

6600W Surface Mount Transient Voltage Suppressor

Features

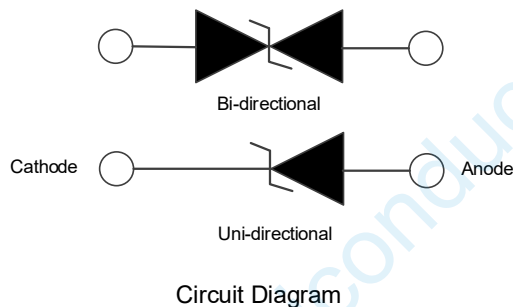
- ✧ 6600W Peak Pulse power capability at 10/1000us Waveform
- ✧ Excellent clamping capability
- ✧ High temperature soldering: 260°C/10s at terminals
- ✧ Glass passivated junction
- ✧ Low Leakage current.
- ✧ Meets ISO16750 surge specification.
- ✧ RoHS compliant in lead-free versions.
- ✧ AEC-Q101 qualified.

Applications

- ✧ Automotive load dump.
- ✧ Inductive load switching

Mechanical Data

- ✧ CASE: DO-218AB) Molded
- ✧ Terminals: tin plated, lead free.
- ✧ Mounting Position: Any
- ✧ Polarity: heatsink is anode for unidirectional



DO-218AB

Absolute Maximum Rating at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 μs Waveform (Note 1, 2, FIG.1)	P_{PPM}	Min 6600	W
Peak Pulse Power Dissipation on 10/10000 μs Waveform (Note 1, 2, FIG.1)	P_{PPM}	Min 5200	W
Power Dissipation on Infinite Heat Sink at $T_L=25^\circ\text{C}$	P_D	10	W
Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3)	I_{PPM}	See Table 1	A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2, 3)	I_{FSM}	800	A
Operating Junction Temperature Range	T_J	-55 to 175	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to 175	$^\circ\text{C}$

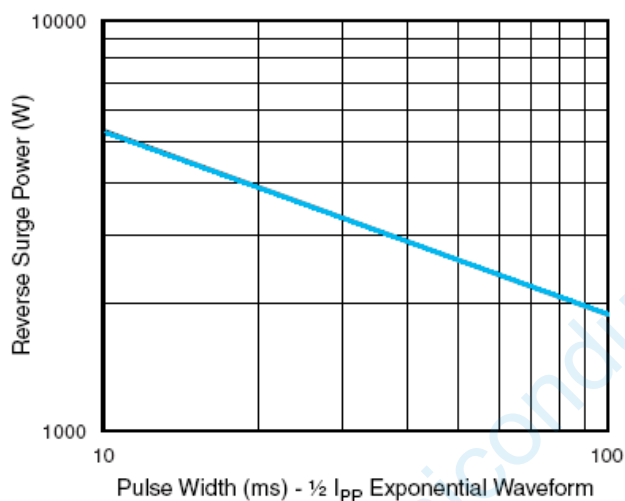
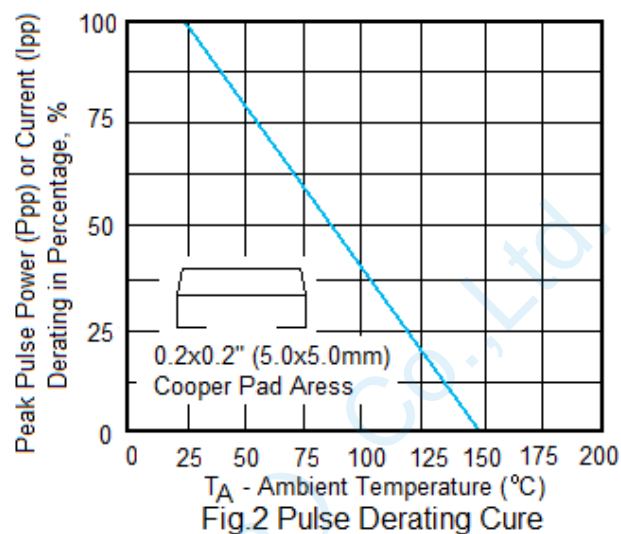
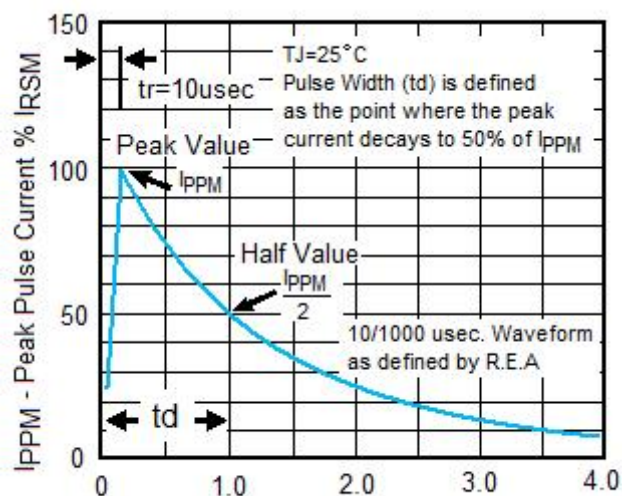
Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig.2.
2. Mounted on 8.0x8.0mm² (0.03mm thick) Copper Pads to each terminal.
3. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

Electrical Characteristics at $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

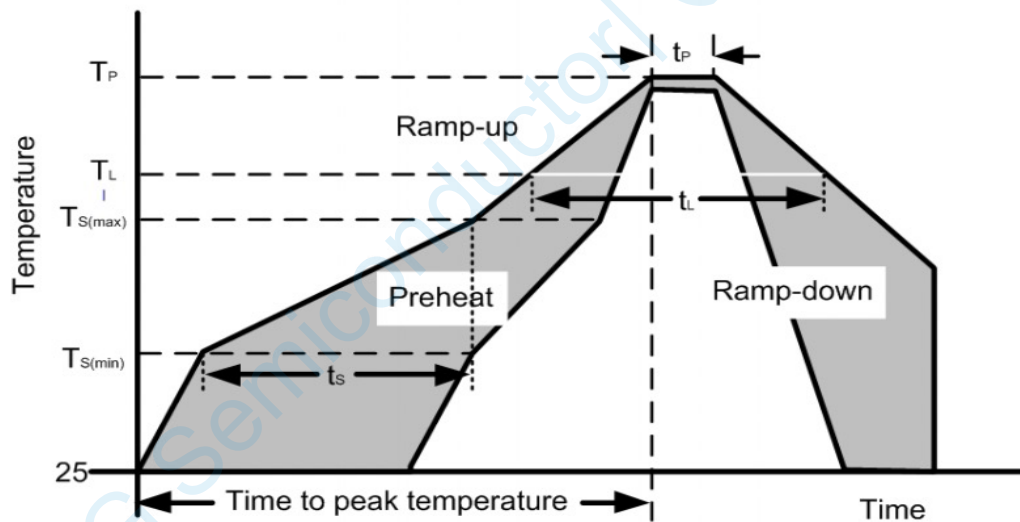
Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @IT	Breakdown Voltage Max. @ IT	Test Current	Maximum Clamping Voltage @IPP	Max. Peak Pulse Current	Max. Reverse Leakage @VRWM
Uni	Bi	Uni	Bi	VRWM(V)	VBR MIN(V)	VBR MAX(V)	IT (mA)	VC(V)	IPP(A)	IR(uA)
SM8S10A	SM8S10CA	UAP	BAP	10	11.1	12.3	5	17.0	388	10
SM8S11A	SM8S11CA	UAQ	BAQ	11	12.2	13.6	5	18.2	363	10
SM8S12A	SM8S12CA	UAW	BAW	12	13.3	14.7	5	19.9	332	10
SM8S13A	SM8S13CA	UAE	BAE	13	14.4	15.9	5	21.5	307	10
SM8S14A	SM8S14CA	UAR	BAR	14	15.6	17.2	5	23.2	284	10
SM8S15A	SM8S15CA	UAT	BAT	15	16.7	18.5	5	24.4	270	10
SM8S16A	SM8S16CA	UAY	BAY	16	17.8	19.7	5	26.0	254	10
SM8S17A	SM8S17CA	UAU	BAU	17	18.9	20.9	5	27.6	239	10
SM8S18A	SM8S18CA	UAI	BAI	18	20.0	22.1	5	29.2	226	10
SM8S20A	SM8S20CA	UBP	BBP	20	22.2	24.5	5	32.4	204	10
SM8S22A	SM8S22CA	UBW	BBW	22	24.4	26.9	5	35.5	186	10
SM8S24A	SM8S24CA	UBR	BBR	24	26.7	29.5	5	38.9	170	10
SM8S26A	SM8S26CA	UBY	BBY	26	28.9	31.9	5	42.1	157	10
SM8S28A	SM8S28CA	UBI	BBI	28	31.1	34.4	5	45.4	145	10
SM8S30A	SM8S30CA	UCP	BCP	30	33.3	36.8	5	48.4	136	10
SM8S33A	SM8S33CA	UCE	BCE	33	36.7	40.6	5	53.3	124	10
SM8S36A	SM8S36CA	UCY	BCY	36	40.0	44.2	5	58.1	114	10
SM8S40A	SM8S40CA	UDP	BDP	40	44.4	49.1	5	64.5	102	10
SM8S43A	SM8S43CA	UDE	BDE	43	47.8	52.8	5	69.4	95	10
SM8S45A	SM8S45CA	UDT	BDT	45	50.0	55.3	5	72.7	91	10
SM8S48A	SM8S48CA	UDI	BDI	48	53.3	58.9	5	77.4	85	10
SM8S51A	SM8S51CA	UEQ	BEQ	51	56.7	62.7	5	82.4	80	10
SM8S54A	SM8S54CA	UER	BER	54	60.0	66.3	5	87.1	76	10
SM8S58A	SM8S58CA	UEI	BEI	58	64.4	71.2	5	93.6	71	10
SM8S60A	SM8S60CA	UFP	BFP	60	66.7	73.7	5	96.8	68	10
SM8S64A	SM8S64CA	UFR	BFR	64	71.1	78.6	5	103.0	64	10
SM8S70A	SM8S70CA	UGP	BGP	70	77.8	86.0	5	113.0	58	10
SM8S75A	SM8S75CA	UGT	BGT	75	83.0	92.1	5	121.0	55	10
SM8S78A	SM8S78CA	UGI	BGI	78	86.0	95.8	5	126.0	52	10
SM8S85A	SM8S85CA	UHT	BHT	85	94.0	104.0	5	137.0	48	10
SM8S90A	SM8S90CA	UIP	BIP	90	100.0	111.0	5	113.0	58	10
SM8S100A	SM8S100CA	UJP	BJP	100	111.0	123.0	5	121.0	55	10

Typical Characteristics at $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

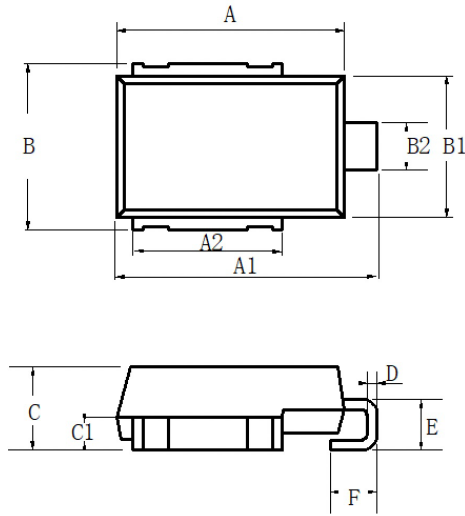


Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 190 secs
Average ramp up rate (Liquidus Temp) (T_L) to peak		5°C/second max
$T_{s(max)}$ to T_L —Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260+0/-5 °C
Time within actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C

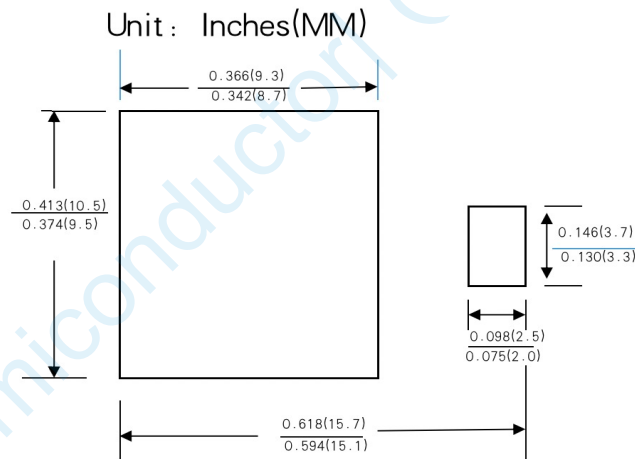


Package Information



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	13.40	13.60	0.527	0.535
A1	15.2	16.1	0.598	0.634
A2	8.80	9.20	0.346	0.362
B	9.60	10.30	0.006	0.012
B1	8.20	8.60	0.378	0.339
B2	2.30	2.80	0.091	0.110
C	4.80	5.10	0.189	0.200
C1	1.95	2.05	0.030	0.060
D	0.5	0.7	0.077	0.080
E	2.5	3.5	0.098	0.138
F	1.5	3.05	0.059	0.120

Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only

Marking



XXX:Marking code

Ordering Information

Part number	Package	Type	Reel size	MOQ	Packaging specification
SM8S Series	DO-218AB	T/R	13 inch	750/reel	EIA STD RS-481