

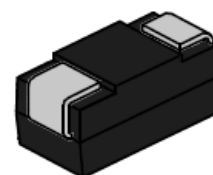


SMAJxxAH, SMAJxxCAH Series 400W TVS

Rev.3.3

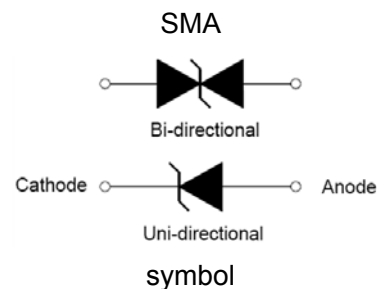
DESCRIPTION:

TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.



FEATURES:

- ✧ Low profile package.
- ✧ Low inductance.
- ✧ Excellent clamping capability.
- ✧ 400W peak pulse power capability at 10/1000μs waveform.
- ✧ Typical I_R less than 1μA above 10V.
- ✧ Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- ✧ High temperature to reflow soldering: 260°C/40s at terminals.
- ✧ Plastic package has underwriters laboratory flammability 94V-0.
- ✧ Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C.
- ✧ Terminal: solder plated, solderable per J-STD-002.
- ✧ For surface mounted applications in order to optimize board space.
- ✧ High reliability application and automotive grade (AEC-Q101 qualified).



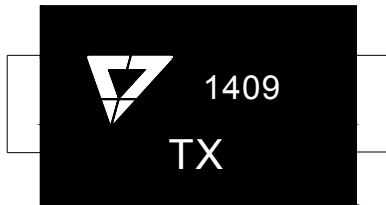
ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage and operating junction temperature range	T_{STG}/T_J	-55 to +150	°C
Steady state power dissipation at $T_L=75^\circ\text{C}$	$P_{M(AV)}$	3.3	W
Peak pulse power dissipation at 10/1000μs waveform	P_{PP}	400	W
Maximum instantaneous forward voltage at 30A for unidirectional	V_F	5.0	V
Peak forward surge current, 8.3ms single half sine wave(Note 1)	I_{FSM}	60	A
Typical thermal resistance junction to lead	$R_{\theta JL}$	30	°C/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	120	°C/W

Notes:

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

MARKING



TX: Device Marking Code
1409: In ninth week, 2014

ELECTRICAL CHARACTERISTICS (T_A=25°C)

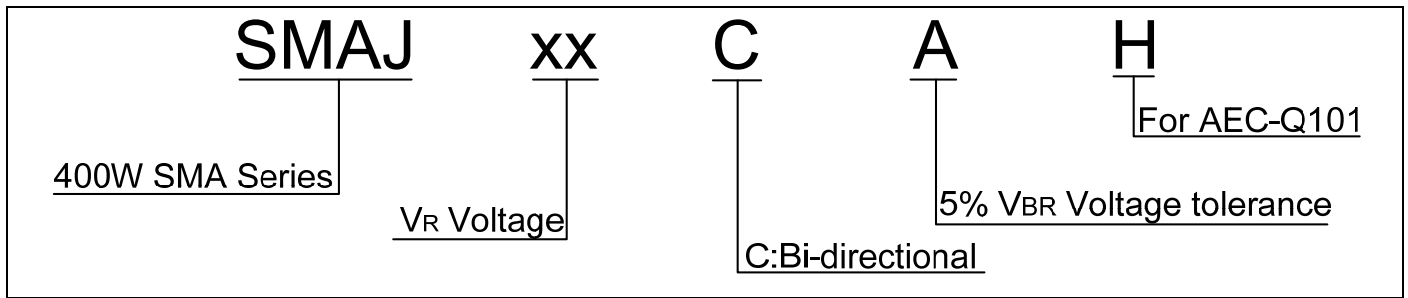
Part Number		Marking		V _R	I _{R@V_R}	V _{BR@I_T}		I _T	V _{C@I_{PP}}	I _{PP} ^①
Uni-polar	Bi-polar	Uni	Bi	V	max(μA)	min(V)	max(V)	mA	max(V)	A
SMAJ10AH	SMAJ10CAH	HX	TX	10.0	2	11.10	12.30	1	17.0	23.5
SMAJ11AH	SMAJ11CAH	HZ	TZ	11.0	1	12.20	13.50	1	18.2	22.0
SMAJ12AH	SMAJ12CAH	IE	UE	12.0	1	13.30	14.70	1	19.9	20.1
SMAJ13AH	SMAJ13CAH	IG	UG	13.0	1	14.40	15.90	1	21.5	18.6
SMAJ14AH	SMAJ14CAH	IK	UK	14.0	1	15.60	17.20	1	23.2	17.3
SMAJ15AH	SMAJ15CAH	IM	UM	15.0	1	16.70	18.50	1	24.4	16.4
SMAJ16AH	SMAJ16CAH	IP	UP	16.0	1	17.80	19.70	1	26.0	15.4
SMAJ17AH	SMAJ17CAH	IR	UR	17.0	1	18.90	20.90	1	27.6	14.5
SMAJ18AH	SMAJ18CAH	IT	UT	18.0	1	20.00	22.10	1	29.2	13.7
SMAJ20AH	SMAJ20CAH	IV	UV	20.0	1	22.20	24.50	1	32.4	12.4
SMAJ22AH	SMAJ22CAH	IX	UX	22.0	1	24.40	26.90	1	35.5	11.3
SMAJ24AH	SMAJ24CAH	IZ	UZ	24.0	1	26.70	29.50	1	38.9	10.3
SMAJ26AH	SMAJ26CAH	JE	VE	26.0	1	28.90	31.90	1	42.1	9.5
SMAJ28AH	SMAJ28CAH	JG	VG	28.0	1	31.10	34.40	1	45.4	8.8
SMAJ30AH	SMAJ30CAH	JK	VK	30.0	1	33.30	36.80	1	48.4	8.3
SMAJ33AH	SMAJ33CAH	JM	VM	33.0	1	36.70	40.60	1	53.3	7.5
SMAJ36AH	SMAJ36CAH	JP	VP	36.0	1	40.00	44.20	1	58.1	6.9
SMAJ40AH	SMAJ40CAH	JR	VR	40.0	1	44.40	49.10	1	64.5	6.2
SMAJ43AH	SMAJ43CAH	JT	VT	43.0	1	47.80	52.80	1	69.4	5.8
SMAJ45AH	SMAJ45CAH	JV	VV	45.0	1	50.00	55.30	1	72.7	5.5
SMAJ48AH	SMAJ48CAH	JX	VX	48.0	1	53.30	58.90	1	77.4	5.2
SMAJ51AH	SMAJ51CAH	JZ	VZ	51.0	1	56.70	62.70	1	82.4	4.9
SMAJ54AH	SMAJ54CAH	RE	WE	54.0	1	60.00	66.30	1	87.1	4.6

ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$, continued)

Part Number		Marking		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{\text{①}}$
Uni-polar	Bi-polar	Uni	Bi	V	max(μA)	min(V)	max(V)	mA	max(V)	A
SMAJ58AH	SMAJ58CAH	RG	WG	58.0	1	64.40	71.20	1	93.6	4.3
SMAJ60AH	SMAJ60CAH	RK	WK	60.0	1	66.70	73.70	1	96.8	4.1
SMAJ64AH	SMAJ64CAH	RM	WM	64.0	1	71.10	78.60	1	103.0	3.9
SMAJ70AH	SMAJ70CAH	RP	WP	70.0	1	77.80	86.00	1	113.0	3.6
SMAJ75AH	SMAJ75CAH	RR	WR	75.0	1	83.30	92.10	1	121.0	3.3
SMAJ78AH	SMAJ78CAH	RT	WT	78.0	1	86.70	95.80	1	126.0	3.2
SMAJ85AH	SMAJ85CAH	RV	WV	85.0	1	94.40	104.0	1	137.0	2.9
SMAJ90AH	SMAJ90CAH	RX	WX	90.0	1	100.0	111.0	1	146.0	2.8
SMAJ100AH	SMAJ100CAH	RZ	WZ	100.0	1	111.0	123.0	1	162.0	2.5
SMAJ110AH	SMAJ110CAH	SE	XE	110.0	1	122.0	135.0	1	177.0	2.3
SMAJ120AH	SMAJ120CAH	SG	XG	120.0	1	133.0	147.0	1	193.0	2.1
SMAJ130AH	SMAJ130CAH	SK	XK	130.0	1	144.0	159.0	1	209.0	1.9
SMAJ150AH	SMAJ150CAH	SM	XM	150.0	1	167.0	185.0	1	243.0	1.7
SMAJ160AH	SMAJ160CAH	SP	XP	160.0	1	178.0	197.0	1	259.0	1.6
SMAJ170AH	SMAJ170CAH	SR	XR	170.0	1	189.0	209.0	1	275.0	1.5
SMAJ180AH	SMAJ180CAH	ST	XT	180.0	1	201.0	222.0	1	292.0	1.4
SMAJ200AH	SMAJ200CAH	SX	XX	200.0	1	224.0	247.0	1	324.0	1.3
SMAJ220AH	SMAJ220CAH	ZE	YE	220.0	1	246.0	272.0	1	356.0	1.1
SMAJ250AH	SMAJ250CAH	ZG	YG	250.0	1	279.0	309.0	1	405.0	1.0
SMAJ300AH	SMAJ330CAH	ZK	YK	300.0	1	335.0	371.0	1	486.0	0.8
SMAJ350AH	SMAJ350CAH	ZM	YM	350.0	1	391.0	432.0	1	567.0	0.7
SMAJ400AH	SMAJ400CAH	ZP	YP	400.0	1	447.0	494.0	1	648.0	0.6
SMAJ440AH	SMAJ440CAH	ZR	YR	440.0	1	492.0	543.0	1	713.0	0.6

① Surge waveform: 10/1000 μs V_R : Stand-off voltage --Maximum voltage that can be applied V_{BR} : Breakdown voltage V_C : Clamping voltage -- Peak voltage measured across the suppressor at a specified I_{PP} I_R : Reverse leakage current

ORDERING INFORMATION



RATINGS AND V-I CHARACTERISTICS CURVES (T_A=25°C, unless otherwise noted)

FIG.1: V- I curve characteristics (Uni-directional)

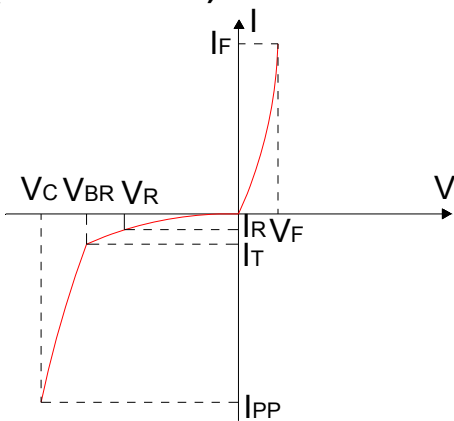


FIG.2: V- I curve characteristics (Bi-directional)

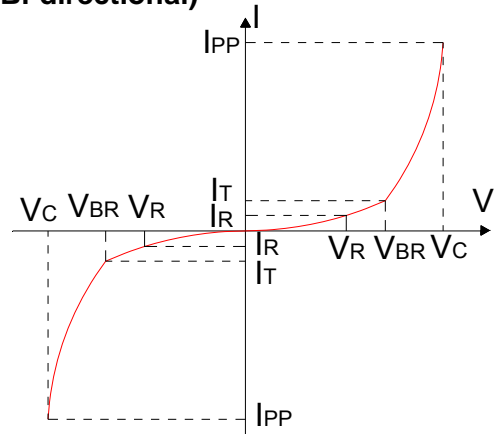


FIG.3: Pulse waveform

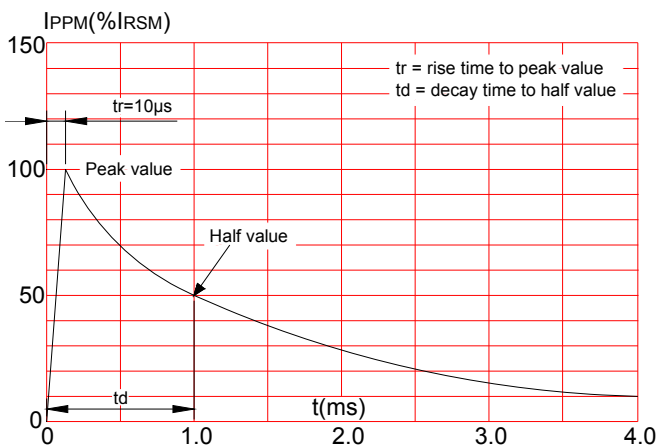


FIG.4: Pulse derating curve

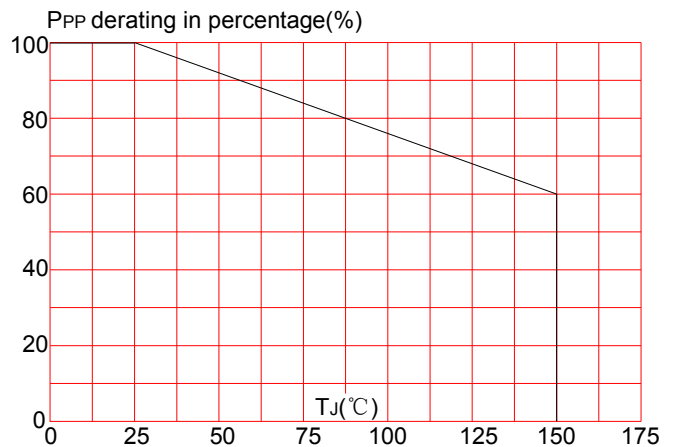
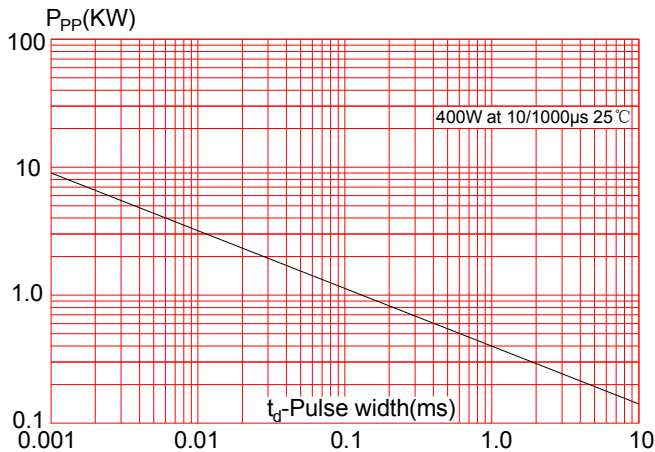
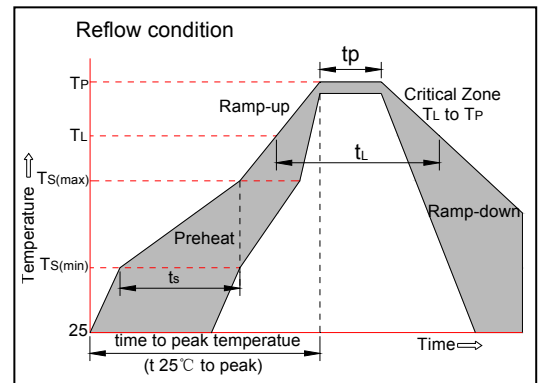


FIG.5: Peak pulse power dissipation vs. pulse width

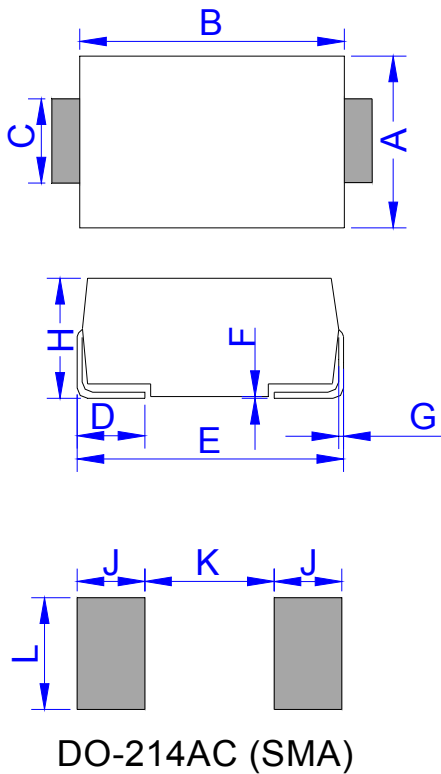


SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
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_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C

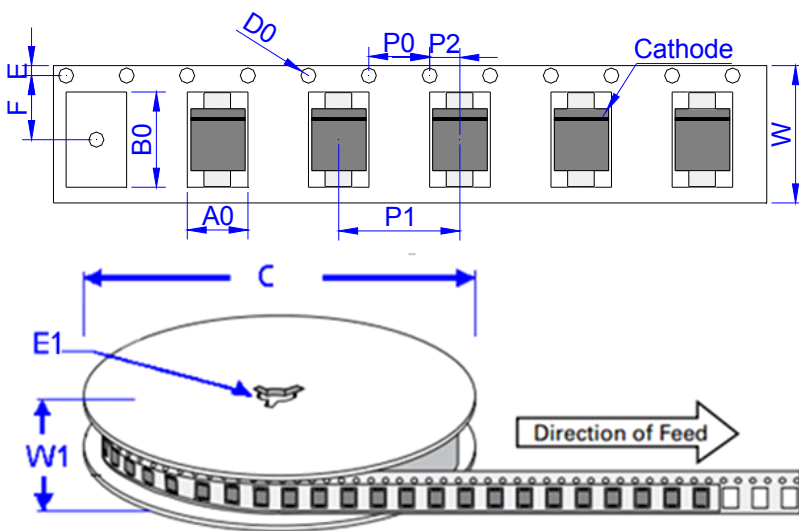


PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	4.15	4.65	0.163	0.183
C	1.25	1.65	0.049	0.065
D	0.95	1.52	0.037	0.060
E	4.90	5.30	0.193	0.209
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.00	2.44	0.079	0.096
J	2.00		0.079	
K		2.30		0.091
L	1.80		0.071	

TAPE AND REEL SPECIFICATION-SMA



Ref.	Dimensions	
	Millimeters	Inches
A0	2.79 ± 0.3	0.110 ± 0.012
B0	5.33 ± 0.3	0.210 ± 0.012
C	330.0	13.0
D0	1.55 ± 0.1	0.061 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3 ± 0.3	0.524 ± 0.012
F	5.5 ± 0.2	0.217 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	4.00 ± 0.2	0.157 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	12.0 ± 0.2	0.472 ± 0.008
W1	15.7 ± 2.0	0.618 ± 0.079

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
SMAJxxAH/CAH	0.07	7,500	120,000	13 inch reel pack

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co.,Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it. Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement. Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information. This document is the 3.3rd version which is made in 6-July-2021. This document supersedes and replaces all information previously supplied.

 is a registered trademark of Jiangsu JieJie Microelectronics Co.,Ltd.

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

单击下面可查看定价，库存，交付和生命周期等信息

[>>JW\(捷捷微\)](#)