



## DESCRIPTION

The SMCJ series support both Uni and Bi-direction.

## MECHANICAL DATA

Case : Molded Plastic

Polarity: by cathode band denotes uni-directional device none cathode band denotes bi-directional device

Weight : 0.007 ounces, 0.21 grams

## ORDERING INFORMATION

## FEATURES

- Rating to 489V  $V_{BR}$
- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL recognition 94V-0
- Typical  $I_R$  less than 5uA above 11V  $V_{BR}$  min
- Fast response time: typically less than 1.0ns for Uni-direction, less than 5.0ns for Bi-direction, from 0 Volts to BV min
- Available in SMC Package

Package Type	Part Number	
	Uni	Bi
SMC	SMCJ5.0A	SMCJ5.0CA
	SMCJ6.0A	SMCJ6.0CA
	SMCJ6.5A	SMCJ6.5CA
	SMCJ7.0A	SMCJ7.0CA
	SMCJ7.5A	SMCJ7.5CA
	SMCJ8.0A	SMCJ8.0CA
	SMCJ8.5A	SMCJ8.5CA
	SMCJ9.0A	SMCJ9.0CA
	SMCJ10A	SMCJ10CA
	SMCJ11A	SMCJ11CA
	SMCJ12A	SMCJ12CA
	SMCJ13A	SMCJ13CA
	SMCJ14A	SMCJ14CA
	SMCJ15A	SMCJ15CA
	SMCJ16A	SMCJ16CA
	SMCJ17A	SMCJ17CA
	SMCJ18A	SMCJ18CA
	SMCJ20A	SMCJ20CA
	SMCJ22A	SMCJ22CA
	SMCJ24A	SMCJ24CA
	SMCJ26A	SMCJ26CA
	SMCJ28A	SMCJ28CA
	SMCJ30A	SMCJ30CA
	SMCJ33A	SMCJ33CA
SMCJ36A	SMCJ36CA	
SMCJ40A	SMCJ40CA	
SMCJ43A	SMCJ43CA	
SMCJ45A	SMCJ45CA	
SMCJ48A	SMCJ48CA	

Package Type	Part Number	
	Uni	Bi
SMC	SMCJ51A	SMCJ51CA
	SMCJ54A	SMCJ54CA
	SMCJ58A	SMCJ58CA
	SMCJ60A	SMCJ60CA
	SMCJ64A	SMCJ64CA
	SMCJ70A	SMCJ70CA
	SMCJ75A	SMCJ75CA
	SMCJ78A	SMCJ78CA
	SMCJ85A	SMCJ85CA
	SMCJ90A	SMCJ90CA
	SMCJ100A	SMCJ100CA
	SMCJ110A	SMCJ110CA
	SMCJ120A	SMCJ120CA
	SMCJ130A	SMCJ130CA
	SMCJ150A	SMCJ150CA
	SMCJ160A	SMCJ160CA
	SMCJ170A	SMCJ170CA
	SMCJ180A	SMCJ180CA
	SMCJ190A	SMCJ190CA
	SMCJ200A	SMCJ200CA
	SMCJ210A	SMCJ210CA
	SMCJ220A	SMCJ220CA
	SMCJ250A	SMCJ250CA
	SMCJ300A	SMCJ300CA
SMCJ350A	SMCJ350CA	
SMCJ400A	SMCJ400CA	
SMCJ440A	SMCJ440CA	
Note	SPQ: 500pcs/ Reel	
AiT provides all RoHS Compliant Products		



## ABSOLUTE MAXIMUM RATINGS

@  $T_A = 25^\circ\text{C}$ , unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%

$P_{PK}$ , Peak Power Dissipation at $T_A=25^\circ\text{C}$ , $T_P=1\text{ms}$ <sup>NOTE1,2</sup>	Minimum 1500W
$I_{FSM}$ , Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method)	200A
$P_{M(AV)}$ , Steady State Power Dissipation at $T_L=75^\circ\text{C}$	5.0W
$V_F$ , Maximum Instantaneous Forward Voltage at 100A for Unidirectional Devices Only <sup>NOTE3</sup>	SEE NOTE4
$T_J$ , Operating Temperature Range	$-55^\circ\text{C}\sim+150^\circ\text{C}$
$T_{STG}$ , Storage Temperature Range	$-55^\circ\text{C}\sim+175^\circ\text{C}$

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

NOTE1: Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per Fig. 1.

NOTE2: Thermal Resistance junction to Lead.

NOTE3: 8.3ms single half-wave duty cycle=4 pulses per minutes maximum (uni-directional units only).

NOTE4:  $V_F=3.5\text{V}$  on SMCJ5.0 thru SMCJ90A devices and  $V_F=5.0\text{V}$  on SMCJ100 thru SMCJ170A devices.



## ELECTRICAL CHARACTERISTICS

Part Number	Working Peak Reverse Voltage	Breakdown Voltage $V_{BR}$ Volts			Maximum Reverse Voltage at $I_{RSM}$ (Clamping Voltage)	Maximum Reverse Surge Current	Maximum Reverse Leakage at $V_{RWM}$
	$V_{RWM}$ (volts)	Min(V)	Max(V)	@ $I_T$ (mA)	$V_{RSM}$ (volts)	$I_{RSM}$ (Amps)	$I_R$ ( $\mu$ A)
SMCJ5.0CA	5.0	6.40	7.55	10	9.6	156.3	1000
SMCJ5.0A	5.0	6.40	7.23	10	9.2	163.0	1000
SMCJ6.0CA	6.0	6.67	8.45	10	11.4	131.6	1000
SMCJ6.0A	6.0	6.67	7.67	10	10.3	145.6	1000
SMCJ6.5CA	6.5	7.22	9.14	10	12.3	122.0	500
SMCJ6.5A	6.5	7.22	8.30	10	11.2	133.9	500
SMCJ7.0CA	7.0	7.78	9.86	10	13.3	112.8	200
SMCJ7.0A	7.0	7.78	8.95	10	12.0	125.0	200
SMCJ7.5CA	7.5	8.33	10.80	1.0	14.3	104.9	100
SMCJ7.5A	7.5	8.33	9.58	1.0	12.9	116.3	100
SMCJ8.0CA	8.0	8.89	11.30	1.0	15.0	100.0	50
SMCJ8.0A	8.0	8.89	10.20	1.0	13.6	110.3	50
SMCJ8.5CA	8.5	9.44	11.90	1.0	15.9	95.3	20
SMCJ8.5A	8.5	9.44	10.80	1.0	14.4	104.2	20
SMCJ9.0CA	9.0	10.00	12.80	1.0	16.9	88.7	10
SMCJ9.0A	9.0	10.00	11.50	1.0	15.4	97.4	10
SMCJ10CA	10.0	11.10	14.10	1.0	18.8	79.8	5.0
SMCJ10A	10.0	11.10	12.80	1.0	17.0	88.2	5.0
SMCJ11CA	11.0	12.20	15.40	1.0	20.1	74.6	5.0
SMCJ11A	11.0	12.20	14.40	1.0	18.2	82.4	5.0
SMCJ12CA	12.0	13.30	16.90	1.0	22.0	68.2	5.0
SMCJ12A	12.0	13.30	15.30	1.0	19.9	75.3	5.0
SMCJ13CA	13.0	14.40	18.20	1.0	23.8	63.0	5.0
SMCJ13A	13.0	14.40	16.50	1.0	21.5	69.7	5.0
SMCJ14CA	14.0	15.60	19.80	1.0	25.8	58.1	5.0
SMCJ14A	14.0	15.60	17.90	1.0	23.2	64.7	5.0
SMCJ15CA	15.0	16.70	21.10	1.0	26.9	55.8	5.0
SMCJ15A	15.0	16.70	19.20	1.0	24.4	61.5	5.0
SMCJ16CA	16.0	17.80	22.60	1.0	28.8	52.1	5.0
SMCJ16A	16.0	17.80	20.50	1.0	26.0	57.7	5.0
SMCJ17CA	17.0	18.90	23.90	1.0	30.5	49.2	5.0
SMCJ17A	17.0	18.90	21.70	1.0	27.6	53.3	5.0
SMCJ18CA	18.0	20.00	25.30	1.0	32.2	46.6	5.0
SMCJ18A	18.0	20.00	23.30	1.0	29.2	51.4	5.0
SMCJ20CA	20.0	22.20	28.10	1.0	35.8	41.9	5.0
SMCJ20A	20.0	22.20	25.50	1.0	32.4	46.3	5.0



Part Number	Working Peak Reverse Voltage	Breakdown Voltage V <sub>BR</sub> Volts			Maximum Reverse Voltage at I <sub>RSM</sub> (Clamping Voltage)	Maximum Reverse Surge Current	Maximum Reverse Leakage at V <sub>RWM</sub>
	V <sub>RWM</sub> (volts)	Min(V)	Max(V)	@ I <sub>T</sub> (mA)	V <sub>RSM</sub> (volts)	I <sub>RSM</sub> (Amps)	I <sub>R</sub> (μA)
SMCJ22CA	22.0	24.40	30.90	1.0	39.4	38.1	5.0
SMCJ22A	22.0	24.40	28.00	1.0	35.5	42.2	5.0
SMCJ24CA	24.0	26.70	33.80	1.0	43.0	34.9	5.0
SMCJ24A	24.0	26.70	30.70	1.0	38.9	38.6	5.0
SMCJ26CA	26.0	28.90	36.80	1.0	46.6	32.2	5.0
SMCJ26A	26.0	28.90	32.20	1.0	42.1	35.6	5.0
SMCJ28CA	28.0	31.10	39.40	1.0	50.0	30.0	5.0
SMCJ28A	28.0	31.10	35.80	1.0	45.4	33.0	5.0
SMCJ30CA	30.0	33.30	42.40	1.0	53.5	28.0	5.0
SMCJ30A	30.0	33.30	38.30	1.0	48.4	31.0	5.0
SMCJ33CA	33.0	36.70	46.90	1.0	59.0	25.4	5.0
SMCJ33A	33.0	36.70	42.20	1.0	53.3	28.1	5.0
SMCJ36CA	36.0	40.0	50.7	1.0	64.3	23.3	5.0
SMCJ36A	36.0	40.0	46.0	1.0	58.1	25.8	5.0
SMCJ40CA	40.0	44.4	56.3	1.0	71.4	21.0	5.0
SMCJ40A	40.0	44.4	51.1	1.0	64.5	23.3	5.0
SMCJ43CA	43.0	47.8	60.5	1.0	76.7	19.6	5.0
SMCJ43A	43.0	47.8	54.9	1.0	69.4	21.6	5.0
SMCJ45CA	45.0	50.0	63.3	1.0	80.3	18.7	5.0
SMCJ45A	45.0	50.0	57.5	1.0	72.7	20.6	5.0
SMCJ48CA	48.0	53.3	67.5	1.0	85.5	17.5	5.0
SMCJ48A	48.0	53.3	61.3	1.0	77.4	19.4	5.0
SMCJ51CA	51.0	56.7	71.8	1.0	91.1	16.5	5.0
SMCJ51A	51.0	56.7	65.2	1.0	82.4	18.2	5.0
SMCJ54CA	54.0	60.0	76.0	1.0	96.3	15.6	5.0
SMCJ54A	54.0	60.0	69.0	1.0	87.1	17.2	5.0
SMCJ58CA	58.0	64.4	81.6	1.0	103.0	14.6	5.0
SMCJ58A	58.0	64.4	74.6	1.0	93.6	16.0	5.0
SMCJ60CA	60.0	66.7	84.5	1.0	107.0	14.0	5.0
SMCJ60A	60.0	66.7	76.7	1.0	96.8	15.5	5.0
SMCJ64CA	64.0	71.1	90.1	1.0	114.0	13.2	5.0
SMCJ64A	64.0	71.1	81.8	1.0	103.0	14.6	5.0
SMCJ70CA	70.0	77.8	98.6	1.0	125.0	12.0	5.0
SMCJ70A	70.0	77.8	89.5	1.0	113.0	13.3	5.0
SMCJ75CA	75.0	83.3	106.0	1.0	134.0	11.2	5.0
SMCJ75A	75.0	83.3	95.8	1.0	121.0	12.4	5.0
SMCJ78CA	78.0	86.7	110.0	1.0	139.0	10.8	5.0
SMCJ78A	78.0	86.7	99.7	1.0	126.0	11.4	5.0
SMCJ85CA	85.0	94.4	119.2	1.0	151.0	9.9	5.0
SMCJ85A	85.0	94.4	108.2	1.0	137.0	10.4	5.0



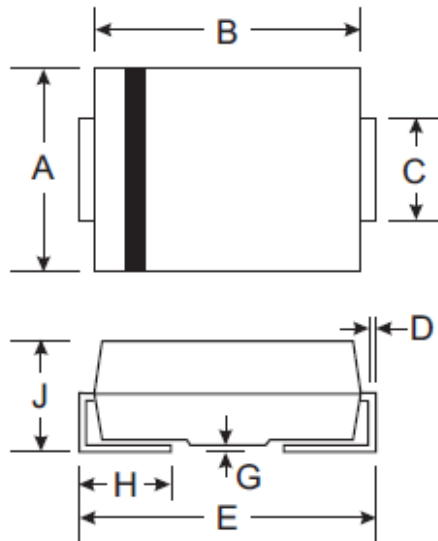
Part Number	Working Peak Reverse Voltage	Breakdown Voltage V <sub>BR</sub> Volts			Maximum Reverse Voltage at I <sub>RSM</sub> (Clamping Voltage)	Maximum Reverse Surge Current	Maximum Reverse Leakage at V <sub>RWM</sub>
	V <sub>RWM</sub> (volts)	Min(V)	Max(V)	@ I <sub>T</sub> (mA)	V <sub>RSM</sub> (volts)	I <sub>RSM</sub> (Amps)	I <sub>R</sub> (μA)
SMCJ90CA	90.0	100.0	126.5	1.0	160.0	9.4	5.0
SMCJ90A	90.0	100.0	115.5	1.0	146.0	10.3	5.0
SMCJ100CA	100.0	111.0	141.0	1.0	179.0	8.4	5.0
SMCJ100A	100.0	111.0	128.0	1.0	162.0	9.3	5.0
SMCJ110CA	110.0	122.0	154.0	1.0	196.0	7.7	5.0
SMCJ110A	110.0	122.0	140.0	1.0	177.0	8.4	5.0
SMCJ120CA	120.0	133.0	169.0	1.0	214.0	7.0	5.0
SMCJ120A	120.0	133.0	153.0	1.0	193.0	7.9	5.0
SMCJ130CA	130.0	144.0	182.0	1.0	231.0	6.5	5.0
SMCJ130A	130.0	144.0	165.0	1.0	209.0	7.2	5.0
SMCJ150CA	150.0	167.0	211.5	1.0	268.0	5.6	5.0
SMCJ150A	150.0	167.0	192.0	1.0	243.0	6.2	5.0
SMCJ160CA	160.0	178.0	226.0	1.0	287.0	5.2	5.0
SMCJ160A	160.0	178.0	205.0	1.0	259.0	5.8	5.0
SMCJ170CA	170.0	189.0	239.5	1.0	304.0	4.9	5.0
SMCJ170A	170.0	189.0	217.5	1.0	275.0	5.5	5.0
SMCJ180CA	180.0	200	230.4	1.0	290	5.2	5.0
SMCJ180A	180.0	200	230.4	1.0	290	5.2	5.0
SMCJ190CA	190.0	211	243.2	1.0	306	4.9	5.0
SMCJ190A	190.0	211	243.2	1.0	306	4.9	5.0
SMCJ200CA	200.0	222	256.0	1.0	322	4.7	5.0
SMCJ200A	200.0	222	256.0	1.0	322	4.7	5.0
SMCJ210CA	210.0	233	268.8	1.0	339	4.4	5.0
SMCJ210A	210.0	233	268.8	1.0	339	4.4	5.0
SMCJ220CA	220.0	244	281.6	1.0	355	4.2	5.0
SMCJ220A	220.0	244	281.6	1.0	355	4.2	5.0
SMCJ250CA	250.0	278	309.0	1.0	403	3.7	5.0
SMCJ250A	250.0	278	309.0	1.0	403	3.7	5.0
SMCJ300CA	300.0	333	371.0	1.0	484	3.1	5.0
SMCJ300A	300.0	333	371.0	1.0	484	3.1	5.0
SMCJ350CA	350.0	389	432.0	1.0	565	2.7	5.0
SMCJ350A	350.0	389	432.0	1.0	565	2.7	5.0
SMCJ400CA	400.0	444	494.0	1.0	645	2.3	5.0
SMCJ400A	400.0	444	494.0	1.0	645	2.3	5.0
SMCJ440CA	440.0	489	543.0	1.0	710	2.1	5.0
SMCJ440A	440.0	489	543.0	1.0	710	2.1	5.0

NOTE: For bidirectional use C or CA suffix for types SMCJ5.0 thru types SMCJ440 (ex. SMCJ5.0C, SMCJ170CA).  
Electrical characteristics apply in both directions.



## PACKAGE INFORMATION

Dimension in SMC Package (Unit: mm)



DIM	MILLIMETERS	
	MIN	MAX
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62



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