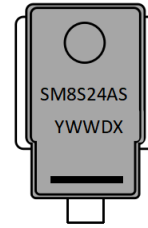


Features

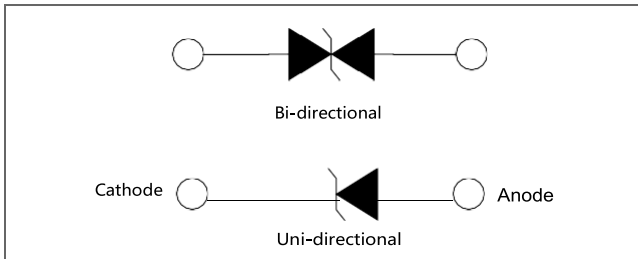
- 6600W peak pulse power capability at 10/1000µs waveform, repetition rate (duty cycles):0.01%
- Excellent clamping capability
- Typical failure mode is a short circuit condition for current events exceeding component rating
- Plastic package is flammability rated V-0 per UL-94
- Meet MSL level1, per J-STD-020, lead-frame maximum peak of 245°C
- AEC-Q101 qualified



Applications

Typically use in sensitive electronics protection against voltage load dump induced by Automotive generator during current interruption.

Function Diagram




Maximum Ratings and Thermal Characteristics (T _A =25°C unless otherwise noted)			
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at T _A =25°C by 10/1000µs Waveform (Fig.4)-- single die	P _{PPM}	6600	W
Power Dissipation on Infinite Heat Sink at T _L =25°C	P _D	8	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 1)	I _{FSM}	700	A
Maximum Instantaneous Forward Voltage at 50A for Unidirectional Only	V _F	3.5	V
Operating Temperature Range	T _J	-55 to 150	°C
Storage Temperature Range	T _{STG}	-55 to 150	°C

AGENCY	AGENCY FILE NUMBER
	Pending

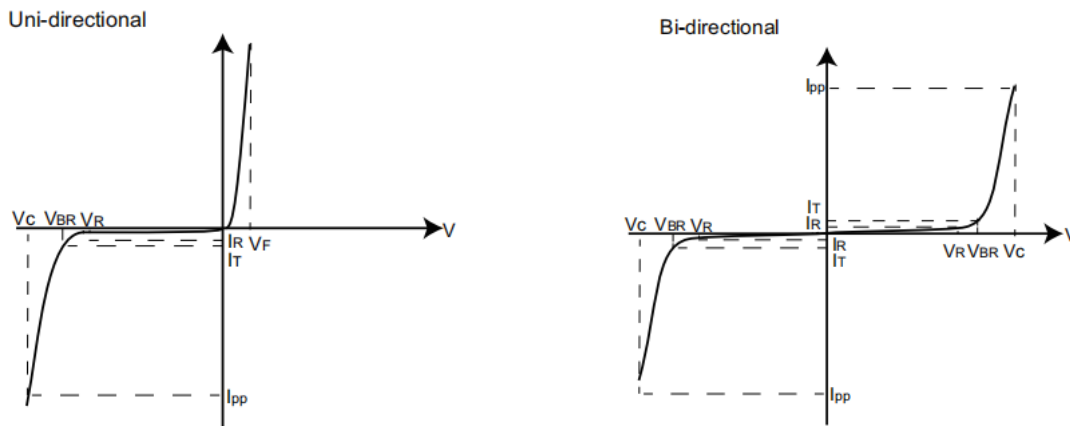
Notes:

1. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.
2. 3.5V for single die, 5V for stack die

Characteristics (T = 25°C unless otherwise noted)

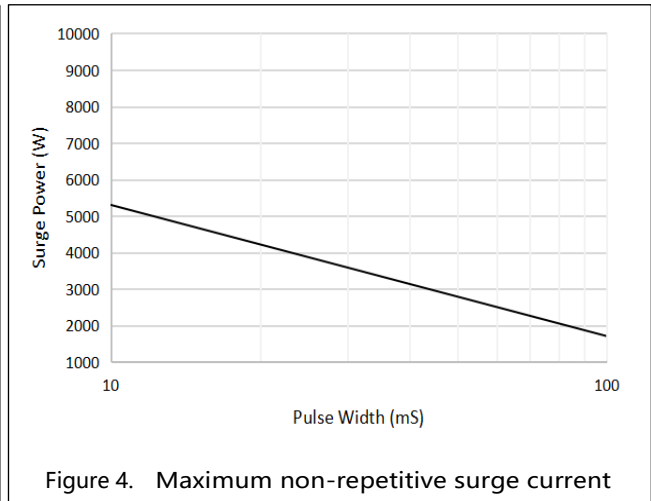
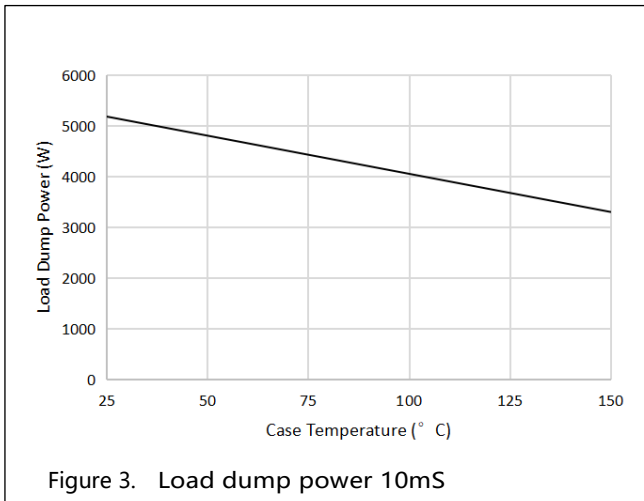
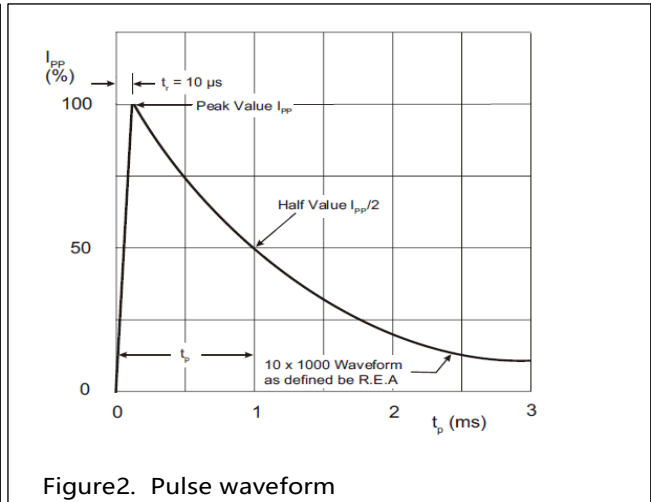
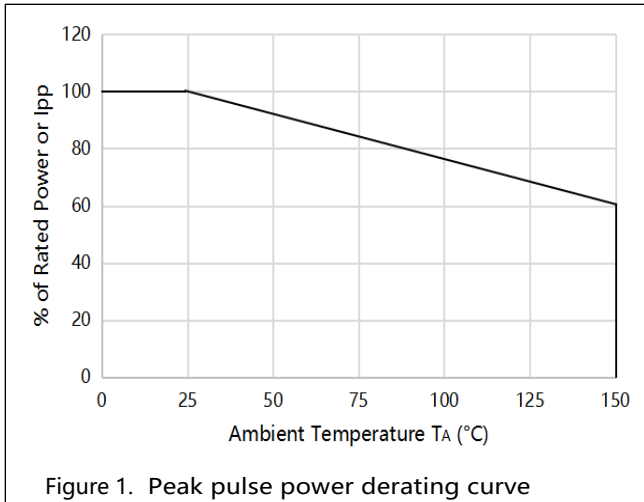
Part Number (Uni)	Part Number (Bi)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{DD} (V)	Maximum Peak Pulse Current I_{pp} (A)	Maximum Reverse Leakage I_R @ V_R (μ A)	Agency Approval 
			MIN	MAX					
SM8S10A	SM8S10CA	10.0	11.10	12.30	5	17.0	388	20	
SM8S11A	SM8S11CA	11.0	12.20	13.50	5	18.2	363	15	
SM8S12A	SM8S12CA	12.0	13.30	14.70	5	19.9	332	10	
SM8S13A	SM8S13CA	13.0	14.40	15.90	5	21.5	307	5	
SM8S14A	SM8S14CA	14.0	15.60	17.20	5	23.2	284	5	
SM8S15A	SM8S15CA	15.0	16.70	18.50	5	24.4	270	5	
SM8S16A	SM8S16CA	16.0	17.80	19.70	5	26.0	253	5	
SM8S17A	SM8S17CA	17.0	18.90	20.90	5	27.6	239	5	
SM8S18A	SM8S18CA	18.0	20.00	22.10	5	29.2	226	5	
SM8S20A	SM8S20CA	20.0	22.20	24.50	5	32.4	204	5	
SM8S22A	SM8S22CA	22.0	24.40	26.90	5	35.5	186	5	
SM8S24A	SM8S24CA	24.0	26.70	29.50	5	38.9	170	5	
SM8S26A	SM8S26CA	26.0	28.90	31.90	5	42.1	157	5	
SM8S28A	SM8S28CA	28.0	31.10	34.40	5	45.4	145	5	
SM8S30A	SM8S30CA	30.0	33.30	36.80	5	48.4	136	5	
SM8S33A	SM8S33CA	33.0	36.70	40.60	5	53.3	124	5	
SM8S36A	SM8S36CA	36.0	40.00	44.20	5	58.1	114	5	
SM8S40A	SM8S40CA	40.0	44.40	49.10	5	64.5	102	5	
SM8S43A	SM8S43CA	43.0	47.80	52.80	5	69.4	95.1	5	

I-V Curve Characteristics



- P_{PPM} Peak Pulse Power Dissipation -- Max power dissipation
- V_R Stand-off Voltage -- Maximum voltage that can be applied to the TVS without operation
- V_{BR} Breakdown Voltage -- Maximum voltage that flows though the TVS at a specified test current (I_T)
- V_C Clamping Voltage -- Peak voltage measured across the TVS at a specified I_{PPM} (peak impulse current)
- I_R Reverse Leakage Current -- Current measured at V_R
- V_F Forward Voltage Drop for Uni-directional

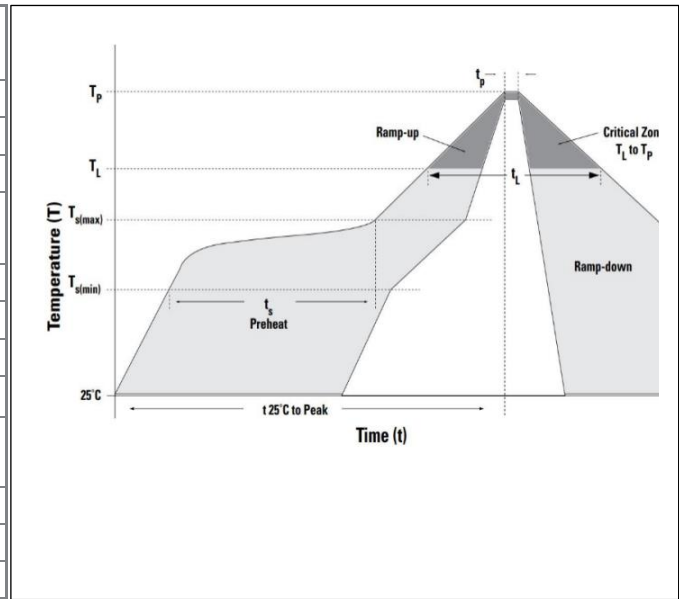
Ratings and Characteristic Curves (T = 25°C unless otherwise noted)



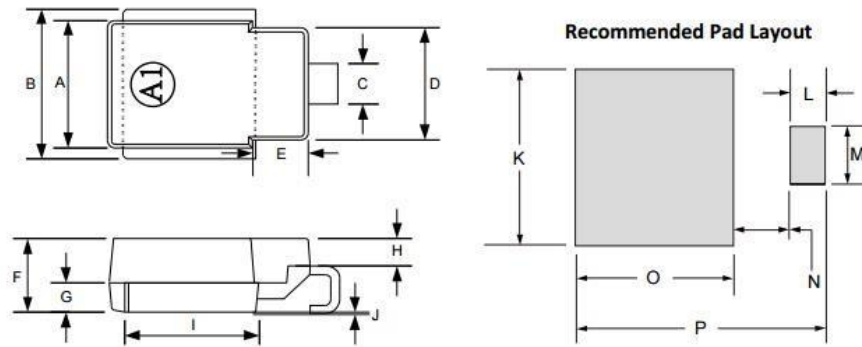
Soldering Parameters

Soldering profile

Reflow Condition		Lead-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 – 180 secs
Average ramp up rate (Liquidus Temp (T_A) to peak)		3°C/second max
$T_{S(max)}$ to T_A - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_A) (Liquidus)	217°C
	- Time (min to max) (t_S)	60 – 150 seconds
Peak Temperature (T_P)		260+0/-5 °C
Time within 5°C of actual peak Temperature (t_P)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		260°C



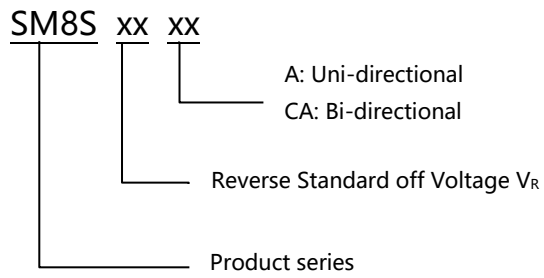
Dimensions



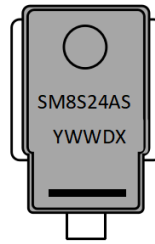
DO-218AB

DIM	Millimeters		Inch	
	Min	Max	Min	Max
A	8.300	8.700	0.3268	0.3425
B	9.500	10.500	0.3740	0.4134
C	2.400	3.000	0.0945	0.1181
D	7.000	8.000	0.2756	0.3150
E	3.200	3.800	0.1260	0.1496
F	4.600	5.200	0.1811	0.2047
G	1.700	2.300	0.0669	0.0906
H	1.500	2.100	0.0591	0.0827
I	8.500	9.500	0.3346	0.3740
J	-	0.160	-	0.0063
K	9.500	10.500	0.3740	0.4134
L	1.700	2.300	0.0669	0.0906
M	2.400	3.000	0.0945	0.1181
N	3.200	3.800	0.1260	0.1496
O	8.700	9.300	0.3425	0.3661
P	14.800	15.400	0.5827	0.6063

Part Numbering



Part Marking



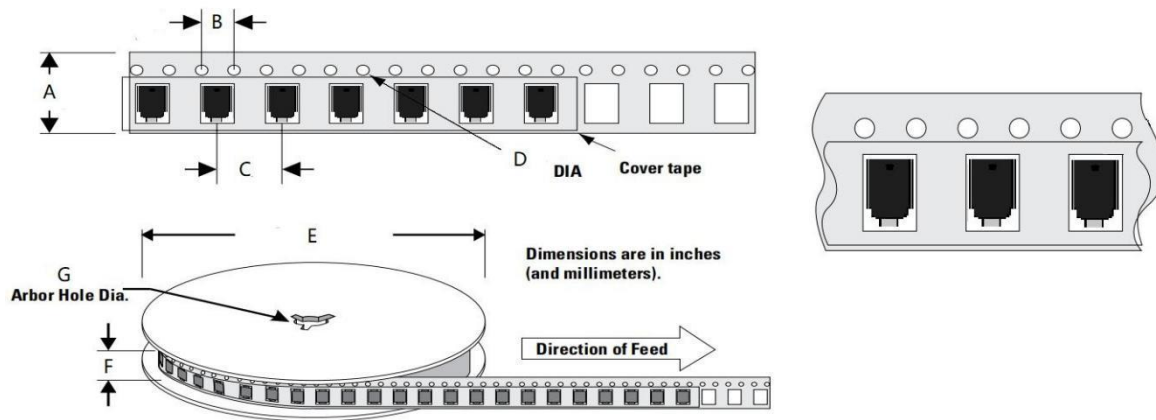
Product Type
Marking Code

Cathode band
(for uni-directional products only)

Packing

Part number	Package name	Small packing quantity	Packing method
SM8SXXXX	DO-218AB	750PCS	Tape & Reel

Tape and Reel Specification



Symbol	Millimeter
A	24.00 ± 0.2
B	4.00 ± 0.2
C	16.00 ± 0.2
D	1.55 ± 0.2
E	330.0 ± 0.3
F	25.85 ± 0.2
G	13.30 ± 0.2

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	13-July-2021

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[P6KE13CA](#) [P6KE43CA](#) [P6KE6.8CA](#) [P6KE8.2](#) [P6SMBJ20CA](#) [JANTX1N6072A](#) [SR2835ESKG](#) [SA90CA](#)