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SMCJ Series

1500W Surface Mount Transient Voltage Suppressors

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Features

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

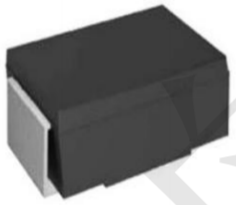
Applications

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

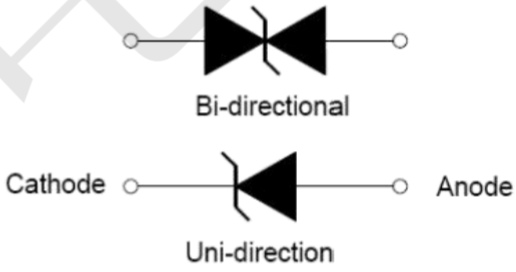
Mechanical Characteristics

- DO-214AB(SMC) surface mount package

Dimensions and Pin Configuration



DO-214AB(SMC)



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℃	$P_{M(AV)}$	6.0	W
Peak Pulse Current of on 10/1000us Waveform	IPPM	See Table	A
Typical thermal resistance junction to ambient	$R_{\theta JA}$	75	℃/W
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

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

PART NUMBER		Working Peak Reverse Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} @I_T			Maximum Clamping Voltage V_C (V) @ I_{PP}	Maximum Reverse Surge Current I_{PP} (A) @10 x 1000μs sinewave	Maximum Reverse Leakage I_R (μA) @V_{RWM}
UNI- POLAR	BI-POLAR		Min. (V)	Max. (V)	I_T (mA)			
SMCJ5.0A	SMCJ5.0CA	5.0	6.40	7.00	10	9.2	163.0	1000
SMCJ6.0A	SMCJ6.0CA	6.0	6.67	7.37	10	10.3	145.6	1000
SMCJ6.5A	SMCJ6.5CA	6.5	7.22	7.98	10	11.2	133.9	500
SMCJ7.0A	SMCJ7.0CA	7.0	7.78	8.60	10	12.0	125.0	200
SMCJ7.5A	SMCJ7.5CA	7.5	8.33	9.21	1	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	8.0	8.89	9.83	1	13.6	110.3	50
SMCJ8.5A	SMCJ8.5CA	8.5	9.44	10.40	1	14.4	104.2	20
SMCJ9.0A	SMCJ9.0CA	9.0	10.00	11.10	1	15.4	97.4	10
SMCJ10A	SMCJ10CA	10	11.10	12.30	1	17.0	88.2	5
SMCJ11A	SMCJ11CA	11	12.20	13.50	1	18.2	82.4	5
SMCJ12A	SMCJ12CA	12	13.30	14.70	1	19.9	75.4	5
SMCJ13A	SMCJ13CA	13	14.40	15.90	1	21.5	69.8	5
SMCJ14A	SMCJ14CA	14	15.60	17.20	1	23.2	64.7	5
SMCJ15A	SMCJ15CA	15	16.70	18.50	1	24.4	61.5	5
SMCJ16A	SMCJ16CA	16	17.80	19.70	1	26.0	57.7	5
SMCJ17A	SMCJ17CA	17	18.90	20.90	1	27.6	54.3	5
SMCJ18A	SMCJ18CA	18	20.00	22.10	1	29.2	51.4	5
SMCJ19A	SMCJ19CA	19	21.10	23.30	1	30.8	48.7	5
SMCJ20A	SMCJ20CA	20	22.20	24.50	1	32.4	46.3	5
SMCJ22A	SMCJ22CA	22	24.40	26.90	1	35.5	42.3	5
SMCJ24A	SMCJ24CA	24	26.70	29.50	1	38.9	38.6	5
SMCJ26A	SMCJ26CA	26	28.90	31.90	1	42.1	35.6	5
SMCJ28A	SMCJ28CA	28	31.10	34.40	1	45.4	33.0	5
SMCJ30A	SMCJ30CA	30	33.30	36.80	1	48.4	31.0	5
SMCJ33A	SMCJ33CA	33	36.70	40.60	1	53.3	28.1	5
SMCJ36A	SMCJ36CA	36	40.00	44.20	1	58.1	25.8	5
SMCJ40A	SMCJ40CA	40	44.40	49.10	1	64.5	23.3	5
SMCJ43A	SMCJ43CA	43	47.80	52.80	1	69.4	21.6	5
SMCJ45A	SMCJ45CA	45	50.00	55.30	1	72.7	20.6	5
SMCJ48A	SMCJ48CA	48	53.30	58.90	1	77.4	19.4	5
SMCJ51A	SMCJ51CA	51	56.70	62.70	1	82.4	18.2	5
SMCJ54A	SMCJ54CA	54	60.00	66.30	1	87.1	17.2	5

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

PART NUMBER		Working Peak Reverse Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} @I_T			Maximum Clamping Voltage V_C (V) @ I_{PP}	Maximum Reverse Surge Current I_{PP} (A) @10 x 1000μs sinewave	Maximum Reverse Leakage I_R (μA) @V_{RWM}
UNI- POLAR	BI-POLAR		Min. (V)	Max. (V)	I_T (mA)			
SMCJ58A	SMCJ58CA	58	64.40	71.20	1	93.6	16.0	5
SMCJ60A	SMCJ60CA	60	66.70	73.70	1	96.8	15.5	5
SMCJ64A	SMCJ64CA	64	71.10	78.60	1	103	14.6	5
SMCJ70A	SMCJ70CA	70	77.80	86.00	1	113	13.3	5
SMCJ75A	SMCJ75CA	75	83.30	92.10	1	121	12.4	5
SMCJ78A	SMCJ78CA	78	86.70	95.80	1	126	11.9	5
SMCJ80A	SMCJ80CA	80	88.80	97.60	1	130	11.6	5
SMCJ85A	SMCJ85CA	85	94.40	104	1	137	10.9	5
SMCJ90A	SMCJ90CA	90	100	111	1	146	10.3	5
SMCJ100A	SMCJ100CA	100	111	123	1	162	9.3	5
SMCJ120A	SMCJ120CA	120	133	147	1	193	7.8	5
SMCJ130A	SMCJ130CA	130	144	159	1	209	7.2	5
SMCJ140A	SMCJ140CA	140	155	171	1	227	6.6	5
SMCJ150A	SMCJ150CA	150	167	185	1	243	6.2	5
SMCJ160A	SMCJ160CA	160	178	197	1	259	5.8	5
SMCJ170A	SMCJ170CA	170	189	209	1	275	5.5	5
SMCJ180A	SMCJ180CA	180	200	220	1	291	5.1	5
SMCJ190A	SMCJ190CA	190	211	232	1	308	4.9	5
SMCJ200A	SMCJ200CA	200	224	247	1	324	4.6	5
SMCJ220A	SMCJ220CA	220	246	272	1	356	4.2	5
SMCJ250A	SMCJ250CA	250	279	309	1	405	3.7	5
SMCJ300A	SMCJ300CA	300	335	371	1	486	3.1	5
SMCJ350A	SMCJ350CA	350	391	432	1	567	2.6	5
SMCJ400A	SMCJ400CA	400	447	494	1	648	2.3	5
SMCJ440A	SMCJ440CA	440	492	543	1	713	2.1	5

For bi-directional type having Vrwm of 10 Volts and less, the IR limit is double.

For parts without A, the VBR is +10%.

Typical Characteristics Curves

FIG. 1- PULSE DERATING CURVE

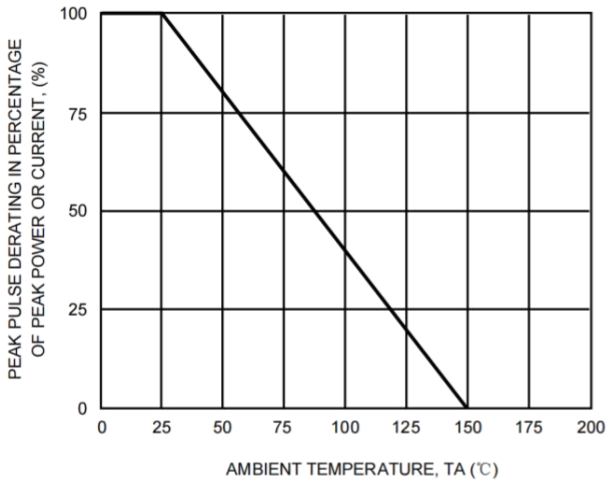


FIG. 2 - MAXIMUM NON-REPETITIVE

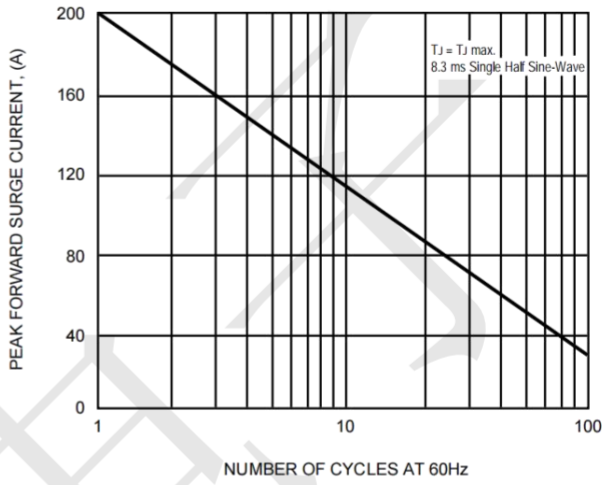


FIG. 3 - STEADY STATE POWER DERATING CURVE

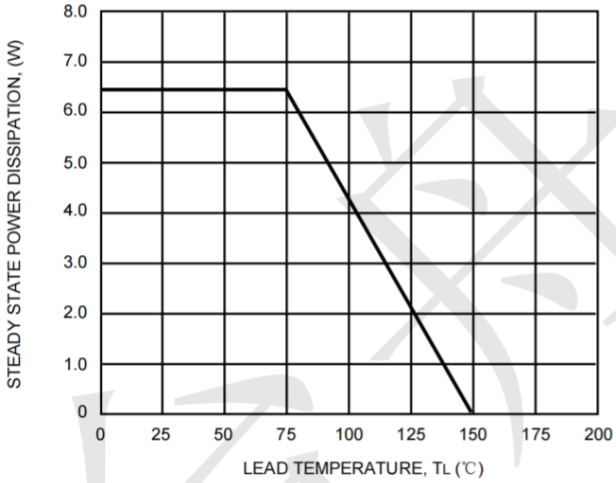


FIG. 4 - PEAK PULSE POWER RATING CURVE

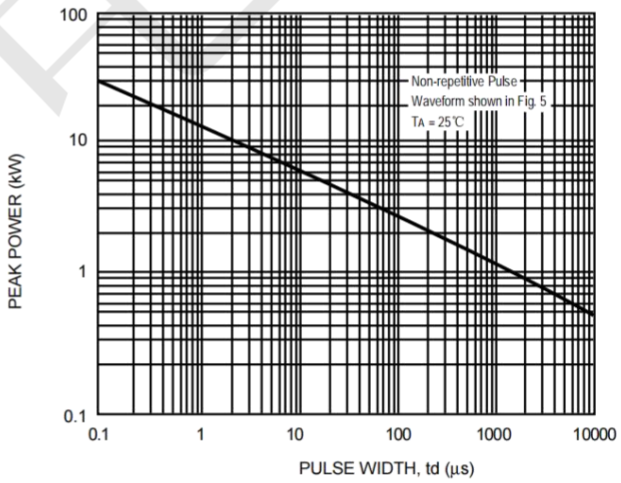
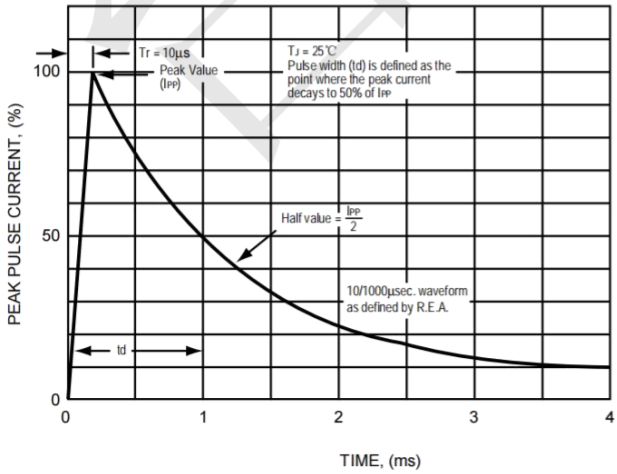
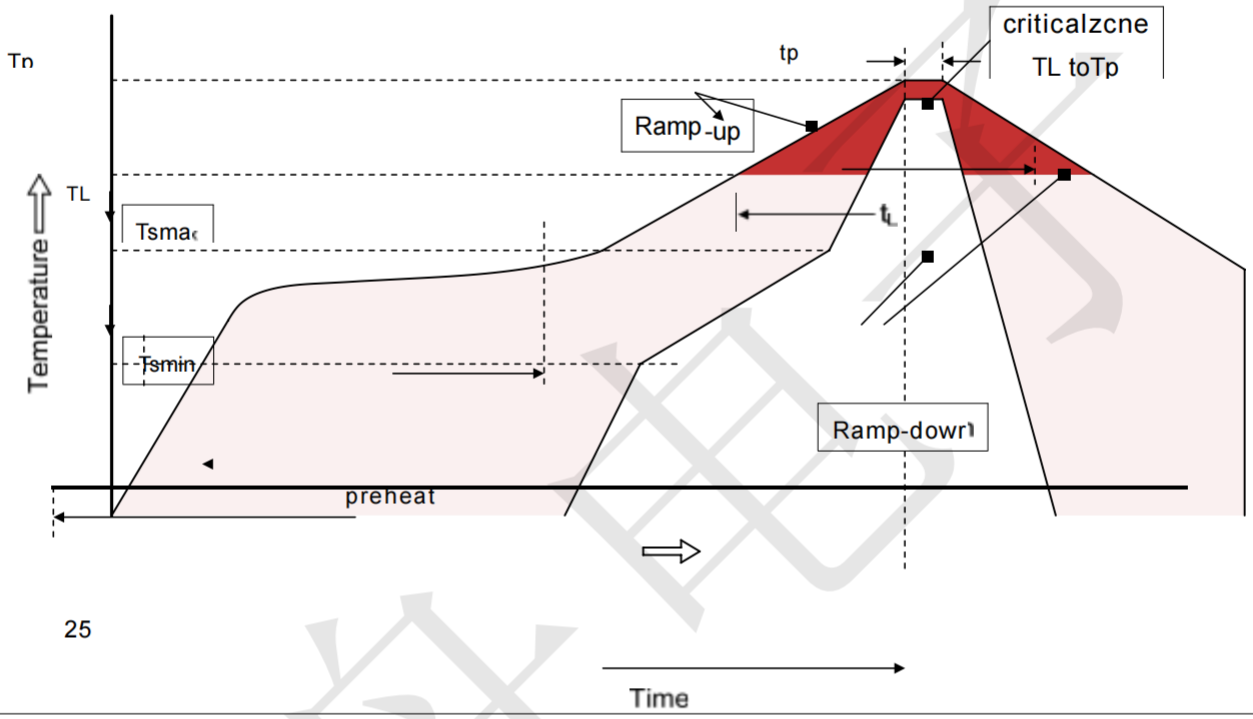


FIG. 5 - PULSE WAVEFORM



Recommended Soldering Conditions

Reflow Soldering

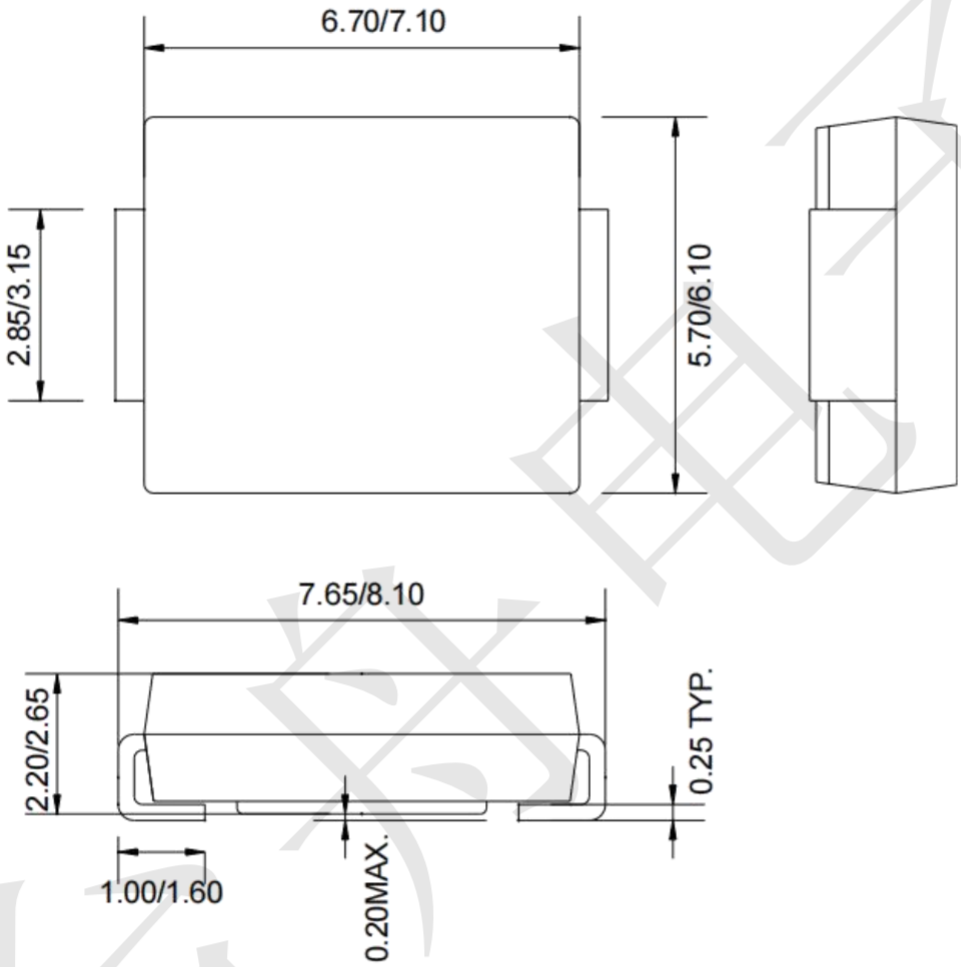


Recommended Conditions

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

Package Outline Dimensions (unit: mm)

SMC



Mounting Pad Layout (unit: mm)