1.Features

- Low profile package with built-in strain relief for surface mounted applications
- Glass passivated junction
- Low incremental surge resistance
- Low inductance
- Excellent clamping capability
- 1500W peak pulse power capability with a 10/1000μs waveform, repetition rate (duty cycle): 0.01%
- Very fast response time
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0

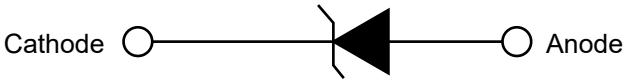
2.Mechanical Data

- Polarity: For uni-directional types the band denotes the cathode, which is positive with
- respect to the anode under normal TVS operation.
- Packaging Codes – Options (Antistatic):
  51 – 1K per Bulk box, 10K/carton
  57 – 850 per 7" plastic Reel (16mm tape),
- 8.5K/carton
  9A – 3.5K per 13" plastic Reel (16mm tape),
- 35K/carton
- Case: JEDEC DO-214AB (SMC) molded plastic over passivated junction
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026. High temperature soldering: 250°C/10 seconds at terminals.
  Standard Packaging: 16mm tape (EIA STD RS-481)
  Weight: 0.007 oz., 0.21g

3.Pinning information



Bi-directional



Uni-directional

SMC

4.Maximum Ratings And Electrical Characteristics

Parameter	Symbol	Value	Units
Peak power dissipation with a 10/1000μs waveform	P_{PPM}	1500	W
Maximum Instantaneous Forward Voltage at 50.0A for Unidirectional Only	V_F	3.5	Volts
Power dissipation on infinite heatsink, T_A=50°C	P_D	6.5	W
Peak forward surge current 8.3ms single half sine-wave uni-directional only(2)	I_{FSM}	200	A
Thermal resistance junction to ambient air(3)	$R_{\theta JA}$	75	°C/W
Thermal resistance junction to leads	$R_{\theta JL}$	15	°C/W
Junction and Storage Temperature Range	T_J,T_{STG}	-65 to 150	°C
IEC-61000-4-2 ESD30kV(Air), 30kV (Contact)			

Notes:

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

(2) Mounted on 0.31 x 0.31” (8.0 x 8.0mm) copper pads to each terminal.

(3) Mounted on minimum recommended pad layout.

5.Electrical Characteristics

General Semiconductor Part Number	Device Marking Code		Breakdown Voltage $V_{(BR)}$ at I_T[1] (V)		Test Current I_T	Stand-off Voltage	Maximum Reverse Leakage atV_{WM} I_D[4]	Maximum PeakPulse Current I_{PPM} [2]	Maximum Clamping Voltage at I_{PPM}	Maximum Temp. Coefficient of $V_{(BR)}$
	UNI	BI	MIN	MAX	(mA)	V_{WM}(A)	(μA)	(A)	V_C(V)	(%/°C)
1.5SMC6.8A(CA)	6V8A	6V8C	6.45	7.14	10	5.8	1000	143	10.5	0.057
1.5SMC7.5A(CA)	7V5A	7V5C	7.13	7.88	10	6.4	500	133	11.3	0.061
1.5SMC8.2A(CA)	8V2A	8V2C	7.79	8.61	10	7.02	200	124	12.1	0.065
1.5SMC9.1A(CA)	9V1A	9V1C	8.65	9.55	1	7.78	50	112	13.4	0.068
1.5SMC10A(CA)	10A	10C	9.5	10.5	1	8.55	10	103	14.5	0.073
1.5SMC11A(CA)	11A	11C	10.5	11.6	1	9.4	5	96.2	15.6	0.075
1.5SMC12A(CA)	12A	12C	11.4	12.6	1	10.2	5	89.8	16.7	0.078
1.5SMC13A(CA)	13A	13C	12.4	13.7	1	11.1	1	82.4	18.2	0.081
1.5SMC15A(CA)	15A	15C	14.3	15.8	1	12.8	1	70.8	21.2	0.084
1.5SMC16A(CA)	16A	16C	15.2	16.8	1	13.6	1	66.7	22.5	0.086
1.5SMC18A(CA)	18A	18C	17.1	18.9	1	15.3	1	59.5	25.2	0.089
1.5SMC20A(CA)	20A	20C	19	21	1	17.1	1	54.2	27.7	0.09
1.5SMC22A(CA)	22A	22C	20.9	23.1	1	18.8	1	49	30.6	0.092
1.5SMC24A(CA)	24A	24C	22.8	25.2	1	20.5	1	45.2	33.2	0.09
1.5SMC27A(CA)	27A	27C	25.7	28.4	1	23.1	1	40	37.5	0.096
1.5SMC30A(CA)	30A	30C	28.5	31.5	1	25.6	1	36.2	41.4	0.097
1.5SMC33A(CA)	33A	33C	31.4	34.7	1	28.2	1	32.8	45.7	0.098
1.5SMC36A(CA)	36A	36C	34.2	37.8	1	30.8	1	30.1	49.9	0.099
1.5SMC39A(CA)	39A	39C	37.1	41	1	33.3	1	27.8	53.9	0.1
1.5SMC43A(CA)	43A	43C	40.9	45.2	1	36.8	1	25.3	59.3	0.101
1.5SMC47A(CA)	47A	47C	44.7	49.4	1	40.2	1	23.1	64.8	0.101
1.5SMC51A(CA)	51A	51C	48.5	53.6	1	43.6	1	21.4	70.1	0.102
1.5SMC56A(CA)	56A	56C	53.2	58.8	1	47.8	1	19.5	77	0.103

1.5SMC62A(CA)	62A	62C	58.9	65.1	1	53	1	17.6	85	0.104
1.5SMC68A(CA)	68A	68C	64.6	71.4	1	58.1	1	16.3	92	0.104
1.5SMC75A(CA)	75A	75C	71.3	78.8	1	64.1	1	14.6	104	0.105
1.5SMC82A(CA)	82A	82C	77.9	86.1	1	70.1	1	13.3	113	0.105
1.5SMC91A(CA)	91A	91C	86.5	95.5	1	77.8	1	12	125	0.106
1.5SMC100A(CA)	100A	100C	95	105	1	85.5	1	10.9	137	0.106
1.5SMC110A(CA)	110A	110C	105	116	1	94	1	9.9	152	0.107
1.5SMC120A(CA)	120A	120C	114	126	1	102	1	9.1	165	0.107
1.5SMC130A(CA)	130A	130C	124	137	1	111	1	8.4	179	0.107
1.5SMC150A(CA)	150A	150C	143	158	1	128	1	7.2	207	0.106
1.5SMC160A(CA)	160A	160C	152	168	1	136	1	6.8	219	0.108
1.5SMC170A(CA)	170A	170C	162	179	1	145	1	6.4	234	0.108
1.5SMC180A(CA)	180A	180C	171	189	1	154	1	6.1	246	0.108
1.5SMC200A(CA)	200A	200C	190	210	1	171	1	5.5	274	0.108
1.5SMC220A(CA)	220A	220C	209	231	1	185	1	4.6	328	0.108
1.5SMC250A(CA)	250A	250C	237	263	1	214	1	4.4	344	0.11
1.5SMC300A(CA)	300A	300C	285	315	1	256	1	3.6	414	0.11
1.5SMC350A(CA)	350A	350C	333	368	1	300	1	3.1	482	0.11
1.5SMC400A(CA)	400A	400C	380	420	1	342	1	2.7	548	0.11
1.5SMC440A(CA)	440A	440C	418	462	1	376	1	2.5	602	0.11
1.5SMC480A(CA)	480A	480C	456	504	1	408	1	2.28	658	0.11
1.5SMC510A(CA)	510A	510C	485	535	1	434	1	2.15	698	0.11
1.5SMC540A(CA)	540A	540C	513	567	1	459	1	2.03	740	0.11

Notes:

(1) Pulse test: $t_p \leq 50ms$

(2) Surge current waveform per Fig. 3 and derate per Fig. 2

(3) All terms and symbols are consistent with ANSI/IEEE CA62.35

(4) For bidirectional types with V_R 10 volts and less, the I_D limit is doubled

6.Typical characteristic

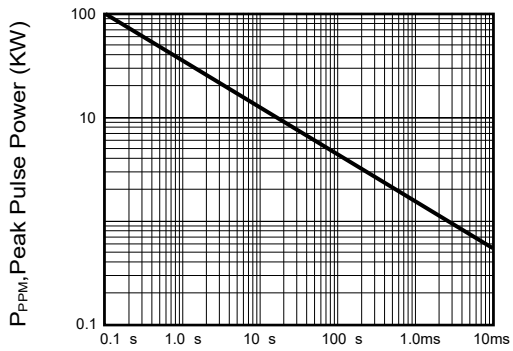


Figure 1: Peak Pulse Power Rating Curve

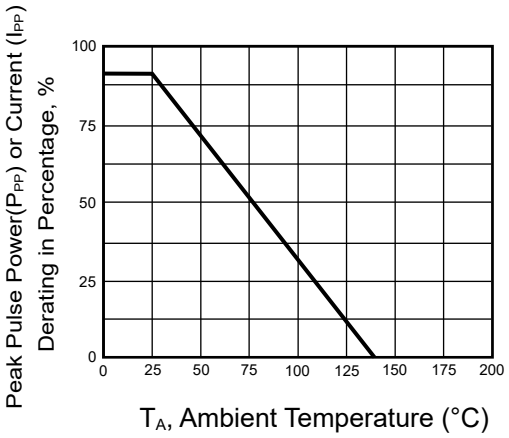


Figure 2: Pulse Derating Curve

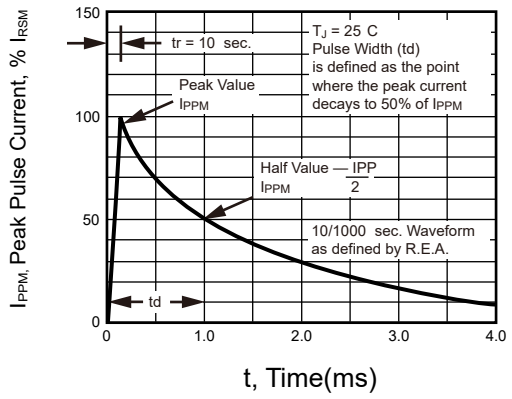


Figure 3: Pulse Waveform

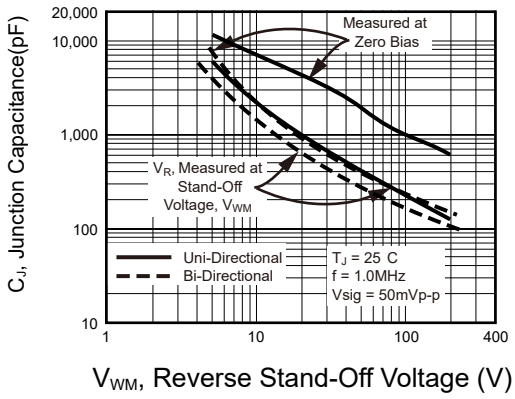


Figure 4: Typical Junction Capacitance Uni-Directional

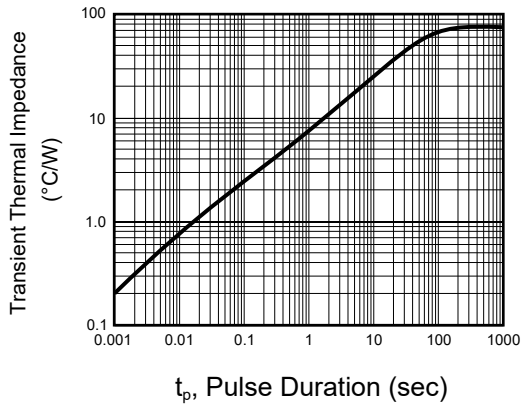


Figure 5: Typical Transient Thermal Impedance

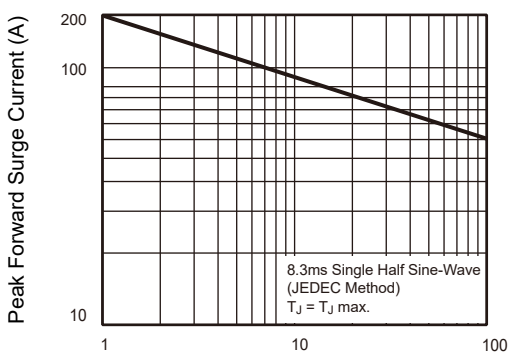
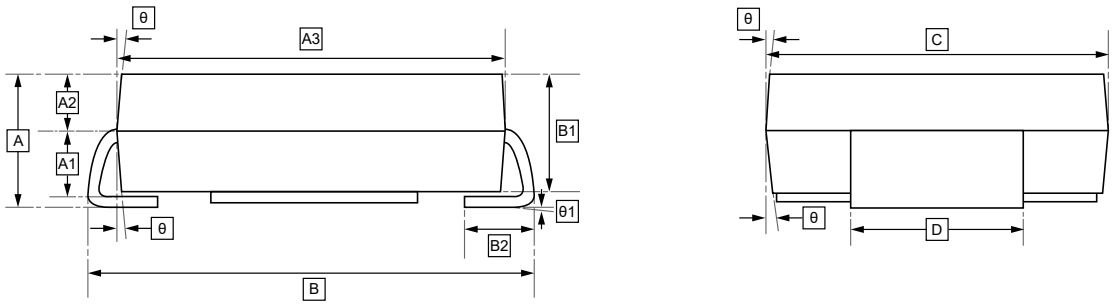


Figure 6: Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

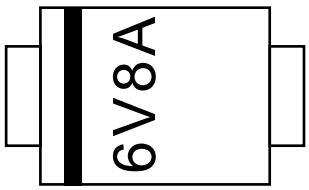
7.SMC Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	A3	B	B1	B2	C	D	θ	θ1
Min	2.2	1.0	0.9	6.7	7.7	2.0	1.0	5.7	2.8	0°	0°
Max	2.6	1.4	1.2	6.9	8.2	2.5	1.4	6.2	3.2	5°	5°

8.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW 1.5SMCxxA	SMC	850	Tape and reel
UMW 1.5SMCxxCA	SMC	850	Tape and reel

9.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

When applying our products, please do not exceed the maximum rated values, as this may affect the reliability of the entire system. Under certain conditions, any semiconductor product may experience faults or failures. Buyers are responsible for adhering to safety standards and implementing safety measures during system design, prototyping, and manufacturing when using our products to prevent potential failure risks that could lead to personal injury or property damage.

Unless explicitly stated in writing, UMW products are not intended for use in medical, life-saving, or life-sustaining applications, nor for any other applications where product failure could result in personal injury or death. If customers use or sell the product for such applications without explicit authorization, they assume all associated risks.

When reselling, applying, or exporting, please comply with export control laws and regulations of China, the United States, the United Kingdom, the European Union, and other relevant countries, regions, and international organizations.

This document and any actions by UMW do not grant any intellectual property rights, whether express or implied, by estoppel or otherwise. The product names and marks mentioned herein may be trademarks of their respective owners.