



TVS 瞬態電壓抑制二極管

Voltage : 11V - 190V

5.0SMCJ Series

5000W Surface Mount Transient Voltage Suppressor

Feature

- ◆ Glass Passivated Die Construction
- ◆ 5000W Peak Pulse Power Dissipation
- ◆ 11V-190V Stand-off Voltage
- ◆ Uni-and Bi-Directional Versions Available
- ◆ Excellent Clamping Capability
- ◆ Fast Response Time
- ◆ 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
- ◆ Weight: 0.21 grams (approx)
- ◆ Marking: Device Marking Code
- ◆ Lead Free: For **RoHS** / Lead Free Version Add "-LF" Suffix to part Number.

Dimension

Case: SMC/DO-214AB (mm)

Dim	Min	Max
A	5.59	6.22
B	6.6	7.11
C	2.75	3.25
D	0.152	0.305
E	7.75	8.13
F	2.0	2.62
G	0.051	0.203
H	0.76	1.27

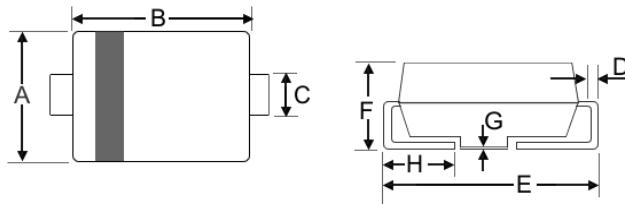


Figure Case SMC/DO-214AB



"C" : Suffix designates Bi-directional Devices  
 "A" : Suffix designates ±5% Tolerance Devices  
 "No" : Suffix designates ±10% Tolerance Devices

Maximum Ratings and Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified

CHARACTERISTIC	Symbol	Value	Unit
Peak Pulse Power Dissipation at T <sub>A</sub> = 25°C (Note 1,2,5) Fig.3	P <sub>PPM</sub>	5000 Min.	W
Peak Forward Surge Current (Note 3)	I <sub>FSM</sub>	300	A
Power Dissipation on Infinite Heatsink at T <sub>J</sub> = 75 (Note 4) Fig. 5	P <sub>M(AV)</sub>	6.5	W
Maximum Instantaneous Forward Voltage at 100A (Note 6)	V <sub>F</sub>	3.5/5.0	V
Typical Thermal Resistance	R <sub>θJL</sub>	15	°C/W
	R <sub>θJA</sub>	75	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG.</sub>	-65~+150	°C

- Note:
1. Non-repetitive current pulse per Figure 1 and derated above T<sub>A</sub>=25°C per Figure 4.
  2. Mounted on 8.0mm2 (0.013mm thick) copper pad to each terminal.
  3. 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum.
  4. Lead temperature at 75°C
  5. Peak pulse power waveform is 10/1000µS.
  6. For unidirectional only. V<sub>F</sub><3.5V for devices of V<sub>BR</sub><200V and V<sub>F</sub><5.0V for devices of V<sub>BR</sub>.201V

Fig. See Curve page-6



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**5000W Surface Mount Transient Voltage Suppressor**

□ **Maximum Ratings and Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified**

Uni- Directional Part No.	Device Marking Code	Reverse Stand-off Voltage V <sub>RWM</sub> (V)	Breakdown Voltage V <sub>BR</sub> (V)		Test Current I <sub>T</sub> (mA)	Max.	Peak	Reverse Leakage @V <sub>RWM</sub> IR (µA)
			Min. @I <sub>T</sub>	Max. @I <sub>T</sub>		Clamping	Pulse	
						Voltage I <sub>pp</sub> Vc(V)	Current I <sub>pp</sub> (A)	
5.0SMCJ11	5PDW	11	12.2	14.9	1	20.1	251.24	800.0
5.0SMCJ11A	5PDX	11	12.2	13.5	1	18.2	277.47	800.0
5.0SMCJ12	5PDY	12	13.3	16.3	1	22	229.55	800.0
5.0SMCJ12A	5PDZ	12	13.3	14.7	1	19.9	253.77	800.0
5.0SMCJ13	5PED	13	14.4	17.6	1	23.8	212.18	500.0
5.0SMCJ13A	5PEE	13	14.4	15.9	1	21.5	234.88	500.0
5.0SMCJ14	5PEF	14	15.6	19.1	1	25.8	195.74	200.0
5.0SMCJ14A	5PEG	14	15.6	17.2	1	23.2	217.67	200.0
5.0SMCJ15	5PEH	15	16.7	20.4	1	26.9	187.73	100.0
5.0SMCJ15A	5PEK	15	16.7	18.5	1	24.4	206.97	100.0
5.0SMCJ16	5PEL	16	17.8	21.8	1	28.8	175.35	50.0
5.0SMCJ16A	5PEM	16	17.8	19.7	1	26.0	194.23	50.0
5.0SMCJ17	5PEN	14	18.9	23.1	1	30.5	182.97	20.0
5.0SMCJ17A	5PEP	17	18.9	20.9	1	27.6	182.97	20.0
5.0SMCJ18	5PEQ	18	20	24.4	1	32.2	156.83	10.0
5.0SMCJ18A	5PER	18	20	22.1	1	29.2	172.95	10.0
5.0SMCJ19	5PES	19	21.1	25.7	1	34	148.49	10.0
5.0SMCJ19A	5PET	19	21.1	23.3	1	30.8	164.07	10.0
5.0SMCJ20	5PEU	20	22.2	27.1	1	35.8	155.86	5.0
5.0SMCJ20A	5PEV	20	22.2	24.5	1	32.4	155.86	5.0
5.0SMCJ22	5PEW	22	24.4	29.8	1	39.4	128.17	5.0
5.0SMCJ22A	5PEX	22	24.4	26.9	1	35.5	142.25	5.0
5.0SMCJ24	5PEY	24	26.7	32.6	1	43.0	117.44	5.0
5.0SMCJ24A	5PEZ	24	26.7	29.5	1	38.9	129.82	5.0
5.0SMCJ26	5PFD	26	28.9	35.3	1	46.6	108.37	5.0
5.0SMCJ26A	5PFE	26	28.9	31.9	1	42.1	119.95	5.0
5.0SMCJ28	5PFF	28	31.1	38.0	1	50	101	5.0
5.0SMCJ28A	5PFG	28	31.1	34.4	1	45.4	111.23	5.0
5.0SMCJ30	5PFH	30	33.3	40.7	1	53.5	94.39	5.0
5.0SMCJ30A	5PFK	30	33.3	36.8	1	48.4	104.34	5.0
5.0SMCJ33	5PFL	33	36.7	44.9	1	59	85.59	5.0
5.0SMCJ33A	5PFM	33	36.7	40.6	1	53.3	94.75	5.0
5.0SMCJ36	5PFN	36	40.0	48.9	1	64.3	78.54	5.0
5.0SMCJ36A	5PFP	36	40.0	44.2	1	58.1	86.92	5.0
5.0SMCJ40	5PFQ	40	44.4	54.3	1	71.4	70.73	5.0
5.0SMCJ40A	5PFR	40	44.4	49.1	1	64.5	65.84	5.0
5.0SMCJ43	5PFS	43	47.8	58.4	1	76.7	65.84	5.0
5.0SMCJ43A	5PFT	43	47.8	52.8	1	69.4	72.77	5.0
5.0SMCJ45	5PFU	45	50.0	61.1	1	80.3	62.89	5.0
5.0SMCJ45A	5PFV	45	50.0	55.3	1	72.7	69.64	5.0
5.0SMCJ48	5PFW	48	53.3	65.1	1	85.5	59.06	5.0
5.0SMCJ48A	5PFX	48	53.3	58.9	1	77.5	65.25	5.0
5.0SMCJ51	5PFY	51	56.7	69.3	1	91.1	55.43	5.0
5.0SMCJ51A	5PFZ	51	56.7	62.7	1	82.4	61.29	5.0
5.0SMCJ54	5PGD	54	60.0	73.3	1	96.3	52.44	5.0
5.0SMCJ54A	5PGE	54	60.0	66.3	1	87.1	57.98	5.0
5.0SMCJ58	5PGF	58	64.4	78.7	1	103	49.03	5.0
5.0SMCJ58A	5PGG	58	64.4	71.2	1	93.6	53.95	5.0
5.0SMCJ60	5PGH	60	66.7	81.5	1	107	47.2	5.0
5.0SMCJ60A	5PGK	60	66.7	73.7	1	96.8	52.17	5.0
5.0SMCJ64	5PGL	64	71.1	86.9	1	114	44.3	5.0
5.0SMCJ64A	5PGM	64	71.1	78.6	1	103	49.03	5.0
5.0SMCJ70	5PGN	70	77.8	95.1	1	125	40.4	5.0
5.0SMCJ70A	5PGP	70	77.8	86.0	1	113	44.69	5.0
5.0SMCJ75	5PGQ	75	83.3	102	1	134	37.69	5.0
5.0SMCJ75A	5PGR	75	83.3	92.1	1	121	41.74	5.0
5.0SMCJ78	5PGS	78	86.7	106	1	139	36.33	5.0
5.0SMCJ78A	5PGT	78	86.7	95.8	1	126	40.08	5.0

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Uni-Directional Part No.	Device Marking Code	Reverse Stand-off Voltage $V_{RWM}(V)$	Breakdown Voltage $V_{BR}(V)$		Test Current $I_T$ (mA)	Max. Clamping Voltage $I_{pp} V_c(V)$	Peak Pulse Current $I_{pp}(A)$	Reverse Leakage @ $V_{RWM}$ IR ( $\mu A$ )
			Min. @ $I_T$	Max. @ $I_T$				
5.0SMCJ80	5PGA	80	88.8	108.8	1	143.2	35.27	5
5.0SMCJ80A	5PGB	80	88.8	97.6	1	129.6	38.97	5
5.0SMCJ85	5PGU	85	94.4	115	1	151	33.44	5
5.0SMCJ85A	5PGV	85	94.4	104	1	137	36.86	5
5.0SMCJ90	5PGW	90	100	122	1	160	31.56	5
5.0SMCJ90A	5PGX	90	100	111	1	146	34.59	5
5.0SMCJ100	5PGY	100	111	136	1	179	28.21	5
5.0SMCJ100A	5PGZ	100	111	123	1	162	31.17	5
5.0SMCJ110	5PHD	110	122	149	1	196	25.77	5
5.0SMCJ110A	5PHE	110	122	135	1	177	28.53	5
5.0SMCJ120	5PHF	120	133	163	1	214	23.6	5
5.0SMCJ120A	5PHG	120	133	147	1	193	26.17	5
5.0SMCJ130	5PHH	130	144	176	1	231	21.86	5
5.0SMCJ130A	5PHK	130	144	159	1	209	24.16	5
5.0SMCJ140	5PHA	140	155	190.4	1	250.6	20.15	5
5.0SMCJ140A	5PHB	140	155	171	1	226.8	22.27	5
5.0SMCJ150	5PHL	150	167	204	1	268	18.84	5
5.0SMCJ150A	5PHM	150	167	185	1	243	20.78	5
5.0SMCJ160	5PHN	160	178	218	1	287	17.6	5
5.0SMCJ160A	5PHP	160	178	197	1	259	19.5	5
5.0SMCJ170	5PHQ	170	189	231	1	304	16.61	5
5.0SMCJ170A	5PHR	170	189	209	1	275	18.36	5
5.0SMCJ180	5PHS	180	200	244	1	322.2	15.67	5
5.0SMCJ180A	5PHT	180	200	220	1	291.6	17.32	5
5.0SMCJ190	5PHU	190	211	258	1	340.1	14.85	5
5.0SMCJ190A	5PHV	190	211	232	1	307.8	16.41	5

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Bi-Directional Part No.	Device Marking Code	Reverse Stand-off Voltage V <sub>RWM</sub> (V)	Breakdown Voltage V <sub>BR</sub> (V)		Test Current I <sub>T</sub> (mA)	Max. Clamping Voltage	Peak Pulse Current	Reverse Leakage @V <sub>RWM</sub> IR (µA)
			Min. @I <sub>T</sub>	Max. @I <sub>T</sub>		Ipp Vc(V)	Ipp(A)	
5.0SMCJ11C	5BDW	11	12.2	14.9	1	20.1	251.24	800.0
5.0SMCJ11CA	5BDX	11	12.2	13.5	1	18.2	277.47	800.0
5.0SMCJ12C	5BDY	12	13.3	16.3	1	22	229.55	800.0
5.0SMCJ12CA	5BDZ	12	13.3	14.7	1	19.9	253.77	800.0
5.0SMCJ13C	5BED	13	14.4	17.6	1	23.8	212.18	500.0
5.0SMCJ13CA	5BEE	13	14.4	15.9	1	21.5	234.88	500.0
5.0SMCJ14C	5BEF	14	15.6	19.1	1	25.8	195.74	200.0
5.0SMCJ14CA	5BEG	14	15.6	17.2	1	23.2	217.67	200.0
5.0SMCJ15C	5BEH	15	16.7	20.4	1	26.9	187.73	100.0
5.0SMCJ15CA	5BEK	15	16.7	18.5	1	24.4	206.97	100.0
5.0SMCJ16C	5BEL	16	17.8	21.8	1	28.8	175.35	50.0
5.0SMCJ16CA	5BEM	16	17.8	19.7	1	26.0	194.23	50.0
5.0SMCJ17C	5BEN	14	18.9	23.1	1	30.5	182.97	20.0
5.0SMCJ17CA	5BEP	17	18.9	20.9	1	27.6	182.97	20.0
5.0SMCJ18C	5BEQ	18	20	24.4	1	32.2	156.83	10.0
5.0SMCJ18CA	5BER	18	20	22.1	1	29.2	172.95	10.0
5.0SMCJ19C	5BES	19	21.1	25.7	1	34	148.49	10.0
5.0SMCJ19CA	5BET	19	21.1	23.3	1	30.8	164.07	10.0
5.0SMCJ20C	5BEU	20	22.2	27.1	1	35.8	155.86	5.0
5.0SMCJ20CA	5BEV	20	22.2	24.5	1	32.4	155.86	5.0
5.0SMCJ22C	5BEW	22	24.4	29.8	1	39.4	128.17	5.0
5.0SMCJ22CA	5BEX	22	24.4	26.9	1	35.5	142.25	5.0
5.0SMCJ24C	5BEY	24	26.7	32.6	1	43.0	117.44	5.0
5.0SMCJ24CA	5BEZ	24	26.7	29.5	1	38.9	129.82	5.0
5.0SMCJ26C	5BFD	26	28.9	35.3	1	46.6	108.37	5.0
5.0SMCJ26CA	5BFE	26	28.9	31.9	1	42.1	119.95	5.0
5.0SMCJ28C	5BFF	28	31.1	38.0	1	50	101	5.0
5.0SMCJ28CA	5BFG	28	31.1	34.4	1	45.4	111.23	5.0
5.0SMCJ30C	5BFH	30	33.3	40.7	1	53.5	94.39	5.0
5.0SMCJ30CA	5BFK	30	33.3	36.8	1	48.4	104.34	5.0
5.0SMCJ33C	5BFL	33	36.7	44.9	1	59	85.59	5.0
5.0SMCJ33CA	5BFL	33	36.7	40.6	1	53.3	94.75	5.0
5.0SMCJ36C	5BFN	36	40.0	48.9	1	64.3	78.54	5.0
5.0SMCJ36CA	5BFP	36	40.0	44.2	1	58.1	86.92	5.0
5.0SMCJ40C	5BFQ	40	44.4	54.3	1	71.4	70.73	5.0
5.0SMCJ40CA	5BFR	40	44.4	49.1	1	64.5	65.84	5.0
5.0SMCJ43C	5BFS	43	47.8	58.4	1	76.7	65.84	5.0
5.0SMCJ43CA	5BFT	43	47.8	52.8	1	69.4	72.77	5.0
5.0SMCJ45C	5BFU	45	50.0	61.1	1	80.3	62.89	5.0
5.0SMCJ45CA	5BFV	45	50.0	55.3	1	72.7	69.64	5.0
5.0SMCJ48C	5BFW	48	53.3	65.1	1	85.5	59.06	5.0
5.0SMCJ48CA	5BFX	48	53.3	58.9	1	77.5	65.25	5.0
5.0SMCJ51C	5BFY	51	56.7	69.3	1	91.1	55.43	5.0
5.0SMCJ51CA	5BFZ	51	56.7	62.7	1	82.4	61.29	5.0
5.0SMCJ54C	5BGD	54	60.0	73.3	1	96.3	52.44	5.0
5.0SMCJ54CA	5BGE	54	60.0	66.3	1	87.1	57.98	5.0
5.0SMCJ58C	5BGF	58	64.4	78.7	1	103	49.03	5.0
5.0SMCJ58CA	5BGG	58	64.4	71.2	1	93.6	53.95	5.0
5.0SMCJ60C	5BGH	60	66.7	81.5	1	107	47.2	5.0
5.0SMCJ60CA	5BGK	60	66.7	73.7	1	96.8	52.17	5.0
5.0SMCJ64C	5BGL	64	71.1	86.9	1	114	44.3	5.0
5.0SMCJ64CA	5BGM	64	71.1	78.6	1	103	49.03	5.0
5.0SMCJ70C	5BGN	70	77.8	95.1	1	125	40.4	5.0
5.0SMCJ70CA	5BGP	70	77.8	86.0	1	113	44.69	5.0
5.0SMCJ75C	5BGQ	75	83.3	102	1	134	37.69	5.0
5.0SMCJ75CA	5BGR	75	83.3	92.1	1	121	41.74	5.0
5.0SMCJ78C	5BGS	78	86.7	106	1	139	36.33	5.0
5.0SMCJ78CA	5BGT	78	86.7	95.8	1	126	40.08	5.0

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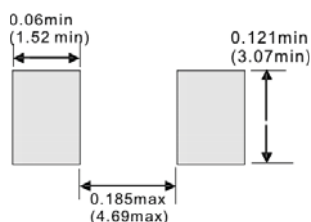
Bi-Directional Part No.	Device Marking Code	Reverse Stand-off Voltage $V_{RWM}(V)$	Breakdown Voltage $V_{BR}(V)$		Test Current $I_T$ (mA)	Max. Clamping Voltage $I_{pp} V_c(V)$	Peak Pulse Current $I_{pp}(A)$	Reverse Leakage @ $V_{RWM}$ IR ( $\mu A$ )
			Min. @ $I_T$	Max. @ $I_T$				
5.0SMCJ80C	5BGA	80	88.8	108.8	1	143.2	35.27	5
5.0SMCJ80CA	5BGB	80	88.8	97.6	1	129.6	38.97	5
5.0SMCJ85C	5BGU	85	94.4	115	1	151	33.44	5
5.0SMCJ85CA	5BGV	85	94.4	104	1	137	36.86	5
5.0SMCJ90C	5BGW	90	100	122	1	160	31.56	5
5.0SMCJ90CA	5BGX	90	100	111	1	146	34.59	5
5.0SMCJ100C	5BGY	100	111	136	1	179	28.21	5
5.0SMCJ100CA	5BGZ	100	111	123	1	162	31.17	5
5.0SMCJ110C	5BHD	110	122	149	1	196	25.77	5
5.0SMCJ110CA	5BHE	110	122	135	1	177	28.53	5
5.0SMCJ120C	5BHF	120	133	163	1	214	23.6	5
5.0SMCJ120CA	5BHG	120	133	147	1	193	26.17	5
5.0SMCJ130C	5BHH	130	144	176	1	231	21.86	5
5.0SMCJ130CA	5BHK	130	144	159	1	209	24.16	5
5.0SMCJ140C	5BHA	140	155	190.4	1	250.6	20.15	5
5.0SMCJ140CA	5BHB	140	155	171	1	226.8	22.27	5
5.0SMCJ150C	5BHL	150	167	204	1	268	18.84	5
5.0SMCJ150CA	5BHM	150	167	185	1	243	20.78	5
5.0SMCJ160C	5BHN	160	178	218	1	287	17.6	5
5.0SMCJ160CA	5BHP	160	178	197	1	259	19.5	5
5.0SMCJ170C	5BHQ	170	189	231	1	304	16.61	5
5.0SMCJ170CA	5BHR	170	189	209	1	275	18.36	5
5.0SMCJ180C	5BHS	180	200	244	1	322.2	15.67	5
5.0SMCJ180CA	5BHT	180	200	220	1	291.6	17.32	5
5.0SMCJ190C	5BHU	190	211	258	1	340.1	14.85	5
5.0SMCJ190CA	5BHV	190	211	232	1	307.8	16.41	5

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"A" : Suffix designates  $\pm 5\%$  Tolerance Devices

"No" : Suffix designates  $\pm 10\%$  Tolerance Devices

**Recommended Footprint**



**Marking Information**

Cathode = Polarity Band  
Body Top = Device Marking Code Number  
Polarity = As Marked Body



**SINLOON®**



SINLOON®

TVS 瞬態電壓抑制二極管  
Voltage : 11V - 190V

5.0SMCJ Series  
5000W Surface Mount Transient Voltage Suppressor

Electrical Characteristics Curve

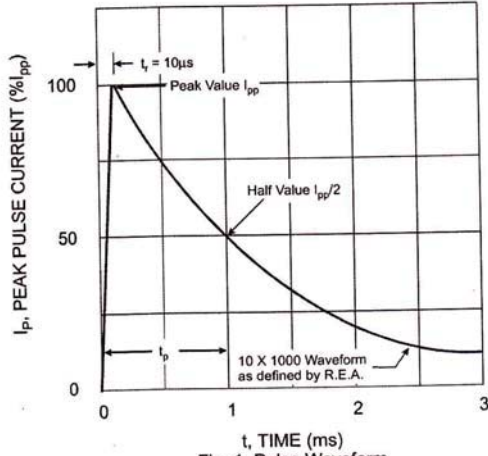


Fig. 1 Pulse Waveform

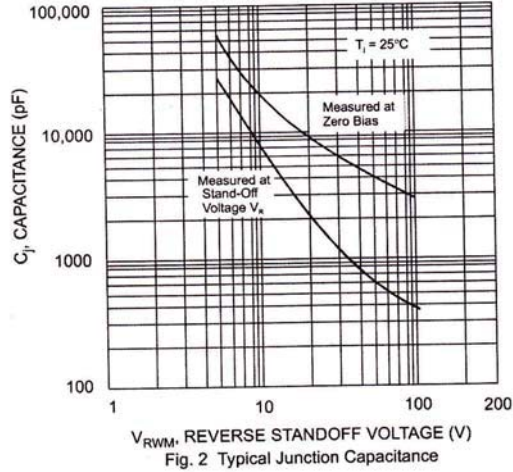


Fig. 2 Typical Junction Capacitance

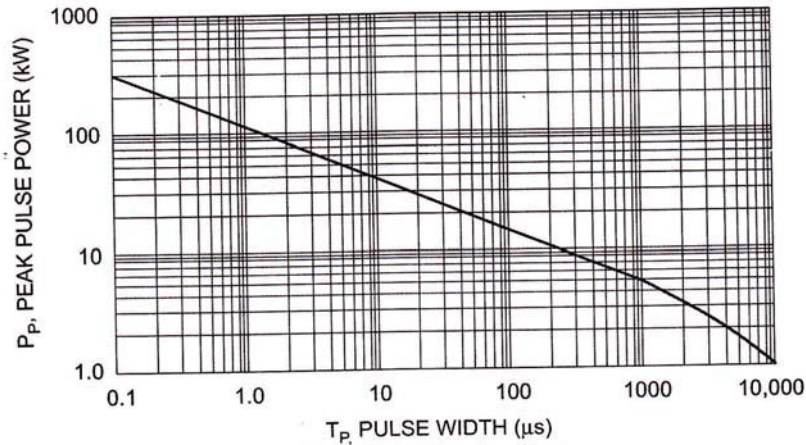


Fig. 3 Pulse Derating Curve

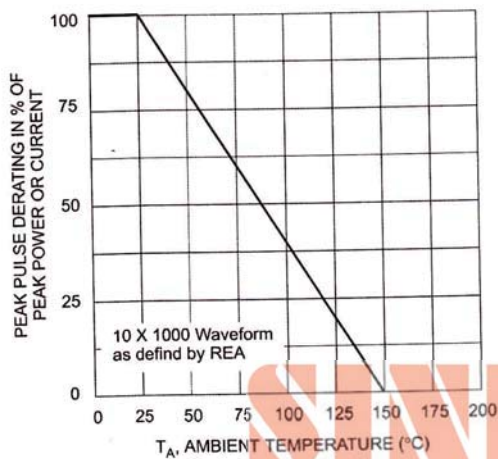


Fig. 4 Pulse Derating Curve

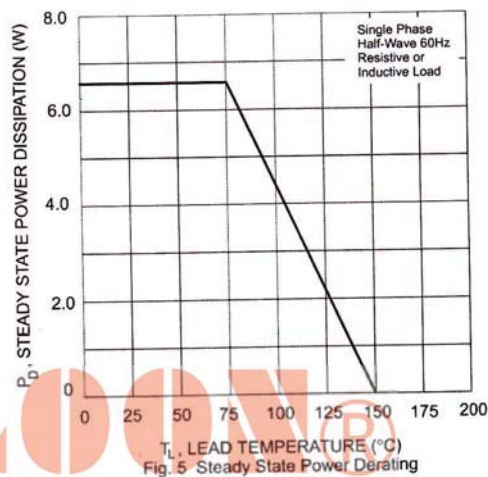


Fig. 5 Steady State Power Derating

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**5000W Surface Mount Transient Voltage Suppressor**

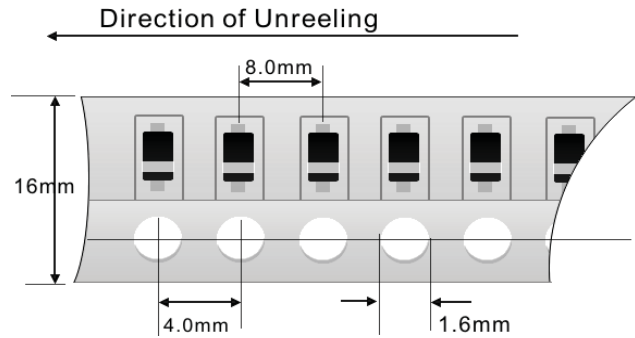
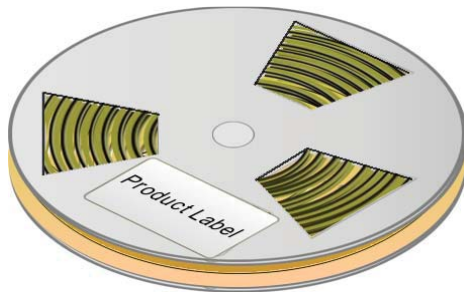
**□ Packaging Information**

Dimension Reel Tape	Quantity (Pcs)	Inner Box Size L x W x H	Quantity (Pcs)	Carton Size L x W x H	Quantity (Pcs)	Gross Weight
330 mm	3,000	340 x 337 x 45 mm	6,000	370 x 370 x 420 mm	48,000	19.0kg

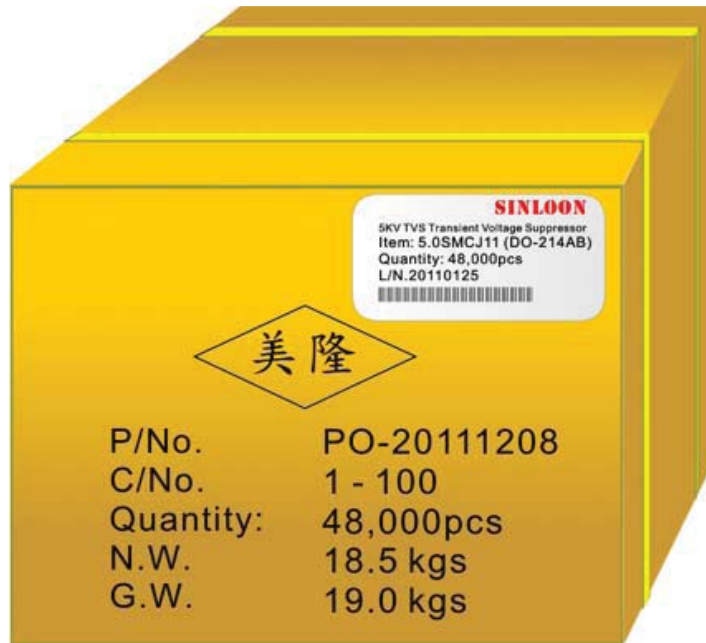
Note: 1. Paper Reel, White or gray color.  
2. Components are packed in accordance with EIA standard 481- and 481-2

Tape Reel

330 x 12mm



Carton:



**SINLOON®**

※美隆公司產品規格及其特性參數的改變或更新恕不另行通知。

※Mayloon characteristic parameters of electronic product specification changes or updates without notice to improve

