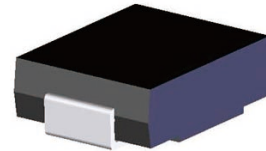


## Features

- Glass passivated chip
- 3000W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard



**SMC  
DO-214AB**



## Mechanical Characteristics

- Case: DO214AB/(SMC) Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

## Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computers & Consumer Electronics
- Industrial Electronics

## Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak power dissipation with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$P_{PP}$	3000	W
Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$I_{PP}$	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75\text{ }^\circ\text{C}$	$P_D$	6.5	W
Peak forward surge current, 8.3 ms single half sine wave unidirectional only <sup>(2)</sup>	$I_{FSM}$	300	A
Maximum instantaneous forward voltage at 100 A for unidirectional only <sup>(3)</sup>	$V_F$	3.5/6.5	V
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

1) Non-repetitive current pulse per Fig.5 and derated above  $T_A = 25\text{ }^\circ\text{C}$  per Fig.1 ;

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  $V_{BR} < 200\text{V}$  and  $V_F < 6.5\text{V}$  for devices of  $V_{BR} > 201\text{V}$ .

## Electrical Characteristics

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Max. Clamping Voltage @ I <sub>PP</sub>	Max. Peak Pulse Current	Max. Reverse Leakage @ V <sub>RWM</sub>
UNI-POLAR	BI-POLAR	UNI	BI	V <sub>RWM</sub> (V)	V <sub>BR</sub> @ I <sub>T</sub>		I <sub>T</sub> (mA)	V <sub>C MAX</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> ( $\mu$ A)
					Min.(V)	Max.(V)				
3.0SMC6.8A	3.0SMC6.8CA	3K6V8A	3K6V8C	5.8	6.45	7.14	10	10.5	289.60	1000
3.0SMC7.5A	3.0SMC7.5CA	3K7V5A	3K7V5C	6.4	7.13	7.88	10	11.3	269.00	500
3.0SMC8.2A	3.0SMC8.2CA	3K8V2A	3K8V2C	7.0	7.79	8.61	10	12.1	251.20	200
3.0SMC9.1A	3.0SMC9.1CA	3K9V1A	3K9V1C	7.8	8.65	9.55	1	13.4	226.80	50
3.0SMC10A	3.0SMC10CA	3K10A	3K10C	8.6	9.50	10.50	1	14.5	209.60	10
3.0SMC11A	3.0SMC11CA	3K11A	3K11C	9.4	10.50	11.60	1	15.6	194.80	5
3.0SMC12A	3.0SMC12CA	3K12A	3K12C	10.2	11.40	12.60	1	16.7	182.00	5
3.0SMC13A	3.0SMC13CA	3K13A	3K13C	11.1	12.40	13.70	1	18.2	167.00	1
3.0SMC15A	3.0SMC15CA	3K15A	3K15C	12.8	14.30	15.80	1	21.2	143.40	1
3.0SMC16A	3.0SMC16CA	3K16A	3K16C	13.6	15.20	16.80	1	22.5	135.20	1
3.0SMC18A	3.0SMC18CA	3K18A	3K18C	15.3	17.10	18.90	1	25.5	120.60	1
3.0SMC20A	3.0SMC20CA	3K20A	3K20C	17.1	19.00	21.00	1	27.7	109.80	1
3.0SMC22A	3.0SMC22CA	3K22A	3K22C	18.8	20.90	23.10	1	30.6	99.40	1
3.0SMC24A	3.0SMC24CA	3K24A	3K24C	20.5	22.80	25.20	1	33.2	91.60	1
3.0SMC27A	3.0SMC27CA	3K27A	3K27C	23.1	25.70	28.40	1	37.5	81.00	1
3.0SMC30A	3.0SMC30CA	3K30A	3K30C	25.6	28.50	31.50	1	41.4	73.40	1
3.0SMC33A	3.0SMC33CA	3K33A	3K33C	28.2	31.40	34.70	1	45.7	66.60	1
3.0SMC36A	3.0SMC36CA	3K36A	3K36C	30.8	34.20	37.80	1	49.9	61.00	1
3.0SMC39A	3.0SMC39CA	3K39A	3K39C	33.3	37.10	41.00	1	53.9	56.40	1
3.0SMC43A	3.0SMC43CA	3K43A	3K43C	36.8	40.90	45.20	1	59.3	51.20	1
3.0SMC47A	3.0SMC47CA	3K47A	3K47C	40.2	44.70	49.40	1	64.8	47.00	1
3.0SMC51A	3.0SMC51CA	3K51A	3K51C	43.6	48.50	53.60	1	70.1	43.40	1
3.0SMC56A	3.0SMC56CA	3K56A	3K56C	47.8	53.20	58.80	1	77.0	39.40	1
3.0SMC62A	3.0SMC62CA	3K62A	3K62C	53.0	58.90	65.10	1	85.0	35.80	1
3.0SMC68A	3.0SMC68CA	3K68A	3K68C	58.1	64.60	71.40	1	92.0	33.00	1
3.0SMC75A	3.0SMC75CA	3K75A	3K75C	64.1	71.30	78.80	1	103.0	29.60	1
3.0SMC82A	3.0SMC82CA	3K82A	3K82C	70.1	77.90	86.10	1	113.0	27.00	1
3.0SMC91A	3.0SMC91CA	3K91A	3K91C	77.8	86.50	95.50	1	125.0	24.40	1
3.0SMC100A	3.0SMC100CA	3K100A	3K100C	85.5	95.00	105.00	1	137.0	22.20	1
3.0SMC110A	3.0SMC110CA	3K110A	3K110C	94.0	105.0	116.0	1	152.0	20.00	1
3.0SMC120A	3.0SMC120CA	3K120A	3K120C	102.0	114.0	126.0	1	165.0	18.40	1
3.0SMC130A	3.0SMC130CA	3K130A	3K130C	111.0	124.0	137.0	1	179.0	17.00	1
3.0SMC150A	3.0SMC150CA	3K150A	3K150C	128.0	143.0	158.0	1	207.0	14.60	1
3.0SMC160A	3.0SMC160CA	3K160A	3K160C	136.0	152.0	168.0	1	219.0	13.80	1
3.0SMC170A	3.0SMC170CA	3K170A	3K170C	145.0	162.0	179.0	1	234.0	13.00	1
3.0SMC180A	3.0SMC180CA	3K180A	3K180C	154.0	171.0	189.0	1	246.0	12.40	1
3.0SMC200A	3.0SMC200CA	3K200A	3K200C	171.0	190.0	210.0	1	274.0	11.00	1
3.0SMC220A	3.0SMC220CA	3K220A	3K220C	185.0	209.0	231.0	1	328.0	9.20	1
3.0SMC250A	3.0SMC250CA	3K250A	3K250C	214.0	237.0	263.0	1	344.0	8.80	1

**3000Watts**  
**Transient Voltage Suppressor**  
**3.0SMCxx(C)A Series**

**Electrical Characteristics**(continued)

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Max. Clamping Voltage @ I <sub>PP</sub>	Max. Peak Pulse Current	Max. Reverse Leakage @ V <sub>RWM</sub>
UNI-POLAR	BI-POLAR	UNI	BI	V <sub>RWM</sub> (V)	V <sub>BR</sub> @ I <sub>T</sub>		I <sub>T</sub> (mA)	V <sub>C MAX.</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> (uA)
					Min.(V)	Max.(V)				
3.0SMC300A		3K300A		256.0	285.00	315.00	1	414.0	7.40	1
3.0SMC350A		3K350A		300.0	332.00	368.00	1	482.0	6.40	1
3.0SMC400A		3K400A		342.0	380.00	420.00	1	548.0	5.60	1
3.0SMC440A		3K440A		376.0	418.00	462.00	1	602.8	5.00	1
3.0SMC480A		3K480A		408.0	456.00	504.00	1	658.0	4.60	1
3.0SMC510A		3K510A		434.0	485.00	535.00	1	698.0	4.20	1
3.0SMC530A		3K530A		450.0	503.00	556.00	1	725.0	4.20	1

**Ratings and Characteristics Curves** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

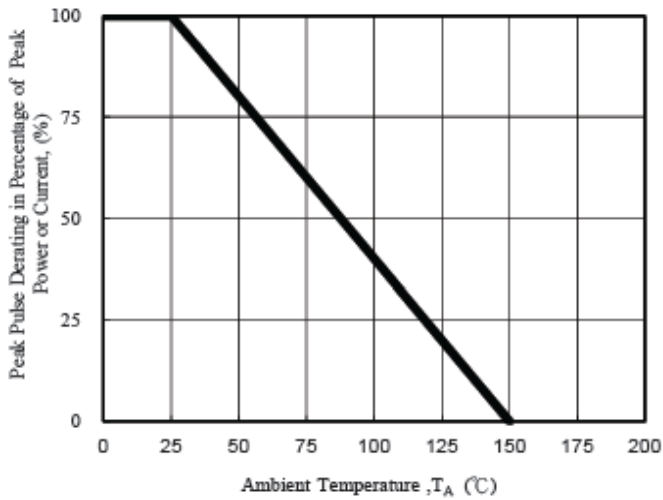


Fig. 1 - Pulse Derating Curve

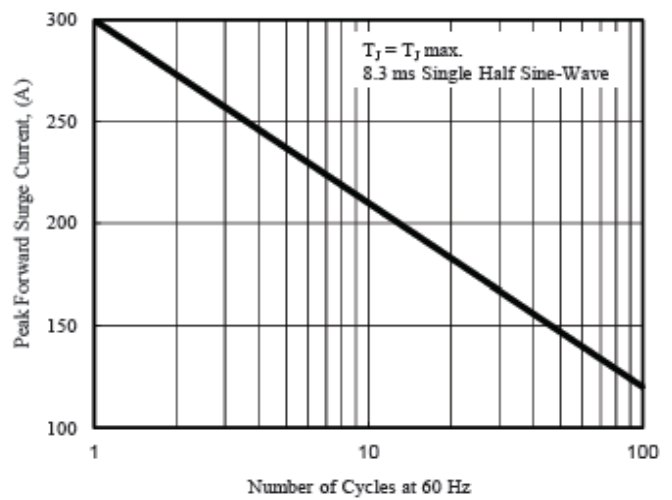


Fig. 2 - Maximum Non-Repetitive Surge Current

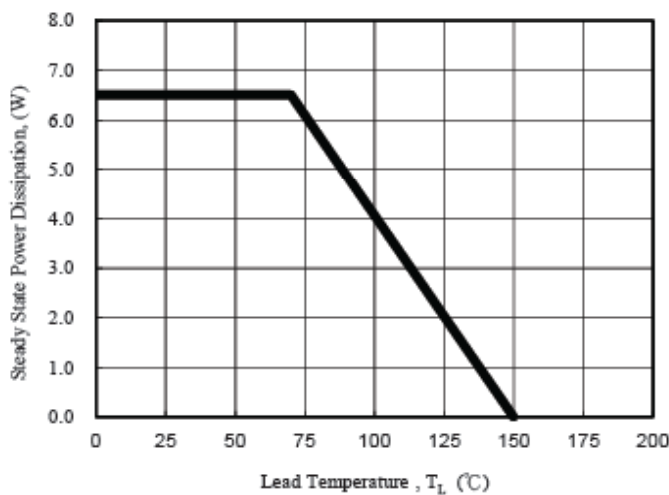


Fig. 3 - Steady State Power Derating Curve

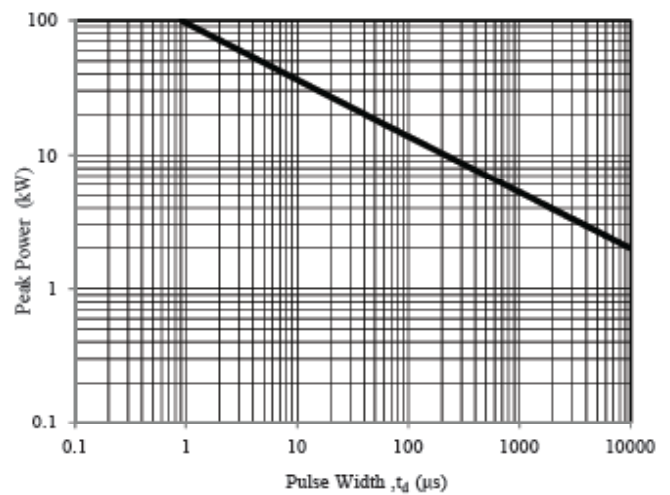


Fig. 4 - Peak Pulse Power Rating Curve

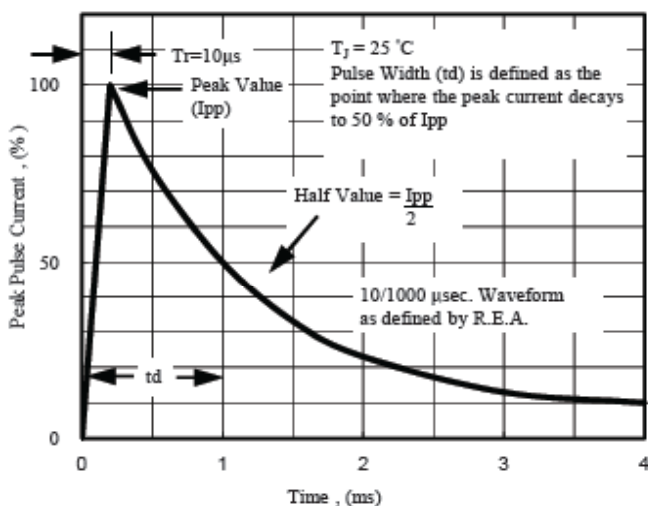


Fig. 5 - Pulse Waveform

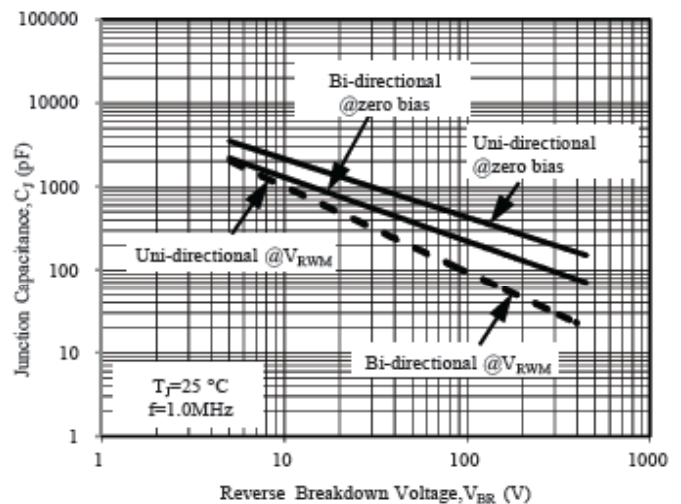
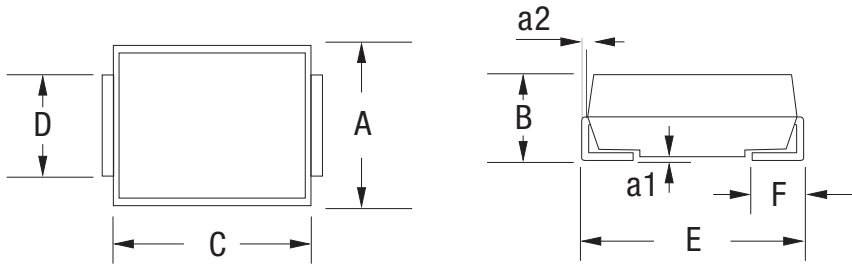


Fig. 6 - Typical Junction Capacitance

**Dimension** (Unit: mm)



A		B		C		D		E		F		a1		a2	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
5.500	6.100	2.100	2.700	6.500	7.100	2.750	3.250	7.400	8.400	0.900	1.400	-	0.203	0.170	0.300

**Packaging: 3,000/Tape & Reel**

**Part Marking System**

