1.Features

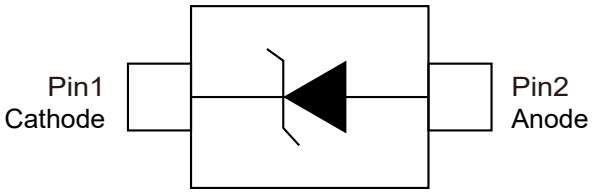
- For surface mounted applications in order to optimize board
- space Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- 3000W peak pulse power capability at 10/1000μs waveform
- Excellent clamping capability
- repetition rate (duty cycle): 0.01%
- Fast response time
- Typical IR less than 1μA above 10V
- High Temperature soldering: 260°C/10 seconds at terminals
- Plastic package has underwriters laboratory flammability 94V-0

2.Mechanical Data

- Case : JEDEC SMC molded plastic body
- Terminals : Solderable per MIL-STD-750 Method 2026
- Polarity : Polarity symbol marking on body
- Mounting Position : Any
- Weight : 0.003 ounce, 0.095 grams
- Standard Packaging: 12mm tape (EIA STD RS-481)

3.Pinning information

Bi-directional



SMC

4.Maximum Ratings And Electrical Characteristics

Parameter	Symbol	Value	Units
Ratings at 25°C ambient temperature unless otherwise specified.			
Peak pulse power dissipation at 10/1000μs waveform (Note1, Note2)	P_{PPM}	3000	W
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only	V_F	3.5	V
Steady state power dissipation at T_A=50°C	P_D	6.5	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3)	I_{FSM}	300	A
Junction and Storage Temperature Range.	T_J,T_{STG}	-65 to 150	°C
Typical thermal resistance junction to lead	$R_{\theta JL}$	15	°C/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	75	°C/W

Notes:

(1) Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig. 2.

(2) Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional.

(3) device only,duty cycle=4 per minute maximum.

5.Electrical Characteristics (T_A=25°C)

Part Number (Uni)	Part Number (Bi)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{pp}(V)	Maximum Peak Pulse Current I_{pp}(A)	Maximum Reverse Leakage I_R @ V_R(μA)
		UNI	UNI		MIN	MAX	MIN			
SMDJ5.0A	SMDJ5.0CA	RDE	DDE	5.0	6.40	7.00	10	9.2	326.1	800
SMDJ6.0A	SMDJ6.0CA	RDG	DDG	6.0	6.67	7.37	10	10.3	291.3	800
SMDJ6.5A	SMDJ6.5CA	RDK	DDK	6.5	7.22	7.98	10	112	267.9	500
SMDJ70A	SMDJ7.0CA	PDM	DDM	7.0	7.78	8.60	10	12.0	250.0	200
SMDJ7.5A	SMDJ7.5CA	PDP	DDP	7.5	8.33	9.21	1	12.9	232.6	100
SMDJ8.0A	SMDJ8.0CA	PDR	DDR	8.0	8.89	9.83	1	13.6	220.6	50
SMDJ8.5A	SMDJ8.5CA	PDT	DDT	8.5	9.44	10.40	1	14.4	208.3	20
SMDJ9.0A	SMDJ9.0CA	PDV	DDV	9.0	10.00	11.10	1	15.4	194.8	10
SMDJ10A	SMDJ10CA	PDX	DDX	10.0	11.10	12.30	1	17.0	176.5	5
SMDJ11A	SMDJ11CA	PDZ	DDZ	11.0	12.20	13.50	1	18.2	164.8	2
SMDJ12A	SMDJ12CA	PEE	DEE	12.0	13.30	14.70	1	19.9	150.8	2
SMDJ13A	SMDJ13CA	PEG	DEG	13.0	14.40	15.90	1	215	139.5	2
SMDJ14A	SMDJ14CA	PEK	DEK	14.0	15.60	17.20	1	23.2	129.3	2
SMDJ15A	SMDJ15CA	PEM	DEM	15.0	16.70	18.50	1	24.4	123.0	2
SMDJ16A	SMDJ16CA	PEP	DEP	16.0	17.80	19.70	1	26.0	115.4	2
SMDJ17A	SMDJ17CA	PER	DER	17.0	18.90	20.90	1	27.6	108.7	2
SMDJ18A	SMDJ18CA	PET	DET	18.0	20.00	22.10	1	29.2	102.7	2
SMDJ20A	SMDJ20CA	PEV	DEV	20.0	22.20	24.50	1	32.4	92.6	2
SMDJ22A	SMDJ22CA	PEX	DEX	22.0	24.40	26.90	1	35.5	84.5	2
SMDJ24A	SMDJ24CA	PEZ	DEZ	24.0	26.70	29.50	1	38.9	721	2
SMDJ26A	SMDJ26CA	PFE	DFE	26.0	28.90	31.90	1	42.1	71.3	2
SMDJ28A	SMDJ28CA	PFG	DFG	28.0	31.10	34.40	1	45.4	66.1	2
SMDJ30A	SMDJ30CA	PFK	DFK	30.0	33.30	36.80	1	48.4	62.0	2

SMDJ33A	SMDJ33CA	PFM	DFM	33.0	36.70	40.60	1	53.3	56.3	2
SMDJ36A	SMDJ36CA	PFP	DFP	36.0	40.00	44.20	1	58.1	51.6	2
SMDJ40A	SMDJ40CA	PFR	DFR	40.0	44.40	49.10	1	64.5	46.5	2
SMDJ43A	SMDJ43CA	PFT	DFT	43.0	47.80	52.80	1	69.4	43.2	2
SMDJ45A	SMDJ45CA	PAV	DFV	45.0	50.00	55.30	1	72.7	41.3	2
SMDJ48A	SMDJ48CA	PFX	DFX	48.0	53.30	58.90	1	77.4	38.8	2
SMDJ51A	SMDJ51CA	PFZ	DFZ	51.0	56.70	62.70	1	82.4	36.4	2
SMDJ54A	SMDJ54CA	RGE	DGE	54.0	60.00	66.30	1	871	34.4	2
SMDJ58A	SMDJ58CA	PGG	DGG	58.0	64.40	71.20	1	93.6	32.1	2
SMDJ60A	SMDJ60CA	PGK	DGK	60.0	66.70	73.70	1	96.8	31.0	2
SMDJ64A	SMDJ64CA	PGM	DGM	64.0	71.10	78.60	1	103.0	29.1	2
SMDJ70A	SMDJ70CA	PGP	DGP	70.0	77.80	86.00	1	113.0	26.5	2
SMDJ75A	SMDJ75CA	PGR	DGR	75.0	83.30	92.10	1	121.0	24.8	2
SMDJ78A	SMDJ78CA	PGT	DGT	78.0	86.70	95.80	1	126.0	23.8	2
SMDJ85A	SMDJ85CA	PGV	DGV	85.0	94.40	104.00	1	1370	21.9	2
SMDJ90A	SMDJ90CA	PGX	DGX	90.0	100.00	111.00	1	146.0	20.5	2
SMDJ100A	SMDJ100CA	PGZ	DGZ	100.0	111.00	123.00	1	162.0	18.5	2
SMDJ110A	SMDJ110CA	PHE	DHE	110.0	122.00	135.00	1	177.0	16.9	2
SMDJ120A	SMDJ120CA	PHG	DHG	120.0	133.00	147.00	1	193.0	15.5	2
SMDJ130A	SMDJ130CA	PHK	DHK	130.0	144.00	159.00	1	209.0	14.4	2
SMDJ150A	SMDJ150CA	PHM	DHM	150.0	167.00	185.00	1	243.0	12 .3	2
SMDJ160A	SMDJ160CA	PHP	DHP	160.0	178.00	197.00	1	259.0	11.6	2
SMDJ170A	SMDJ170CA	PHR	DHR	170.0	189.00	209.00	1	275.0	10.9	2

Notes:

For parts without A , the V_{BR} is ± 10%, and V_C is 5% higher than A parts.

For bidirectional type having V_R of 10 volts and less, the I_R limit is double.

6.1Typical characteristic

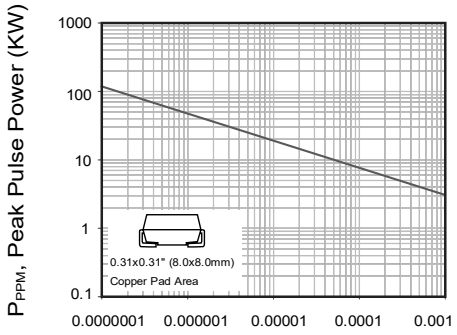


Figure 1: Peak Pulse Power Rating Curve

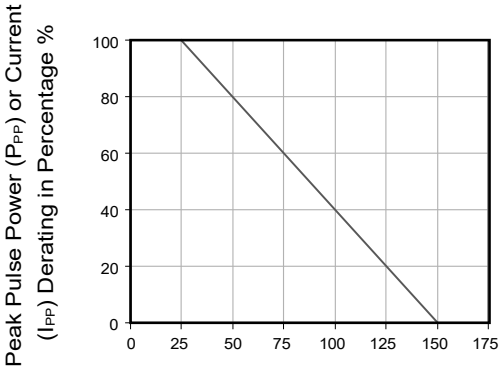


Figure 2: Pulse Derating Curve

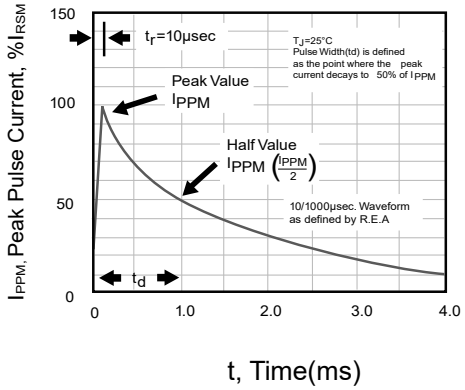


Figure 3: Pulse Waveform

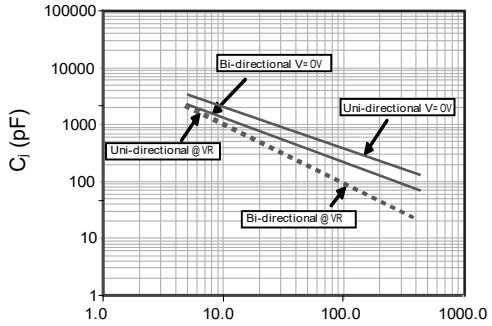


Figure 4: Typical Junction Capacitance

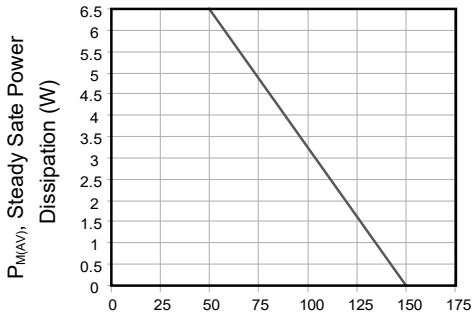


Figure 5: Steady State Power Derating Curve

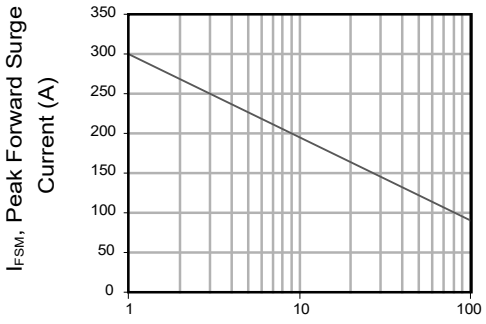


Figure 6: Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional only

6.2Typical characteristic

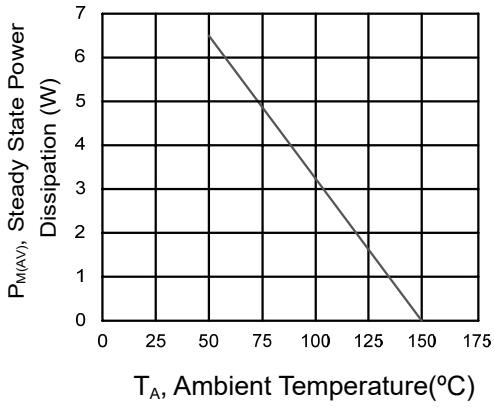


Figure 7: Steady State Power Dissipation Derating Curve

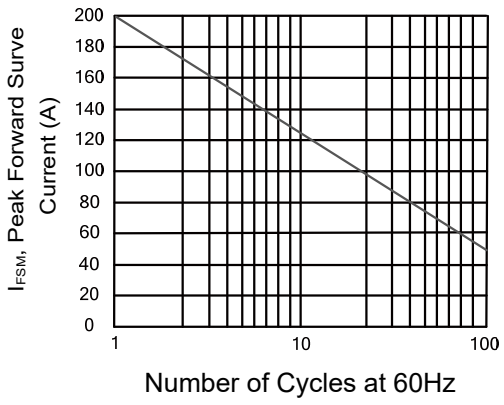
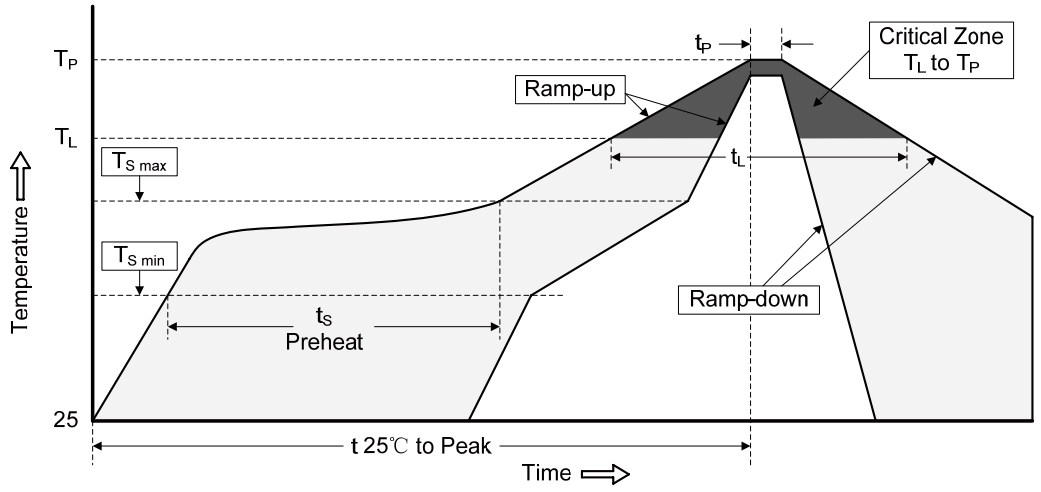


Figure 8: Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

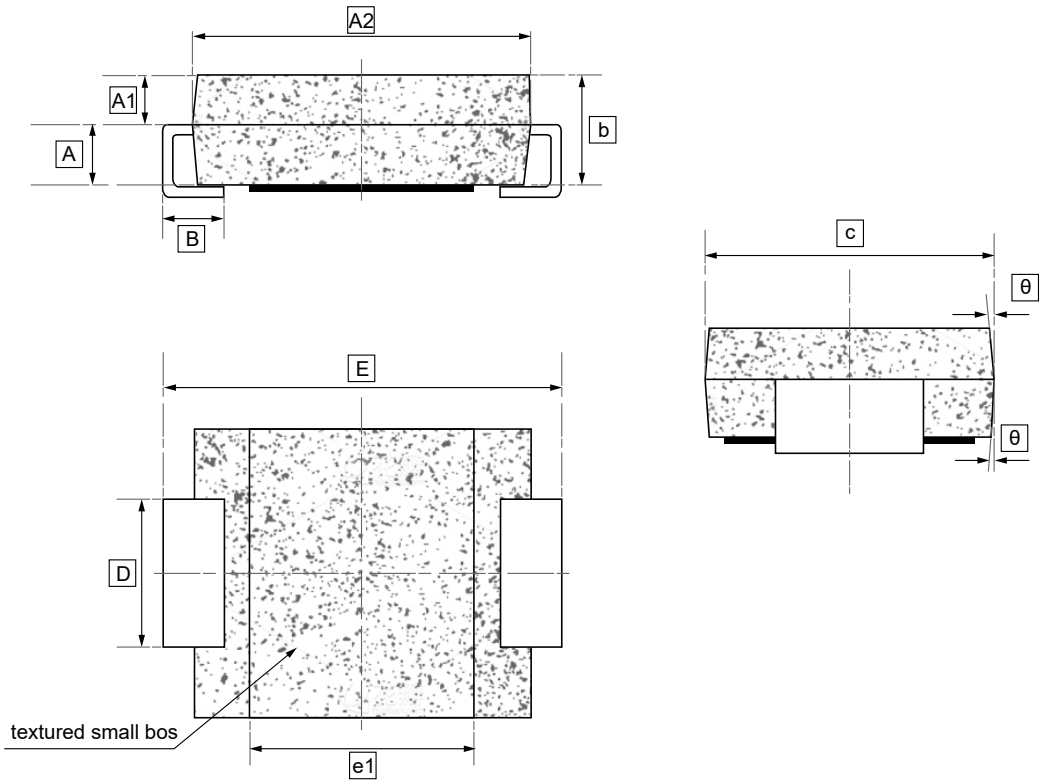
7.Recommended Conditions

Reflow Condition		Pb-Free Assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (T_L to T_P)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Time maintained above:	-Temperature(T_L)	217°C
	-Time(T_L)	60-150 secs.
Peak Temp (T_p)		260 °C
Time within 5°C of actual Peak Temp (T_p)		20-40 seconds
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max

8.Reflow Soldering



9.SMC Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	B	b	c	D	E	e1	θ
Min	1.17	0.97	6.80	1.00	2.25	5.80	2.98	7.90	4.40	0°
Max	1.23	1.03	6.90	1.40	2.35	5.90	3.02	8.10	4.60	6°

10.Ordering information

XXXX: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW SMDJxxA	SMC	3000	Tape and reel
UMW SMDJxxCA	SMC	3000	Tape and reel

11.Disclaimer

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