

# 1.5SMC6.8(C)A-T to 1.5SMC600(C)A-T

# 1500Watts

## Automotive Transient Voltage Suppressors

PROSEMI offers AEC-Q101 qualified TVS diode device is specially designed to protect sensitive electronic devices from lightning and other transient voltage induced voltage transient events.



### Features

- Glass passivated chip
- 1500 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle) : 0.01%
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

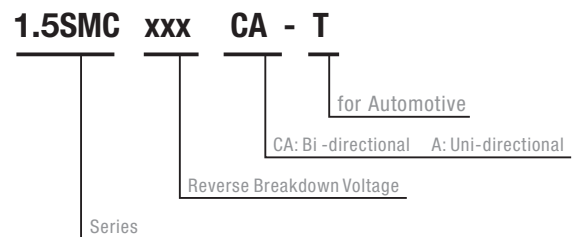


SMC  
DO-214AB

### Applications

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

### Part Numbering System



### Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (tp =10/1000µs) (see Note1,2&3)	PPPM	1500	Watts
Peak pulse current (10/1000 µs) (see Note2&3)	IPPM	See Electrical Characteristics	A
Peak Forward surge current (see Note4&5)	IFSM	200	A
Power Dissipation on infinite heat sink TA= 50 °C (Fig5)	Pd	5.0	W
Operating Junction Temperaturerange	TJ	-55 ~ +150	°C
Maximum instantaneous forward voltage at 100 A for unidirectional only(3)	VF	3.5 / 6.5	V

Note1: Non-repetitive current pulse per Fig.5 and derated above TA= 25 °C per Fig.1 ;

Note2: Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum ;

Note3: VF<3.5V for devices of VBR<200V and VF<6.5V for devices of VBR>201V.

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### 1500Watts

#### Electrical Characteristics

Part Number		Marking		Reverse Stand Off $V_R$ (V)	Breakdown Voltage		Test Current $I_T$ (mA)	Maximum Clamping Voltage $V_C$ (V) @ $I_{PP}$	Maximum Peak Pulse Current $I_{PP}$ (A)	Maximum Reverse Leakage $I_R$ ( $\mu$ A) @ $V_R$
Uni	Bi	Uni	Bi		$V_{BR}$ (V) @ $I_T$ Min.	Max.				
1.5SMC6.8A-T	1.5SMC6.8CA-T	6V8AT	6V8CT	5.8	6.45	7.14	10	10.5	144.80	1000
1.5SMC7.5A-T	1.5SMC7.5CA-T	7V5AT	7V5CT	6.4	7.13	7.88	10	11.3	134.50	500
1.5SMC8.2A-T	1.5SMC8.2CA-T	8V2AT	8V2CT	7.0	7.79	8.61	10	12.1	125.60	200
1.5SMC9.1A-T	1.5SMC9.1CA-T	9V1AT	9V1CT	7.8	8.65	9.55	1	13.4	113.40	50
1.5SMC10A-T	1.5SMC10CA-T	10AT	10CT	8.6	9.50	10.50	1	14.5	104.80	10
1.5SMC11A-T	1.5SMC11CA-T	11AT	11CT	9.44	10.50	11.60	1	15.6	97.40	5
1.5SMC12A-T	1.5SMC12CA-T	12AT	12CT	10.2	11.40	12.60	1	16.7	91.00	5
1.5SMC13A-T	1.5SMC13CA-T	13AT	13CT	11.1	12.40	13.70	1	18.2	83.50	1
1.5SMC15A-T	1.5SMC15CA-T	15AT	15CT	12.8	14.30	15.80	1	21.2	71.70	1
1.5SMC16A-T	1.5SMC16CA-T	16AT	16CT	13.6	15.20	16.80	1	22.5	67.60	1
1.5SMC18A-T	1.5SMC18CA-T	18AT	18CT	15.3	17.10	18.90	1	25.5	60.30	1
1.5SMC20A-T	1.5SMC20CA-T	20AT	20CT	17.1	19.00	21.00	1	27.7	54.90	1
1.5SMC22A-T	1.5SMC22CA-T	22AT	22CT	18.8	20.90	23.10	1	30.6	49.70	1
1.5SMC24A-T	1.5SMC24CA-T	24AT	24CT	20.5	22.80	25.20	1	33.2	45.80	1
1.5SMC27A-T	1.5SMC27CA-T	27AT	27CT	23.1	25.70	28.40	1	37.5	40.50	1
1.5SMC30A-T	1.5SMC30CA-T	30AT	30CT	25.6	28.50	31.50	1	41.4	36.70	1
1.5SMC33A-T	1.5SMC33CA-T	33AT	33CT	28.2	31.40	34.70	1	45.7	33.30	1
1.5SMC36A-T	1.5SMC36CA-T	36AT	36CT	30.8	34.20	37.80	1	49.9	30.50	1
1.5SMC39A-T	1.5SMC39CA-T	39AT	39CT	33.3	37.10	41.00	1	53.9	28.20	1
1.5SMC43A-T	1.5SMC43CA-T	43AT	43CT	36.8	40.90	45.20	1	59.3	25.60	1
1.5SMC47A-T	1.5SMC47CA-T	47AT	47CT	40.2	44.70	49.40	1	64.8	23.50	1
1.5SMC51A-T	1.5SMC51CA-T	51AT	51CT	43.6	48.50	53.60	1	70.1	21.70	1
1.5SMC56A-T	1.5SMC56CA-T	56AT	56CT	47.8	53.20	58.80	1	77.0	19.70	1
1.5SMC62A-T	1.5SMC62CA-T	62AT	62CT	53.0	58.90	65.10	1	85.0	17.90	1
1.5SMC68A-T	1.5SMC68CA-T	68AT	68CT	58.1	64.60	71.40	1	92.0	16.50	1
1.5SMC75A-T	1.5SMC75CA-T	75AT	75CT	64.1	71.30	78.80	1	103.0	14.80	1
1.5SMC82A-T	1.5SMC82CA-T	82AT	82CT	70.11	77.90	86.11	1	113	13.5	1
1.5SMC91A-T	1.5SMC91CA-T	91AT	91CT	77.8	86.50	95.50	1	125.0	12.20	1
1.5SMC100A-T	1.5SMC100CA-T	100AT	100CT	85.5	95.00	105.00	1	137.0	11.10	1
1.5SMC110A-T	1.5SMC110CA-T	110AT	110CT	94.0	105.00	116.00	1	152.0	10.00	1
1.5SMC120A-T	1.5SMC120CA-T	120AT	120CT	102.0	114.00	126.00	1	165.0	9.20	1
1.5SMC130A-T	1.5SMC130CA-T	130AT	130CT	111.0	124.00	137.00	1	179.0	8.50	1

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### 1.5SMC6.8(C)A-T to 1.5SMC600(C)A-T

### 1500Watts

#### Electrical Characteristics

Part Number		Marking		Reverse Stand Off $V_R$ (V)	Breakdown Voltage		Test Current $I_T$ (mA)	Maximum Clamping Voltage $V_C$ (V) @ $I_{PP}$	Maximum Peak Pulse Current $I_{PP}$ (A)	Maximum Reverse Leakage $I_R$ ( $\mu$ A) @ $V_R$
Uni	Bi	Uni	Bi		$V_{BR}$ (V) @ $I_T$ Min.	Max.				
1.5SMC150A-T	1.5SMC150CA-T	150AT	150CT	128.0	143.00	158.00	1	207.0	7.30	1
1.5SMC160A-T	1.5SMC160CA-T	160AT	160CT	136.0	152.00	168.00	1	219.0	6.90	1
1.5SMC170A-T	1.5SMC170CA-T	170AT	170CT	145.0	162.00	179.00	1	234.0	6.50	1
1.5SMC180A-T	1.5SMC180CA-T	180AT	180CT	154.0	171.00	189.00	1	246.0	6.20	1
1.5SMC200A-T	1.5SMC200CA-T	200AT	200CT	171.0	190.00	210.00	1	274.0	5.50	1
1.5SMC220A-T	1.5SMC220CA-T	220AT	220CT	185.0	209.00	231.00	1	328.0	4.60	1
1.5SMC250A-T	1.5SMC250CA-T	250AT	250CT	214.0	237.00	263.00	1	344.0	4.40	1
1.5SMC300A-T	1.5SMC300CA-T	300AT	300CT	256.0	285.00	315.00	1	414.0	3.70	1
1.5SMC350A-T	1.5SMC350CA-T	350AT	350CT	300.0	332.00	368.00	1	482.0	3.20	1
1.5SMC400A-T	1.5SMC400CA-T	400AT	400CT	342.0	380.00	420.00	1	548.0	2.80	1
1.5SMC440A-T	1.5SMC440CA-T	440AT	440CT	376.0	418.00	462.00	1	602.0	2.50	1
1.5SMC480A-T	1.5SMC480CA-T	480AT	480CT	408.0	456.00	504.00	1	658.0	2.30	1
1.5SMC510A-T	1.5SMC510CA-T	510AT	510CT	434.0	485.00	535.00	1	698.0	2.10	1
1.5SMC530A-T	1.5SMC530CA-T	530AT	530CT	450.0	503.00	556.00	1	725.0	2.10	1
1.5SMC540A-T	1.5SMC540CA-T	540AT	540CT	459.0	513.00	567.00	1	740.0	2.00	1
1.5SMC550A-T	1.5SMC550CA-T	550AT	550CT	467.0	522.50	577.50	1	760.0	2.00	1
1.5SMC600A-T	1.5SMC600CA-T	600AT	600CT	509.0	570.00	630.00	1	820.0	1.80	1

#### Typical Characteristics

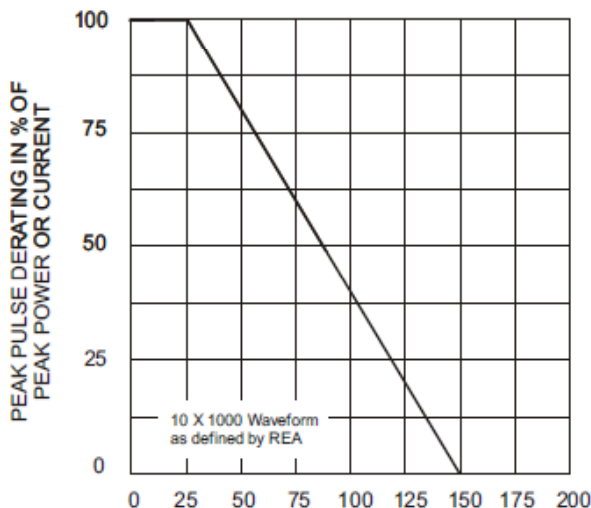


Fig. 1 - Pulse Derating Curve

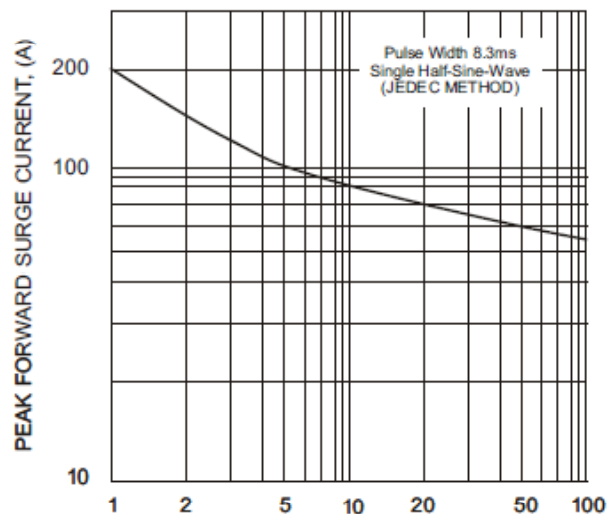


Fig. 2 - Maximum Non-Repetitive Surge Current

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## 1500Watts

### Typical Characteristics

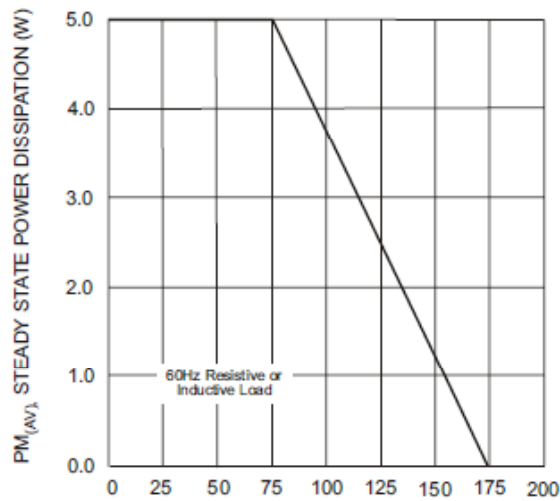


Fig. 3 - Steady State Power Derating Curve

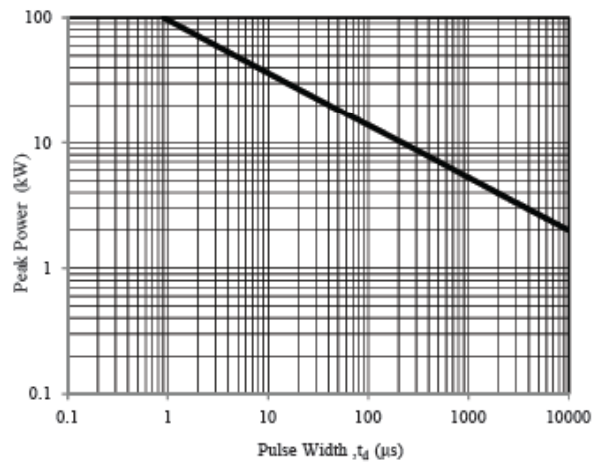


Fig. 4 - Peak Pulse Power Rating Curve

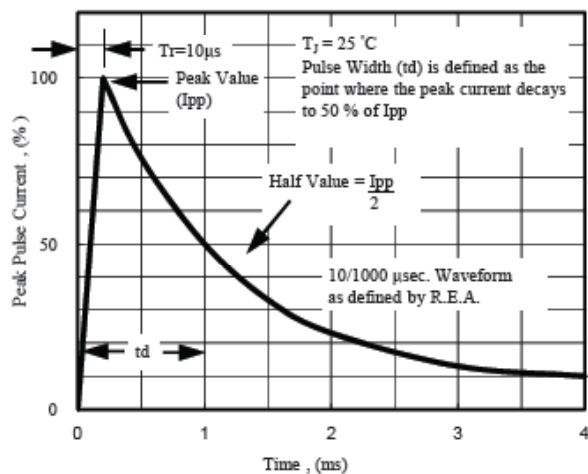


Fig. 5 - Pulse Waveform

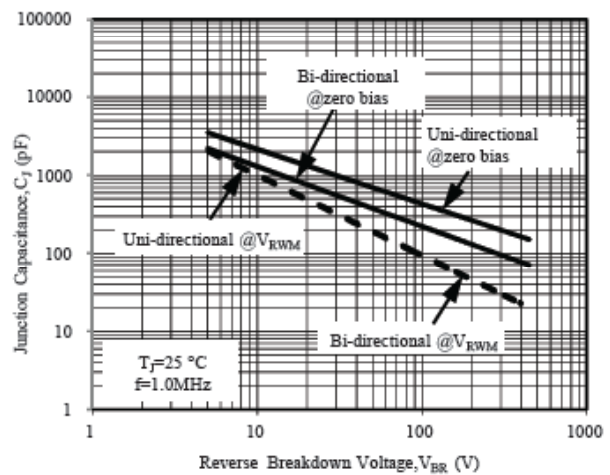


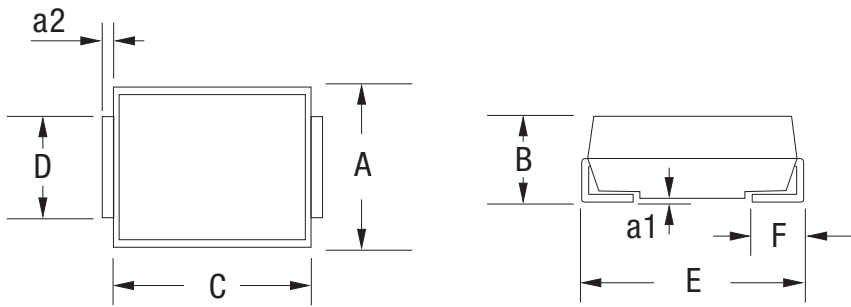
Fig. 6 - Typical Junction Capacitance

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**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	0.760	1.520	-	0.203	0.152	0.305

### Packaging

- Quantity: 3,000pcs
- 12mm wide tape on 330mm(13 inch) diameter reel –specification EIA Standard 481.