

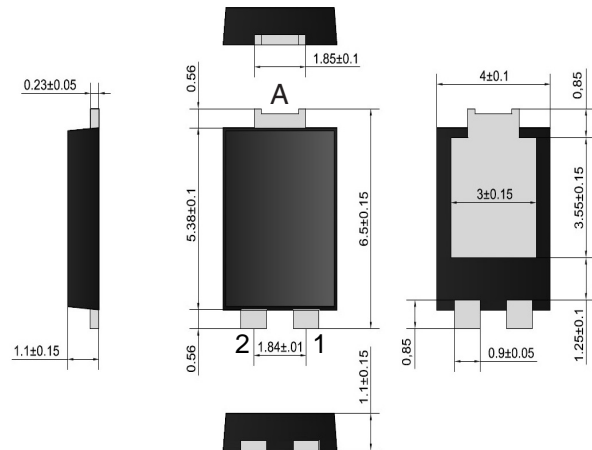
### TO-277

#### ■ Features

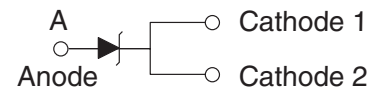
- 1500W peak pulse power capability with a 10/1000us waveform, repetition rate (duty cycle): 0.01%.
- Excellent clamping capability.
- Uni-direction only
- Very fast response time
- Low profile - typical height of 1.15 mm
- Low incremental surge resistance.
- Glass passivated chip junction.
- Ultra high-speed switching.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- AEC-Q101 Quality and PPAP Capable

#### ■ Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded Plastic, TO-277
- Terminals : Solder plated, solderable per MIL-STD-202, Method 208
- Polarity : See Diagram
- Weight : 0.09 grams (approx)



Dimensions in millimeters



#### ■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	SMCJ series	UNIT
Peak power dissipation	with a 10/1000us waveform, note 1	$P_{PPM}$	1500	W
Peak forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method), note 2	$I_{FSM}$	200	A
Steady state power dissipation	on infinite heatsink at $T_L = 75^\circ\text{C}$	$P_D$	6.5	W
Peak pulse current	with a 10/1000us waveform, note 1	$I_{PPM}$	See next table	A
Maximum instantaneous forward voltage	at 100A for unidirectional only, note 3	$V_F$	3.5 / 5.0	V
Operating temperature		$T_J$	-55 ~ +150	°C
Storage temperature		$T_{STG}$	-55 ~ +150	°C

Notes : 1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per Fig. 2.

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

3.  $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 5.0\text{V}$  for devices of  $V_{BR} > 201\text{V}$ .

■ Electrical characteristics

Part No.	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Peak Forward Surge Current	Maximum Clamping Voltage @I <sub>PP</sub>		Maximum Leakage Current	Marking Code
	V <sub>RWM</sub>	V <sub>BRMin</sub>	V <sub>BRMax</sub>	I <sub>T</sub>	I <sub>FSM</sub>	V <sub>C</sub>	I <sub>PP</sub>	I <sub>R</sub> @V <sub>RWM</sub>	
	Volts	Volts	Volts	mA	A	Volts	A	uA	
1.5SMP5.0A	5.0	6.40	7.00	10	200	9.2	163.04	500	GDE
1.5SMP6.0A	6.0	6.67	7.37	10	200	10.3	145.63	500	GDG
1.5SMP6.5A	6.5	7.22	7.98	10	200	11.2	133.93	500	GDK
1.5SMP7.0A	7.0	7.78	8.60	10	200	12.0	125.00	200	GDM
1.5SMP7.5A	7.5	8.33	9.21	1.0	200	12.9	116.28	100	GDP
1.5SMP8.0A	8.0	8.89	9.83	1.0	200	13.6	110.29	50	GDR
1.5SMP8.5A	8.5	9.44	10.40	1.0	200	14.4	104.17	20	GDT
1.5SMP9.0A	9.0	10.00	11.10	1.0	200	15.4	97.40	10	GDV
1.5SMP10A	10.0	11.10	12.30	1.0	200	17.0	88.24	5	GDY
1.5SMP11A	11.0	12.20	13.50	1.0	200	18.2	82.42	5	GDZ
1.5SMP12A	12.0	13.30	14.70	1.0	200	19.9	75.38	5	GEE
1.5SMP13A	13.0	14.40	15.90	1.0	200	21.5	69.77	5	GEG
1.5SMP14A	14.0	15.60	17.20	1.0	200	23.2	64.66	5	GEK
1.5SMP15A	15.0	16.70	18.50	1.0	200	24.4	61.48	5	GEM
1.5SMP16A	16.0	17.80	19.70	1.0	200	26.0	57.69	5	GEP
1.5SMP17A	17.0	18.90	20.90	1.0	200	27.6	54.35	5	GER
1.5SMP18A	18.0	20.00	22.10	1.0	200	29.2	51.37	5	GET
1.5SMP19A	19.0	21.10	23.30	1.0	200	30.8	48.73	5	GEB
1.5SMP20A	20.0	22.20	24.50	1.0	200	32.4	46.30	5	GEV
1.5SMP22A	22.0	24.40	26.90	1.0	200	35.5	42.25	5	GEX
1.5SMP24A	24.0	26.70	29.50	1.0	200	38.9	38.56	5	GEZ
1.5SMP26A	26.0	28.90	31.90	1.0	200	42.1	35.63	5	GFE
1.5SMP28A	28.0	31.10	34.40	1.0	200	45.4	33.04	5	GFG
1.5SMP30A	30.0	33.30	36.80	1.0	200	48.4	30.99	5	GFK
1.5SMP33A	33.0	36.70	40.60	1.0	200	53.3	28.14	5	GFM
1.5SMP36A	36.0	40.00	44.20	1.0	200	58.1	25.82	5	GFP
1.5SMP40A	40.0	44.40	49.10	1.0	200	64.5	23.26	5	GFR
1.5SMP43A	43.0	47.80	52.80	1.0	200	69.4	21.61	5	GFT
1.5SMP45A	45.0	50.00	55.30	1.0	200	72.7	20.63	5	GFV
1.5SMP48A	48.0	53.30	58.90	1.0	200	77.4	19.38	5	GFX
1.5SMP51A	51.0	56.70	62.70	1.0	200	82.4	18.20	5	GFZ
1.5SMP54A	54.0	60.00	66.30	1.0	200	87.1	17.22	5	GGE
1.5SMP58A	58.0	64.40	71.20	1.0	200	93.6	16.03	5	GGG
1.5SMP60A	60.0	66.70	73.70	1.0	200	96.8	15.50	5	GGK
1.5SMP64A	64.0	71.10	78.60	1.0	200	103.0	14.56	5	GGM

## Rating and characteristic curves

Fig.1 - Peak Pulse Power Rating Curve

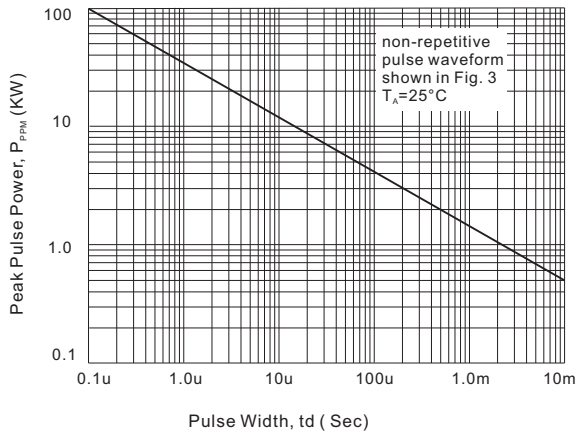


Fig.2 - Pulse Derating Curve

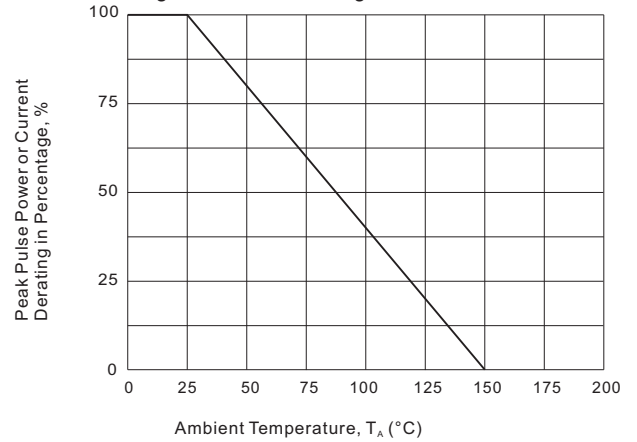


Fig.3 - Pulse Waveform

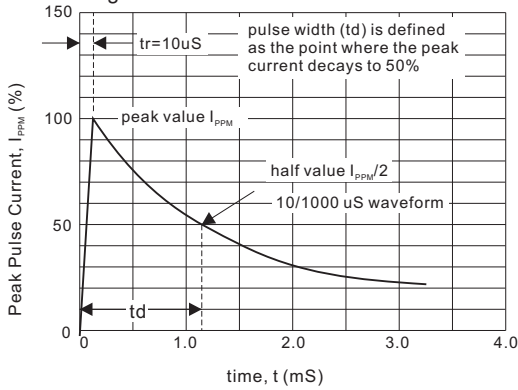


Fig.4 - Typical Junction Capacitance

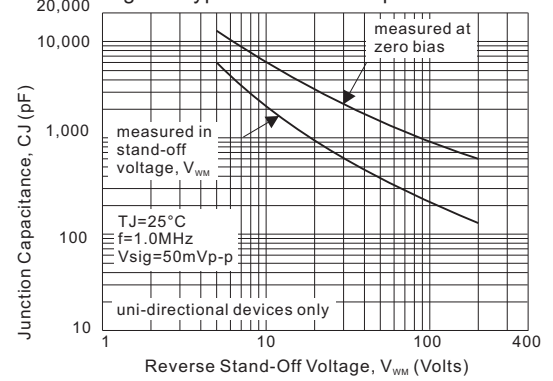


Fig.5 - Steady State Power Derating Curve

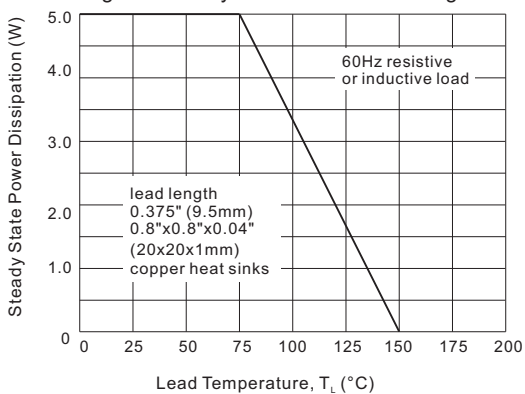
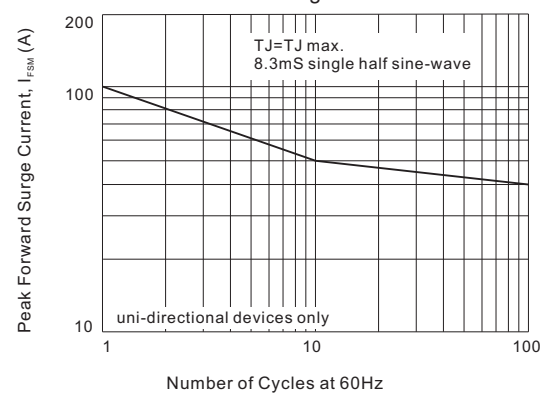
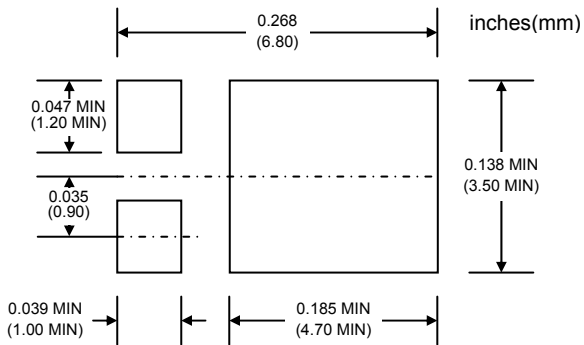


Fig.6 - Maximum Non-Repetitive Forward Surge Current



■ TO-277 foot print



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Shanghai Leiditech Electronic Co., Ltd  
 Email: sale1@leiditech.com  
 Tel : +86- 021 50828806  
 Fax : +86- 021 50477059