

**SMCJ5.0(C)A THRU SMCJ170(C)A**

**SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR DIODES**

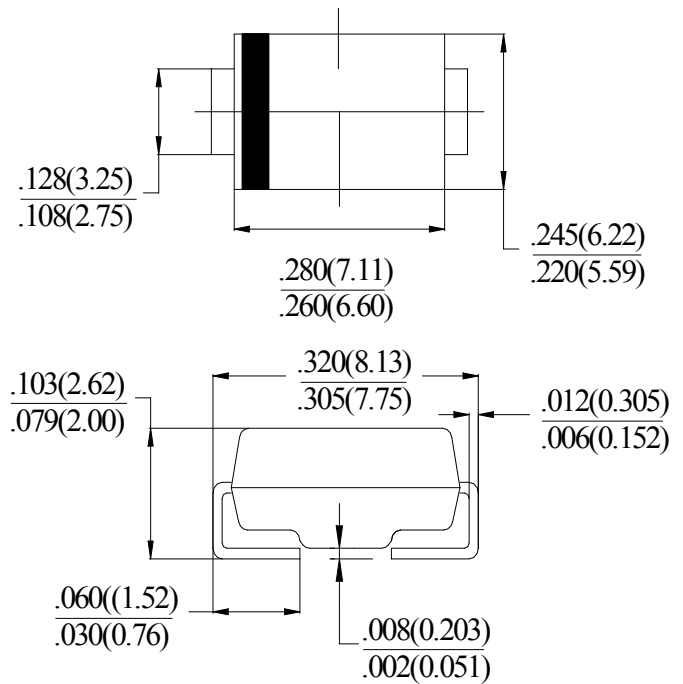
**FEATURE**

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated chip junction
- 1500W surge capability at 10/1000us waveform, Duty cycle:0.01%
- Excellent clamping capability
- Low zener impedance
- Fast response time: Typically less than 1.0ps from 0 volts to BV min.
- Typical IR less than 1  $\mu$ A above 13V
- High temperature soldering guaranteed: 260°C/10 seconds at terminals.

**MECHANICAL DATA**

- Case: SMC, Transfer Molded Epoxy
- Epoxy: UL94V-0 rate flame retardant
- Terminals: MIL-STD- 202E, Method 208 guaranteed
- Polarity Indicator: Cathode Band (Note: Bi-directional devices have no polarity indicator.)
- Weight: 0.230g (approximately)
- Mounting position: Any

**SMC (DO-214AB)**



Dimensions in inches and (millimeters)

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Rating at 25°C ambient temperature unless otherwise stated.  
Single-phase, half-wave, 60HZ, resistive or inductive load.  
For capacitive load, derate current by 20%

Type Number	SYM BOL	Value	units
Peak Power Dissipation at $T_A=25^\circ\text{C}$ , $T_p=1\text{ms}$ (Note 1)	$P_{PPM}$	Minimum 1500	Watts
Peak Pulse Current of on 10/1000us waveform. (Note1, Fig.3)	$I_{PPM}$	See Table	Amps
Steady State Power Dissipation at $T_L=75^\circ\text{C}$ (note 2)	$P_D$	5.0	Watts
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (note 3)	$I_{FSM}$	200	Amps
Storage Temperature	$T_{STG}$	-55 to +150	°C
Operating Junction Temperature	$T_J$	-55 to +150	°C

**Note:**

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  $0.3 \times 0.3''$  ( $8 \times 8\text{mm}$ ) Per Fig.5 .
3. 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minutes Maximum.

**Devices for Bipolar Applications**

1. For Bidirectional Use C or CA Suffix for Types SMCJ5.0 thru Types SMCJ170.
2. Electrical Characteristics Apply in Both Directions.

**ELECTRICAL CHARACTERISTICS**( $T_A=25^\circ\text{C}$  unless otherwise noted)

Device		Reverse Stand-Off Voltage	Breakdown Voltage VBR(volts)@IT		Test Current	Maximum Reverse Leakage @VR	Maximum Peak Pulse Current	Maximum Clamping Voltage @IPP
UNI	BI	VR(V)	VBL(V)	VBH(V)	IT(mA)	IR(μA)	IPP(A)	VCH(V)
SMCJ 5.0A	SMCJ 5.0CA	5.0	6.40	7.00	10	800	163.0	9.2
SMCJ 6.0A	SMCJ 6.0CA	6.0	6.67	7.37	10	800	145.7	10.3
SMCJ 6.5A	SMCJ 6.5CA	6.5	7.22	7.98	10	500	134.0	11.2
SMCJ 7.0A	SMCJ 7.0CA	7.0	7.78	8.60	10	200	125.0	12.0
SMCJ 7.5A	SMCJ 7.5CA	7.5	8.33	9.21	1.0	100	116.3	12.9
SMCJ 8.0A	SMCJ 8.0CA	8.0	8.89	9.83	1.0	50.0	110.3	13.6
SMCJ 8.5A	SMCJ 8.5CA	8.5	9.44	10.4	1.0	20.0	104.2	14.4
SMCJ 9.0A	SMCJ 9.0CA	9.0	10.0	11.1	1.0	10.0	97.4	15.4
SMCJ 10A	SMCJ 10CA	10	11.1	12.3	1.0	5.0	88.3	17.0
SMCJ 11A	SMCJ 11CA	11	12.2	13.5	1.0	1.0	82.5	18.2
SMCJ 12A	SMCJ 12CA	12	13.3	14.7	1.0	1.0	75.4	19.9
SMCJ 13A	SMCJ 13CA	13	14.4	15.9	1.0	1.0	69.8	21.5
SMCJ 14A	SMCJ 14CA	14	15.6	17.2	1.0	1.0	64.7	23.2
SMCJ 15A	SMCJ 15CA	15	16.7	18.5	1.0	1.0	61.5	24.4
SMCJ 16A	SMCJ 16CA	16	17.8	19.7	1.0	1.0	57.7	26.0
SMCJ 17A	SMCJ 17CA	17	18.9	20.9	1.0	1.0	54.4	27.6
SMCJ 18A	SMCJ 18CA	18	20.0	22.1	1.0	1.0	51.4	29.2
SMCJ 20A	SMCJ 20CA	20	22.2	24.5	1.0	1.0	46.3	32.4
SMCJ 22A	SMCJ 22CA	22	24.4	26.9	1.0	1.0	42.3	35.5
SMCJ 24A	SMCJ 24CA	24	26.7	29.5	1.0	1.0	38.6	38.9
SMCJ 26A	SMCJ 26CA	26	28.9	31.9	1.0	1.0	35.7	42.1
SMCJ 28A	SMCJ 28CA	28	31.1	34.4	1.0	1.0	33.1	45.4
SMCJ 30A	SMCJ 30CA	30	33.3	36.8	1.0	1.0	31.0	48.4
SMCJ 33A	SMCJ 33CA	33	36.7	40.6	1.0	1.0	28.2	53.3
SMCJ 36A	SMCJ 36CA	36	40.0	44.2	1.0	1.0	25.9	58.1
SMCJ 40A	SMCJ 40CA	40	44.4	49.1	1.0	1.0	23.3	64.5
SMCJ 43A	SMCJ 43CA	43	47.8	52.8	1.0	1.0	21.7	69.4
SMCJ 45A	SMCJ 45CA	45	50.0	55.3	1.0	1.0	20.6	72.7
SMCJ 48A	SMCJ 48CA	48	53.3	58.9	1.0	1.0	19.4	77.4
SMCJ 51A	SMCJ 51CA	51	56.7	62.7	1.0	1.0	18.2	82.4
SMCJ 54A	SMCJ 54CA	54	60.0	66.3	1.0	1.0	17.3	87.1

SMCJ 58A	SMCJ 58CA	58	64.4	71.2	1.0	1.0	16.1	93.6
SMCJ 60A	SMCJ 60CA	60	66.7	73.7	1.0	1.0	15.5	96.8
SMCJ 64A	SMCJ 64CA	64	71.1	78.6	1.0	1.0	14.6	103
SMCJ 70A	SMCJ 70CA	70	77.8	86.0	1.0	1.0	13.3	113
SMCJ 75A	SMCJ 75CA	75	83.3	92.1	1.0	1.0	12.4	121
SMCJ 78A	SMCJ 78CA	78	86.7	95.8	1.0	1.0	11.9	126
SMCJ 85A	SMCJ 85CA	85	94.4	104	1.0	1.0	11.0	137
SMCJ 90A	SMCJ 90CA	90	100	111	1.0	1.0	10.3	146
SMCJ 100A	SMCJ 100CA	100	111	123	1.0	1.0	9.3	162
SMCJ 110A	SMCJ 110CA	110	122	135	1.0	1.0	8.5	177
SMCJ 120A	SMCJ 120CA	120	133	147	1.0	1.0	7.8	193
SMCJ 130A	SMCJ 130CA	130	144	159	1.0	1.0	7.2	209
SMCJ 150A	SMCJ 150CA	150	167	185	1.0	1.0	6.2	243
SMCJ 160A	SMCJ 160CA	160	178	197	1.0	1.0	5.8	259
SMCJ 170A	SMCJ 170CA	170	189	209	1.0	1.0	5.5	275

**Note:**

1. VBR measured after IT applied for 300us, IT=square wave pulse or equivalent.
2. Surge current waveform per Figure 3 and derate per Figure 2.
3. All terms and symbols are consistent with ANSI/IEEE C62.35.

RATING AND CHARACTERISTIC CURVES

FIG.1-PEAK PULSE POWER RATING CURVE

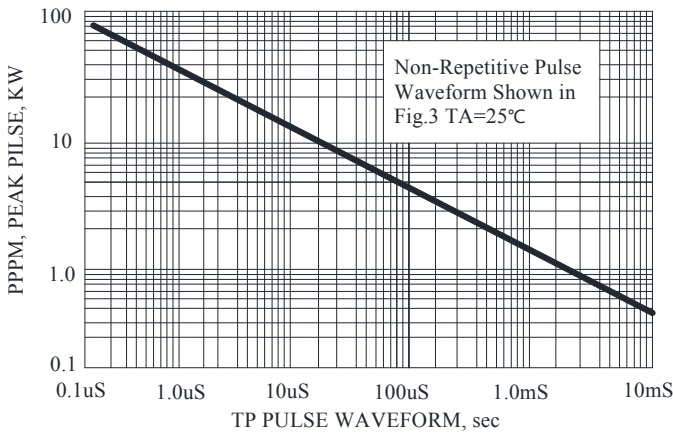


FIG.2-PULSE DERATING CURVE

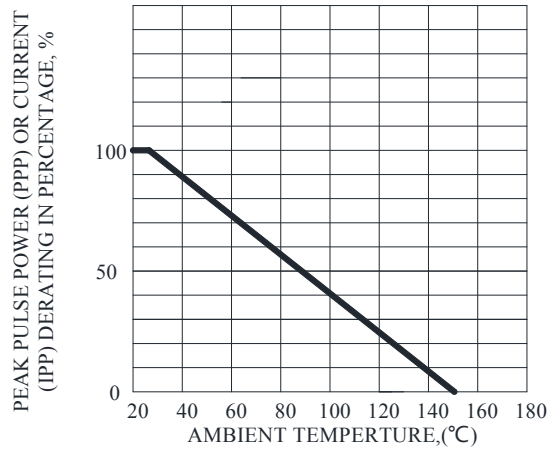


FIG.3-PULSE WAVEFORM

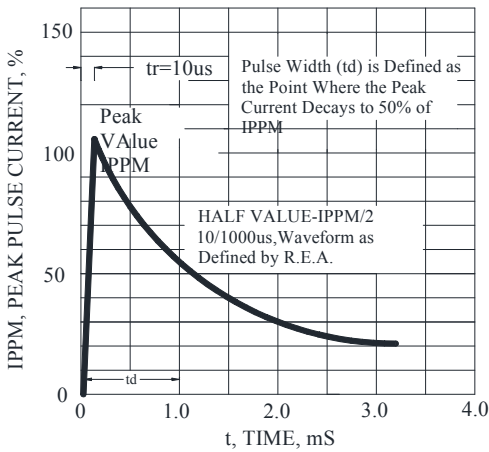


FIG.4- TYPICAL JUNCTION CAPACITANCE

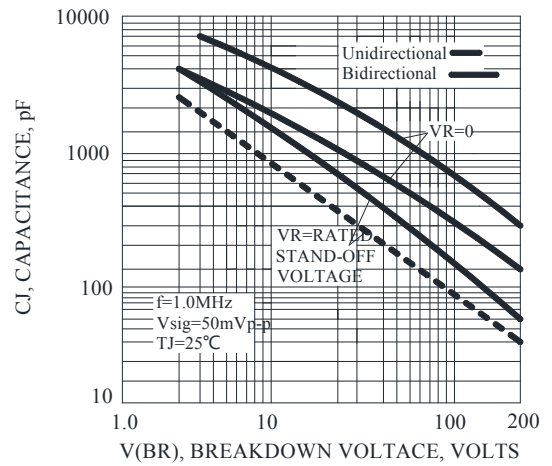


FIG.5- STEADY STATE POWER DERATING CURVE

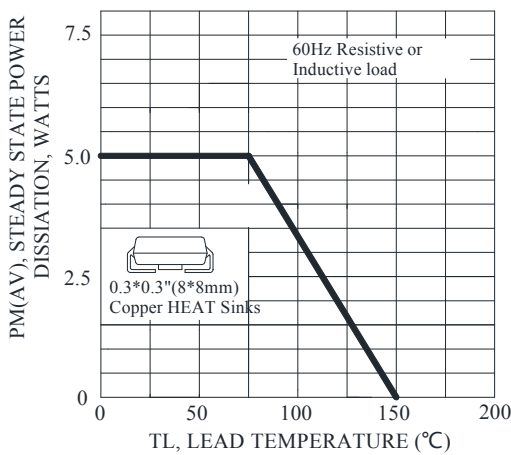
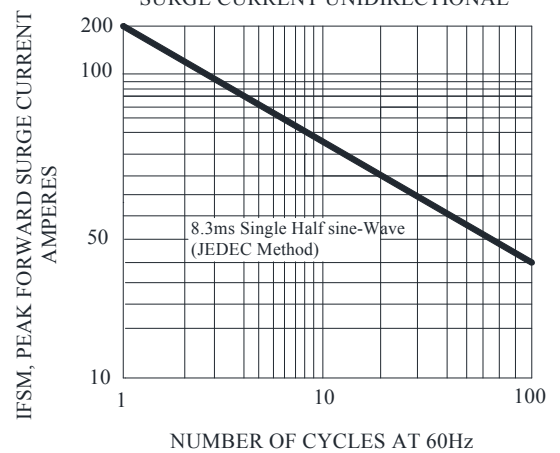


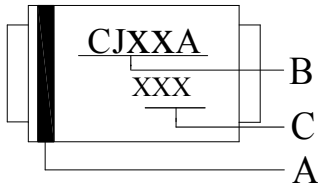
FIG.6- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL



## Marking and packaging illustration

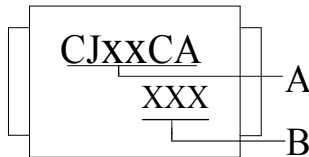
### 1、Marking

#### SMCJ5.0A thru SMCJ170A



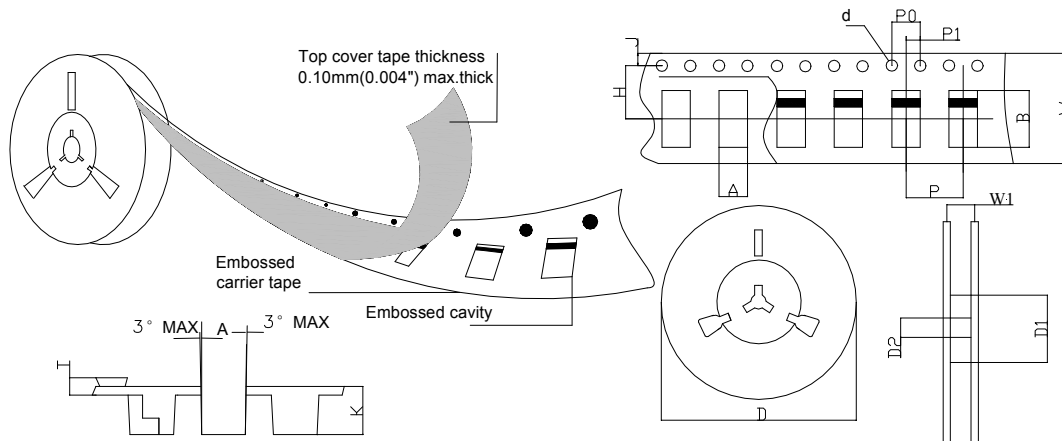
SYMBOL	Explanation
A	Color Band Denotes Cathode
B	Product Name (SMCJ5.0A thru SMCJ170A)
C	Date Code

#### SMCJ5.0CA thru SMCJ170CA



SYMBOL	Explanation
A	Product Name (SMCJ5.0CA thru SMCJ170CA)
B	Date Code

### 2、Packaging



SPECIFICATIONS mm(inch)		PACKAGE	SPECIFICATIONS mm(inch)		PACKAGE
ITEM	SYM BOL	SMC DO-214AB	ITEM	SYM BOL	SMC DO-214AB
Carrier width	A	6.15(0.242)Max	Carrier depth	K	2.54(0.100)Typ
Carrier length	B	8.41(0.331)Max	Punch hole pitch	P	8.00(0.315)Typ
Sprocket hole	d	ø1.55(0.061)Typ	Sprocket hole pitch	P0	4.00(0.157)Typ
Reel outer diameter	D	330.0(13.0)Typ	Embossment center	P1	2.00(0.079)Typ
Reel inner diameter	D1	74.0(2.913)Min	Overall tape thickness	T	0.25(0.010)Typ
Feed hole diameter	D2	13.0(0.512)Typ	Tape width	W	16.0(0.430)Typ
Sprocket hole position	J	1.75(0.069)Typ	Reel width	W1	16.5(0.650)Min
Punch hole position	H	7.50(0.295)Typ			