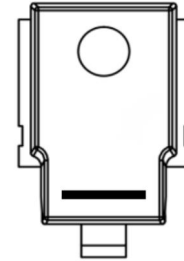


Features

- 4600W 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

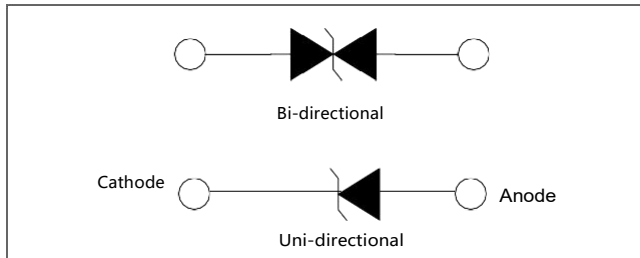
RoHS
Compliant



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}	4600	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

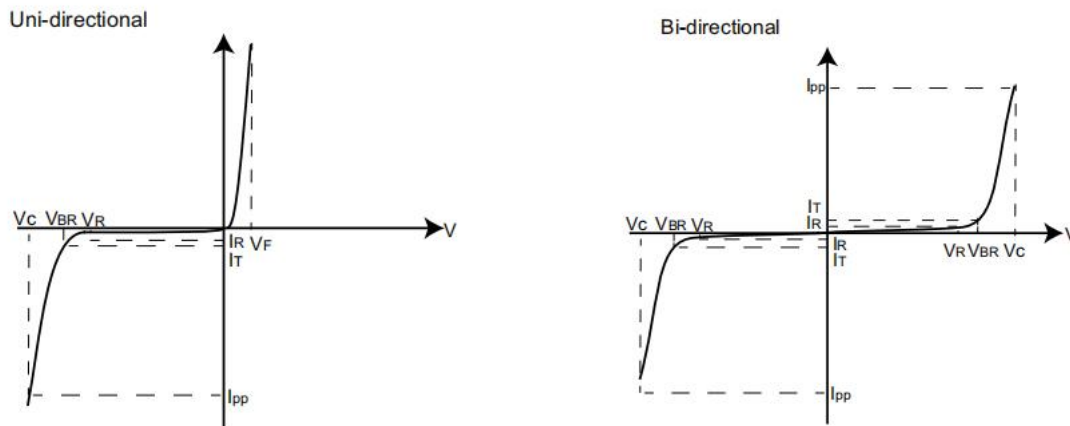
Notes:

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

Characteristics (T = 25°C unless otherwise noted)

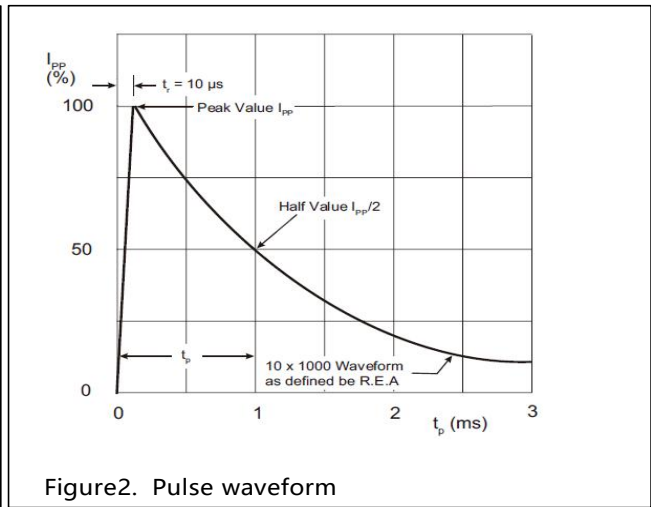
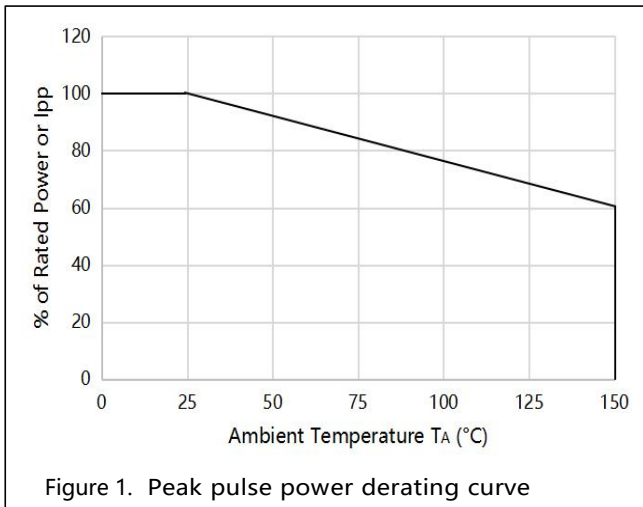
Part Number (Uni)	Part Number (Bi)	Reverse Stand off Voltage V _R (Volts)	Breakdown Voltage V _{BR} (Volts) @ I _T		Test Current I _T (mA)	Maximum Clamping Voltage V _C @ I _{pp} (V)	Maximum Peak Pulse Current I _{pp} (A)	Maximum Reverse Leakage I _R @ V _R (μA)	Agency Approval 
			MIN	MAX					
SM6S14A	SM6S14CA	14.0	15.60	17.20	5	23.2	198	5	
SM6S15A	SM6S15CA	15.0	16.70	18.50	5	24.4	189	5	
SM6S16A	SM6S16CA	16.0	17.80	19.70	5	26.0	177	5	
SM6S17A	SM6S17CA	17.0	18.90	20.90	5	27.6	167	5	
SM6S18A	SM6S18CA	18.0	20.00	22.10	5	29.2	158	5	
SM6S20A	SM6S20CA	20.0	22.20	24.50	5	32.4	142	5	
SM6S22A	SM6S22CA	22.0	24.40	26.90	5	35.5	130	5	
SM6S24A	SM6S24CA	24.0	26.70	29.50	5	38.9	118	5	
SM6S26A	SM6S26CA	26.0	28.90	31.90	5	42.1	109	5	
SM6S28A	SM6S28CA	28.0	31.10	34.40	5	45.4	101	5	
SM6S30A	SM6S30CA	30.0	33.30	36.80	5	48.4	95	5	
SM6S33A	SM6S33CA	33.0	36.70	40.60	5	53.3	86	5	
SM6S36A	SM6S36CA	36.0	40.00	44.20	5	58.1	79	5	
SM6S40A	SM6S40CA	40.0	44.40	49.10	5	64.5	71	5	
SM6S43A	SM6S43CA	43.0	47.80	52.80	5	69.4	66	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

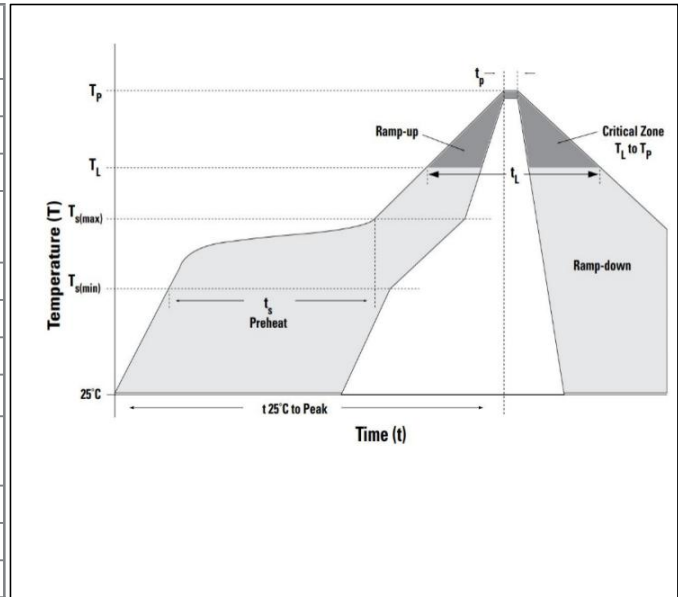
Ratings and Characteristic Curves (T = 25°C unless otherwise noted)



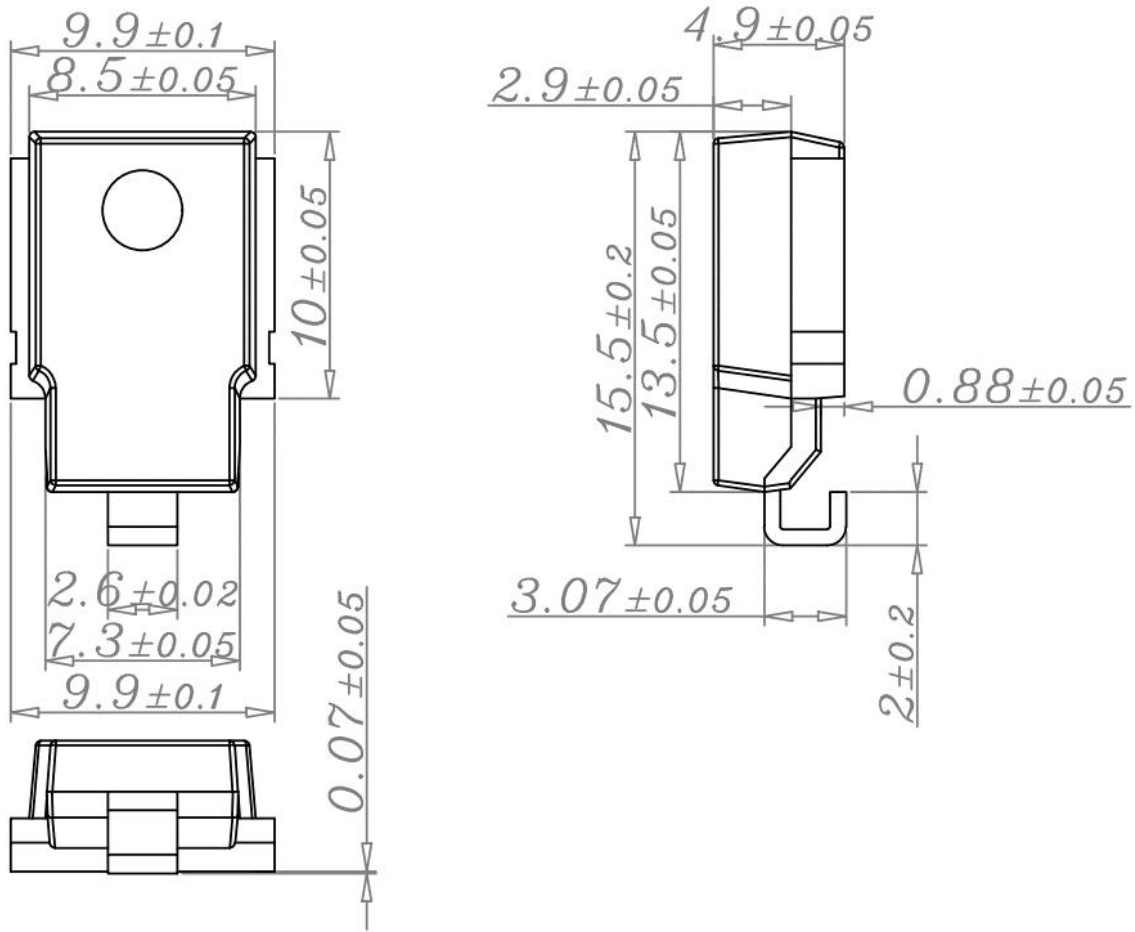
Soldering Parameters

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

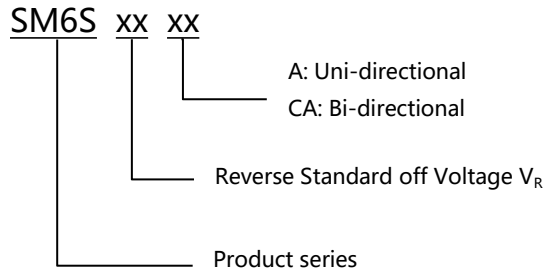


Dimensions

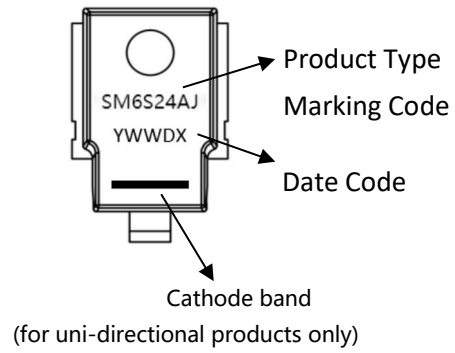


Note: Size units mm

Part Numbering



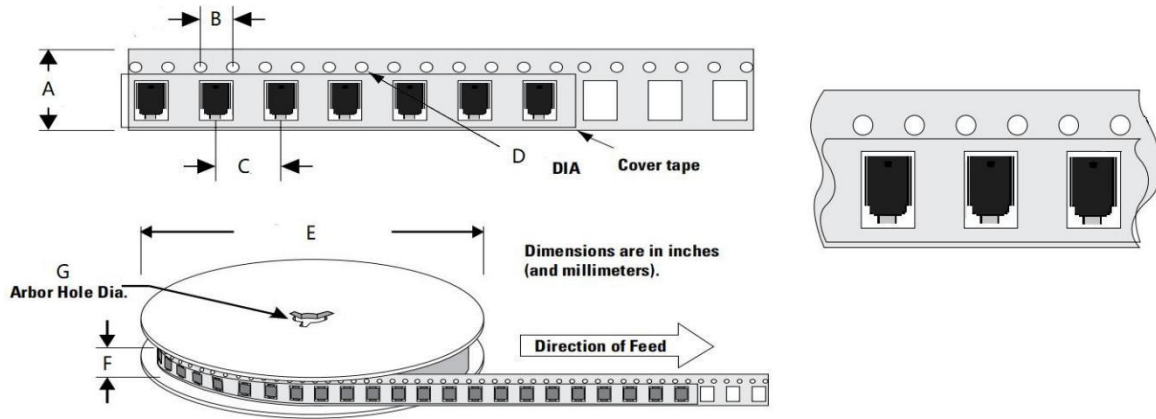
Part Marking



Packing

Part number	Package name	Small packing quantity	Packing method
SM6SXXXX	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
1.1	Revised Part Marking ("S" to "J")	24- Aug-2023