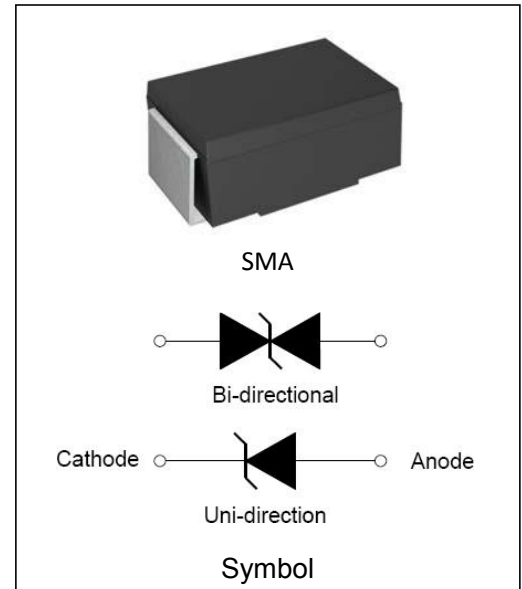


DESCRIPTION:

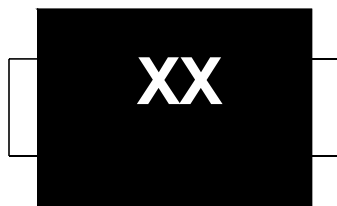
TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.

FEATURES:

- ✧ Glass passivated or planar junction
- ✧ Lower clamping voltage.
- ✧ High temperature soldering: 260°C/10s at terminals.
- ✧ Plastic package has Underwriters Laboratory Flammability 94V-0.
- ✧ Surface mount DO-214AC.
- ✧ Fast response time: typically less than 1.0ps from 0V to VBR min.
- ✧ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact).
- ✧ 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	$^{\circ}\text{C}$
Peak pulse power dissipation on 10/1000 μs waveform	P_{PP}	400	W

MARKING


Screscreen and model

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Part Number		V _R	I _R @ V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP} [®]
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
SMAJ5.0AH	SMAJ5.0CAH	5.0	300	6.40	7.00	10	9.2	43.5
SMAJ6.0AH	SMAJ6.0CAH	6.0	300	6.67	7.37	10	10.3	38.8
SMAJ6.5AH	SMAJ6.5CAH	6.5	250	7.22	7.98	10	11.2	35.7
SMAJ7.0AH	SMAJ7.0CAH	7.0	100	7.78	8.60	10	12.0	33.3
SMAJ7.5AH	SMAJ7.5CAH	7.5	50	8.33	9.21	1	12.9	31.0
SMAJ8.0AH	SMAJ8.0CAH	8.0	30	8.89	9.83	1	13.6	29.4
SMAJ8.5AH	SMAJ8.5CAH	8.5	10	9.44	10.40	1	14.4	27.8
SMAJ9.0AH	SMAJ9.0CAH	9.0	5	10.00	11.10	1	15.4	26.0
SMAJ10AH	SMAJ10CAH	10.0	2	11.10	12.30	1	17.0	23.5
SMAJ11AH	SMAJ11CAH	11.0	1	12.20	13.50	1	18.2	22.0
SMAJ12AH	SMAJ12CAH	12.0	1	13.30	14.70	1	19.9	20.1
SMAJ13AH	SMAJ13CAH	13.0	1	14.40	15.90	1	21.5	18.6
SMAJ14AH	SMAJ14CAH	14.0	1	15.60	17.20	1	23.2	17.3
SMAJ15AH	SMAJ15CAH	15.0	1	16.70	18.50	1	24.4	16.4
SMAJ16AH	SMAJ16CAH	16.0	1	17.80	19.70	1	26.0	15.4
SMAJ17AH	SMAJ17CAH	17.0	1	18.90	20.90	1	27.6	14.5
SMAJ18AH	SMAJ18CAH	18.0	1	20.00	22.10	1	29.2	13.7
SMAJ20AH	SMAJ20CAH	20.0	1	22.20	24.50	1	32.4	12.4
SMAJ22AH	SMAJ22CAH	22.0	1	24.40	26.90	1	35.5	11.3
SMAJ24AH	SMAJ24CAH	24.0	1	26.70	29.50	1	38.9	10.3
SMAJ26AH	SMAJ26CAH	26.0	1	28.90	31.90	1	42.1	9.5
SMAJ28AH	SMAJ28CAH	28.0	1	31.10	34.40	1	45.4	8.8
SMAJ30AH	SMAJ30CAH	30.0	1	33.30	36.80	1	48.4	8.3
SMAJ33AH	SMAJ33CAH	33.0	1	36.70	40.60	1	53.3	7.5
SMAJ36AH	SMAJ36CAH	36.0	1	40.00	44.20	1	58.1	6.9
SMAJ40AH	SMAJ40CAH	40.0	1	44.40	49.10	1	64.5	6.2
SMAJ43AH	SMAJ43CAH	43.0	1	47.80	52.80	1	69.4	5.8
SMAJ45AH	SMAJ45CAH	45.0	1	50.00	55.30	1	72.7	5.5
SMAJ48AH	SMAJ48CAH	48.0	1	53.30	58.90	1	77.4	5.2
SMAJ51AH	SMAJ51CAH	51.0	1	56.70	62.70	1	82.4	4.9

ELECTRICAL CHARACTERISTICS (T_A=25°C, continued)

Part Number		V _R	I _R @ V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP} ®
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
SMAJ54AH	SMAJ54CAH	54.0	1	60.00	66.30	1	87.1	4.6
SMAJ58AH	SMAJ58CAH	58.0	1	64.40	71.20	1	93.6	4.3
SMAJ60AH	SMAJ60CAH	60.0	1	66.70	73.70	1	96.8	4.1
SMAJ64AH	SMAJ64CAH	64.0	1	71.10	78.60	1	103.0	3.9
SMAJ70AH	SMAJ70CAH	70.0	1	77.80	86.00	1	113.0	3.6
SMAJ75AH	SMAJ75CAH	75.0	1	83.30	92.10	1	121.0	3.3
SMAJ78AH	SMAJ78CAH	78.0	1	86.70	95.80	1	126.0	3.2
SMAJ85AH	SMAJ85CAH	85.0	1	94.40	104.0	1	137.0	2.9
SMAJ90AH	SMAJ90CAH	90.0	1	100.0	111.0	1	146.0	2.8
SMAJ100AH	SMAJ100CAH	100.0	1	111.0	123.0	1	162.0	2.5
SMAJ110AH	SMAJ110CAH	110.0	1	122.0	135.0	1	177.0	2.3
SMAJ120AH	SMAJ120CAH	120.0	1	133.0	147.0	1	193.0	2.1
SMAJ130AH	SMAJ130CAH	130.0	1	144.0	159.0	1	209.0	1.9
SMAJ150AH	SMAJ150CAH	150.0	1	167.0	185.0	1	243.0	1.7
SMAJ160AH	SMAJ160CAH	160.0	1	178.0	197.0	1	259.0	1.6
SMAJ170AH	SMAJ170CAH	170.0	1	189.0	209.0	1	275.0	1.5
SMAJ180AH	SMAJ180CAH	180.0	1	201.0	222.0	1	292.0	1.4
SMAJ200AH	SMAJ200CAH	200.0	1	224.0	247.0	1	324.0	1.3
SMAJ220AH	SMAJ220CAH	220.0	1	246.0	272.0	1	356.0	1.1
SMAJ250AH	SMAJ250CAH	250.0	1	279.0	309.0	1	405.0	1.0
SMAJ300AH	SMAJ330CAH	300.0	1	335.0	371.0	1	486.0	0.8
SMAJ350AH	SMAJ350CAH	350.0	1	391.0	432.0	1	567.0	0.7
SMAJ400AH	SMAJ400CAH	400.0	1	447.0	494.0	1	648.0	0.6
SMAJ440AH	SMAJ440CAH	440.0	1	492.0	543.0	1	713.0	0.6

① Surge waveform: 10/1000μs

V_R : Stand-off Voltage -- Maximum voltage that can be applied

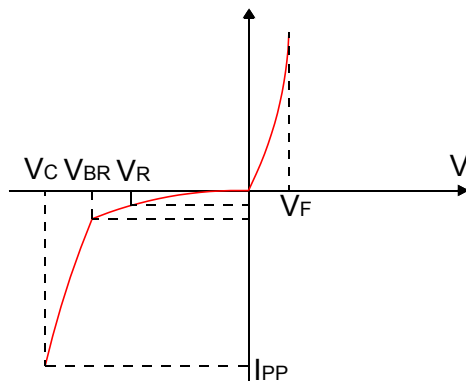
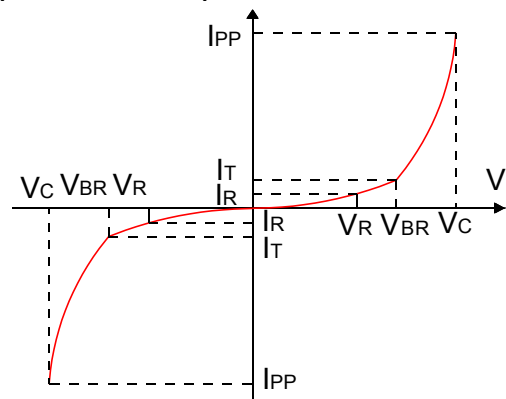
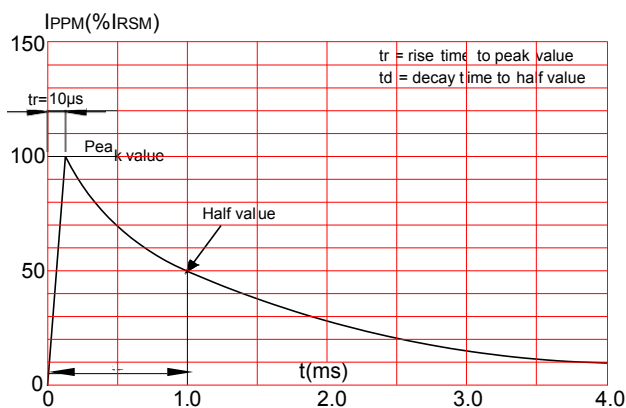
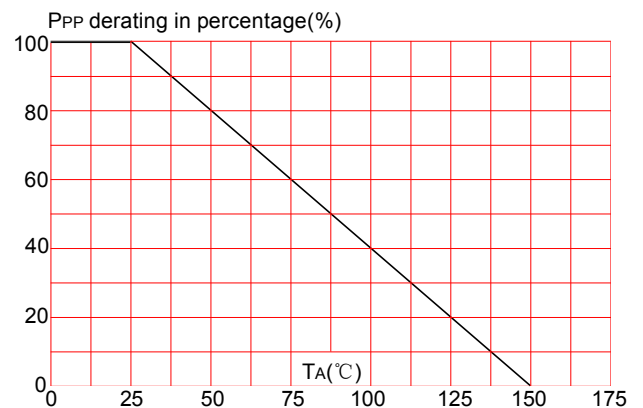
V_{BR}: Breakdown Voltage

V_C: Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{pp}

I_R: Reverse Leakage Current

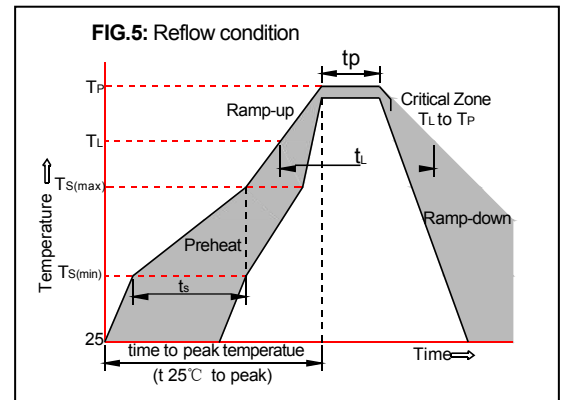
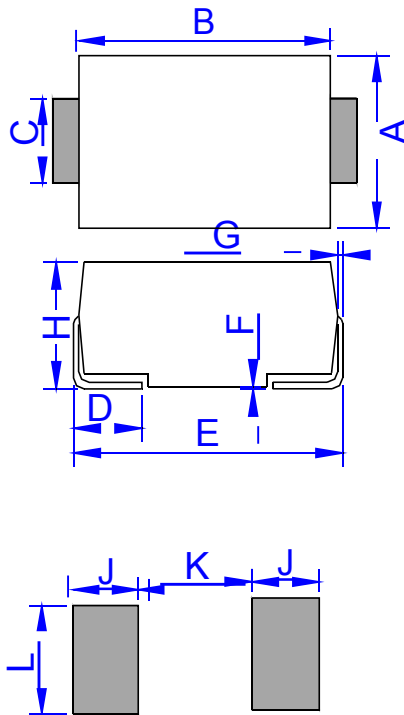
ORDERING INFORMATION

SMAJ	XX	C	A	H
400W SMA Series	V_R Voltage	C: Bi-directional	5% V_{BR} Voltage tolerance	For AEC-Q101

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, 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


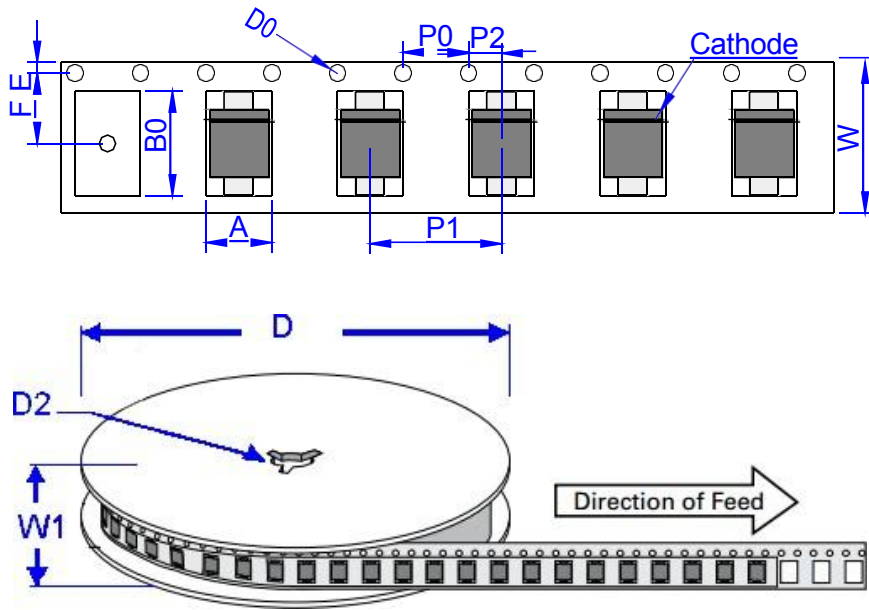
SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.5)
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 (Liquid us 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)(Liquid us)	+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)		30 secs. Max
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


DO-214AC (SMA)

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
A	2.79 ± 0.3	0.110 ± 0.012
B0	5.33 ± 0.3	0.210 ± 0.012
D	330.0	13.0
D0	1.55 ± 0.1	0.061 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
D2	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.	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)
SMAJxxAH/CAH	5,000	80,000	330