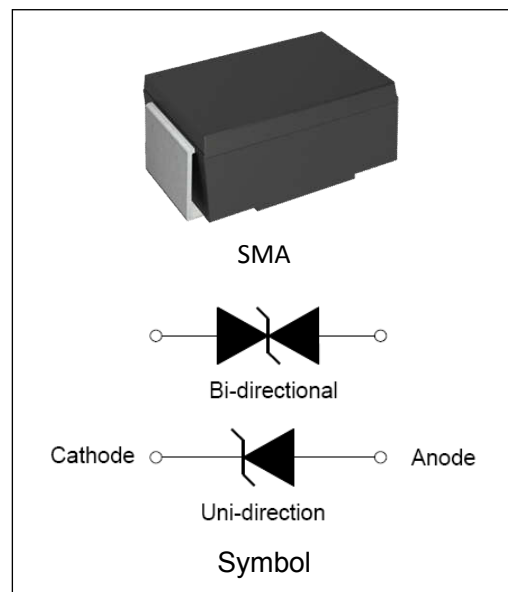


DESCRIPTION:

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
- Excellent clamping capability
- Repetition rate (duty cycle): 0.01%
- Typical I_R less than $1\mu A$ above 10V.
- Low profile package and low inductance
- 600W Peak Pulse power capability at $10 \times 1000\mu s$ waveform.
- Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- High temperature soldering: $260^\circ C/10s$ at terminals.
- Plastic package has Underwriters Laboratory Flammability 94V-0.
- For surface mounted applications in order to optimize board space
- AEC-Q101 qualified.



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

Parameter	Symbol	Value	Unit
Storage temperature range	T_{stg}	-55 to +150	$^\circ C$
Operating junction temperature range	T_j	-55 to +125	$^\circ C$
Steady state power dissipation at $T_L=75^\circ C$	$P_{M(AV)}$	5.0	W
Peak pulse power dissipation on 10/1000 μs waveform	P_{PP}	600	W
Maximum Instantaneous Forward Voltage at 50A for Unidirectional	V_F	5.0	V

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

Part Number		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
S-6AJ5.0A	S-6AJ5.0CA	5.0	100	6.40	7.00	10	9.2	65.2
S-6AJ6.0A	S-6AJ6.0CA	6.0	100	6.67	7.37	10	10.3	58.3
S-6AJ6.5A	S-6AJ6.5CA	6.5	50	7.22	7.98	10	11.2	53.6
S-6AJ7.0A	S-6AJ7.0CA	7.0	50	7.78	8.60	10	12.0	50.0
S-6AJ7.5A	S-6AJ7.5CA	7.5	50	8.33	9.21	1	12.9	46.5
S-6AJ8.0A	S-6AJ8.0CA	8.0	20	8.89	9.83	1	13.6	44.1
S-6AJ8.5A	S-6AJ8.5CA	8.5	10	9.44	10.40	1	14.4	41.7
S-6AJ9.0A	S-6AJ9.0CA	9.0	5	10.00	11.10	1	15.4	39.0
S-6AJ10A	S-6AJ10CA	10.0	2	11.10	12.30	1	17.0	35.3
S-6AJ11A	S-6AJ11CA	11.0	1	12.20	13.50	1	18.2	33.0
S-6AJ12A	S-6AJ12CA	12.0	1	13.30	14.70	1	19.9	30.2
S-6AJ13A	S-6AJ13CA	13.0	1	14.40	15.90	1	21.5	27.9
S-6AJ14A	S-6AJ14CA	14.0	1	15.60	17.20	1	23.2	25.9
S-6AJ15A	S-6AJ15CA	15.0	1	16.70	18.50	1	24.4	24.6
S-6AJ16A	S-6AJ16CA	16.0	1	17.80	19.70	1	26.0	23.1
S-6AJ17A	S-6AJ17CA	17.0	1	18.90	20.90	1	27.6	21.8
S-6AJ18A	S-6AJ18CA	18.0	1	20.00	22.10	1	29.2	20.6
S-6AJ20A	S-6AJ20CA	20.0	1	22.20	24.50	1	32.4	18.6
S-6AJ22A	S-6AJ22CA	22.0	1	24.40	26.90	1	35.5	16.9
S-6AJ24A	S-6AJ24CA	24.0	1	26.70	29.50	1	38.9	15.4
S-6AJ26A	S-6AJ26CA	26.0	1	28.90	31.90	1	42.1	14.3
S-6AJ28A	S-6AJ28CA	28.0	1	31.10	34.40	1	45.4	13.2
S-6AJ30A	S-6AJ30CA	30.0	1	33.30	36.80	1	48.4	12.4
S-6AJ33A	S-6AJ33CA	33.0	1	36.70	40.60	1	53.3	11.3
S-6AJ36A	S-6AJ36CA	36.0	1	40.00	44.20	1	58.1	10.4
S-6AJ40A	S-6AJ40CA	40.0	1	44.40	49.10	1	64.5	9.3
S-6AJ43A	S-6AJ43CA	43.0	1	47.80	52.80	1	69.4	8.7
S-6AJ45A	S-6AJ45CA	45.0	1	50.00	55.30	1	72.7	8.3
S-6AJ48A	S-6AJ48CA	48.0	1	53.30	58.90	1	77.4	7.8
S-6AJ51A	S-6AJ51CA	51.0	1	56.70	62.70	1	82.4	7.3

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

Part Number		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
S-6AJ54A	S-6AJ54CA	54.0	1	60.00	66.30	1	87.1	6.9
S-6AJ58A	S-6AJ58CA	58.0	1	64.40	71.20	1	93.6	6.4
S-6AJ60A	S-6AJ60CA	60.0	1	66.70	73.70	1	96.8	6.2
S-6AJ64A	S-6AJ64CA	64.0	1	71.10	78.60	1	103.0	5.8
S-6AJ70A	S-6AJ70CA	70.0	1	77.80	86.00	1	113.0	5.3
S-6AJ75A	S-6AJ75CA	75.0	1	83.30	92.10	1	121.0	5.0
S-6AJ78A	S-6AJ78CA	78.0	1	86.70	95.80	1	126.0	4.8
S-6AJ85A	S-6AJ85CA	85.0	1	94.40	104.0	1	137.0	4.4
S-6AJ90A	S-6AJ90CA	90.0	1	100.0	111.0	1	146.0	4.1
S-6AJ100A	S-6AJ100CA	100.0	1	100.0	111.0	1	162.0	3.7
S-6AJ110A	S-6AJ110CA	110.0	1	111.0	123.0	1	177.0	3.4
S-6AJ120A	S-6AJ120CA	120.0	1	122.0	135.0	1	193.0	3.1
S-6AJ130A	S-6AJ130CA	130.0	1	133.0	147.0	1	209.0	2.9
S-6AJ150A	S-6AJ150CA	150.0	1	144.0	159.0	1	243.0	2.5
S-6AJ160A	S-6AJ160CA	160.0	1	167.0	185.0	1	259.0	2.3
S-6AJ170A	S-6AJ170CA	170.0	1	178.0	197.0	1	275.0	2.2
S-6AJ180A	S-6AJ180CA	180.0	1	189.0	209.0	1	292.0	2.1
S-6AJ200A	S-6AJ200CA	200.0	1	201.0	222.0	1	324.0	1.9

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:

S-6AJ	xx	C	A
600W SMA Series	V_R Voltage	C: Bi-directional	5% V_{BR} Voltage tolerance

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

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

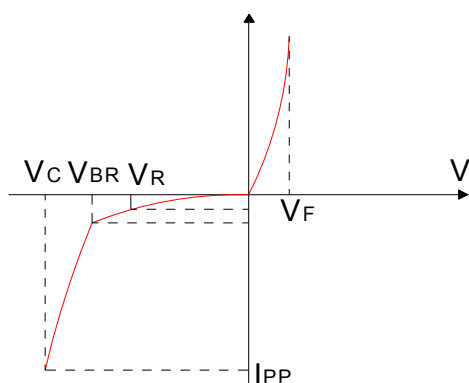


FIG.2: V- I curve characteristics (Bi-directional)

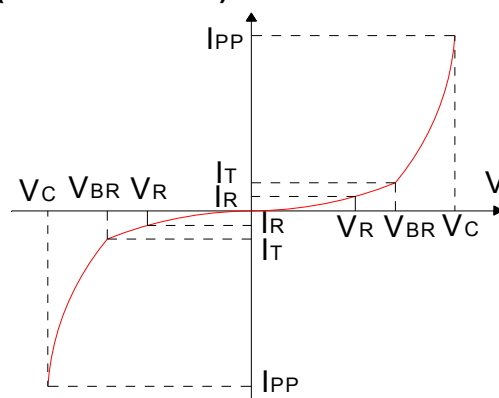


FIG.3: Pulse waveform

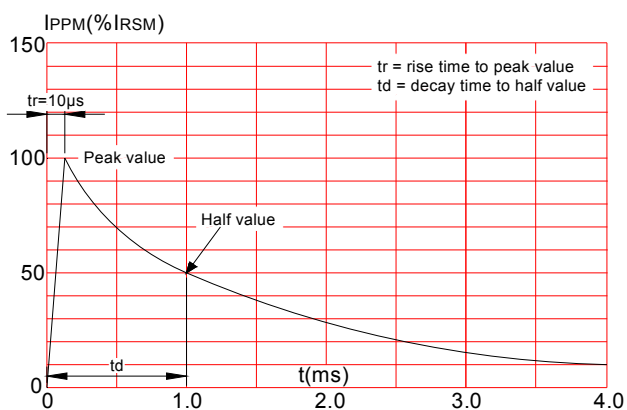
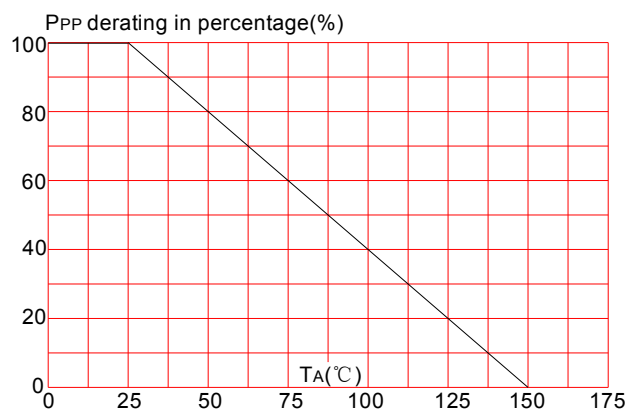
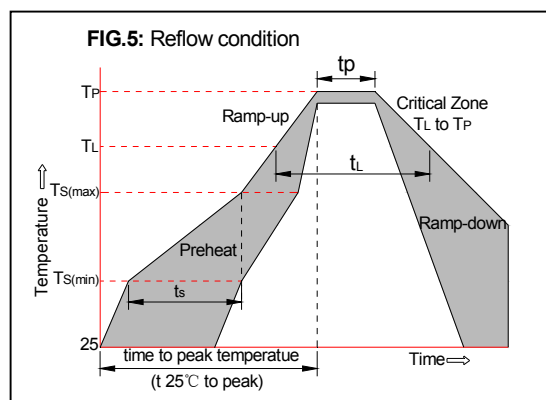


FIG.4: Pulse derating curve

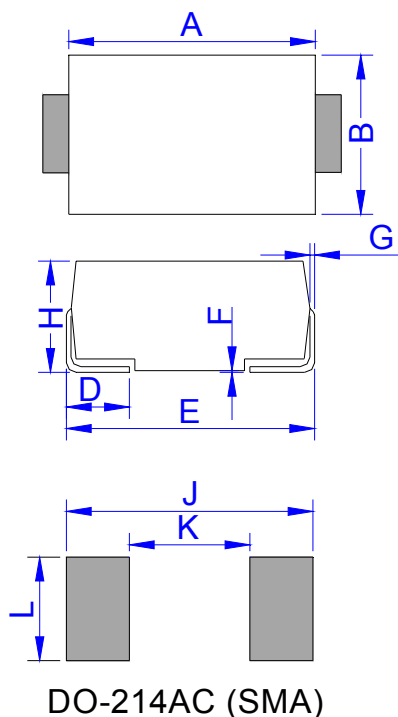


SOLDERING PARAMETERS

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

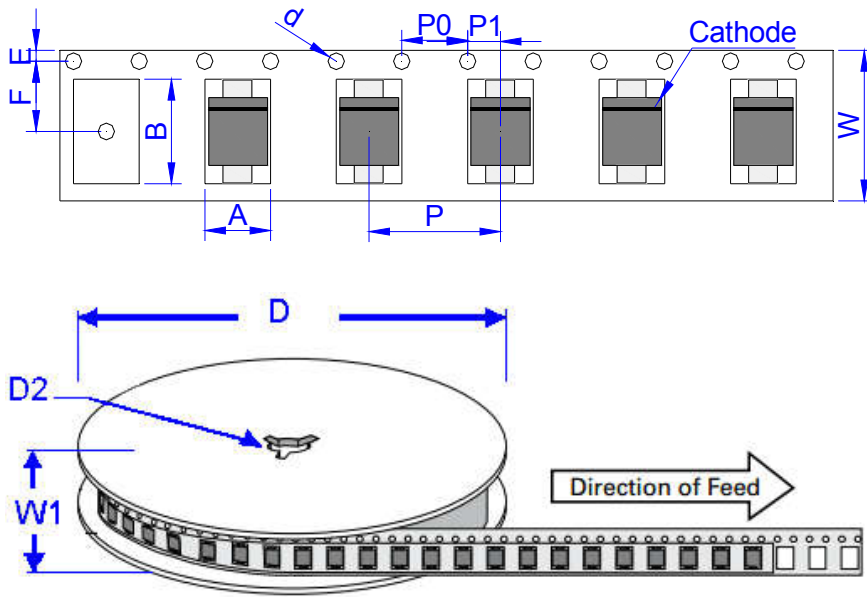


PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.65	0.167	0.183
B	2.50	2.90	0.098	0.114
C	1.35	1.65	0.053	0.065
D	0.76	1.52	0.030	0.060
E	4.93	5.28	0.194	0.208
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	1.98	2.41	0.078	0.095
J	6.50		0.256	
K		2.30		0.090
L	1.70		0.067	

TAPE AND REEL SPECIFICATION-SMA



Ref.	Dimensions	
	Millimeters	Inches
A	2.79 ± 0.3	0.110 ± 0.012
B	5.33 ± 0.3	0.210 ± 0.012
d	1.5 ± 0.1	0.059 ± 0.004
D	330.0	13.0
D2	13 ± 1	0.512 ± 0.039
E	1.5 ± 0.2	0.059 ± 0.008
F	5.65 ± 0.2	0.222 ± 0.008
P	4.0 ± 0.2	0.157 ± 0.008
P0	4.0 ± 0.2	0.157 ± 0.008
P1	2.0 ± 0.2	0.079 ± 0.008
W	12.0 ± 0.2	0.472 ± 0.008
W1	16.8 ± 2.0	0.661 ± 0.079

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)
TAPING	5,000	80,000	330