SOCAY

HF RoHS

Surface Mount Transient Voltage Suppressors (TVS)

SM8SXXG Series | **10 to 85 V** | **6600W** | **DO-218AB**

Description

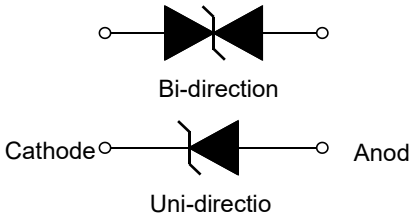
The SM8SXXG series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

DO-218AB

Features

- Optimized glass passivated chip
- T_J=175℃ capability suitable for high reliability and automotive requirement
- 6600W peak pulse power capability with a 10/1000μs waveform, repetitive rate (duty cycle): 0.01 %
- Meet ISO7637-2 5a/5b and ISO 16750 load dump test (varied by test condition)
- Meet AEC-Q101 qualified
- Low leakage current
- Low forward voltage drop
- Excellent clamping capability
- Very fast response time
- RoHS compliant

Functional Diagram



Mechanical Data

- Case: DO-218AB
- Molding compound: UL94V-0 flammability

Maximum Ratings (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000μs waveform ①	P_{PP}	6600	W
Peak Pulse Current with a 10/1000μs waveform ①	I_{PP}	See Next Table	A
Power Dissipation on Infinite Heatsink at T_L=25℃	P_D	8.0	W
Operating junction and Storage Temperature Range	T_J , T_{STG}	- 55 to + 175	℃
Peak Forward Surge Current 8.3ms Single Half Sine-wave	I_{FSM}	700	A

Notes:

1. Non-repetitive current pulse per Fig.2 and derated above T_A = 25 ℃ per Fig.1.

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Electrical Characteristics (T_A=25℃ unless otherwise noted)

Part Number		Working Peak Reverse Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} (V)		Test Current I_T (mA)	Maximum Reverse Leakage I_R @ V_{RWM} (μA)	Maximum I_R @ V_{RWM} T_J=175℃ (μA)	Maximum Reverse Surge Current I_{PP} (A) ①	Maximum Clamping Voltage V_C @ I_{PP} (V)
Uni	Bi		Min.	Max.					
SM8S10AG	SM8S10CAG	10.0	11.1	12.3	5.0	15	250	388	17.0
SM8S11AG	SM8S11CAG	11.0	12.2	13.5	5.0	10	150	363	18.2
SM8S12AG	SM8S12CAG	12.0	13.3	14.7	5.0	10	150	332	19.9
SM8S13AG	SM8S13CAG	13.0	14.4	15.9	5.0	10	150	307	21.5
SM8S14AG	SM8S14CAG	14.0	15.6	17.2	5.0	10	150	284	23.2
SM8S15AG	SM8S15CAG	15.0	16.7	18.5	5.0	10	150	270	24.4
SM8S16AG	SM8S16CAG	16.0	17.8	19.7	5.0	10	150	254	26.0
SM8S17AG	SM8S17CAG	17.0	18.9	20.9	5.0	10	150	239	27.6
SM8S18AG	SM8S18CAG	18.0	20.0	22.1	5.0	10	150	226	29.2
SM8S20AG	SM8S20CAG	20.0	22.2	24.5	5.0	10	150	204	32.4
SM8S22AG	SM8S22CAG	22.0	24.4	26.9	5.0	10	150	186	35.5
SM8S24AG	SM8S24CAG	24.0	26.7	29.5	5.0	10	150	170	38.9
SM8S26AG	SM8S26CAG	26.0	28.9	31.9	5.0	10	150	157	42.1
SM8S28AG	SM8S28CAG	28.0	31.1	34.4	5.0	10	150	145	45.4
SM8S30AG	SM8S30CAG	30.0	33.3	36.8	5.0	10	150	136	48.4
SM8S33AG	SM8S33CAG	33.0	36.7	40.6	5.0	10	150	124	53.3
SM8S36AG	SM8S36CAG	36.0	40.0	44.2	5.0	10	150	114	58.1
SM8S40AG	SM8S40CAG	40.0	44.4	49.1	5.0	10	150	102	64.5
SM8S43AG	SM8S43CAG	43.0	47.8	52.8	5.0	10	150	95.1	69.4
SM8S45AG	SM8S45CAG	45.0	50.0	55.3	5.0	10	150	90.8	72.7
SM8S48AG	SM8S48CAG	48.0	53.3	58.9	5.0	10	150	85.3	77.4
SM8S51AG	SM8S51CAG	51.0	56.7	62.7	5.0	10	150	80.1	82.4
SM8S54AG	SM8S54CAG	54.0	60.0	66.3	5.0	10	150	75.8	87.1
SM8S58AG	SM8S58CAG	58.0	64.4	71.2	5.0	10	150	70.5	93.6
SM8S60AG	SM8S60CAG	60.0	66.7	73.7	5.0	10	150	68.2	96.8
SM8S64AG	SM8S64CAG	64.0	71.1	78.6	5.0	10	150	64.1	103.0
SM8S70AG	SM8S70CAG	70.0	77.8	86.0	5.0	10	150	58.4	113.0
SM8S75AG	SM8S75CAG	75.0	83.3	92.1	5.0	10	150	54.5	121.0
SM8S78AG	SM8S78CAG	78.0	86.7	95.8	5.0	10	150	52.4	126.0
SM8S85AG	SM8S85CAG	85.0	94.4	104.0	5.0	10	150	48.2	137.0

Notes:

1. *Surge current waveform is defined at 10/1000μS waveform.*
2. *For all types maximum V_F = 1.8 V at I_F = 100 A measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.*

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Ratings and Characteristics Curves (T_A=25°C unless otherwise noted)

Fig1. Pulse Derating Curve

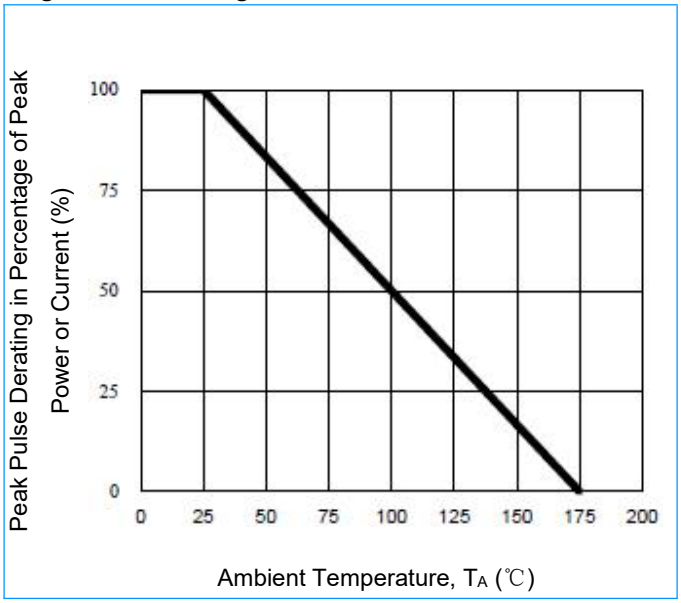


Fig2. Pulse Waveform

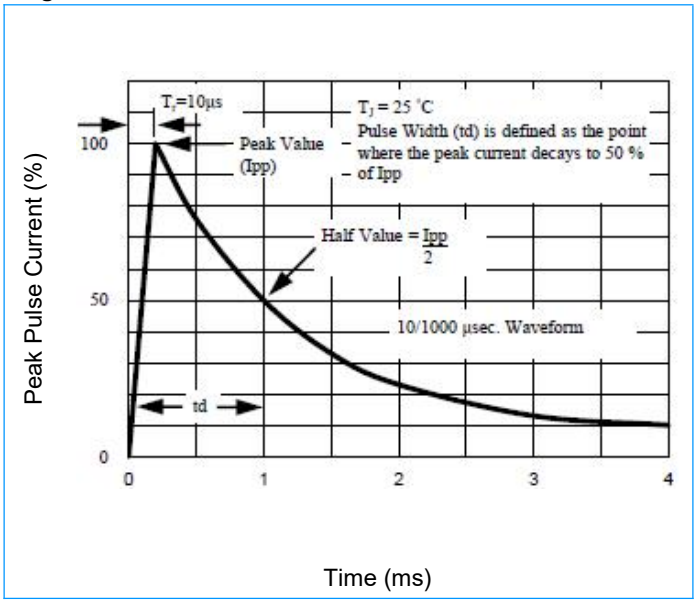


Fig3. Steady State Power Derating Curve

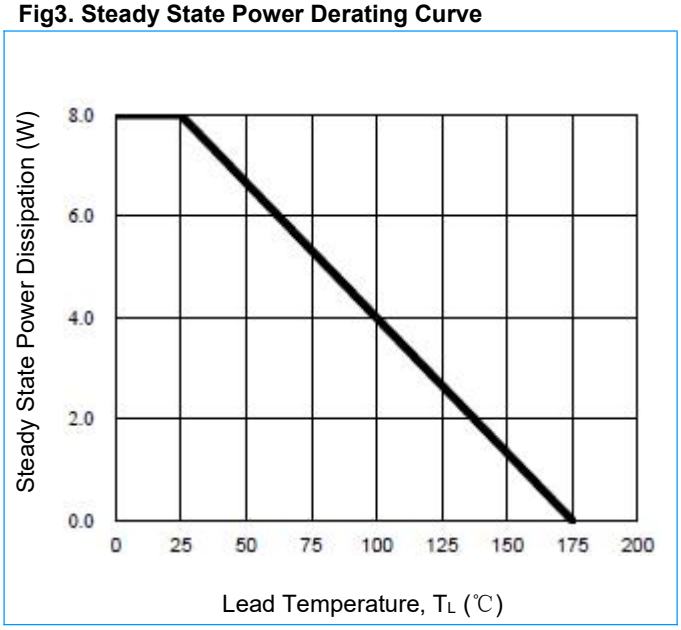
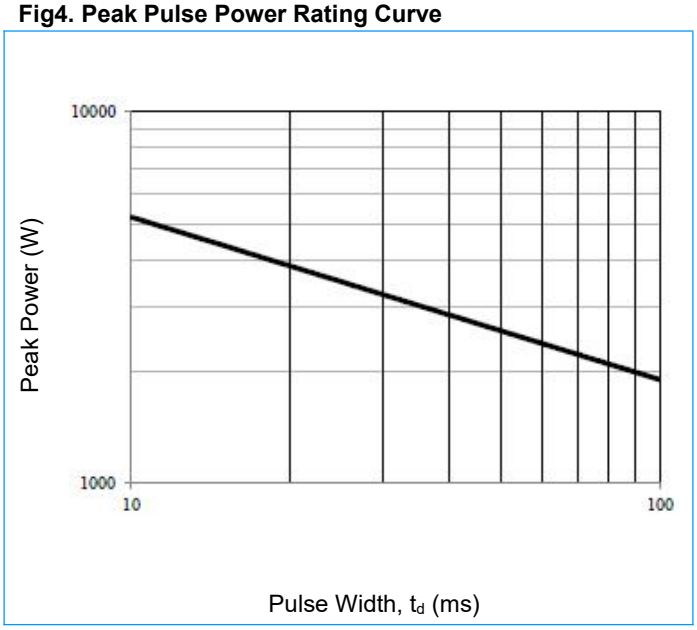


Fig4. Peak Pulse Power Rating Curve



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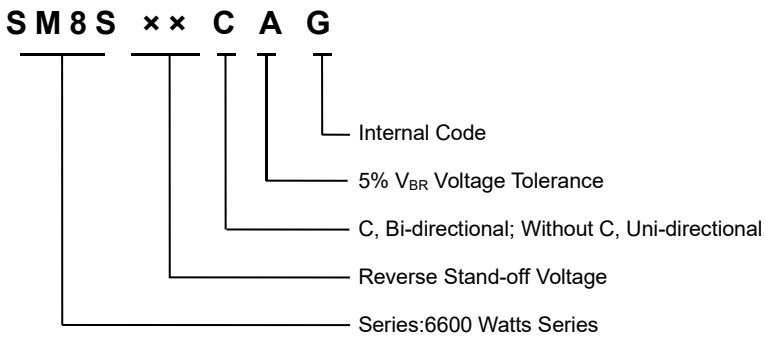
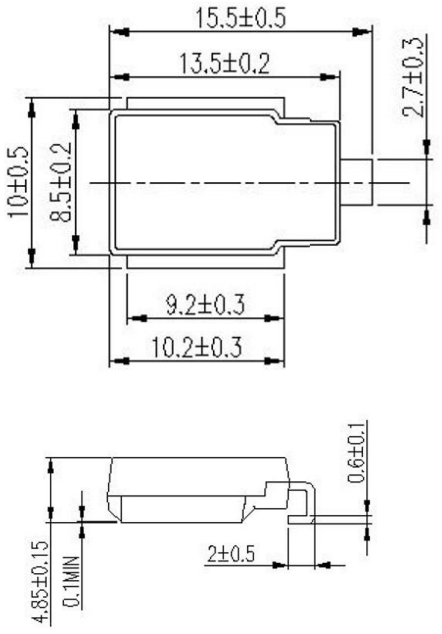
Part Numbering



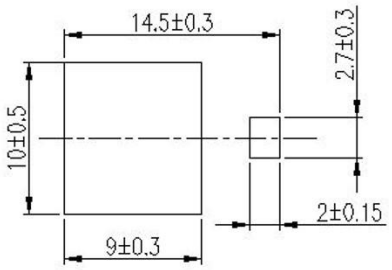
Packaging

Part Number	Component Package	Quantity	Packaging Option
SM8SXXG Series	DO-218AB	500 PCS	13" diameter plastic tape and reel, anode towards the sprocket hole

Package Outline Dimensions (Unit: millimeters)



Recommended Mounting Pad Layout



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