SM8TxxA

Automotive Load Dump Protection TVS

Features

- 8000 watts Peak Pulse Power (10/1000μs)
- Available in uni-directional polarity only
- Junction passivation optimized design passivated anisotropic rectifier technology
- Low leakage current
- Low forward voltage drop
- High surge capability
- Meets ISO7637-2 surge specification (varied by test condition)
- AEC-Q101 compliant

Mechanical Characteristics

- JEDEC DO-218AB package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Heatsink is anode

Applications

- Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting, especially for automotive load dump protection application.

Absolute Maximum Rating			
Rating	**Symbol**	**Value**	**Units**
Peak Pulse Power (tp =10/1000μs) (see Note1,2)	P_{PPM}	8000	Watts
Peak pulse current (10/1000μs) (see Note2)	I_{PPM}	See Electrical Characteristics	A
Power dissipation on infinite heat sink T_L = 25 °C (Fig4)	P_D	8.5	W
Operating junction temperature range	T_J	-55 to + 175	℃
Storage temperature range	T_{STG}	-55 to + 175	℃

Note1: Peak Pulse Power Rating as Pulse Width ,per Fig1.

Note2: Peak Pulse Power or Current Derated above T_A=25℃ Per Fig. 2.

©2019 WAYON Corporation

Electrical Characteristics

Part Number	Reverse Stand off Voltage V_{RWM} (Volts)	Breakdown Voltage V_{BR}(Volts)@I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C@I_{PP} (Volts)	Maximum Peak Pulse Current I_{pp} (Amps)	Maximum Reverse Leakage IR@VRWM (μA)
		MIN	MAX				
SM8T20A	20	22.2	24.5	5	32.4	247	10
SM8T22A	22	24.4	26.9	5	35.5	225	10
SM8T24A	24	26.7	29.5	5	38.9	205	10
SM8T26A	26	28.9	31.9	5	42.1	190	10
SM8T28A	28	31.1	34.4	5	45.4	176	10
SM8T30A	30	33.3	36.8	5	48.4	165	10
SM8T33A	33	36.7	40.6	5	53.3	150	10
SM8T36A	36	40.0	44.2	5	58.1	138	10
SM8T40A	40	44.4	49.1	5	64.5	124	10
SM8T43A	43	47.8	52.8	5	69.4	115	10

Typical Characteristics

Figure 1: Peak Pulse Power Rating Curve

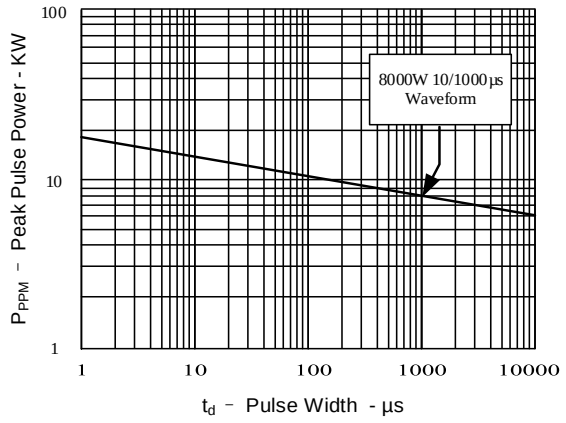


Figure 2: Pulse Derating Curve

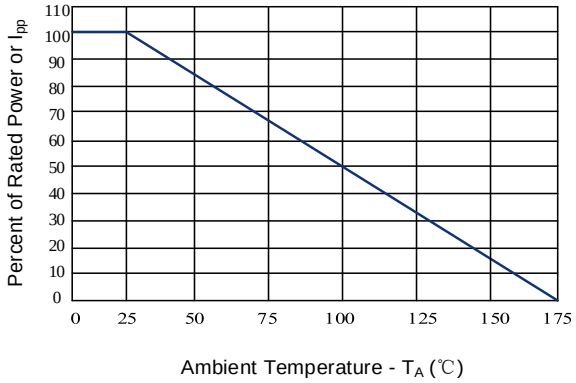


Figure 3: Pulse Waveform

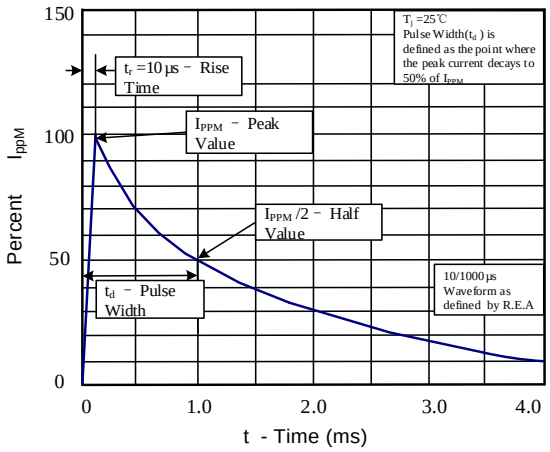
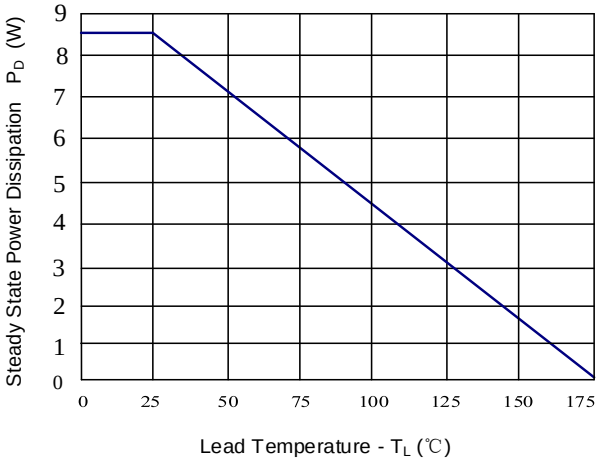
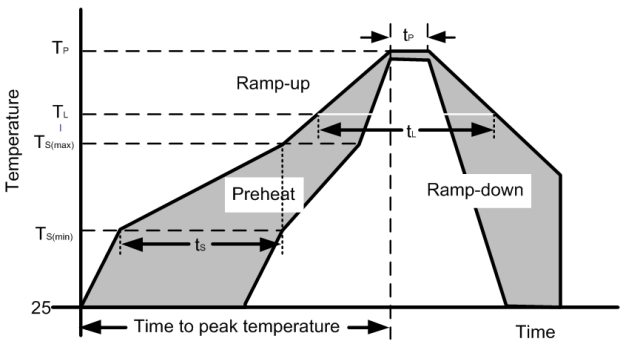


Figure 4: Steady State Power Dissipation Derating Curve



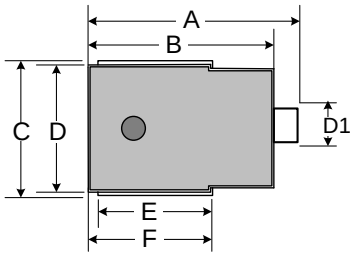
Soldering Parameters

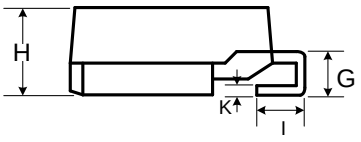
Reflow Condition		
Pre Heat	Temp. min ($T_{s(min)}$)	150°C
	Temp. max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60-190 s
Average ramp up rate (Liquidus Temp.) (T_L) to peak		3°C/s max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/s max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60-150 s
Peak Temperature (T_P)		260+0/-5 °C
Time within actual peak Temperature (t_p)		20-40 s
Ramp-down Rate		5°C/s max
Time 25°C to peak Temperature (T_P)		8 minutes max
Do not exceed		260°C



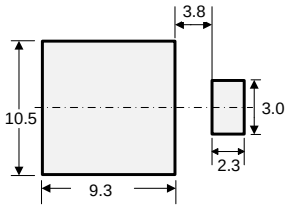
Outline Drawing – DO-218AB

Ref.（mm）	Millimeters	
	Min.	Max.
A	15.0	16.0
B	13.3	13.7
C	9.5	10.5
D	8.3	8.7
D1	2.4	3.0
E	8.5	9.3
F	9.5	10.3
G	2.5	3.7
H	4.7	5.1
I	1.5	2.5
K	0.5	0.7



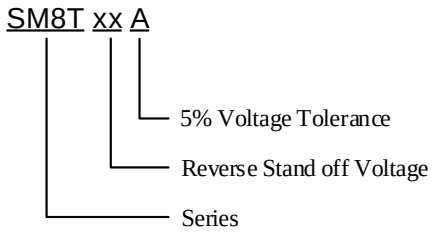


Recommended Solder Pad Layout

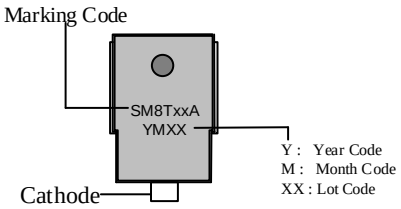


Dimensions in mm

Part Numbering System



Part Marking System



Package Information

750 Pcs/Reel

Contact Information

No.1001, Shiwan(7) Road, Pudong District, Shanghai, P.R.China.201207
Tel: 86-21-68969993 Fax: 86-21-50757680 Email: market@way-on.com
WAYON website: **http://www.way-on.com**
For additional information, please contact your local Sales Representative.

WAYON ® is registered trademarks of Wayon Corporation.

Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.