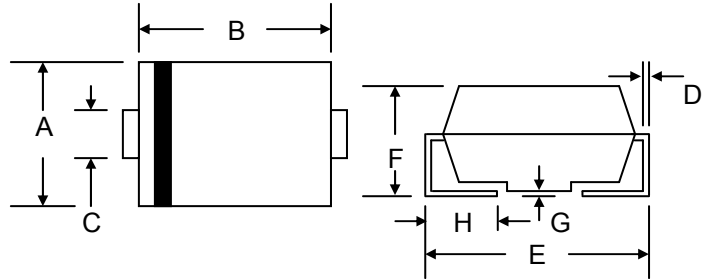


Features

- Glass Passivated Die Construction
- 5000W Peak Pulse Power Dissipation
- 11V – 440V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Voltage
- Typical Response Time < 1nS
- Plastic Case Material has UL Flammability Classification Rating 94V-0



Mechanical Data

- Case: SMC/DO-214AB, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band Except Bi-Directional
- Marking: Device Code
- Weight: 0.21 grams (approx.)
- **Lead Free: For RoHS / Lead Free Version, Add "-LF" Suffix to Part Number, See Page 6**

SMC/DO-214AB		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.25
D	0.152	0.305
E	7.75	8.13
F	2.00	2.62
G	0.051	0.203
H	0.76	1.52
All Dimensions in mm		

Maximum Ratings and Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 μs Waveform (Note 1, 2, 5)	PPPM	5000	W
Peak Pulse Current on 10/1000 μs Waveform (Note 1)	IPPM	See Table 1	A
Peak Forward Surge Current (Note 2, 3)	IFSM	300	A
Maximum Instantaneous Forward Voltage at 100A (Note 3, 4)	V _F	3.5 / 5.0	V
Power Dissipation on Infinite Heatsink at $T_A = 50^\circ\text{C}$	P _D	6.5	W
Typical Thermal Resistance, Junction to Ambient (Note 2)	R _{JA}	75	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance, Junction to Lead (Note 2)	R _{JL}	15	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	$^\circ\text{C}$

- Note:
1. Non-repetitive current pulse per Figure 5 and derated above $T_A = 25^\circ\text{C}$ per Figure 1.
 2. Mounted on 8.0 x 8.0mm copper pads to each terminal.
 3. Measured on 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum. For uni-directional devices only.
 4. $V_F < 3.5\text{V}$ for $V_{BR} \leq 200\text{V}$ and $V_F < 5.0\text{V}$ for $V_{BR} \geq 201\text{V}$.
 5. Peak pulse power waveform is 10/1000 μs .

5.0SMCJ SERIES

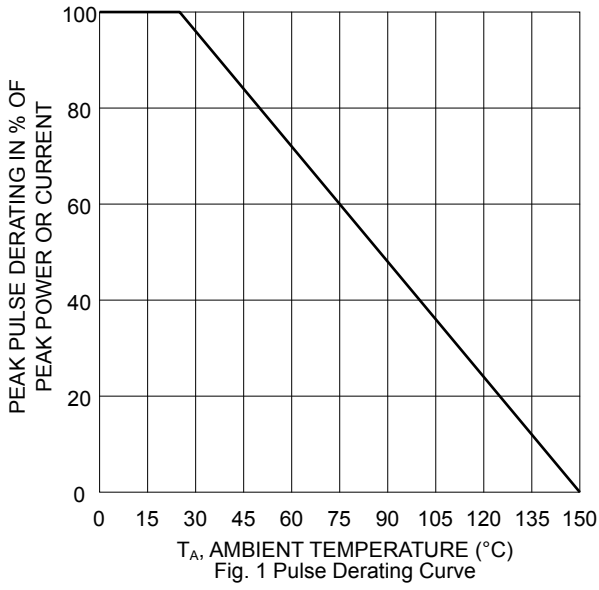


Fig. 1 Pulse Derating Curve

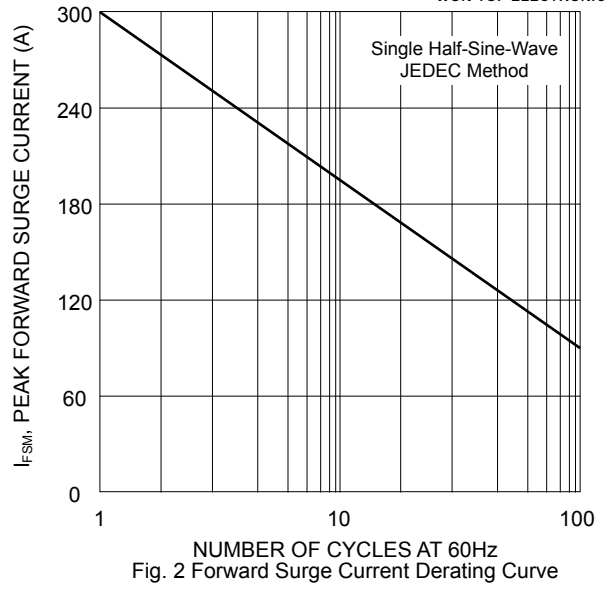


Fig. 2 Forward Surge Current Derating Curve

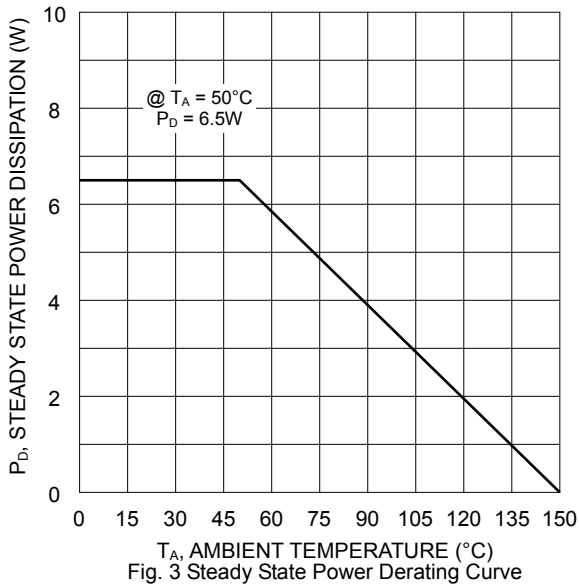


Fig. 3 Steady State Power Derating Curve

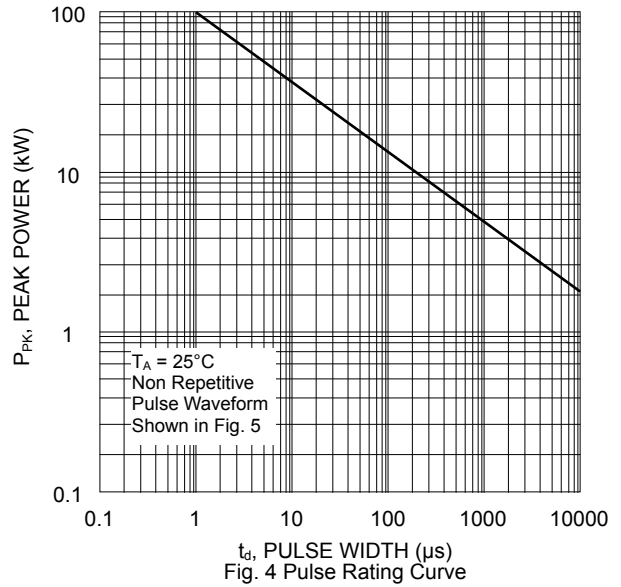


Fig. 4 Pulse Rating Curve

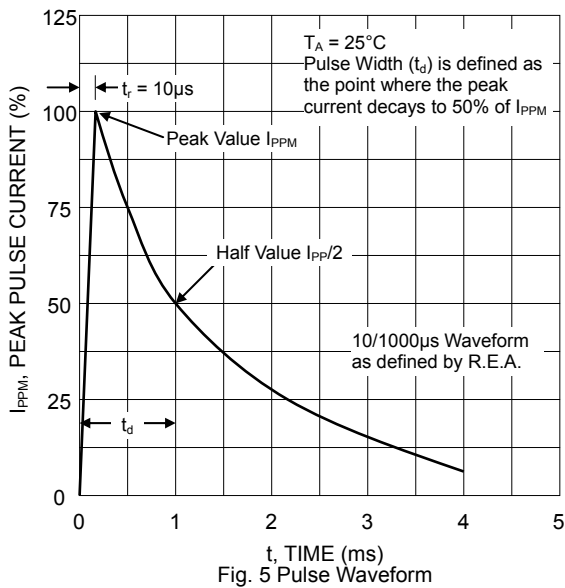


Fig. 5 Pulse Waveform

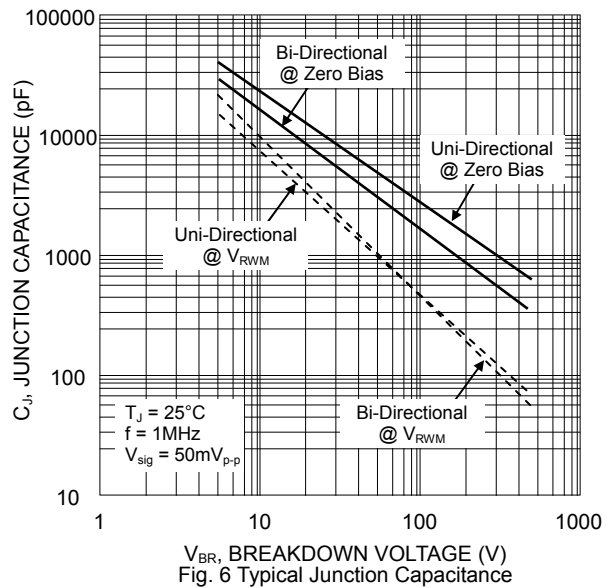


Fig. 6 Typical Junction Capacitance

Electrical Characteristics (@T_A=25°C unless otherwise specified) Table 1

Uni-Directional Part No.	Bi-Directional Part No.	Device Marking Code		Reverse Stand-Off Voltage V _{RWM} (V)	Breakdown Voltage V _{BR} (V) @I _T		Test Current I _T (mA)	Maximum Clamping Voltage @I _{PP} V _C (V)	Peak Pulse Current I _{PP} (A)	Reverse Leakage* @V _{RWM} I _R (μA)
		UNI	BI		Min.	Max.				
5.0SMCJ11	5.0SMCJ11C	5PDW	5BDW	11.0	12.20	14.90	10	20.1	248.80	800
5.0SMCJ11A	5.0SMCJ11CA	5PDX	5BDX	11.0	12.20	13.50	10	18.2	274.70	800
5.0SMCJ12	5.0SMCJ12C	5PDY	5BDY	12.0	13.30	16.30	10	22.0	227.30	800
5.0SMCJ12A	5.0SMCJ12CA	5PDZ	5BDZ	12.0	13.30	14.70	10	19.9	251.30	800
5.0SMCJ13	5.0SMCJ13C	5PED	5BED	13.0	14.40	17.60	10	23.8	210.10	500
5.0SMCJ13A	5.0SMCJ13CA	5PEE	5BEE	13.0	14.40	15.90	10	21.5	232.60	500
5.0SMCJ14	5.0SMCJ14C	5PEF	5BEF	14.0	15.60	19.10	10	25.8	193.80	200
5.0SMCJ14A	5.0SMCJ14CA	5PEG	5BEG	14.0	15.60	17.20	10	23.2	215.50	200
5.0SMCJ15	5.0SMCJ15C	5PEH	5BEH	15.0	16.70	20.40	1	26.9	185.90	100
5.0SMCJ15A	5.0SMCJ15CA	5PEK	5BEK	15.0	16.70	18.50	1	24.4	204.90	100
5.0SMCJ16	5.0SMCJ16C	5PEL	5BEL	16.0	17.80	21.80	1	28.8	173.60	50
5.0SMCJ16A	5.0SMCJ16CA	5PEM	5BEM	16.0	17.80	19.70	1	26.0	192.30	50
5.0SMCJ17	5.0SMCJ17C	5PEN	5BEN	17.0	18.90	23.10	1	30.5	163.90	20
5.0SMCJ17A	5.0SMCJ17CA	5PEP	5BEP	17.0	18.90	20.90	1	27.6	181.20	20
5.0SMCJ18	5.0SMCJ18C	5PEQ	5BEQ	18.0	20.00	24.40	1	32.2	155.30	10
5.0SMCJ18A	5.0SMCJ18CA	5PER	5BER	18.0	20.00	22.10	1	29.2	171.20	10
5.0SMCJ19	5.0SMCJ19C	5PES	5BES	19.0	21.10	25.70	1	34.0	147.00	10
5.0SMCJ19A	5.0SMCJ19CA	5PET	5BET	19.0	21.10	23.30	1	30.8	162.40	10
5.0SMCJ20	5.0SMCJ20C	5PEU	5BEU	20.0	22.20	27.10	1	35.8	139.70	5
5.0SMCJ20A	5.0SMCJ20CA	5PEV	5BEV	20.0	22.20	24.50	1	32.4	154.30	5
5.0SMCJ22	5.0SMCJ22C	5PEW	5BEW	22.0	24.40	29.80	1	39.4	126.90	5
5.0SMCJ22A	5.0SMCJ22CA	5PEX	5BEX	22.0	24.40	26.90	1	35.5	140.80	5
5.0SMCJ24	5.0SMCJ24C	5PEY	5BEY	24.0	26.70	32.60	1	43.0	116.30	5
5.0SMCJ24A	5.0SMCJ24CA	5PEZ	5BEZ	24.0	26.70	29.50	1	38.9	128.50	5
5.0SMCJ26	5.0SMCJ26C	5PFD	5BFD	26.0	28.90	35.30	1	46.6	107.30	5
5.0SMCJ26A	5.0SMCJ26CA	5PFE	5BFE	26.0	28.90	31.90	1	42.1	118.80	5
5.0SMCJ28	5.0SMCJ28C	5PFF	5BFF	28.0	31.10	38.00	1	50.0	100.00	5
5.0SMCJ28A	5.0SMCJ28CA	5PFG	5BFG	28.0	31.10	34.40	1	45.4	110.10	5
5.0SMCJ30	5.0SMCJ30C	5PFH	5BFH	30.0	33.30	40.70	1	53.5	93.50	5
5.0SMCJ30A	5.0SMCJ30CA	5PFK	5BFK	30.0	33.30	36.80	1	48.4	103.30	5
5.0SMCJ33	5.0SMCJ33C	5PFL	5BFL	33.0	36.70	44.90	1	59.0	84.70	5
5.0SMCJ33A	5.0SMCJ33CA	5PFM	5BFM	33.0	36.70	40.60	1	53.3	93.80	5
5.0SMCJ36	5.0SMCJ36C	5PFN	5BFN	36.0	40.00	48.90	1	64.3	77.80	5
5.0SMCJ36A	5.0SMCJ36CA	5PFP	5BFP	36.0	40.00	44.20	1	58.1	86.10	5
5.0SMCJ40	5.0SMCJ40C	5PFQ	5BFQ	40.0	44.40	54.30	1	71.4	70.00	5
5.0SMCJ40A	5.0SMCJ40CA	5PFR	5BFR	40.0	44.40	49.10	1	64.5	77.50	5
5.0SMCJ43	5.0SMCJ43C	5PFS	5BFS	43.0	47.80	58.40	1	76.7	65.20	5
5.0SMCJ43A	5.0SMCJ43CA	5PFT	5BFT	43.0	47.80	52.80	1	69.4	72.00	5
5.0SMCJ45	5.0SMCJ45C	5PFU	5BFU	45.0	50.00	61.10	1	80.3	62.30	5
5.0SMCJ45A	5.0SMCJ45CA	5PFV	5BFV	45.0	50.00	55.30	1	72.7	68.80	5
5.0SMCJ48	5.0SMCJ48C	5PFW	5BFW	48.0	53.30	65.10	1	85.5	58.50	5
5.0SMCJ48A	5.0SMCJ48CA	5PFX	5BFX	48.0	53.30	58.90	1	77.4	64.60	5
5.0SMCJ51	5.0SMCJ51C	5PFY	5BFY	51.0	56.70	69.30	1	91.1	54.90	5
5.0SMCJ51A	5.0SMCJ51CA	5PFZ	5BFZ	51.0	56.70	62.70	1	82.4	60.70	5
5.0SMCJ54	5.0SMCJ54C	5PGD	5BGD	54.0	60.00	73.30	1	96.3	51.90	5
5.0SMCJ54A	5.0SMCJ54CA	5PGE	5BGE	54.0	60.00	66.30	1	87.1	57.40	5
5.0SMCJ58	5.0SMCJ58C	5PGF	5BGF	58.0	64.40	78.70	1	103.0	48.50	5
5.0SMCJ58A	5.0SMCJ58CA	5PGG	5BGG	58.0	64.40	71.20	1	93.6	53.40	5
5.0SMCJ60	5.0SMCJ60C	5PGH	5BGH	60.0	66.70	81.50	1	107.0	46.70	5
5.0SMCJ60A	5.0SMCJ60CA	5PGK	5BGK	60.0	66.70	73.70	1	96.8	51.70	5
5.0SMCJ64	5.0SMCJ64C	5PGL	5BGL	64.0	71.10	86.90	1	114.0	43.90	5
5.0SMCJ64A	5.0SMCJ64CA	5PGM	5BGM	64.0	71.10	78.60	1	103.0	48.50	5
5.0SMCJ70	5.0SMCJ70C	5PGN	5BGN	70.0	77.80	95.10	1	125.0	40.00	5
5.0SMCJ70A	5.0SMCJ70CA	5PGP	5BGP	70.0	77.80	86.00	1	113.0	44.20	5
5.0SMCJ75	5.0SMCJ75C	5PGQ	5BGQ	75.0	83.30	102.00	1	134.0	37.30	5
5.0SMCJ75A	5.0SMCJ75CA	5PGR	5BGR	75.0	83.30	92.10	1	121.0	41.30	5
5.0SMCJ78	5.0SMCJ78C	5PGS	5BGS	78.0	86.70	106.00	1	139.0	36.00	5
5.0SMCJ78A	5.0SMCJ78CA	5PGT	5BGT	78.0	86.70	95.80	1	126.0	39.70	5
5.0SMCJ80	5.0SMCJ80C	5PGA	5BGA	80.0	88.80	108.80	1	143.2	34.90	5
5.0SMCJ80A	5.0SMCJ80CA	5PGB	5BGB	80.0	88.80	97.60	1	129.6	38.60	5
5.0SMCJ85	5.0SMCJ85C	5PGU	5BGU	85.0	94.40	115.00	1	151.0	33.10	5
5.0SMCJ85A	5.0SMCJ85CA	5PGV	5BGV	85.0	94.40	104.00	1	137.0	36.50	5
5.0SMCJ90	5.0SMCJ90C	5PGW	5BGW	90.0	100.00	122.00	1	160.0	31.30	5
5.0SMCJ90A	5.0SMCJ90CA	5PGX	5BGX	90.0	100.00	111.00	1	146.0	34.20	5

*For bi-directional devices V_{RWM} ≤ 20V, the I_R limit is double.

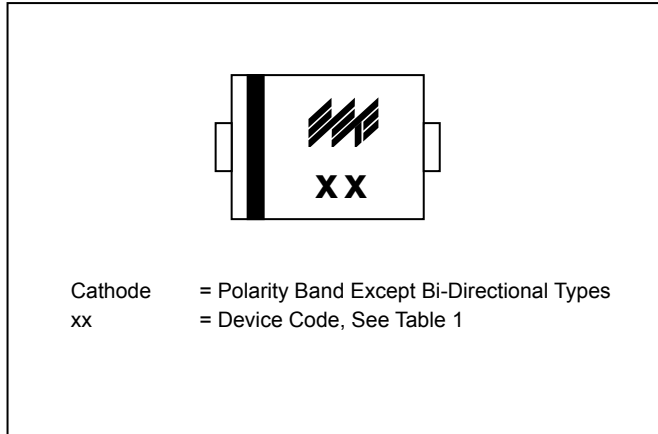
5.0SMCJ SERIES



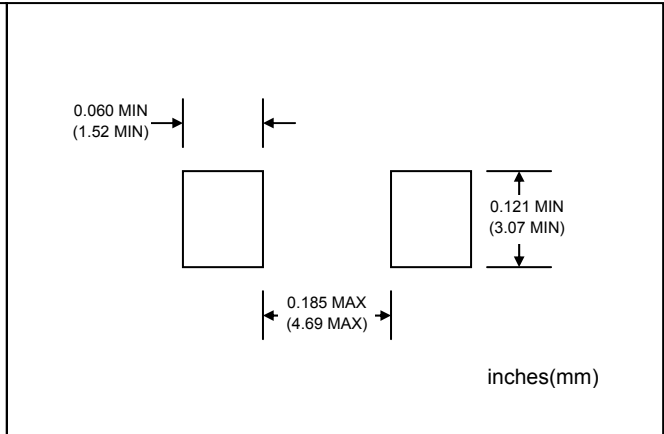
Electrical Characteristics (@T_A=25°C unless otherwise specified) Table 1 (Cont'd)

Uni-Directional Part No.	Bi-Directional Part No.	Device Marking Code		Reverse Stand-Off Voltage V _{RWM} (V)	Breakdown Voltage V _{BR} (V) @I _T		Test Current I _T (mA)	Maximum Clamping Voltage @I _{FP} V _C (V)	Peak Pulse Current I _{PP} (A)	Reverse Leakage @V _{RWM} I _R (μA)
		UNI	BI		Min.	Max.				
5.0SMCJ100	5.0SMCJ100C	5PGY	5BGY	100.0	111.00	136.00	1	179.0	27.90	5
5.0SMCJ100A	5.0SMCJ100CA	5PGZ	5BGZ	100.0	111.00	123.00	1	162.0	30.90	5
5.0SMCJ110	5.0SMCJ110C	5PHD	5BHD	110.0	122.00	149.00	1	196.0	25.50	5
5.0SMCJ110A	5.0SMCJ110CA	5PHE	5BHE	110.0	122.00	135.00	1	177.0	28.20	5
5.0SMCJ120	5.0SMCJ120C	5PHF	5BHF	120.0	133.00	163.00	1	214.0	23.40	5
5.0SMCJ120A	5.0SMCJ120CA	5PHG	5BHG	120.0	133.00	147.00	1	193.0	25.90	5
5.0SMCJ130	5.0SMCJ130C	5PHH	5BHH	130.0	144.00	176.00	1	231.0	21.60	5
5.0SMCJ130A	5.0SMCJ130CA	5PHK	5BHK	130.0	144.00	159.00	1	209.0	23.90	5
5.0SMCJ140	5.0SMCJ140C	5PHA	5BHA	140.0	155.00	190.40	1	250.6	20.00	5
5.0SMCJ140A	5.0SMCJ140CA	5PHB	5BHB	140.0	155.00	171.00	1	226.8	22.00	5
5.0SMCJ150	5.0SMCJ150C	5PHL	5BHL	150.0	167.00	204.00	1	268.0	18.70	5
5.0SMCJ150A	5.0SMCJ150CA	5PHM	5BHM	150.0	167.00	185.00	1	243.0	20.60	5
5.0SMCJ160	5.0SMCJ160C	5PHN	5BHN	160.0	178.00	218.00	1	287.0	17.40	5
5.0SMCJ160A	5.0SMCJ160CA	5PHP	5BHP	160.0	178.00	197.00	1	259.0	19.30	5
5.0SMCJ170	5.0SMCJ170C	5PHQ	5BHQ	170.0	189.00	231.00	1	304.0	16.40	5
5.0SMCJ170A	5.0SMCJ170CA	5PHR	5BHR	170.0	189.00	209.00	1	275.0	18.20	5
5.0SMCJ180	5.0SMCJ180C	5PHS	5BHS	180.0	200.00	244.80	1	322.2	15.50	5
5.0SMCJ180A	5.0SMCJ180CA	5PHT	5BHT	180.0	200.00	220.00	1	291.6	17.10	5
5.0SMCJ190	5.0SMCJ190C	5PHU	5BHU	190.0	211.00	258.40	1	340.1	14.70	5
5.0SMCJ190A	5.0SMCJ190CA	5PHV	5BHV	190.0	211.00	232.00	1	307.8	16.20	5
5.0SMCJ200A	5.0SMCJ200CA	5PHW	5BHW	200.0	224.00	247.00	1	324.0	15.40	5
5.0SMCJ220A	5.0SMCJ220CA	5PHX	5BHX	220.0	246.00	272.00	1	356.0	14.00	5
5.0SMCJ250A	5.0SMCJ250CA	5PHZ	5BHZ	250.0	279.00	309.00	1	405.0	12.30	5
5.0SMCJ300A	5.0SMCJ300CA	5PJE	5BJE	300.0	335.00	371.00	1	486.0	10.30	5
5.0SMCJ350A	5.0SMCJ350CA	5PJG	5BJG	350.0	391.00	432.00	1	567.0	8.80	5
5.0SMCJ400A	5.0SMCJ400CA	5PJK	5BJK	400.0	447.00	494.00	1	648.0	7.70	5
5.0SMCJ440A	5.0SMCJ440CA	5PJM	5BJM	440.0	492.00	543.00	1	713.0	7.00	5

MARKING INFORMATION

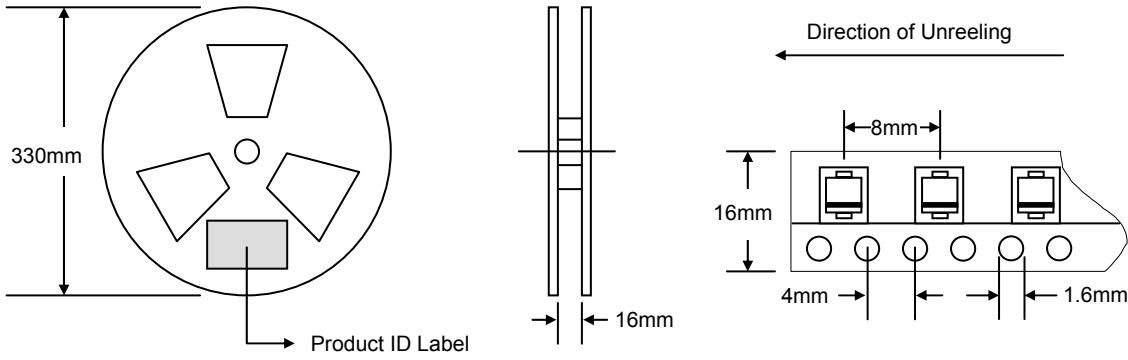


RECOMMENDED FOOTPRINT



PACKAGING INFORMATION

TAPE & REEL




Reel Diameter (mm)	Quantity (PCS)	Inner Box Size L x W x H (mm)	Quantity (PCS)	Carton Size L x W x H (mm)	Quantity (PCS)	Approx. Gross Weight (KG)
330	3,000	340 x 337 x 45	6,000	370 x 370 x 420	48,000	19.0

Note: 1. Paper reel, white or gray color.
2. Components are packed in accordance with EIA standard 481-1 and 481-2.

ORDERING INFORMATION

Product No.	Package Type	Shipping Quantity
5.0SMCJxx-T3	SMC	3000/Tape & Reel

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, 5.0SMCJ5.0-T3-LF.**

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