

Features

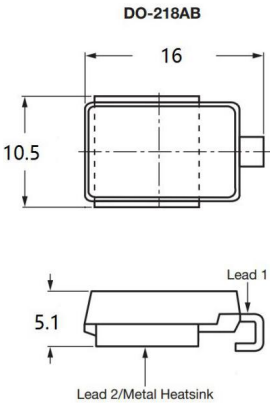
- Junction passivation optimized design passivated anisotropic rectifier technology
- 6800W peak pulse power capability at 10×1000μs waveform.
- Very fast response time
- Meets MSL-1,per J-STD-020,LF maximum peak of 260℃
- Conform to AEC-Q101
- Compliant to RoHS directive 2002/96/EC

Mechanical Characteristics

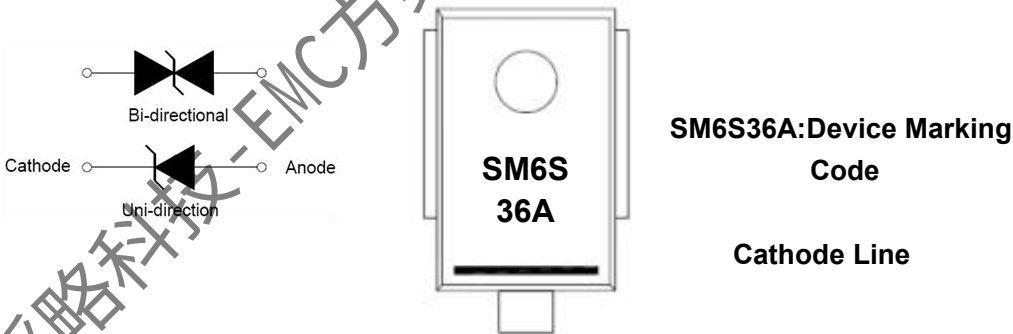
- Case:DO-218AB
- Molding compound meets UL 94V-0 flammability rating
- Base P/NHE3-RoHS compliant,AEC-Q101 qualified
- Terminals:Matte tin plated leads,solderable per
- J-STD-002 and JESD22-B102

PRIMARY CHARACTERISTICS	
V_{RWM}	22 V to 36 V
P_{PPM}	6800 W
P_D	6.0W
I_{FSM}	600A
T_{jmax}	150 °C

Schematic And Configuration



Marking Information



SM6S36A:Device Marking Code

Cathode Line

Absolute Maximum Ratings (T_C=25℃, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000us waveform	P	6800	Watts
Peak pulse current with 10/1000us waveform	I _{pp}	See last table	Amps
Power dissipation on infinite heat Sink at T _C =25℃	P _D	6.0	Watts
Peak forward surge current, 8.3ms single half sine-wave	I _{FSM}	600	Amps
Operating Junction and Storage Temperature Range	T _J ,T _{STG}	-55 to +150	℃
Typical thermal resistance, junction to case	R _{θJC}	0.9	℃/Watt

Notes:

- 1 Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum

Electrical Characteristics (Ta=25°C, unless otherwise noted)

Part Number		V _R	I _R @V _R		V _{BR} @ I _T		I _T	V _C @I _{pp}	I _{pp}
Uni-polar	Bi-polar	V	μA@25°C	μA@175°	min(V)	max (V)	mA	V	A
6.8KP22A	6.8KP22CA	22.0	10	150	24.4	26.9	5	35.5	187
6.8KP24A	6.8KP24CA	24.0	10	150	26.7	29.5	5	38.9	175
6.8KP26A	6.8KP26CA	26.0	10	150	28.9	31.9	5	42.1	159
6.8KP28A	6.8KP28CA	28.0	10	150	31.1	34.4	5	45.4	138
6.8KP30A	6.8KP30CA	30.0	10	150	33.3	36.8	5	48.4	136
6.8KP33A	6.8KP33CA	33.0	10	150	36.7	40.6	5	53.3	126
6.8KP36A	6.8KP36CA	36.0	10	150	40.0	44.2	5	58.1	115

Note:

① For all types maximum VF = 2.0 V at IF = 100 A measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum。

②. Surge waveform: 10/1000μs

V_R : Stand-off Voltage -- Maximum voltage that can be applied V_{BR}: Breakdown Voltage

V_C: Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{pp}

I_R: Reverse Leakage Current

I_T: Test current

Ordering Information

6.8KP		XX	(CA) A
6800W@10/1000US		V _R	bi-directional polarity uni-directional polarity

Ratings And Characteristics Curves ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

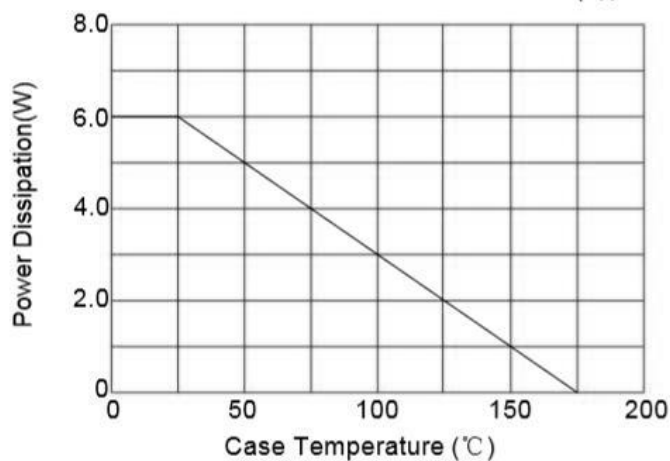


FIG.1: Power Derating Curve

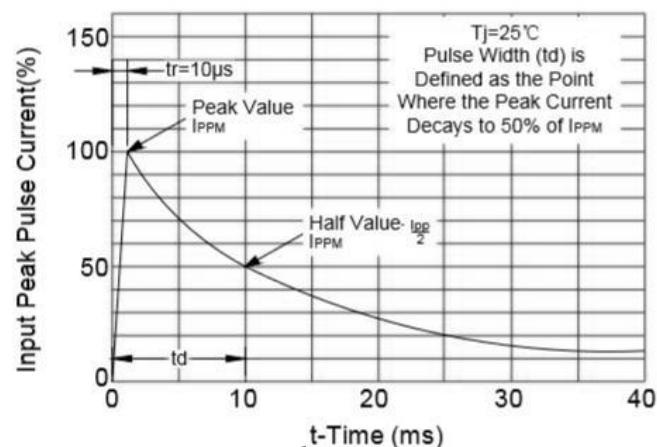


FIG.2: Pulse Waveform

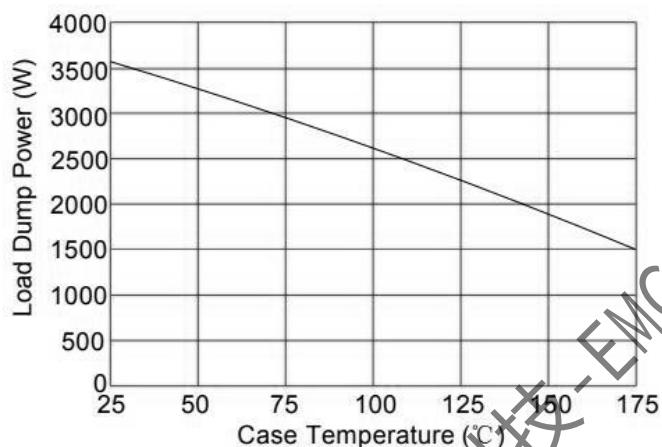


FIG.3: Load Dump Power Characteristics (10ms Exponential Waveform)

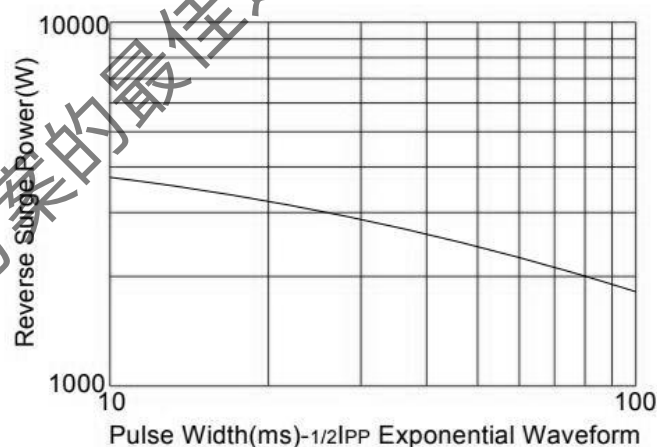


FIG.4: Reverse Power Capability

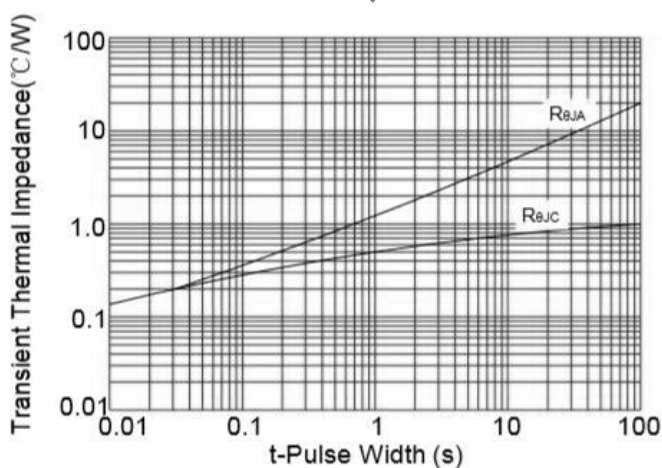
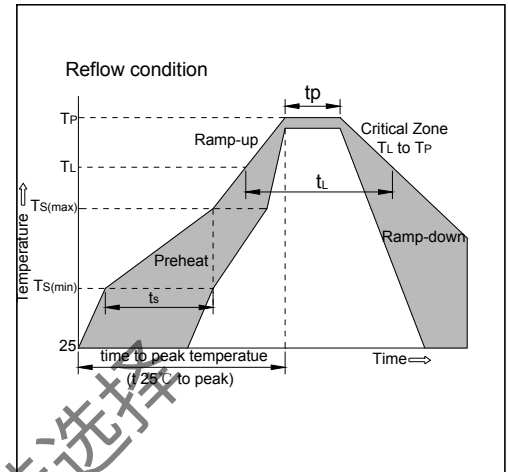


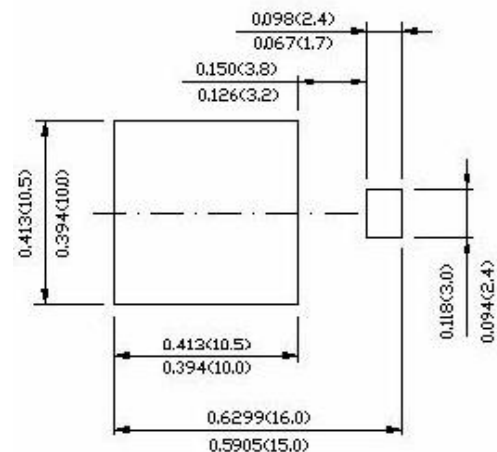
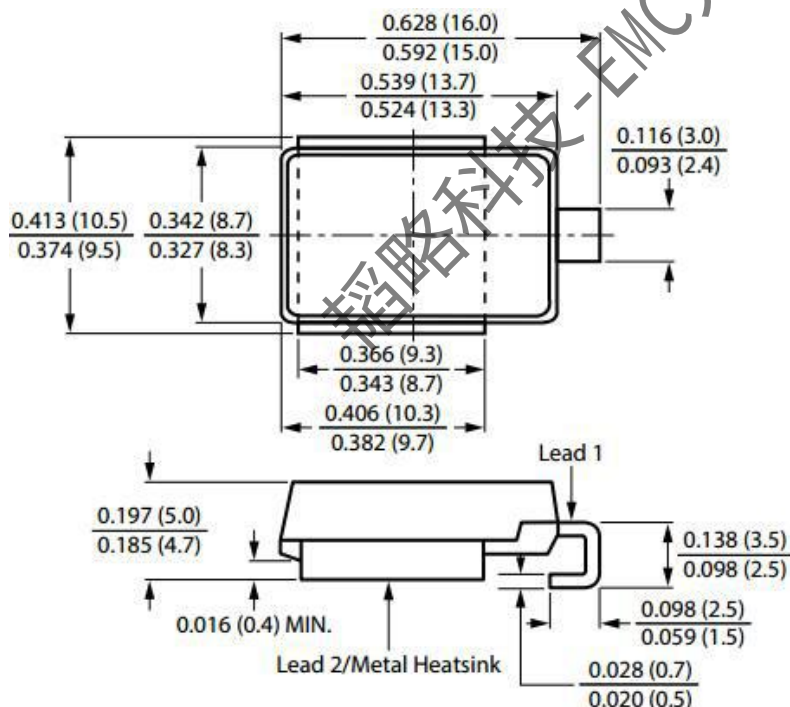
FIG.5: Typical Transient Thermal Impedance

Soldering Parameters

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



Package Mechanical Data



Contact Information

SHENZHEN TOP-FLIGHT TECHNOLOGY CO.,LTD

4th Floor, C Building, Quansen Industrial Park , Bulong Road, Longhua New District, Shenzhen

Tel: 86-755-82908191 Fax: 86-755-82908701 Email: kang@topleve.com

Website: <http://www.topleve.com>