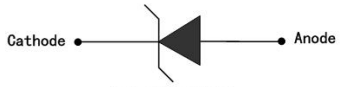
SMA6JxxH Series

●General description

The SMA6JxxH Series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events in a wide range of applications which like consumer electronics, automotive industries, telecommunications and intelligent control systems,etc.

SMA

Bi-directional



Uni-directional

●Features

600W peak pulse capability at 10/1000μs waveform.
Meets MSL level 1, per J-STD-020, LF maximum peak of 260℃.
Matte tin lead–free Plated.
Halogen free and RoHS compliant.
Excellent clamping capability.
Low incremental surge resistance.
Typical IR less than 1μA.
Fast response time:typically less than 1.0ps from 0V to VBRmin.
Plastic package has underwriters laboratory flammability 94V-0.
Typical failure mode is short for over-specified voltage or current.
For high reliability applications and automotive grade (AEC-Q101 qualified).

●Applications

TVS devices are ideal for the protection of I/O interfaces,V_{CC} bus and other vulnerable circuits used in telecom,computer, industrial and consumer electronic applications.

●Maximum ratings and thermal characteristics (T_A=25ºC unless otherwise noted)

Symbol	Parameter	Conditions	Value	Unit
P_{PP}	Peak pulse power dissipation	10/1000μs Test waveform, T_A = 25℃	600	W
P_D	Power dissipation on infinite heatsink	T_L=78ºC	5	W
I_{FSM}	Peak forward surge current	8.3ms single half sine wave	60	A
V_F	Maximum instantaneous forward voltage	25A for uni-directional only	5.0	V
$R_{th(j-l)}$	Junction to lead		30	ºC/W
$R_{th(j-a)}$	Junction to ambient on printed circuit on recommended pad layout		120	ºC/W
T_{stg}	Storage temperature range		-55 to 150	ºC
T_j	Operating junction temperature range		-55 to 150	ºC

●Marking

Y: Year Code，M:Month Code

6XXH: Marking Code

●Electrical characteristics

Part number		Marking		V_{RWM}	$V_{BR}@I_T(V)$		I_T	$I_R@V_{RWM}$	$V_C@I_{PP}$	I_{PP}
Uni	Bi	Uni	Bi	(V)	Min	Max	(mA)	(μA)	(V)	(A)
SMA6J10AH	SMA6J10CAH	6KXH	6AXH	10.0	11.10	12.30	1	1	17.0	35.3
SMA6J11AH	SMA6J11CAH	6KZH	6AZH	11.0	12.20	13.50	1	1	18.2	33.0
SMA6J12AH	SMA6J12CAH	6LEH	6BEH	12.0	13.30	14.70	1	1	19.9	30.2
SMA6J13AH	SMA6J13CAH	6LGH	6BGH	13.0	14.40	15.90	1	1	21.5	28.0
SMA6J14AH	SMA6J14CAH	6LKH	6BKH	14.0	15.60	17.20	1	1	23.2	25.9
SMA6J15AH	SMA6J15CAH	6LMH	6BMH	15.0	16.70	18.50	1	1	24.4	24.6
SMA6J16AH	SMA6J16CAH	6LPH	6BPH	16.0	17.80	19.70	1	1	26.0	23.1
SMA6J17AH	SMA6J17CAH	6LRH	6BRH	17.0	18.90	20.90	1	1	27.6	21.8
SMA6J18AH	SMA6J18CAH	6LTH	6BTH	18.0	20.00	22.10	1	1	29.2	20.6
SMA6J20AH	SMA6J20CAH	6LVH	6BVH	20.0	22.20	24.50	1	1	32.4	18.6
SMA6J22AH	SMA6J22CAH	6LXH	6BXH	22.0	24.40	26.90	1	1	35.5	16.9
SMA6J24AH	SMA6J24CAH	6LZH	6BZH	24.0	26.70	29.50	1	1	38.9	15.5
SMA6J26AH	SMA6J26CAH	6MEH	6CEH	26.0	28.90	31.90	1	1	42.1	14.3
SMA6J28AH	SMA6J28CAH	6MGH	6CGH	28.0	31.10	34.40	1	1	45.4	13.3
SMA6J30AH	SMA6J30CAH	6MKH	6CKH	30.0	33.30	36.80	1	1	48.4	12.4
SMA6J33AH	SMA6J33CAH	6MMH	6CMH	33.0	36.70	40.60	1	1	53.3	11.3
SMA6J36AH	SMA6J36CAH	6MPH	6CPH	36.0	40.00	44.20	1	1	58.1	10.4
SMA6J40AH	SMA6J40CAH	6MRH	6CRH	40.0	44.40	49.10	1	1	64.5	9.3
SMA6J43AH	SMA6J43CAH	6MTH	6CTH	43.0	47.80	52.80	1	1	69.4	8.7
SMA6J45AH	SMA6J45CAH	6MVH	6CVH	45.0	50.00	55.30	1	1	72.7	8.3
SMA6J48AH	SMA6J48CAH	6MXH	6CXH	48.0	53.30	58.90	1	1	77.4	7.8
SMA6J51AH	SMA6J51CAH	6MZH	6CZH	51.0	56.70	62.70	1	1	82.4	7.3
SMA6J54AH	SMA6J54CAH	6NEH	6DEH	54.0	60.00	66.30	1	1	87.1	6.9
SMA6J58AH	SMA6J58CAH	6NGH	6DGH	58.0	64.40	71.20	1	1	93.6	6.5
SMA6J60AH	SMA6J60CAH	6NKH	6DKH	60.0	66.70	73.70	1	1	96.8	6.2
SMA6J64AH	SMA6J64CAH	6NMH	6DMH	64.0	71.10	78.60	1	1	103.0	5.9
SMA6J70AH	SMA6J70CAH	6NPH	6DPH	70.0	77.80	86.00	1	1	113.0	5.3
SMA6J75AH	SMA6J75CAH	6NRH	6DRH	75.0	83.20	92.10	1	1	121.0	5.0
SMA6J78AH	SMA6J78CAH	6NTH	6DTH	78.0	86.70	95.80	1	1	126.0	4.8
SMA6J85AH	SMA6J85CAH	6NVH	6DVH	85.0	94.40	104.00	1	1	137.0	4.4
SMA6J90AH	SMA6J90CAH	6NXH	6DXH	90.0	100.00	111.00	1	1	146.0	4.1
SMA6J100AH	SMA6J100CAH	6NZH	6DZH	100.0	111.00	123.00	1	1	162.0	3.7
SMA6J110AH	SMA6J110CAH	6PEH	6EEH	110.0	122.00	135.00	1	1	177.0	3.4
SMA6J120AH	SMA6J120CAH	6PGH	6EGH	120.0	133.00	147.00	1	1	193.0	3.1

I_{PP} **Peak Pulse Current** -- Maxium current that flows through the TVS

V_{RWM} **Stand-off Voltage** -- Maximum voltage that can be applied to the TVS without operation

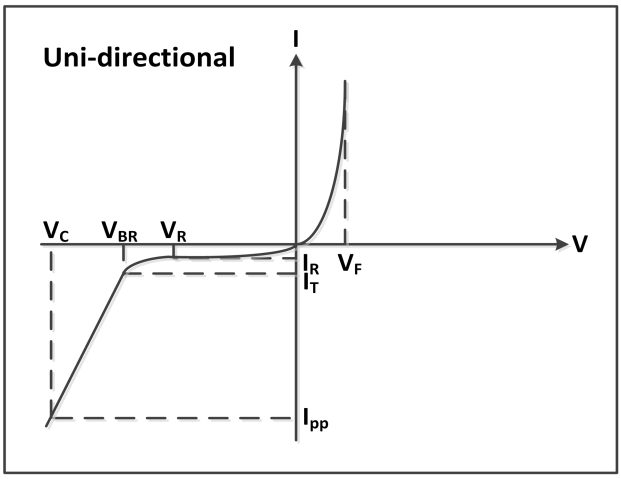
V_{BR} **Breakdown Voltage** -- Maximum voltage that flows through the TVS at a specifed test current (I_T)

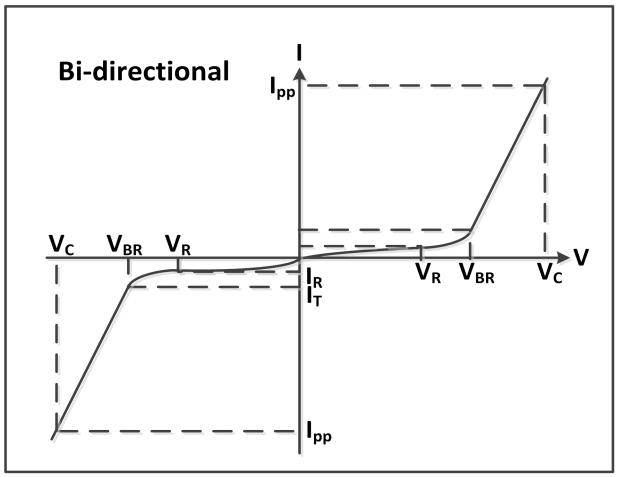
V_C **Clamping Voltage** -- Peak voltage measured at a specifed Ippm (peak impulse current)

I_R **Reverse Leakage Current** -- Current measured at V_{RWM}

V_F **Forward Voltage Drop for Uni-directional**

●I-V Curve Characteristics





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

FIG 1 : Peak Pulse Power Derating Curve

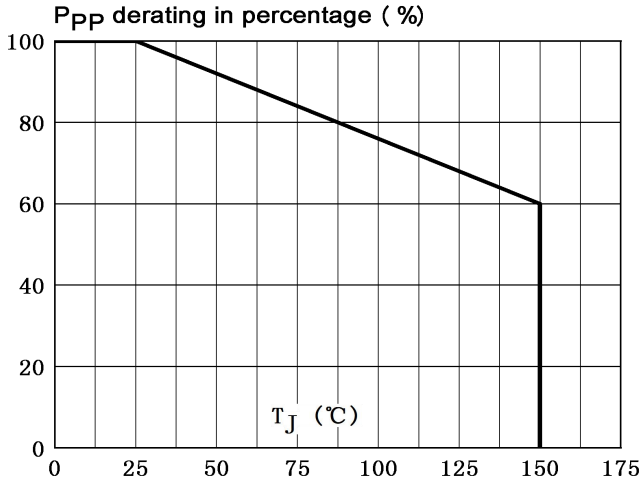
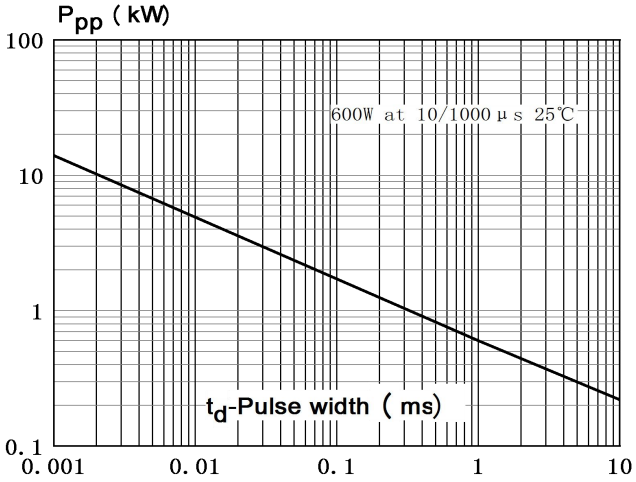


FIG 2:Peak pulse power versus exponential pulse duration



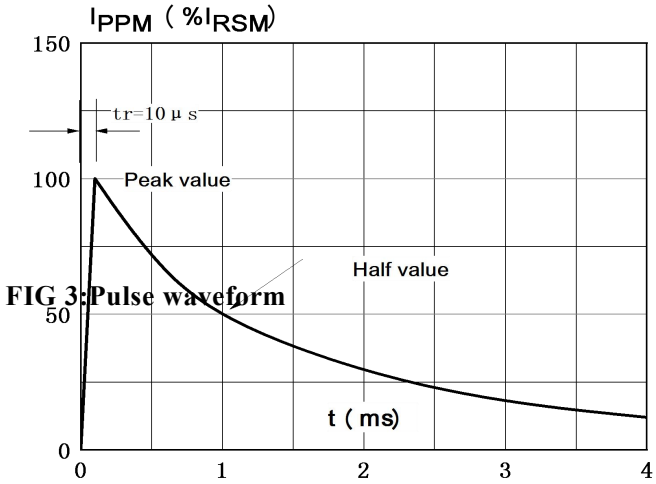
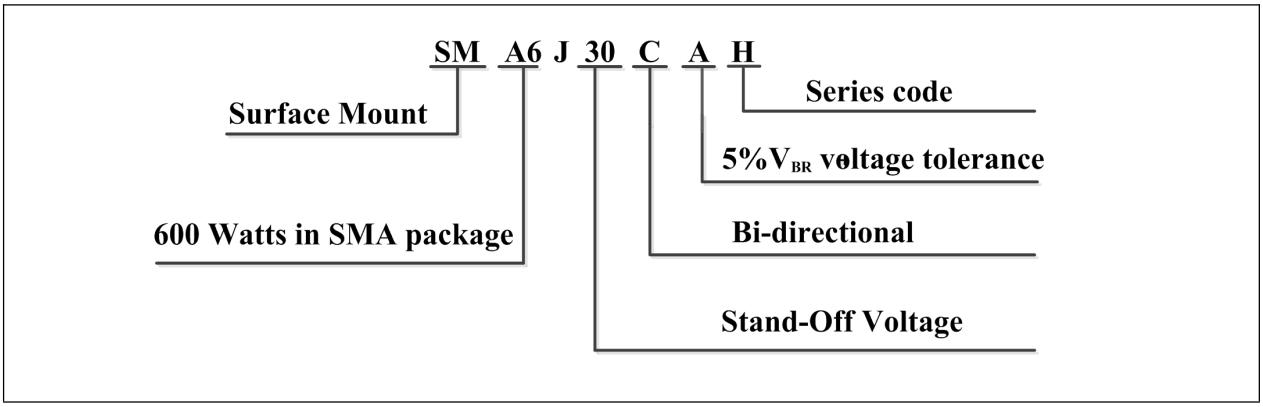


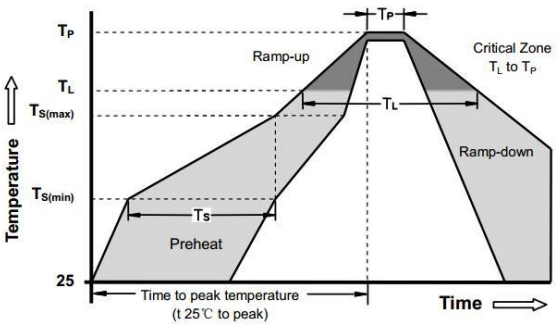
FIG 3:Pulse waveform

●Order Code

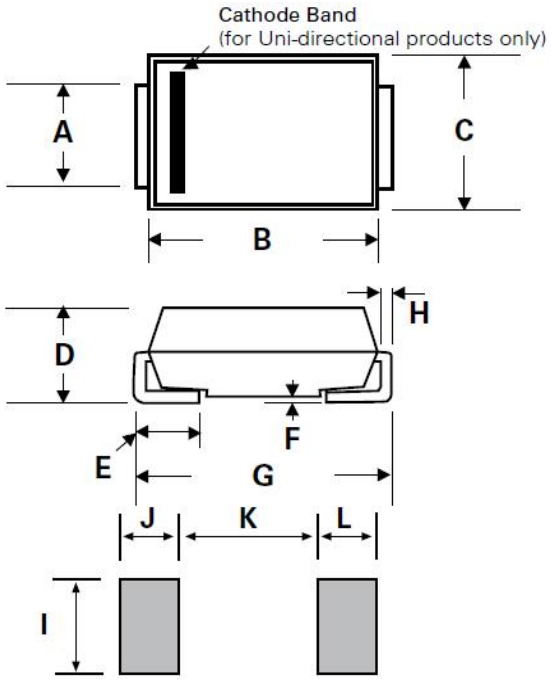


●Soldering Parameters

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

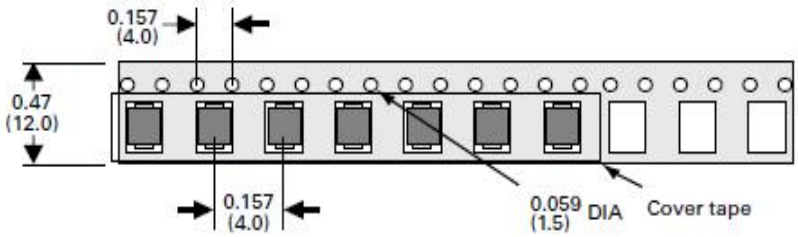


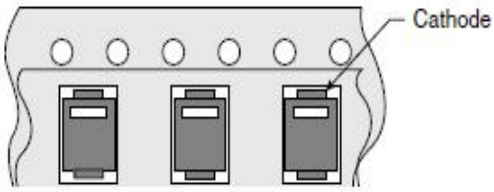
● Dimensions

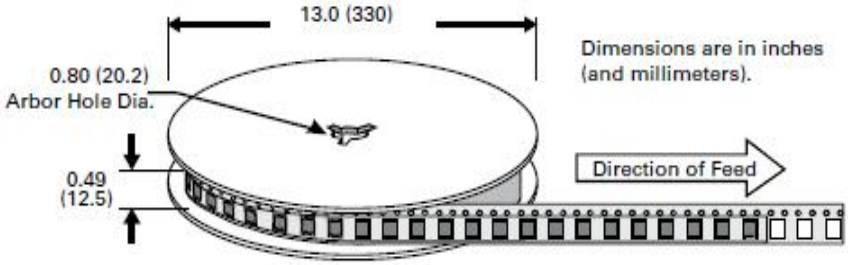


REF.	Millimeters		Inches	
	Min	Max	Min	Max
A	1.250	1.650	0.049	0.065
B	3.990	4.600	0.157	0.181
C	2.400	2.900	0.095	0.114
D	1.900	2.290	0.075	0.090
E	0.780	1.520	0.030	0.060
F	-	0.203	-	0.008
G	4.800	5.280	0.189	0.208
H	0.152	0.305	0.006	0.012
I	1.800	-	0.070	-
J	2.100	-	0.082	-
K	-	2.300	-	0.090
L	2.100	-	0.082	-

●Tape and reel specification







●Revision history

Date	Revision	Change
25-May-2021	1.0	First release

Definitions:

Information in this document is provided solely in connection with FuXin Microelectronics Co., Ltd products. FuXin reserves the right to make changes without further notice to any products herein at any time. All FuXin products are sold pursuant to FuXin's terms and conditions of sale.

Purchasers are responsible for the choice and use of the FuXin products and services described herein. FuXin assumes no liability relating to the choice, or use of the FuXin products and services described herein.

This document is made in 25-May.-2021. This document supersedes and replaces all information previously supplied.

Copyright©2021 FuXin Microelectronics Co., Ltd. Printed All rights reserved.