

### Features

- Glass Passivated Die Construction
- 3000W Peak Pulse Power Dissipation
- 5.0V – 170V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O



### 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	1.27
All Dimensions in mm		

"C" Suffix Designates Bi-directional Devices  
 "A" Suffix Designates 5% Tolerance Devices  
 No Suffix Designates 10% Tolerance Devices

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

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation 10/1000 $\mu\text{s}$ Waveform (Note 1, 2) Figure 3	PPPM	3000 Minimum	W
Peak Pulse Current on 10/1000 $\mu\text{s}$ Waveform (Note 1) Figure 4	IPPM	See Table 1	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 2, 3)	IFSM	100	A
Operating and Storage Temperature Range	$T_j, T_{STG}$	-55 to +150	$^\circ\text{C}$

- Note: 1. Non-repetitive current pulse per Figure 4 and derated above  $T_A = 25^\circ\text{C}$  per Figure 1.  
 2. Mounted on 8.0mm<sup>2</sup> copper pad to each terminal.  
 3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum.



Fig. 1 Pulse Derating Curve



Fig. 2 Typical Junction Capacitance



Fig. 3 Pulse Rating Curve



Fig. 4 Pulse Waveform

# UNI-DIRECTIONAL 3000 WATT SURFACE MOUNT TVS


UNI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR (uA)
3.0SMCJ5.0	HDD	5.00	6.40	7.55	10	9.6	312.5	1000
3.0SMCJ5.0A	HDE	5.00	6.40	7.25	10	9.2	326.0	1000
3.0SMCJ6.0	HDF	6.00	6.67	8.45	10	11.4	263.2	1000
3.0SMCJ6.0A	HDG	6.00	6.67	7.67	10	10.3	291.3	1000
3.0SMCJ6.5	HDH	6.50	7.22	9.14	10	12.3	243.9	500
3.0SMCJ6.5A	HDK	6.50	7.22	8.30	10	11.2	267.9	500
3.0SMCJ7.0	HDL	7.00	7.78	9.86	10	13.3	225.6	200
3.0SMCJ7.0A	HDM	7.00	7.78	8.95	10	12.0	250.0	200
3.0SMCJ7.5	HDN	7.50	8.33	10.67	1	14.3	209.8	100
3.0SMCJ7.5A	HDP	7.50	8.33	9.58	1	12.9	232.6	100
3.0SMCJ8.0	HDQ	8.00	8.99	11.30	1	15.0	200.0	50
3.0SMCJ8.0A	HDR	8.00	8.99	10.23	1	13.6	220.6	50
3.0SMCJ8.5	HDS	8.50	9.44	11.92	1	15.9	188.8	25
3.0SMCJ8.5A	HDT	8.50	9.44	10.82	1	14.4	208.4	25
3.0SMCJ9.0	HDU	9.00	10.00	12.60	1	16.9	177.4	10
3.0SMCJ9.0A	HDV	9.00	10.00	11.50	1	15.4	194.8	10
3.0SMCJ10	HDW	10.00	11.10	14.10	1	18.8	159.6	5
3.0SMCJ10A	HDX	10.00	11.10	12.80	1	17.0	176.4	5
3.0SMCJ11	HDY	11.00	12.20	15.40	1	20.1	149.2	5
3.0SMCJ11A	HDZ	11.00	12.20	14.00	1	18.2	184.8	5
3.0SMCJ12	HED	12.00	13.30	16.90	1	22.0	136.4	5
3.0SMCJ12A	HEE	12.00	13.30	15.30	1	19.9	150.6	5
3.0SMCJ13	HEF	13.00	14.40	18.20	1	23.8	126.0	5
3.0SMCJ13A	HEG	13.00	14.40	16.50	1	21.5	139.4	5
3.0SMCJ14	HEH	14.00	15.60	19.80	1	25.8	116.2	5
3.0SMCJ14A	HEK	14.00	15.60	17.90	1	23.2	129.4	5
3.0SMCJ15	HEL	15.00	16.70	21.10	1	26.9	111.6	5
3.0SMCJ15A	HEM	15.00	16.70	19.20	1	24.4	123.0	5
3.0SMCJ16	HEN	16.00	17.80	22.60	1	28.8	104.2	5
3.0SMCJ16A	HEP	16.00	17.80	20.50	1	26.0	115.4	5
3.0SMCJ17	HEQ	17.00	18.90	23.90	1	30.5	98.4	5
3.0SMCJ17A	HER	17.00	18.90	21.70	1	27.6	106.6	5
3.0SMCJ18	HES	18.00	20.00	25.30	1	32.2	93.2	5
3.0SMCJ18A	HET	18.00	20.00	23.30	1	29.2	102.8	5
3.0SMCJ20	HEU	20.00	22.20	28.10	1	35.8	83.8	5
3.0SMCJ20A	HEV	20.00	22.20	25.50	1	32.4	92.6	5
3.0SMCJ22	HEW	22.00	24.40	30.90	1	39.4	76.2	5
3.0SMCJ22A	HEX	22.00	24.40	28.00	1	35.5	84.4	5
3.0SMCJ24	HEY	24.00	26.70	33.80	1	43.0	69.8	5
3.0SMCJ24A	HEZ	24.00	26.70	30.70	1	38.9	77.2	5
3.0SMCJ26	HFD	26.00	28.90	36.60	1	46.6	64.4	5
3.0SMCJ26A	HFE	26.00	28.90	33.20	1	42.1	71.2	5
3.0SMCJ28	HFF	28.00	31.10	39.40	1	50.0	60.0	5
3.0SMCJ28A	HFG	28.00	31.10	35.80	1	45.4	66.0	5
3.0SMCJ30	HFH	30.00	33.30	42.20	1	53.5	56.0	5
3.0SMCJ30A	HFK	30.00	33.30	38.30	1	48.4	62.0	5
3.0SMCJ33	HFL	33.00	36.70	46.50	1	59.0	50.4	5
3.0SMCJ33A	HFM	33.00	36.70	42.20	1	53.3	56.2	5
3.0SMCJ36	HFN	36.00	40.00	50.70	1	64.3	46.6	5
3.0SMCJ36A	HFP	36.00	40.00	46.00	1	58.1	51.6	5
3.0SMCJ40	HFQ	40.00	44.40	56.30	1	71.4	42.0	5
3.0SMCJ40A	HFR	40.00	44.40	51.10	1	64.5	46.4	5
3.0SMCJ43	HFS	43.00	47.80	60.50	1	76.7	39.2	5
3.0SMCJ43A	HFT	43.00	47.80	54.90	1	69.4	43.2	5
3.0SMCJ45	HFU	45.00	50.00	63.30	1	80.3	37.4	5
3.0SMCJ45A	HFV	45.00	50.00	57.50	1	72.7	41.2	5
3.0SMCJ48	HFW	48.00	53.30	67.50	1	85.5	35.0	5
3.0SMCJ48A	HFY	48.00	53.30	61.30	1	77.4	38.8	5
3.0SMCJ51	HFZ	51.00	56.70	71.80	1	91.1	37.0	5
3.0SMCJ51A	HFZ	51.00	56.70	65.20	1	82.4	36.4	5
3.0SMCJ54	HGD	54.00	60.00	76.00	1	96.3	31.2	5
3.0SMCJ54A	HGE	54.00	60.00	69.00	1	87.1	34.4	5
3.0SMCJ58	HGF	58.00	64.40	81.60	1	103.0	29.2	5
3.0SMCJ58A	HGG	58.00	64.40	74.10	1	93.6	32.0	5
3.0SMCJ60	HGH	60.00	66.70	84.50	1	107.0	28.0	5
3.0SMCJ60A	HGK	60.00	66.70	76.70	1	96.8	31.0	5
3.0SMCJ64	HGL	64.00	71.10	90.10	1	114.0	26.4	5
3.0SMCJ64A	HGM	64.00	71.10	81.80	1	103.0	29.2	5
3.0SMCJ70	HGN	70.00	77.80	98.60	1	125.0	24.0	5
3.0SMCJ70A	HGP	70.00	77.80	89.50	1	113.0	26.6	5
3.0SMCJ75	HGQ	75.00	83.30	105.70	1	134.0	22.4	5
3.0SMCJ75A	HGR	75.00	83.30	95.80	1	121.0	24.8	5
3.0SMCJ78	HGS	78.00	86.70	109.80	1	139.0	21.6	5
3.0SMCJ78A	HGT	78.00	86.70	99.70	1	126.0	22.8	5
3.0SMCJ85	HGU	85.00	94.40	119.20	1	151.0	19.8	5
3.0SMCJ85A	HGV	85.00	94.40	108.20	1	137.0	20.8	5
3.0SMCJ90	HGW	90.00	100.00	126.50	1	160.0	18.8	5
3.0SMCJ90A	HGX	90.00	100.00	115.50	1	146.0	20.6	5
3.0SMCJ100	HGY	100.00	111.00	141.00	1	179.0	16.6	5
3.0SMCJ100A	HGZ	100.00	111.00	128.00	1	162.0	18.6	5
3.0SMCJ110	HHD	110.00	122.00	154.50	1	196.0	15.4	5
3.0SMCJ110A	HHE	110.00	122.00	140.50	1	177.0	16.8	5
3.0SMCJ120	HHF	120.00	133.00	169.00	1	214.0	14.0	5
3.0SMCJ120A	HHG	120.00	133.00	153.00	1	193.0	15.6	5
3.0SMCJ130	HHH	130.00	144.00	182.50	1	231.0	13.0	5
3.0SMCJ130A	HHK	130.00	144.00	165.50	1	209.0	14.4	5
3.0SMCJ150	HHL	150.00	167.00	211.50	1	268.0	11.2	5
3.0SMCJ150A	HHM	150.00	167.00	192.50	1	243.0	12.4	5
3.0SMCJ160	HHN	160.00	178.00	226.00	1	287.0	10.4	5
3.0SMCJ160A	HHP	160.00	178.00	205.00	1	259.0	11.6	5
3.0SMCJ170	HHQ	170.00	189.00	239.50	1	304.0	9.8	5
3.0SMCJ170A	HHR	170.00	189.00	217.50	1	275.0	11.0	5

## BI-DIRECTIONAL 3000 WATT SURFACE MOUNT TVS

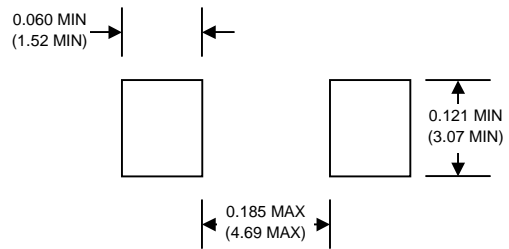
BI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR (uA)
3.0SMCJ5.0C	IDD	5.00	6.40	7.55	10	9.6	312.5	2000
3.0SMCJ5.0CA	IDE	5.00	6.40	7.25	10	9.2	326.0	2000
3.0SMCJ6.0C	IDF	6.00	6.67	8.45	10	11.4	263.2	2000
3.0SMCJ6.0CA	IDG	6.00	6.67	7.67	10	10.3	291.3	2000
3.0SMCJ6.5C	IDH	6.50	7.22	9.14	10	12.3	243.9	1000
3.0SMCJ6.5CA	IDK	6.50	7.22	8.30	10	11.2	267.9	1000
3.0SMCJ7.0C	IDL	7.00	7.78	9.86	10	13.3	225.6	400
3.0SMCJ7.0CA	IDM	7.00	7.78	8.95	10	12.0	250.0	400
3.0SMCJ7.5C	IDN	7.50	8.33	10.67	1	14.3	209.8	200
3.0SMCJ7.5CA	IDP	7.50	8.33	9.58	1	12.9	232.6	200
3.0SMCJ8.0C	IDQ	8.00	8.99	11.30	1	15.0	200.0	100
3.0SMCJ8.0CA	IDR	8.00	8.99	10.23	1	13.6	220.6	100
3.0SMCJ8.5C	IDS	8.50	9.44	11.92	1	15.9	188.8	50
3.0SMCJ8.5CA	IDT	8.50	9.44	10.82	1	14.4	208.4	50
3.0SMCJ9.0C	IDU	9.00	10.00	12.60	1	16.9	177.4	20
3.0SMCJ9.0CA	IDV	9.00	10.00	11.50	1	15.4	194.8	20
3.0SMCJ10C	IDW	10.00	11.10	14.10	1	18.8	159.6	5
3.0SMCJ10CA	IDX	10.00	11.10	12.80	1	17.0	176.4	5
3.0SMCJ11C	IDY	11.00	12.20	15.40	1	20.1	149.2	5
3.0SMCJ11CA	IDZ	11.00	12.20	14.00	1	18.2	184.8	5
3.0SMCJ12C	IED	12.00	13.30	16.90	1	22.0	136.4	5
3.0SMCJ12CA	IEE	12.00	13.30	15.30	1	19.9	150.6	5
3.0SMCJ13C	IEF	13.00	14.40	18.20	1	23.8	126.0	5
3.0SMCJ13CA	IEG	13.00	14.40	16.50	1	21.5	139.4	5
3.0SMCJ14C	IEH	14.00	15.60	19.80	1	25.8	116.2	5
3.0SMCJ14CA	IEK	14.00	15.60	17.90	1	23.2	129.4	5
3.0SMCJ15C	IEL	15.00	16.70	21.10	1	26.9	111.6	5
3.0SMCJ15CA	IEM	15.00	16.70	19.20	1	24.4	123.0	5
3.0SMCJ16C	IEN	16.00	17.80	22.60	1	28.8	104.2	5
3.0SMCJ16CA	IEP	16.00	17.80	20.50	1	26.0	115.4	5
3.0SMCJ17C	IEQ	17.00	18.90	23.90	1	30.5	98.4	5
3.0SMCJ17CA	IER	17.00	18.90	21.70	1	27.6	106.6	5
3.0SMCJ18C	IES	18.00	20.00	25.30	1	32.2	93.2	5
3.0SMCJ18CA	IET	18.00	20.00	23.30	1	29.2	102.8	5
3.0SMCJ20C	IEU	20.00	22.20	28.10	1	35.8	83.8	5
3.0SMCJ20CA	IEV	20.00	22.20	25.50	1	32.4	92.6	5
3.0SMCJ22C	IEW	22.00	24.40	30.90	1	39.4	76.2	5
3.0SMCJ22CA	IEX	22.00	24.40	28.00	1	35.5	84.4	5
3.0SMCJ24C	IEY	24.00	26.70	33.80	1	43.0	69.8	5
3.0SMCJ24CA	IEZ	24.00	26.70	30.70	1	38.9	77.2	5
3.0SMCJ26C	IFD	26.00	28.90	36.60	1	46.6	64.4	5
3.0SMCJ26CA	IFE	26.00	28.90	33.20	1	42.1	71.2	5
3.0SMCJ28C	IFF	28.00	31.10	39.40	1	50.0	60.0	5
3.0SMCJ28CA	IFG	28.00	31.10	35.80	1	45.4	66.0	5
3.0SMCJ30C	IFH	30.00	33.30	42.20	1	53.5	56.0	5
3.0SMCJ30CA	IFK	30.00	33.30	38.30	1	48.4	62.0	5
3.0SMCJ33C	IFL	33.00	36.70	46.50	1	59.0	50.4	5
3.0SMCJ33CA	IFM	33.00	36.70	42.20	1	53.3	56.2	5
3.0SMCJ36C	IFN	36.00	40.00	50.70	1	64.3	46.6	5
3.0SMCJ36CA	IFP	36.00	40.00	46.00	1	58.1	51.6	5
3.0SMCJ40C	IFQ	40.00	44.40	56.30	1	71.4	42.0	5
3.0SMCJ40CA	IFR	40.00	44.40	51.10	1	64.5	46.4	5
3.0SMCJ43C	IFS	43.00	47.80	60.50	1	76.7	39.2	5
3.0SMCJ43CA	IFT	43.00	47.80	54.90	1	69.4	43.2	5
3.0SMCJ45C	IFU	45.00	50.00	63.30	1	80.3	37.4	5
3.0SMCJ45CA	IFV	45.00	50.00	57.50	1	72.7	41.2	5
3.0SMCJ48C	IFW	48.00	53.30	67.50	1	85.5	35.0	5
3.0SMCJ48CA	IFX	48.00	53.30	61.30	1	77.4	38.8	5
3.0SMCJ51C	IFY	51.00	56.70	71.80	1	91.1	37.0	5
3.0SMCJ51CA	IFZ	51.00	56.70	65.20	1	82.4	36.4	5
3.0SMCJ54C	IGD	54.00	60.00	76.00	1	96.3	31.2	5
3.0SMCJ54CA	IGE	54.00	60.00	69.00	1	87.1	34.4	5
3.0SMCJ58C	IGF	58.00	64.40	81.60	1	103.0	29.2	5
3.0SMCJ58CA	IGG	58.00	64.40	74.10	1	93.6	32.0	5
3.0SMCJ60C	IGH	60.00	66.70	84.50	1	107.0	28.0	5
3.0SMCJ60CA	IGK	60.00	66.70	76.70	1	96.8	31.0	5
3.0SMCJ64C	IGL	64.00	71.10	90.10	1	114.0	26.4	5
3.0SMCJ64CA	IGM	64.00	71.10	81.80	1	103.0	29.2	5
3.0SMCJ70C	IGN	70.00	77.80	98.60	1	125.0	24.0	5
3.0SMCJ70CA	IGP	70.00	77.80	89.50	1	113.0	26.6	5
3.0SMCJ75C	IGQ	75.00	83.30	105.70	1	134.0	22.4	5
3.0SMCJ75CA	IGR	75.00	83.30	95.80	1	121.0	24.8	5
3.0SMCJ78C	IGS	78.00	86.70	109.80	1	139.0	21.6	5
3.0SMCJ78CA	IGT	78.00	86.70	99.70	1	126.0	22.8	5
3.0SMCJ85C	IGU	85.00	94.40	119.20	1	151.0	19.8	5
3.0SMCJ85CA	IGV	85.00	94.40	108.20	1	137.0	20.8	5
3.0SMCJ90C	IGW	90.00	100.00	126.50	1	160.0	18.8	5
3.0SMCJ90CA	IGX	90.00	100.00	115.50	1	146.0	20.6	5
3.0SMCJ100C	IGY	100.00	111.00	141.00	1	179.0	16.6	5
3.0SMCJ100CA	IGZ	100.00	111.00	128.00	1	162.0	18.6	5
3.0SMCJ110C	IHD	110.00	122.00	154.50	1	196.0	15.4	5
3.0SMCJ110CA	IHE	110.00	122.00	140.50	1	177.0	16.8	5
3.0SMCJ120C	IHF	120.00	133.00	169.00	1	214.0	14.0	5
3.0SMCJ120CA	IHG	120.00	133.00	153.00	1	193.0	15.6	5
3.0SMCJ130C	IHH	130.00	144.00	182.50	1	231.0	13.0	5
3.0SMCJ130CA	IHK	130.00	144.00	165.50	1	209.0	14.4	5
3.0SMCJ150C	IHL	150.00	167.00	211.50	1	268.0	11.2	5
3.0SMCJ150CA	IHM	150.00	167.00	192.50	1	243.0	12.4	5
3.0SMCJ160C	IHN	160.00	178.00	226.00	1	287.0	10.4	5
3.0SMCJ160CA	IHP	160.00	178.00	205.00	1	259.0	11.6	5
3.0SMCJ170C	IHQ	170.00	189.00	239.50	1	304.0	9.8	5
3.0SMCJ170CA	IHR	170.00	189.00	217.50	1	275.0	11.0	5

## MARKING INFORMATION

## RECOMMENDED FOOTPRINT



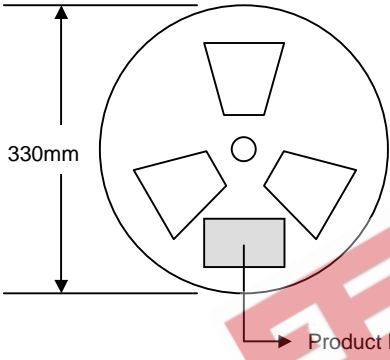
Cathode = Polarity Band Except Bi-Directional Types  
WTE = Manufacturer's Logo  
xxx = Device Code, See Page 3 & 4



inches(mm)


## PACKAGING INFORMATION

### TAPE & REEL

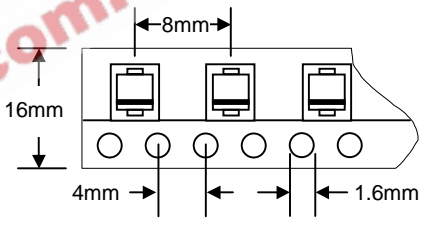


330mm

Product ID Label



16mm



Direction of Unreeling

8mm

16mm

4mm

1.6mm

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
3.0SMCJxx-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, add "-LF" suffix to part number above. For example, 3.0SMCJ5.0-T3-LF.**

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Won-Top Electronics Co., Ltd (WTE) has checked all information carefully and believes it to be correct and accurate. However, WTE cannot assume any responsibility for inaccuracies. Furthermore, this information does not give the purchaser of semiconductor devices any license under patent rights to manufacturer. WTE reserves the right to change any or all information herein without further notice.

**WARNING:** DO NOT USE IN LIFE SUPPORT EQUIPMENT. WTE power semiconductor products are not authorized for use as critical components in life support devices or systems without the express written approval.

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