

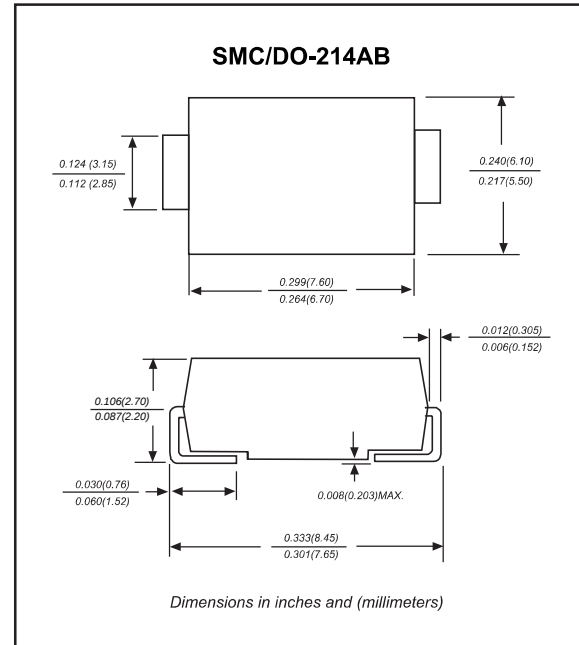
Features

- 3000W peak pulse power capability with a 10/1000us waveform, repetition rate (duty cycle): 0.05%.
- Excellent clamping capability.
- Low incremental surge resistance.
- Fast response time from 0V to VBR, typically less than 1pS for uni-directional & 5 nS for bi-directional types.
- Ultra high-speed switching.
- Glass passivated chip junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Compliant to Halogen-free

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AB / SMC
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Package outline



Maximum ratings (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	3KP SERIES	UNIT
Peak power dissipation	with a 10/1000us waveform, Note 1 & Fig. 1	P_{PPM}	3000	W
Peak pulse current	with a 10/1000us waveform	I_{PPM}	See table 1	A
Steady state power dissipation	at $T_L=75^{\circ}\text{C}$ lead length 0.375" (9.5 mm)	$P_{M(AV)}$	6.5	W
Peak forward surge current	8.3mS single half sine-wave superimposed on rated load (jedec method), note 2	I_{FSM}	300	A
Maximum instantaneous forward voltage	at 100A for uni-directional types only, note 3	V_F	3.5 / 5.0	V
Operating temperature range		T_J	-55~+150	$^{\circ}\text{C}$
Storage temperature range		T_{STG}	-55~+150	$^{\circ}\text{C}$

Note 1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}\text{C}$ per Fig. 2

2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum

3. $V_F<3.5\text{V}$. for devices of $V_{BR}\leq 220\text{V}$, and $V_F<5.0\text{V}$. for devices of $V_{BR}>201\text{V}$

Electrical characteristics (at T_A=25°C unless otherwise noted)

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RMW}
(Uni)	(Bi)	(Uni)	(Bi)	V _{RMW} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
3.0SMC6.8	3.0SMC6.8C	6V8	6V8C	5.50	6.12	7.48	10.0	10.8	277.8	800.0
3.0SMC6.8A	3.0SMC6.8CA	6V8A	6V8CA	5.80	6.45	7.14	10.0	10.5	285.7	800.0
3.0SMC7.5	3.0SMC7.5C	7V5	7V5C	6.05	6.75	8.25	10.0	11.7	256.4	500.0
3.0SMC7.5A	3.0SMC7.5CA	7V5A	7V5CA	6.40	7.13	7.88	10.0	11.3	265.5	500.0
3.0SMC8.2	3.0SMC8.2C	8V2	8V2C	6.63	7.38	9.02	10.0	12.5	240.0	200.0
3.0SMC8.2A	3.0SMC8.2CA	8V2A	8V2CA	7.02	7.79	8.61	10.0	12.1	247.9	200.0
3.0SMC9.1	3.0SMC9.1C	9V1	9V1C	7.37	8.19	10.0	1.0	13.8	217.4	100.0
3.0SMC9.1A	3.0SMC9.1CA	9V1A	9V1CA	7.78	8.65	9.55	1.0	13.4	223.9	100.0
3.0SMC10	3.0SMC10C	10	10C	8.10	9.00	11.0	1.0	15.0	200.0	50.0
3.0SMC10A	3.0SMC10CA	10A	10CA	8.55	9.50	10.5	1.0	14.5	206.9	50.0
3.0SMC11	3.0SMC11C	11	11C	8.92	9.90	12.1	1.0	16.2	185.2	20.0
3.0SMC11A	3.0SMC11CA	11A	11CA	9.40	10.5	11.6	1.0	15.6	192.3	20.0
3.0SMC12	3.0SMC12C	12	12C	9.72	10.8	13.2	1.0	17.3	173.4	10.0
3.0SMC12A	3.0SMC12CA	12A	12CA	10.2	11.4	12.6	1.0	16.7	179.6	10.0
3.0SMC13	3.0SMC13C	13	13C	10.5	11.7	14.3	1.0	19.0	157.9	1.0
3.0SMC13A	3.0SMC13CA	13A	13CA	11.1	12.4	13.7	1.0	18.2	164.8	1.0
3.0SMC15	3.0SMC15C	15	15C	12.1	13.5	16.5	1.0	22.0	136.4	1.0
3.0SMC15A	3.0SMC15CA	15A	15CA	12.8	14.3	15.8	1.0	21.2	141.5	1.0
3.0SMC16	3.0SMC16C	16	16C	12.9	14.4	17.6	1.0	23.5	127.7	1.0
3.0SMC16A	3.0SMC16CA	16A	16CA	13.6	15.2	16.8	1.0	22.5	133.3	1.0
3.0SMC18	3.0SMC18C	18	18C	14.5	16.2	19.8	1.0	26.5	113.2	1.0
3.0SMC18A	3.0SMC18CA	18A	18CA	15.3	17.1	18.9	1.0	25.2	119.0	1.0
3.0SMC20	3.0SMC20C	20	20C	16.2	18.0	22.0	1.0	29.1	103.1	1.0
3.0SMC20A	3.0SMC20CA	20A	20CA	17.1	19.0	21.0	1.0	27.7	108.3	1.0
3.0SMC22	3.0SMC22C	22	22C	17.8	19.8	24.2	1.0	31.9	94.0	1.0
3.0SMC22A	3.0SMC22CA	22A	22CA	18.8	20.9	23.1	1.0	30.6	98.0	1.0
3.0SMC24	3.0SMC24C	24	24C	19.4	21.6	26.4	1.0	34.7	86.5	1.0
3.0SMC24A	3.0SMC24CA	24A	24CA	20.5	22.8	25.2	1.0	33.2	90.4	1.0
3.0SMC27	3.0SMC27C	27	27C	21.8	24.3	29.7	1.0	39.1	76.7	1.0
3.0SMC27A	3.0SMC27CA	27A	27CA	23.1	25.7	28.4	1.0	37.5	80.0	1.0
3.0SMC30	3.0SMC30C	30	30C	24.3	27.0	33.0	1.0	43.5	69.0	1.0
3.0SMC30A	3.0SMC30CA	30A	30CA	25.6	28.5	31.5	1.0	41.4	72.5	1.0
3.0SMC33	3.0SMC33C	33	33C	26.8	29.7	36.3	1.0	47.7	62.9	1.0
3.0SMC33A	3.0SMC33CA	33A	33CA	28.2	31.4	34.7	1.0	45.7	65.6	1.0
3.0SMC36	3.0SMC36C	36	36C	29.1	32.4	39.6	1.0	52.0	57.7	1.0
3.0SMC36A	3.0SMC36CA	36A	36CA	30.8	34.2	37.8	1.0	49.9	60.1	1.0
3.0SMC39	3.0SMC39C	39	39C	31.6	35.1	42.9	1.0	56.4	53.2	1.0
3.0SMC39A	3.0SMC39CA	39A	39CA	33.3	37.1	41.0	1.0	53.9	55.7	1.0
3.0SMC43	3.0SMC43C	43	43C	34.8	38.7	47.3	1.0	61.9	48.5	1.0
3.0SMC43A	3.0SMC43CA	43A	43CA	36.8	40.9	45.2	1.0	59.3	50.6	1.0
3.0SMC47	3.0SMC47C	47	47C	38.1	42.3	51.7	1.0	67.8	44.2	1.0
3.0SMC47A	3.0SMC47CA	47A	47CA	40.2	44.7	49.4	1.0	64.8	46.3	1.0
3.0SMC51	3.0SMC51C	51	51C	41.3	45.9	56.1	1.0	73.5	40.8	1.0
3.0SMC51A	3.0SMC51CA	51A	51CA	43.6	48.5	53.6	1.0	70.1	42.8	1.0

※ For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double



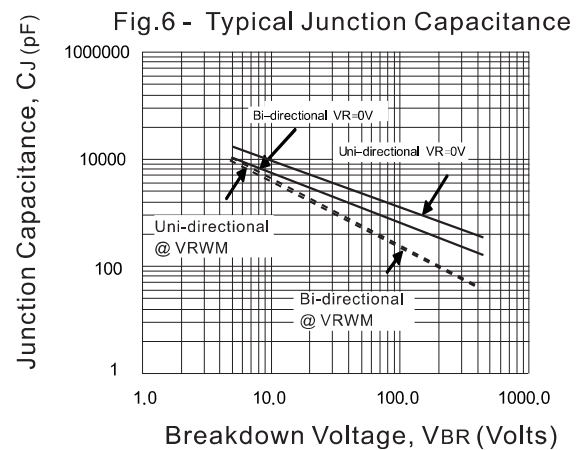
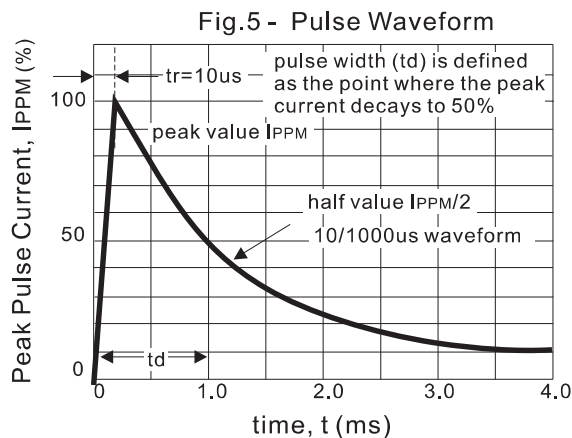
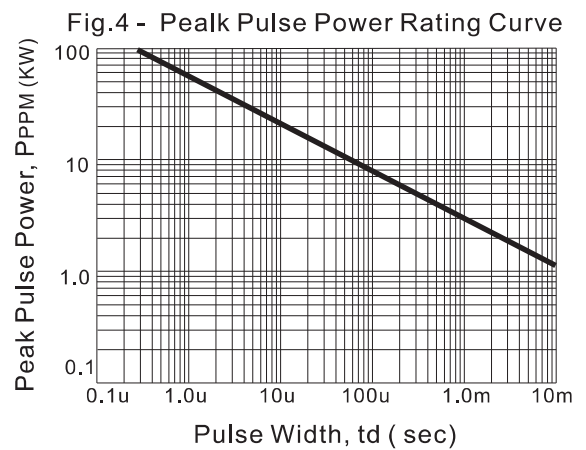
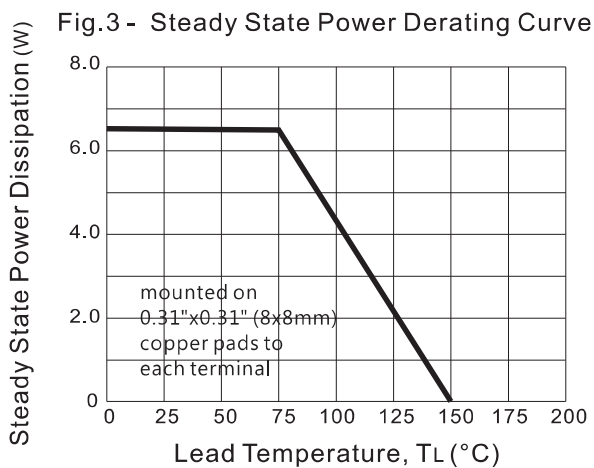
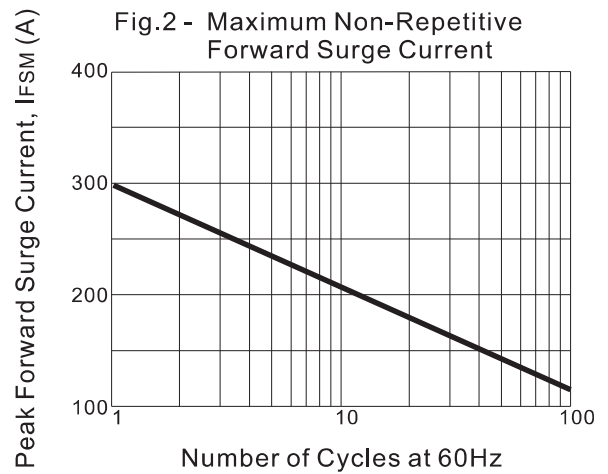
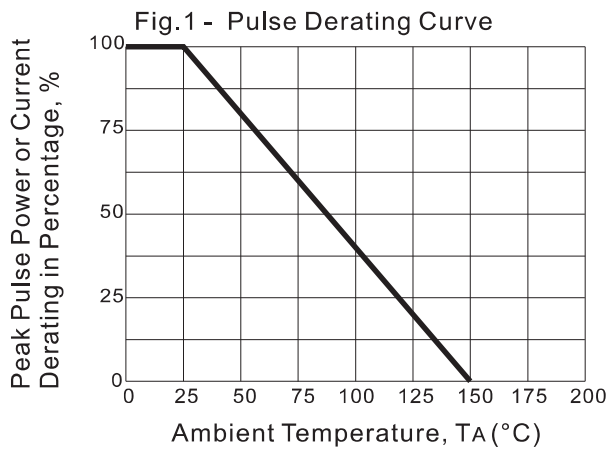
Electrical characteristics (at T_A=25°C unless otherwise noted)

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RMW}
(Uni)	(Bi)	(Uni)	(Bi)	V _{RMW} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
3.0SMC56	3.0SMC56C	56	56C	45.4	50.4	61.6	1.0	80.5	37.3	1.0
3.0SMC56A	3.0SMC56CA	56A	56CA	47.8	53.2	58.8	1.0	77.0	39.0	1.0
3.0SMC62	3.0SMC62C	62	62C	50.2	55.8	68.2	1.0	89.0	33.7	1.0
3.0SMC62A	3.0SMC62CA	62A	62CA	53.0	58.9	65.1	1.0	85.0	35.3	1.0
3.0SMC68	3.0SMC68C	68	68C	55.1	61.2	74.8	1.0	98.0	30.6	1.0
3.0SMC68A	3.0SMC68CA	68A	68CA	58.1	64.6	71.4	1.0	92.0	32.6	1.0
3.0SMC75	3.0SMC75C	75	75C	60.7	67.5	82.5	1.0	108	27.8	1.0
3.0SMC75A	3.0SMC75CA	75A	75CA	64.1	71.3	78.8	1.0	103	29.1	1.0
3.0SMC82	3.0SMC82C	82	82C	66.4	73.8	90.2	1.0	118	25.4	1.0
3.0SMC82A	3.0SMC82CA	82A	82CA	70.1	77.9	86.1	1.0	113	26.5	1.0
3.0SMC91	3.0SMC91C	91	91C	73.7	81.9	100	1.0	131	22.9	1.0
3.0SMC91A	3.0SMC91CA	91A	91CA	77.8	86.5	95.5	1.0	125	24.0	1.0
3.0SMC100	3.0SMC100C	100	100C	81.0	90.0	110	1.0	144	20.8	1.0
3.0SMC100A	3.0SMC100CA	100A	100CA	85.5	95.0	105	1.0	137	21.9	1.0
3.0SMC110	3.0SMC110C	110	110C	89.2	99.0	121	1.0	158	19.0	1.0
3.0SMC110A	3.0SMC110CA	110A	110CA	94.0	105	116	1.0	152	19.7	1.0
3.0SMC120	3.0SMC120C	120	120C	97.2	108	132	1.0	173	17.3	1.0
3.0SMC120A	3.0SMC120CA	120A	120CA	102	114	126	1.0	165	18.2	1.0
3.0SMC130	3.0SMC130C	130	130C	105	117	143	1.0	187	16.0	1.0
3.0SMC130A	3.0SMC130CA	130A	130CA	111	124	137	1.0	179	16.8	1.0
3.0SMC150	3.0SMC150C	150	150C	121	135	165	1.0	215	14.0	1.0
3.0SMC150A	3.0SMC150CA	150A	150CA	128	143	158	1.0	207	14.5	1.0
3.0SMC160	3.0SMC160C	160	160C	130	144	176	1.0	230	13.0	1.0
3.0SMC160A	3.0SMC160CA	160A	160CA	136	152	168	1.0	219	13.7	1.0
3.0SMC170	3.0SMC170C	170	170C	138	153	187	1.0	244	12.3	1.0
3.0SMC170A	3.0SMC170CA	170A	170CA	145	162	179	1.0	234	12.8	1.0
3.0SMC180	3.0SMC180C	180	180C	146	162	198	1.0	258	11.6	1.0
3.0SMC180A	3.0SMC180CA	180A	180CA	154	171	189	1.0	246	12.2	1.0
3.0SMC200	3.0SMC200C	200	200C	162	180	220	1.0	287	10.5	1.0
3.0SMC200A	3.0SMC200CA	200A	200CA	171	190	210	1.0	274	10.9	1.0
3.0SMC220	3.0SMC220C	220	220C	175	198	242	1.0	344	8.7	1.0
3.0SMC220A	3.0SMC220CA	220A	220CA	185	209	231	1.0	328	9.1	1.0
3.0SMC250	3.0SMC250C	250	250C	202	225	275	1.0	360	8.3	1.0
3.0SMC250A	3.0SMC250CA	250A	250CA	214	237	263	1.0	344	8.7	1.0
3.0SMC300	3.0SMC300C	300	300C	243	270	330	1.0	430	7.0	1.0
3.0SMC300A	3.0SMC300CA	300A	300CA	256	285	315	1.0	414	7.2	1.0
3.0SMC350	3.0SMC350C	350	350C	284	315	385	1.0	504	6.0	1.0
3.0SMC350A	3.0SMC350CA	350A	350CA	300	333	368	1.0	482	6.2	1.0
3.0SMC400	3.0SMC400C	400	400C	324	360	440	1.0	574	5.2	1.0
3.0SMC400A	3.0SMC400CA	400A	400CA	342	380	420	1.0	548	5.5	1.0
3.0SMC440	3.0SMC440C	440	440C	356	396	484	1.0	631	4.8	1.0
3.0SMC440A	3.0SMC440CA	440A	440CA	376	418	462	1.0	600	5.0	1.0

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Rating and characteristic curves (3.0SMC SERIES)



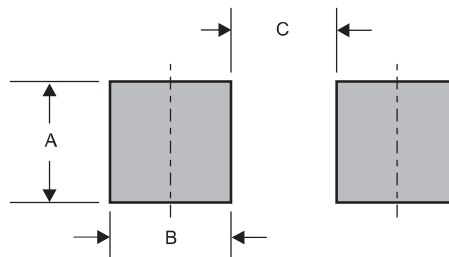
Pinning information

Pin	Simplified outline	Symbol
Uni-Directional Pin1 cathode Pin2 anode		
Bi-Directional		

Marking

Type number	Example
Uni-Directional	 Cathode band Marking code (see page 2 to page 3)
Bi-Directional	 Marking code (see page 2 to page 3)

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMC	0.132 (3.30)	0.100 (2.50)	0.176 (4.40)