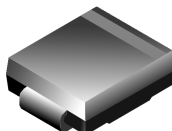


## SMCJ5.0(C)A - SMCJ170(C)A

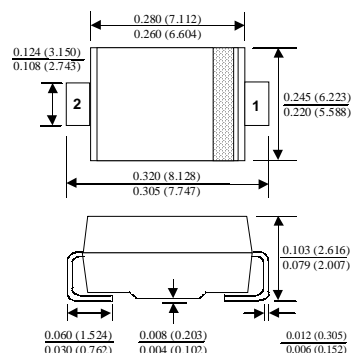
### Features

- Glass passivated junction.
- 1500 W Peak Pulse Power capability on 10/1000  $\mu$ s waveform.
- Excellent clamping capability.
- Low incremental surge resistance.
- Fast response time; typically less than 1.0 ps from 0 volts to BV for unidirectional and 5.0 ns for bidirectional.
- Typical  $I_R$  less than 1.0  $\mu$ A above 10V.



**SMC/DO-214AB**

COLOR BAND DENOTES CATHODE ON UNIDIRECTIONAL DEVICES ONLY. NO COLOR BAND ON BIDIRECTIONAL DEVICES.



### DEVICES FOR BIPOLAR APPLICATIONS

- Bidirectional types use CA suffix.
- Electrical Characteristics apply in both directions.

## 1500 Watt Transient Voltage Suppressors

### Absolute Maximum Ratings\*

$T_A = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Value	Units
$P_{PPM}$	Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform	minimum 1500	W
$I_{PPM}$	Peak Pulse Current on 10/1000 $\mu$ s waveform	see table	A
$i_{f(surge)}$	Peak Forward Surge Current superimposed on rated load (JEDEC method) (Note 1)	200	A
$T_{stg}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature	-55 to +150	$^\circ\text{C}$

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**Note 1:** Measured on 8.3 ms single half-sine wave or equivalent square wave; Duty cycle = 4 pulses per minute maximum.

## Transient Voltage Suppressors

(continued)

### Electrical Characteristics

$T_A = 25^\circ\text{C}$  unless otherwise noted

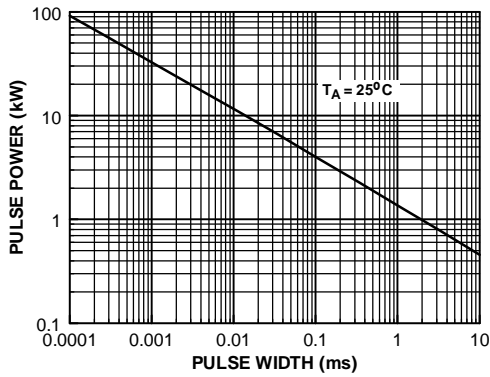
Uni-directional Bi-directional (C) Device	Part Marking	Reverse Stand-off Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ (V)		Test Current $I_T$ (mA)	Max Clamping Voltage @ IPPM $V_C$ (V)	Max Peak Pulse Surge Current $I_{PPM}$ (A)	Max Reverse Leakage $V_{RWM}$ $I_R$ (uA)*
			min	max				
SMCJ5.0(C)A	GDE(BDE)	5.0	6.40	7.0	10	9.2	163.0	1000
SMCJ6.0(C)A	GDG(BDG)	6.0	6.67	7.37	10	10.3	145.6	1000
SMCJ6.5(C)A	GDK(BDK)	6.5	7.22	7.98	10	11.2	133.9	500
SMCJ7.0(C)A	GDM(BDM)	7.0	7.78	8.60	10	12.0	125.0	200
SMCJ7.5(C)A	GDP(BDP)	7.5	8.33	9.21	1	12.9	116.3	100
SMCJ8.0(C)A	GDR(BDR)	8.0	8.89	9.83	1	13.6	110.3	50
SMCJ8.5(C)A	GDY(BDY)	8.5	9.44	10.4	1	14.4	104.2	20
SMCJ9.0(C)A	GDV(BDV)	9.0	10.0	11.1	1	15.4	97.4	10
SMCJ10(C)A	GDX(BDX)	10	11.1	12.3	1	17.0	88.2	5
SMCJ11(C)A	GDZ(BDZ)	11	12.2	13.5	1	18.2	82.4	5
SMCJ12(C)A	GEE(BEE)	12	13.3	14.7	1	19.9	75.3	5
SMCJ13(C)A	GEG(BEG)	13	14.4	15.9	1	21.5	69.8	5
SMCJ14(C)A	GEK(BEK)	14	15.6	17.2	1	23.2	64.7	5
SMCJ15(C)A	GEM(BEM)	15	16.7	18.5	1	24.4	61.5	5
SMCJ16(C)A	GEP(BEP)	16	17.8	19.7	1	26.0	57.7	5
SMCJ17(C)A	GER(BER)	17	18.9	20.9	1	27.6	54.3	5
SMCJ18(C)A	GET(BET)	18	20.0	22.1	1	29.2	51.4	5
SMCJ20(C)A	GEV(BEV)	20	22.2	24.5	1	32.4	46.3	5
SMCJ22(C)A	GEX(BEX)	22	24.4	26.9	1	35.5	42.3	5
SMCJ24(C)A	GEZ(BEZ)	24	26.7	29.5	1	38.9	38.6	5
SMCJ26(C)A	GFE(BFE)	26	28.9	31.9	1	42.1	35.6	5
SMCJ28(C)A	GFG(BFG)	28	31.1	34.4	1	45.4	33.0	5
SMCJ30(C)A	GFK(BFK)	30	33.3	36.8	1	48.4	31.0	5
SMCJ33(C)A	GFN(BFN)	33	36.7	40.6	1	53.3	28.1	5
SMCJ36(C)A	GFP(BFP)	36	40.0	44.2	1	58.1	25.8	5
SMCJ40(C)A	GFR(BFR)	40	44.4	49.1	1	64.5	23.3	5
SMCJ43(C)A	GFT(BFT)	43	47.8	52.8	1	69.4	21.6	5
SMCJ45(C)A	GFV(BFV)	45	50.0	55.3	1	72.7	20.6	5
SMCJ48(C)A	GFX(BFX)	48	53.3	58.9	1	77.4	19.4	5
SMCJ51(C)A	GFZ(BFZ)	51	56.7	62.7	1	82.4	18.2	5
SMCJ54(C)A	GGE(BGE)	54	60.0	66.3	1	87.1	17.2	5
SMCJ58(C)A	GGG(BGG)	58	64.4	71.2	1	93.6	16.0	5
SMCJ60(C)A	GGK(BGK)	60	66.7	73.7	1	96.8	15.5	5
SMCJ64(C)A	GGM(BGM)	64	71.1	78.6	1	103.0	14.6	5
SMCJ70(C)A	GGP(BGP)	70	77.8	86.0	1	113.0	13.3	5
SMCJ75(C)A	GGR(BGR)	75	83.3	92.1	1	121.0	12.4	5
SMCJ78(C)A	GGT(BGT)	78	86.7	95.8	1	126.0	11.9	5
SMCJ85(C)A	GGV(BGV)	85	94.4	104.0	1	137.0	10.9	5
SMCJ90(C)A	GGX(BGX)	90	100.0	111.1	1	146.0	10.3	5
SMCJ100(C)A	GGZ(BGZ)	100	111.0	123.0	1	162.0	9.3	5
SMCJ110(C)A	GHE(BHE)	110	122.0	135.0	1	177.0	8.5	5
SMCJ120(C)A	GHG(BHG)	120	133.0	147.0	1	193.0	7.8	5
SMCJ130(C)A	GHK(BHK)	130	144.0	159.0	1	209.0	7.2	5
SMCJ150(C)A	GHM(BHM)	150	167.0	185.0	1	243.0	6.2	5
SMCJ160(C)A	GHP(BHP)	160	178.0	197.0	1	259.0	5.8	5
SMCJ170(C)A	GHR(BHR)	170	189.0	209.0	1	275.0	5.5	5

\* For bidirectional parts with  $V_{RWM} < 10\text{V}$ , the  $I_R$  max limit is doubled.

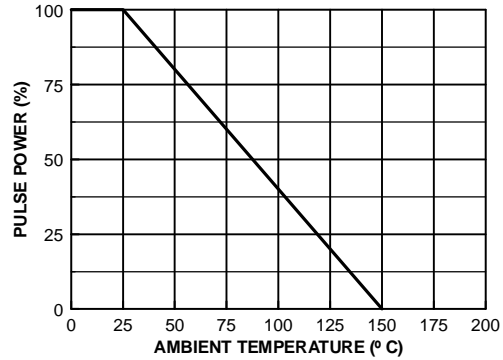
SMCJ5.0(C)A - SMCJ170(C)A

Typical Characteristics

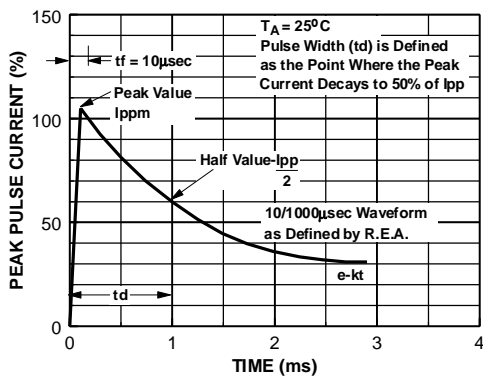
Peak Pulse Power Rating Curve



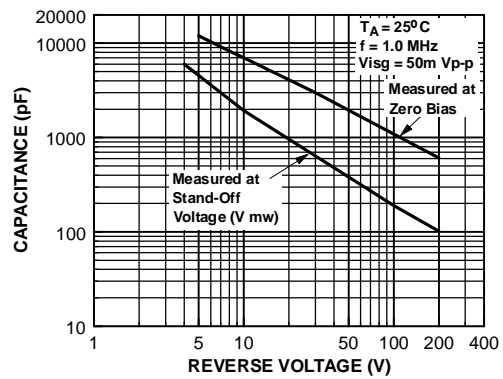
Pulse Derating Curve



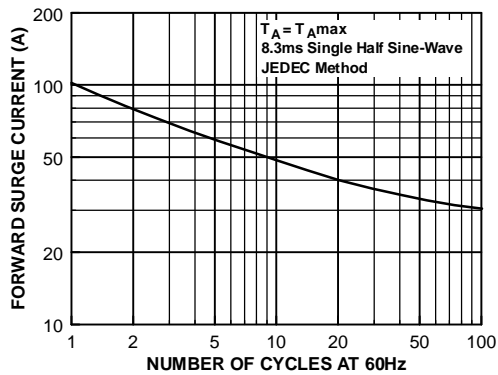
Pulse Waveform



Junction Capacitance



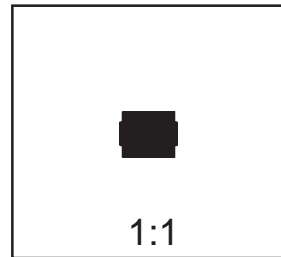
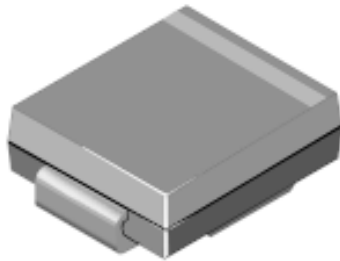
Non-Repetitive Surge Current



# SMC/DO-214AB Package Dimensions



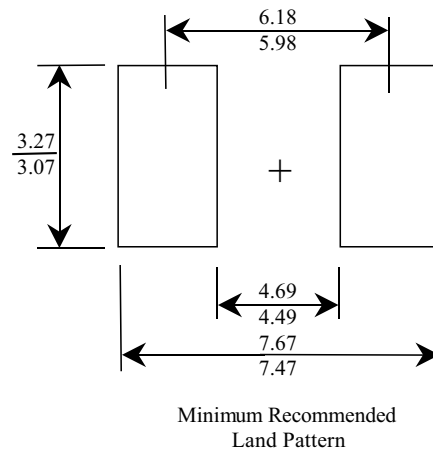
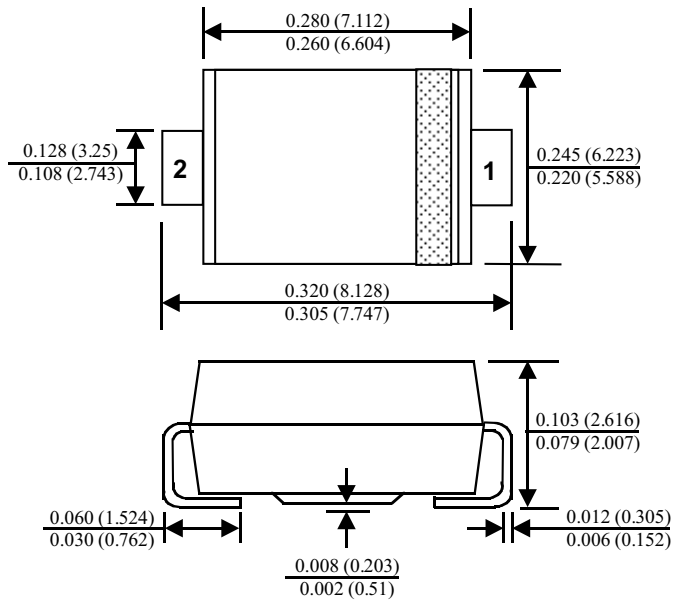
## SMC/DO-214AB (FS PKG Code P7)



Scale 1:1 on letter size paper

Dimensions shown below are in:  
inches [millimeters]

Part Weight per unit (gram): 0.21



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