

Features

- Peak power dissipation
1500W@10 x 1000 us Pluse
- Low incremental surge resistance
- Excellent clamping capability
- Fast response time
- Low leakage current
- Halogen free and RoHS compliant

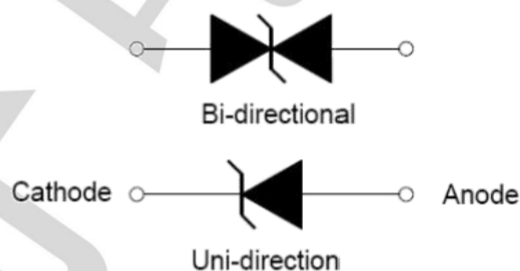
Applications

- Personal digital assistants (PDA)
- Cellular handsets & Accessories
- Handhelds and notebooks
- Portable instrumentation

Mechanical Characteristics

- SMC surface mount package

Dimensions and Pin Configuration



Pin Configuration

Maximum Ratings& Thermal Characteristics

(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak pulse power (tp=10/1000μs waveform)	P _{PPM}	1500	W
Steady state power dissipation at T _A =50°C	P _{M(AV)}	6.5	W
Peak Pulse Current of on 10/1000us Waveform	I _{PPM}	See Table	A
Typical thermal resistance junction to ambient	R _{θJA}	75	°C/W
Storage & operating temperature range	T _{STG} ,T _J	-55~+150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage @I _T	Test Current	Maximum Clamping Voltage@I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
Unidirectional	Bidirectional	V _{RWM} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)
1.5SMC6.8A	1.5SMC6.8CA	5.80	6.45~7.14	10	10.5	144.8	1000
1.5SMC7.5A	1.5SMC7.5CA	6.40	7.13~7.88	10	11.3	134.5	500
1.5SMC8.2A	1.5SMC8.2CA	7.02	7.79~8.61	10	12.1	125.6	200
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	1.5SMC62CA	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

Electrical Characteristics (TA=25°C unless otherwise specified)

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Unidirectional	Bidirectional	V _{RWM} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)
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
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
1.5SMC250A	1.5SMC250CA	214.00	237.00~263.00	1	344.0	4.4	1
1.5SMC300A	1.5SMC300CA	256.00	285.00~315.00	1	414.0	3.7	1
1.5SMC350A	1.5SMC350CA	300.00	332.00~368.00	1	482.0	3.2	1
1.5SMC400A	1.5SMC400CA	342.00	380.00~420.00	1	548.0	2.8	1
1.5SMC440A	1.5SMC440CA	376.00	418.00~462.00	1	602.0	2.5	1
1.5SMC480A	1.5SMC480CA	408.00	456.00~504.00	1	658.0	2.3	1
1.5SMC510A	1.5SMC510CA	434.00	485.00~535.00	1	698.0	2.1	1
1.5SMC530A	1.5SMC530CA	450.00	503.50~556.50	1	725.0	2.1	1
1.5SMC540A	1.5SMC540CA	459.00	513.00~567.00	1	740.0	2.0	1
1.5SMC550A	1.5SMC550CA	467.00	522.50~577.50	1	760.0	2.0	1

Notes: For bidirectional type having V_{RWM} of 10V and less, the I_R limit is double.

Typical Characteristics Curves

Figure 1. Peak Pulse Power Rating Curve

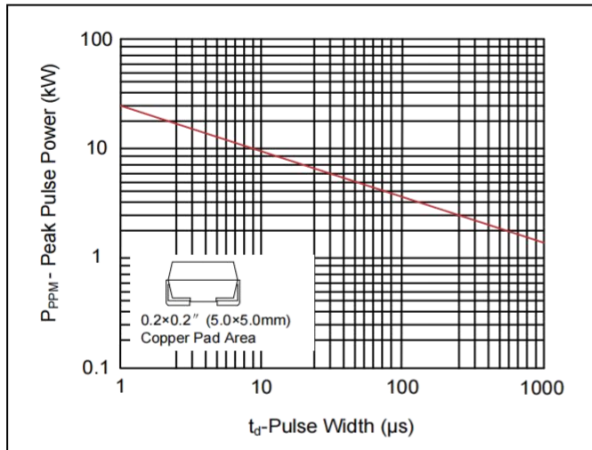


Figure 2. Pulse Derating Curve

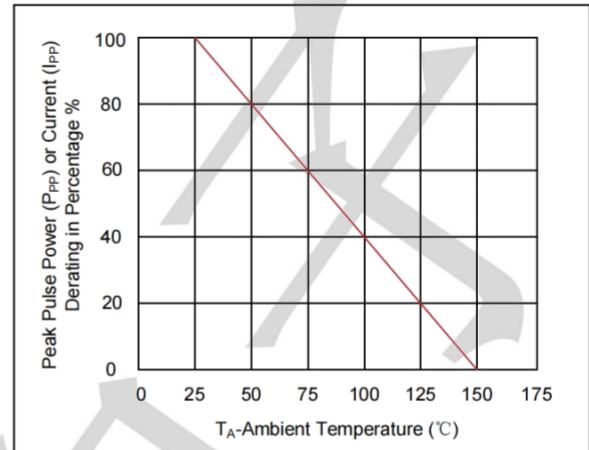


Figure 3. Pulse Waveform

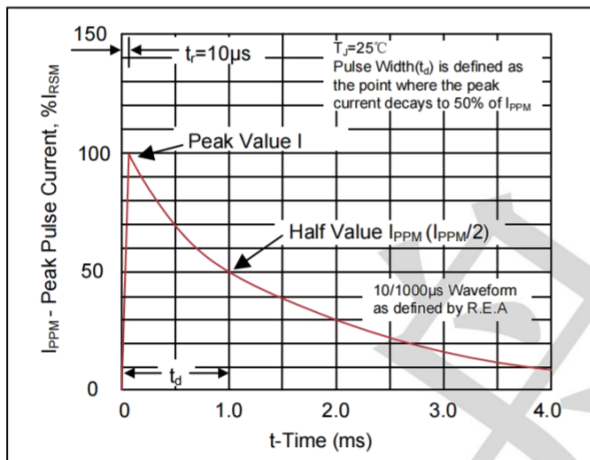


Figure 4. Typical Junction Capacitance

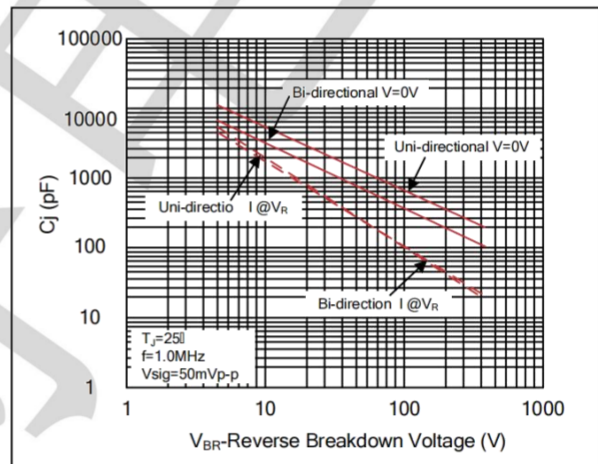


Figure 5. Steady State Power Dissipation Derating Curve

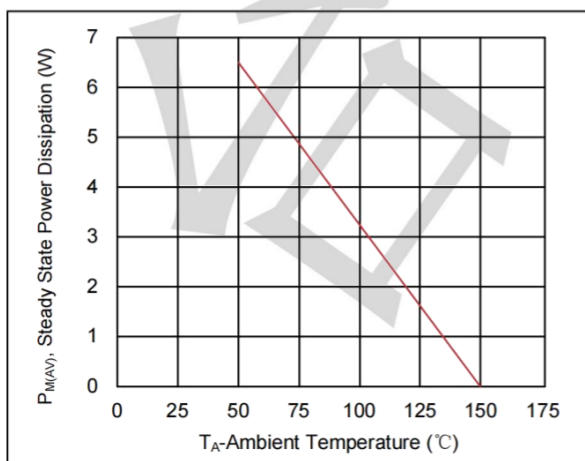
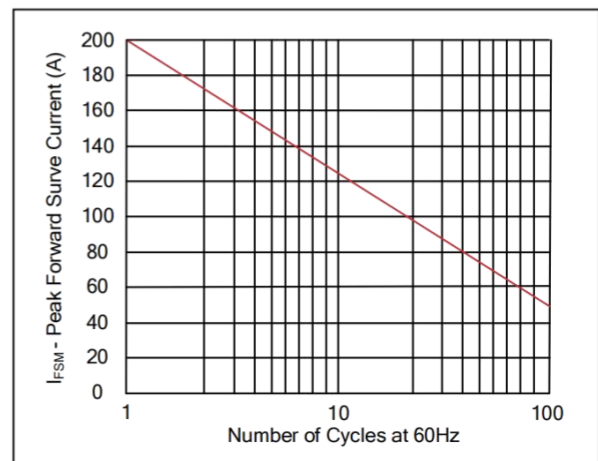
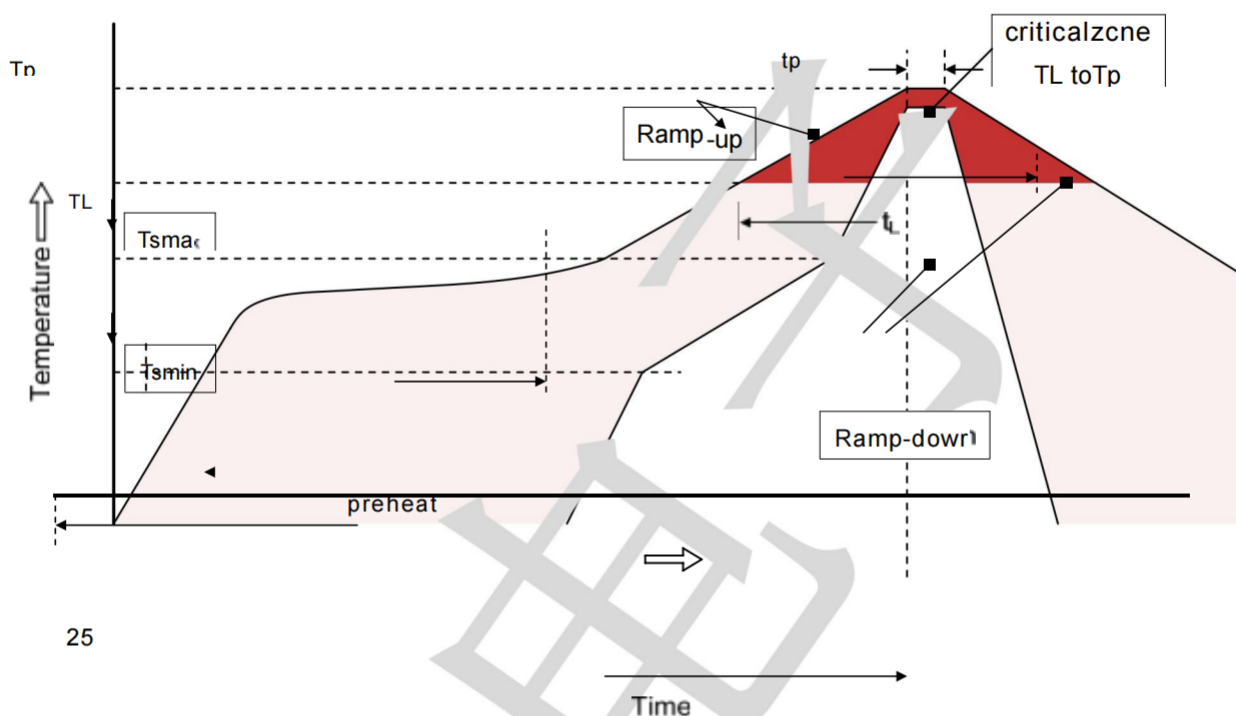


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



Recommended Soldering Conditions

Reflow Soldering

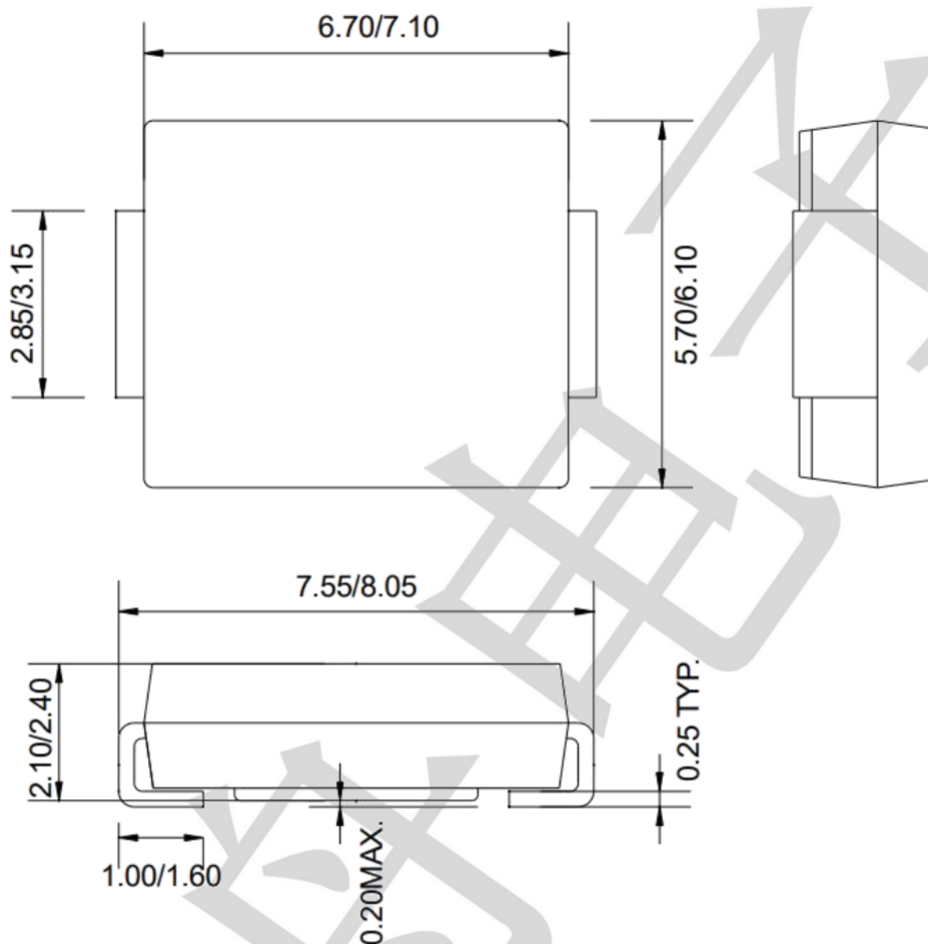


Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min (T_{Smin})	150°C
-Temperature Max (T_{Smax})	200°C
-Time (minto max) (ts)	60-180 seconds
T_{Smax} to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Package Outline Dimensions (unit: mm)

DO-214AB (SMC)



Mounting Pad Layout (unit: mm)

