)(Note 2)	P <sub>PPM</sub>	5000	W
Power Dissipation on infinite heat sink at T <sub>A</sub> =50°C	P <sub>D</sub>	6.5	W
Peak Forward Surge Current,8.3ms Single Half Sine Wave Unidirectional only(Note 3)	I <sub>FSM</sub>	300	A
Operation Junction and Storage Temperature Range	T <sub>J</sub> ,T <sub>STG</sub>	-55 to +150	°C
Typical Thermal Resistance Junction to Lead	R <sub>uJL</sub>	15	°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>uJA</sub>	75	°C/W

**Notes:**

1. Non-repetitive current pulse , per Fig. 3 and derated above  $T_A=25^{\circ}\text{C}$  per Fig. 2.
2. Mounted on copper pad area of  $0.31 \times 0.31$ " ( $8.0 \times 8.0\text{mm}$ ) to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

**Electrical characteristics per line@ $25^{\circ}\text{C}$  ( unless otherwise specified)**

PART NUMBER		REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE VBR(V)MAX.@I T		TEST CURRENT	REVERSE LEAKAGE @VRWM	PEAK PULSE CURRENT	MAXIMUM CLAMPING VOLTAGE @Ipp
BI- POLAR	UNI-POLAR	VRWM(V)	VBR MIN(V)	VBR MAX(V)	IT (mA)	IR( $\mu\text{A}$ )	Ipp(A)	Vc(V)
5.0SMDJ12CA	5.0SMDJ12A	12.0	13.30	14.70	1	800	252.0	19.9
5.0SMDJ13CA	5.0SMDJ13A	13.0	14.40	15.90	1	500	233.0	21.5
5.0SMDJ14CA	5.0SMDJ14A	14.0	15.60	17.20	1	200	216.0	23.2
5.0SMDJ15CA	5.0SMDJ15A	15.0	16.70	18.50	1	100	205.0	24.4
5.0SMDJ16CA	5.0SMDJ16A	16.0	17.80	19.70	1	50	193.0	26.0
5.0SMDJ17CA	5.0SMDJ17A	17.0	18.90	20.90	1	20	181.0	27.6
5.0SMDJ18CA	5.0SMDJ18A	18.0	20.00	22.10	1	10	172.0	29.2
5.0SMDJ20CA	5.0SMDJ20A	20.0	22.20	24.50	1	5	155.0	32.4
5.0SMDJ22CA	5.0SMDJ22A	22.0	24.40	26.90	1	5	141.0	35.5
5.0SMDJ24CA	5.0SMDJ24A	24.0	26.70	29.50	1	5	129.0	38.9
5.0SMDJ26CA	5.0SMDJ26A	26.0	28.90	31.90	1	5	119.0	42.1
5.0SMDJ28CA	5.0SMDJ28A	28.0	31.10	34.40	1	5	110.0	45.4
5.0SMDJ30CA	5.0SMDJ30A	30.0	33.30	36.80	1	5	103.0	48.4
5.0SMDJ33CA	5.0SMDJ33A	33.0	36.70	40.60	1	5	93.9	53.3
5.0SMDJ36CA	5.0SMDJ36A	36.0	40.00	44.20	1	5	86.1	58.1
5.0SMDJ40CA	5.0SMDJ40A	40.0	44.40	49.10	1	5	77.6	64.5
5.0SMDJ43CA	5.0SMDJ43A	43.0	47.80	52.80	1	5	72.1	69.4
5.0SMDJ45CA	5.0SMDJ45A	45.0	50.00	55.30	1	5	68.8	72.7
5.0SMDJ48CA	5.0SMDJ48A	48.0	53.30	58.90	1	5	64.7	77.4
5.0SMDJ51CA	5.0SMDJ51A	51.0	56.70	62.70	1	5	60.7	82.4
5.0SMDJ54CA	5.0SMDJ54A	54.0	60.00	66.30	1	5	57.5	87.1
5.0SMDJ58CA	5.0SMDJ58A	58.0	64.40	71.20	1	5	53.5	93.6
5.0SMDJ60CA	5.0SMDJ60A	60.0	66.70	73.70	1	5	51.7	96.8
5.0SMDJ64CA	5.0SMDJ64A	64.0	71.10	78.60	1	5	48.6	103.0
5.0SMDJ70CA	5.0SMDJ70A	70.0	77.80	86.00	1	5	44.3	113.0
5.0SMDJ75CA	5.0SMDJ75A	75.0	83.30	92.10	1	5	41.4	121.0

Electrical characteristics per line@25°C ( unless otherwise specified)

PART NUMBER		REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE VBR(V)MAX.@I T		TEST CURRENT	REVERSE LEAKAGE @VRWM	PEAK PULSE CURRENT	MAXIMUM CLAMPING VOLTAGE @Ipp
BI- POLAR	UNI-POLAR	VRWM(V)	VBR MIN(V)	VBR MAX(V)	IT (mA)	IR(μA)	Ipp(A)	Vc(V)
5.0SMDJ78CA	5.0SMDJ78A	78.0	86.70	95.80	1	5	39.7	126.0
5.0SMDJ85CA	5.0SMDJ85A	85.0	94.40	104.00	1	5	36.5	137.0
5.0SMDJ90CA	5.0SMDJ90A	90.0	100.0	111.00	1	5	34.3	146.0
5.0SMDJ100CA	5.0SMDJ100A	100.0	111.0	123.00	1	5	30.9	162.0
5.0SMDJ110CA	5.0SMDJ110A	110.0	122.0	135.00	1	5	28.3	177.0
5.0SMDJ120CA	5.0SMDJ120A	120.0	133.0	147.00	1	5	26.0	193.0
5.0SMDJ130CA	5.0SMDJ110A	130.0	144.0	159.00	1	5	24.0	209.0
5.0SMDJ150CA	5.0SMDJ150A	150.0	167.0	185.00	1	5	20.6	243.0
5.0SMDJ160CA	5.0SMDJ160A	160.0	178.0	197.00	1	5	19.3	259.0
5.0SMDJ170CA	5.0SMDJ170A	170.0	189.0	209.00	1	5	18.2	275.0
5.0SMDJ180CA	5.0SMDJ180A	180.0	201.0	222.00	1	5	17.5	292.0
5.0SMDJ190CA	5.0SMDJ190A	190.0	211.0	233.00	1	5	16.5	308.0

Notes:

For bidirectional type having VR of 20 volts and less, the IR limit is double.

For parts without A the VBR is ±10% and VC is 5% higher than with A parts.

Typical Characteristics

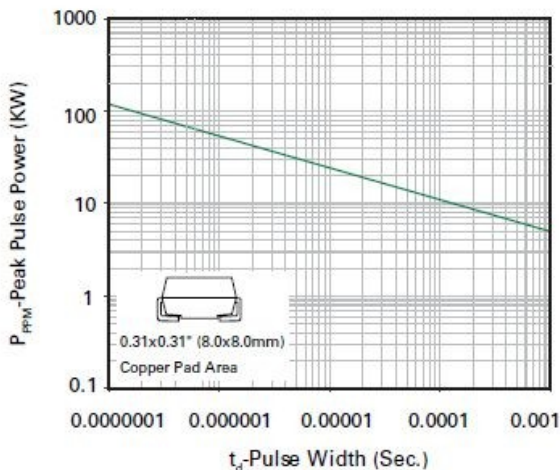


Fig 1. Peak Pulse Power Rating Curve

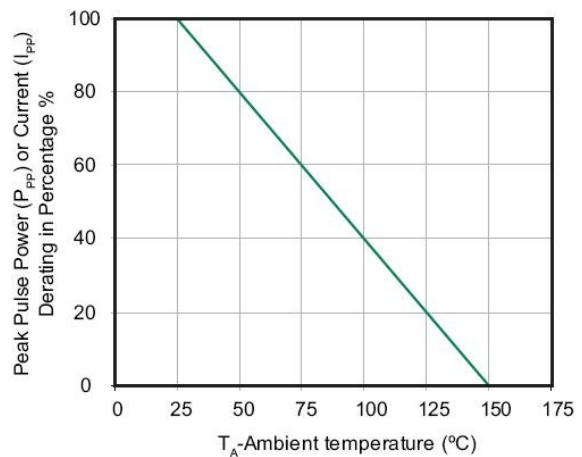


Fig 2. Pulse Derating Curve

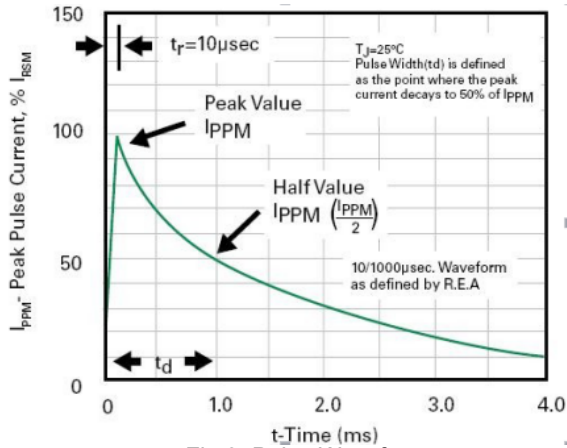


Fig 3. Pulse Waveform

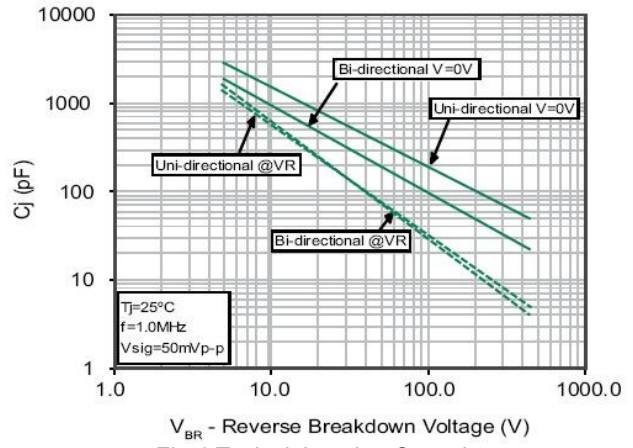


Fig 4. Typical Junction Capacitance

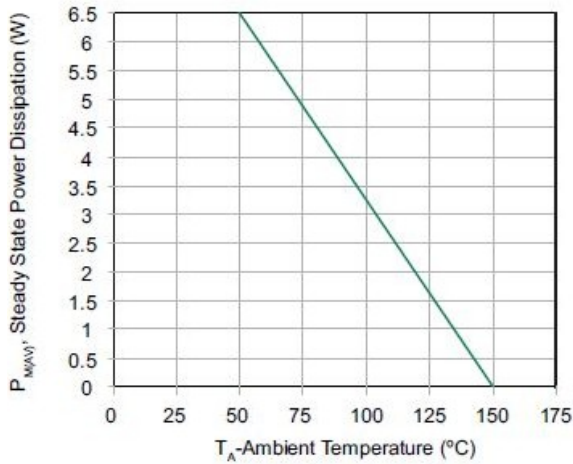
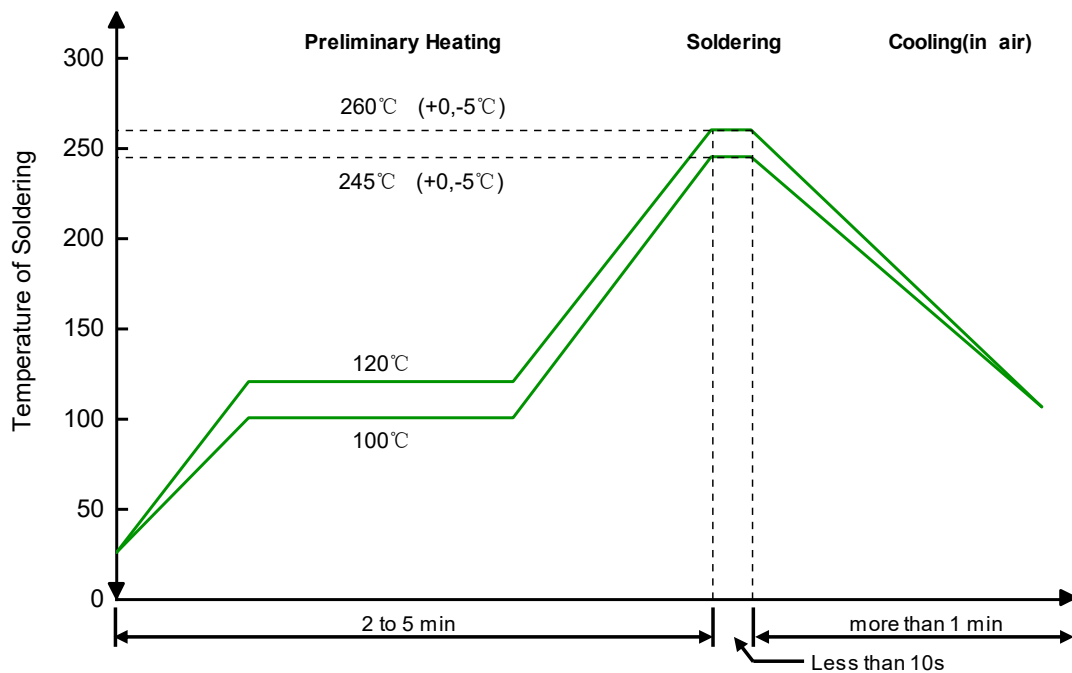


Fig 5. Steady State Power Dissipation Derating Curve



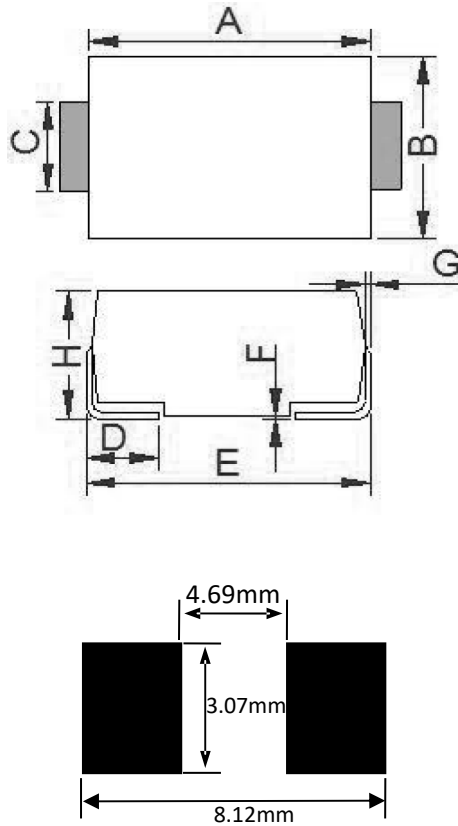
Fig 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

Solder Reflow Recommendation



Remark: Pb free for 260 $^\circ\text{C}$ ; Pb for 245 $^\circ\text{C}$ .

Product dimension(SMC(DO214AB))

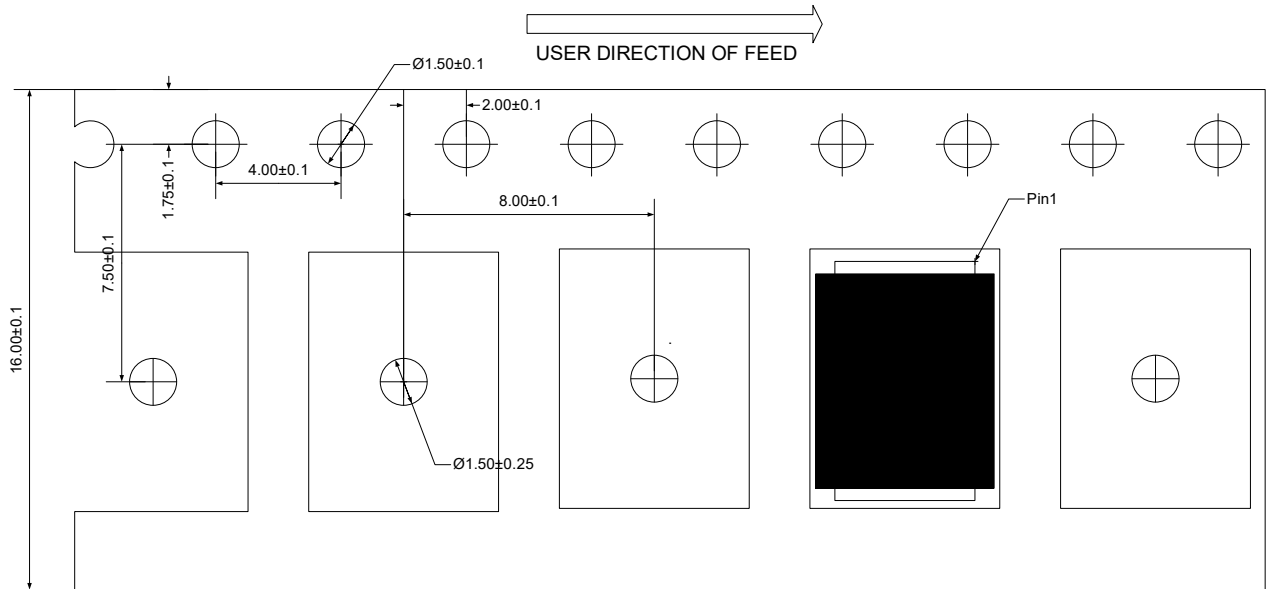


Dimension	Millimeters	
	MIN	MAX
A	6.60	7.11
B	5.59	6.20
C	2.75	3.20
D	0.76	1.52
E	7.71	8.13
F	0.051	0.203
G	0.15	0.31
H	2.06	2.75

Ordering information


Device	Package	Shipping
5.0 SMDJ Series	SMC(DO214AB)	500 / Tape & Reel

Load with information



Unit:mm

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