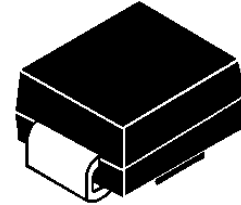


## 1.5SMC Series

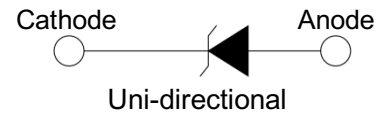
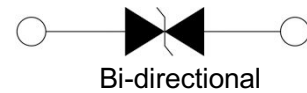
### 1500W Surface Mount Transient Voltage Suppressors

#### Features

- Peak power dissipation 1500W @10 x 1000 us Pulse
- Low profile package.
- Excellent clamping capability.
- Glass passivated junction.
- Very Fast response time.
- Typical  $I_R$  less than 1uA when  $V_{BR}$  min above 12V.
- IEC 61000-4-2 ESD 30KV(Air), 30KV(Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4
- RoHS compliant
- Lead-free finish



**SMC**



#### Mechanical Characteristics

- CASE: SMC(DO-214AB) Molded Plastic
- Mounting Position: Any
- Polarity: by cathode band denotes uni-directional device, none cathode band denotes bi-directional device.
- Terminal: Solder plated

#### Maximum Ratings and Characteristics @ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 us Waveform (Note 1, FIG.1)	$P_{PPM}$	Min 1500	W
Power Dissipation on Infinite Heat Sink at $T_L=75^\circ\text{C}$	$P_D$	6.5	W
Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3)	$I_{PPM}$	See Table 1	A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2)	$I_{FSM}$	200	A
Operating Junction Temperature Range	$T_J$	-55 to 150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to 150	$^\circ\text{C}$

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ\text{C}$  per Fig.2.
2. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

## 1.5SMC Series

Electrical Specification ( $T_A=25@25^{\circ}\text{C}$  unless otherwise specified)

Type Number		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 @ $V_{RWM}$
(Uni)	(Bi)	$V_{RWM}(V)$	$V_{BR\ MIN}(V)$	$V_{BR\ MAX}(V)$	$I_T\ (mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
1.5SMC6.8A	1.5SMC6.8CA	5.80	6.45	7.14	10	10.5	144.8	300
1.5SMC7.5A	1.5SMC7.5CA	6.40	7.13	7.88	10	11.3	134.5	200
1.5SMC8.2A	1.5SMC8.2CA	7.02	7.79	8.61	10	12.1	125.6	100
1.5SMC9.1A	1.5SMC9.1CA	7.78	8.65	9.55	1	13.4	113.4	50
1.5SMC10A	1.5SMC10CA	8.55	9.50	10.50	1	14.5	104.8	10
1.5SMC11A	1.5SMC11CA	9.40	10.50	11.60	1	15.6	97.4	5
1.5SMC12A	1.5SMC12CA	10.20	11.40	12.60	1	16.7	91.0	5
1.5SMC13A	1.5SMC13CA	11.10	12.40	13.70	1	18.2	83.5	1
1.5SMC15A	1.5SMC15CA	12.80	14.30	15.80	1	21.2	71.7	1
1.5SMC16A	1.5SMC16CA	13.60	15.20	16.80	1	22.5	67.6	1
1.5SMC18A	1.5SMC18CA	15.30	17.10	18.90	1	25.2	60.3	1
1.5SMC20A	1.5SMC20CA	17.10	19.00	21.00	1	27.7	54.9	1
1.5SMC22A	1.5SMC22CA	18.80	20.90	23.10	1	30.6	49.7	1
1.5SMC24A	1.5SMC24CA	20.50	22.80	25.20	1	33.2	45.8	1
1.5SMC27A	1.5SMC27CA	23.10	25.70	28.40	1	37.5	40.5	1
1.5SMC30A	1.5SMC30CA	25.60	28.50	31.50	1	41.4	36.7	1
1.5SMC33A	1.5SMC33CA	28.20	31.40	34.70	1	45.7	33.3	1
1.5SMC36A	1.5SMC36CA	30.80	34.20	37.80	1	49.9	30.5	1
1.5SMC39A	1.5SMC39CA	33.30	37.10	41.00	1	53.9	28.2	1
1.5SMC43A	1.5SMC43CA	36.80	40.90	45.20	1	59.3	25.6	1
1.5SMC47A	1.5SMC47CA	40.20	44.70	49.40	1	64.8	23.5	1
1.5SMC51A	1.5SMC51CA	43.60	48.50	53.60	1	70.1	21.7	1
1.5SMC56A	1.5SMC56CA	47.80	53.20	58.80	1	77.0	19.7	1
1.5SMC62A	1.5MC62CA	53.00	58.90	65.10	1	85.0	17.9	1
1.5SMC68A	1.5SMC68CA	58.10	64.60	71.40	1	92.0	16.5	1
1.5SMC75A	1.5SMC75CA	64.10	71.30	78.80	1	103.0	14.8	1
1.5SMC82A	1.5SMC82CA	70.10	77.90	86.10	1	113.0	13.5	1
1.5SMC91A	1.5SMC91CA	77.80	86.50	95.50	1	125.0	12.2	1
1.5SMC100A	1.5SMC100CA	85.50	95.00	105.00	1	137.0	11.1	1
1.5SMC110A	1.5SMC110CA	94.00	105.00	116.00	1	152.0	10.0	1
1.5SMC120A	1.5SMC120CA	102.00	114.00	126.00	1	165.0	9.2	1
1.5SMC130A	1.5SMC130CA	111.00	124.00	137.00	1	179.0	8.5	1
1.5SMC150A	1.5SMC150CA	128.00	143.00	158.00	1	207.0	7.3	1
1.5SMC160A	1.5SMC160CA	136.00	152.00	168.00	1	219.0	6.9	1
1.5SMC170A	1.5SMC170CA	145.00	162.00	179.00	1	234.0	6.5	1
1.5SMC180A	1.5SMC180CA	154.00	171.00	189.00	1	246.0	6.2	1

※ For Bi-directional type having  $V_{RWM}$  of 10 Volts and less, the  $I_R$  limit is double.

※ For parts without A, the  $V_{BR}$  is  $\pm 10\%$  and  $V_C$  is 5% higher than with A parts.

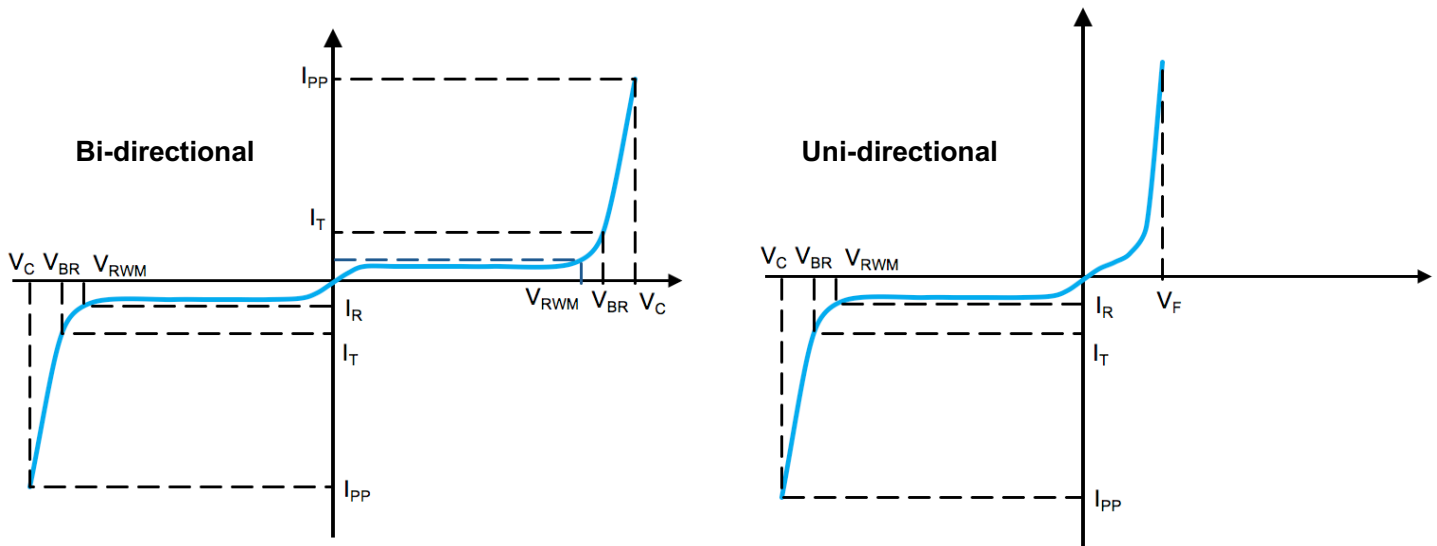
## 1.5SMC Series

Type Number		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 @ $V_{RWM}$
(Uni)	(Bi)	$V_{RWM}(V)$	$V_{BR MIN}(V)$	$V_{BR MAX}(V)$	$I_T$ (mA)	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
1.5SMC200A	1.5SMC200CA	171.00	190.00	210.00	1	274.0	5.5	1
1.5SMC220A	1.5SMC220CA	185.00	209.00	231.00	1	328.0	4.6	1

※ For Bi-directional type having  $V_{RWM}$  of 10 Volts and less, the  $I_R$  limit is double.

※ For parts without A, the  $V_{BR}$  is  $\pm 10\%$  and  $V_C$  is 5% higher than with A parts.

## I-V Curve Characteristics



**$P_{PPM}$  Peak Pulse Power Dissipation** - Max power dissipation

**$V_{RWM}$  Reverse Stand-off Voltage** - Maximum voltage that can be applied to TVS without operation

**$V_{BR}$  Breakdown Voltage** – Maximum voltage that flows though the TVS at a specified current ( $I_T$ )

**$V_C$  Clamping Voltage** – Peak voltage measured across the TVS at a specified  $I_{PPM}$  (peak impulse current)

**$I_R$  Reverse Leakage Current** – Current measured at  $V_R$

**$V_F$  Forward Voltage Drop for Uni-directional**

## 1.5SMC Series

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

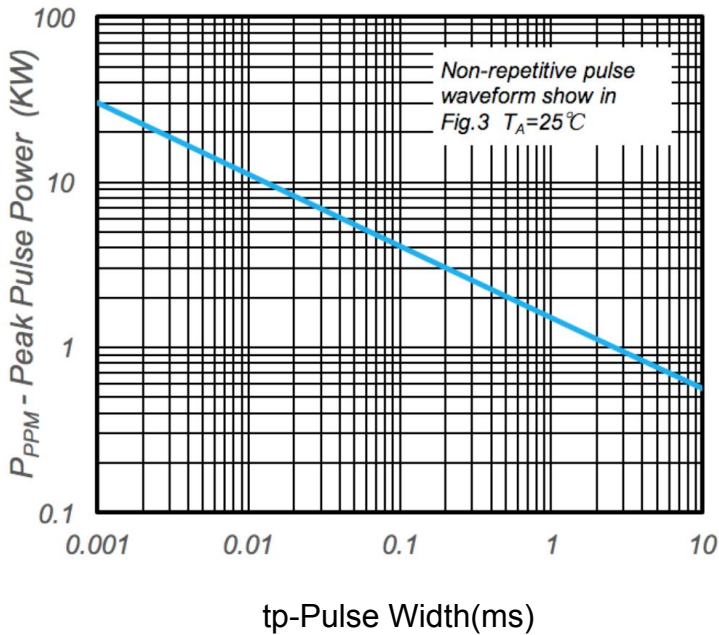


Fig.1 - Peak Pulse Power Rating

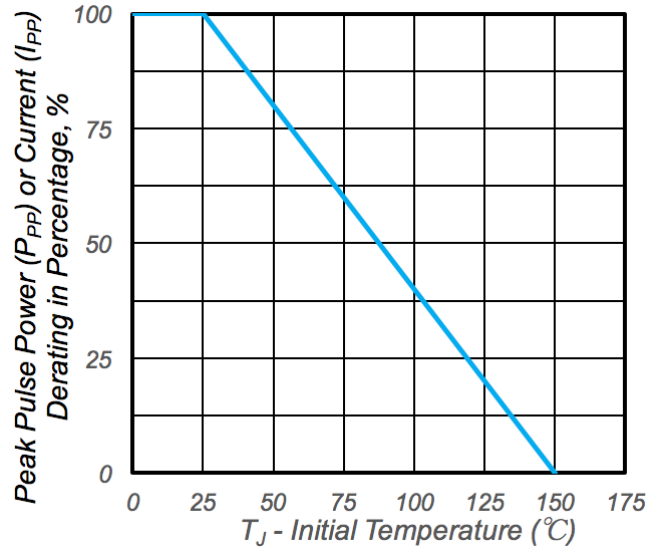


Fig.2 - Pulse Derating Curve

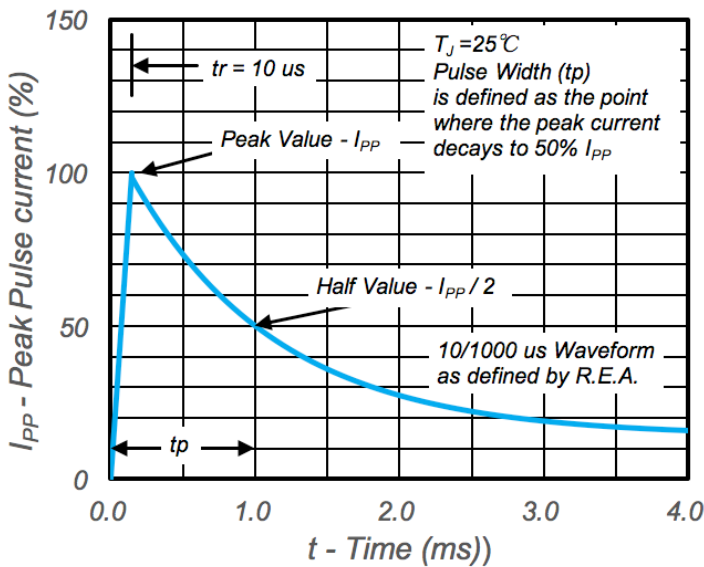


Fig.3 - Pulse Waveform

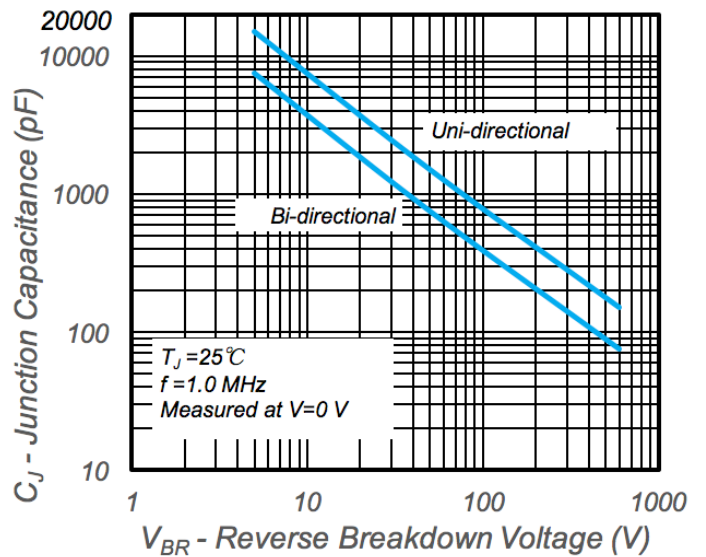
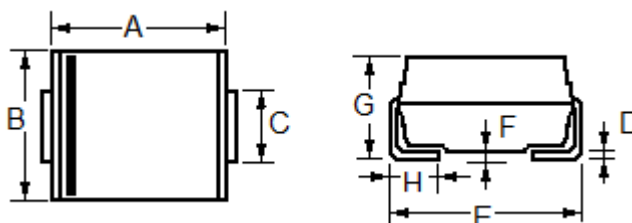


Fig.4 - Typical Junction Capacitance

## 1.5SMC Series

### Package Outline Dimensions and Pad Layouts

#### DO-214AB (SMC)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	6.60	7.11	0.260	0.280
B	5.59	6.22	0.220	0.245
C	2.90	3.20	0.114	0.126
D	0.125	0.305	0.006	0.012
E	7.75	8.13	0.305	0.320
F	----	0.203	----	0.008
G	2.06	2.62	0.079	0.103
H	0.76	1.52	0.030	0.060