

3000W Transient Voltage Suppressor

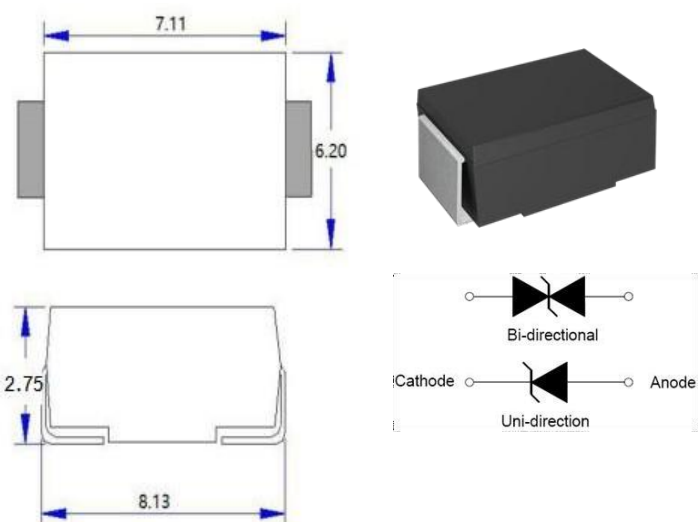
Description

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%
- Low profile package and low inductance
- 3000W Peak Pulse power capability at 10×1000µs waveform.
- Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- High temperature soldering: 260°C/10s at terminals.
- Plastic package has Underwriters Laboratory Flammability 94V-0.
- For surface mounted applications in order to optimize board space.

Dimensions & Symbol (Unit: mm Max)



Mechanical Characteristics

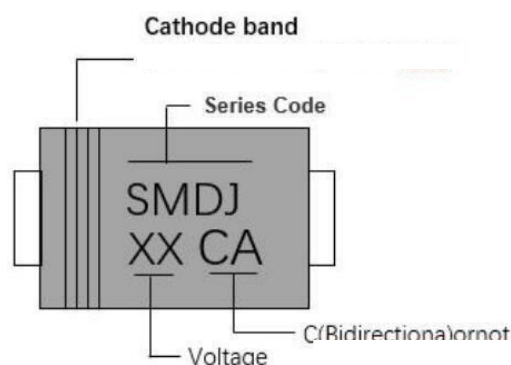
Package: SMC/DO-214AB

- Case Material: “Green” MoldingCompound.
- UL Flammability Classification Rating 94V-0
- Polarity: Color band denotes cathode except bi-directional models
- Standard Packaging: 12mm tape (EIA STD RS-481)
- Weight: 0.28g
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- I/O Interface.
- AC/DC Power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

Marking Information



Ordering information

Out line	Reel (pcs)	Per carton (pcs)	Reel diameters (mm)
Taping	3K	48K	330

Electrical characteristics($T_A=25^{\circ}\text{C}$)

Part Number		Marking		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	I_{PP}
Uni-Polar	Bi-Polar	Uni	Bi	V	μA	min(V)	max(V)	mA	max(V)	A
SMDJ5.0A	SMDJ5.0CA	SMDJ5.0A	SMDJ5.0CA	5	800	6.4	7	10	9.2	326.1
SMDJ6.0A	SMDJ6.0CA	SMDJ6.0A	SMDJ6.0CA	6	800	6.67	7.37	10	10.3	291
SMDJ 6.5A	SMDJ6.5CA	SMDJ 6.5A	SMDJ6.5CA	6.5	500	7.22	7.98	10	11.2	267.9
SMDJ7.0 A	SMDJ7.0CA	SMDJ7.0 A	SMDJ7.0CA	7	200	7.78	8.6	10	12	250
SMDJ 7.5A	SMDJ7.5CA	SMDJ 7.5A	SMDJ7.5CA	7.5	100	8.33	9.21	1	12.9	232.6
SMDJ 8.0A	SMDJ8.0CA	SMDJ 8.0A	SMDJ8.0CA	8	50	8.89	9.83	1	13.6	220.6
SMDJ8.5 A	SMDJ8.5CA	SMDJ8.5 A	SMDJ8.5CA	8.5	20	9.44	10.4	1	14.4	208.3
SMDJ9.0 A	SMDJ9.0CA	SMDJ9.0 A	SMDJ9.0CA	9	5	10	11.1	1	15.4	194.8
SMDJ10A	SMDJ10CA	SMDJ10A	SMDJ10CA	10	1	11.1	12.3	1	17	176.5
SMDJ11A	SMDJ11CA	SMDJ11A	SMDJ11CA	11	1	12.2	13.5	1	18.2	164.8
SMDJ12A	SMDJ12CA	SMDJ12A	SMDJ12CA	12	1	13.3	14.7	1	19.9	150.8
SMDJ13A	SMDJ13CA	SMDJ13A	SMDJ13CA	13	1	14.4	15.9	1	21.5	139.5
SMDJ14A	SMDJ14CA	SMDJ14A	SMDJ14CA	14	1	15.6	17.2	1	23.2	129.3
SMDJ15A	SMDJ15CA	SMDJ15A	SMDJ15CA	15	1	16.7	18.5	1	24.4	123
SMDJ16A	SMDJ16CA	SMDJ16A	SMDJ16CA	16	1	17.8	19.7	1	26	115.4
SMDJ17A	SMDJ17CA	SMDJ17A	SMDJ17CA	17	1	18.9	20.9	1	27.6	108.7
SMDJ18A	SMDJ18CA	SMDJ18A	SMDJ18CA	18	1	20	22.1	1	29.2	102.7
SMDJ20A	SMDJ20CA	SMDJ20A	SMDJ20CA	20	1	22.2	24.5	1	32.4	92.6
SMDJ22A	SMDJ22CA	SMDJ22A	SMDJ22CA	22	1	24.4	26.9	1	35.5	84.5
SMDJ24A	SMDJ24CA	SMDJ24A	SMDJ24CA	24	1	26.7	29.5	1	38.9	77.1
SMDJ26A	SMDJ26CA	SMDJ26A	SMDJ26CA	26	1	28.9	31.9	1	42.1	71.3
SMDJ28A	SMDJ28CA	SMDJ28A	SMDJ28CA	28	1	31.1	34.4	1	45.4	66.1
SMDJ30A	SMDJ30CA	SMDJ30A	SMDJ30CA	30	1	33.3	36.8	1	48.4	62
SMDJ33A	SMDJ33CA	SMDJ33A	SMDJ33CA	33	1	36.7	40.6	1	53.3	56.3
SMDJ36A	SMDJ36CA	SMDJ36A	SMDJ36CA	36	1	40	44.2	1	58.1	51.6
SMDJ40A	SMDJ40CA	SMDJ40A	SMDJ40CA	40	1	44.4	49.1	1	64.5	46.5
SMDJ43A	SMDJ43CA	SMDJ43A	SMDJ43CA	43	1	47.8	52.8	1	69.4	43.2
SMDJ45A	SMDJ45CA	SMDJ45A	SMDJ45CA	45	1	50	55.3	1	72.7	41.3
SMDJ48A	SMDJ48CA	SMDJ48A	SMDJ48CA	48	1	53.3	58.9	1	77.4	38.8
SMDJ51A	SMDJ51CA	SMDJ51A	SMDJ51CA	51	1	56.7	62.7	1	82.4	36.4

Electrical characteristics($T_A=25^{\circ}\text{C}$)

Part Number		Marking		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	I_{PP}
Uni-Polar	Bi-Polar	Uni	Bi	V	μA	min(V)	max(V)	mA	max(V)	A
SMDJ54A	SMDJ54CA	SMDJ54A	SMDJ54CA	54.0	1	60.0	66.3	1	87.1	34.4
SMDJ58A	SMDJ58CA	SMDJ58A	SMDJ58CA	58.0	1	64.4	71.2	1	93.6	32.1
SMDJ60A	SMDJ60CA	SMDJ60A	SMDJ60CA	60.0	1	66.7	73.7	1	96.8	31
SMDJ64A	SMDJ64CA	SMDJ64A	SMDJ64CA	64.0	1	71.1	78.6	1	103	29.1
SMDJ70A	SMDJ70CA	SMDJ70A	SMDJ70CA	70.0	1	77.8	86.0	1	113	26.5
SMDJ75A	SMDJ75CA	SMDJ75A	SMDJ75CA	75.0	1	83.3	92.1	1	121	24.8
SMDJ78A	SMDJ78CA	SMDJ78A	SMDJ78CA	78.0	1	86.70	95.8	1	126	23.8
SMDJ85A	SMDJ85CA	SMDJ85A	SMDJ85CA	85.0	1	94.4	104.0	1	137	21.9
SMDJ90A	SMDJ90CA	SMDJ90A	SMDJ90CA	90.0	1	100.0	111.0	1	146	20.5
SMDJ100A	SMDJ100CA	SMDJ100A	SMDJ100CA	100.0	1	111.0	123.0	1	162	18.5
SMDJ110A	SMDJ110CA	SMDJ110A	SMDJ110CA	110.0	1	122.0	135.0	1	177	16.9
SMDJ120A	SMDJ120CA	SMDJ120A	SMDJ120CA	120.0	1	133.0	147.0	1	193	15.5
SMDJ130A	SMDJ130CA	SMDJ130A	SMDJ130CA	130.0	1	144.0	159.0	1	209	14.4
SMDJ150A	SMDJ150CA	SMDJ150A	SMDJ150CA	150.0	1	167.0	185.0	1	243	12.3
SMDJ160A	SMDJ160CA	SMDJ160A	SMDJ160CA	160.0	1	178.0	197.0	1	259	11.6
SMDJ170A	SMDJ170CA	SMDJ170A	SMDJ170CA	170.0	1	189.0	209.0	1	275	10.9
SMDJ180A	SMDJ180CA	SMDJ180A	SMDJ180CA	180.0	1	201.0	222.0	1	292	10.3
SMDJ190A	SMDJ190CA	SMDJ190A	SMDJ190CA	190.0	1	211.0	233.0	1	308	9.7
SMDJ200A	SMDJ200CA	SMDJ200A	SMDJ200CA	200.0	1	224.0	247.0	1	324	9.3
SMDJ210A	SMDJ210CA	SMDJ210A	SMDJ210CA	210.0	1	237.0	263.0	1	340	8.8
SMDJ220A	SMDJ220CA	SMDJ220A	SMDJ220CA	220.0	1	246.0	272.0	1	356	8.4
SMDJ250A	SMDJ250CA	SMDJ250A	SMDJ250CA	250.0	1	279.0	309.0	1	405	7.8
SMDJ300A	SMDJ300CA	SMDJ300A	SMDJ300CA	300.0	1	335.0	371.0	1	486	6.5
SMDJ350A	SMDJ350CA	SMDJ350A	SMDJ350CA	350.0	1	391.0	432.0	1	567	5.5
SMDJ400A	SMDJ400CA	SMDJ400A	SMDJ400CA	400.0	1	447.0	494.0	1	648	4.8
SMDJ440A	SMDJ440CA	SMDJ440A	SMDJ440CA	440.0	1	492.0	543.0	1	713	4.4

① Surge waveform: 10/1000 μs

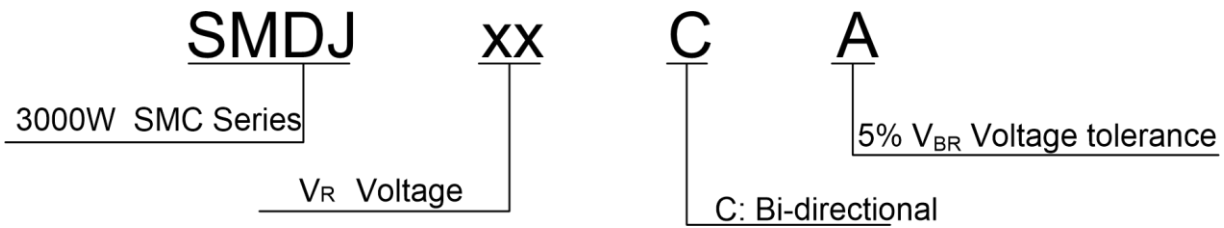
V_R : Stand-off Voltage -- Maximum voltage that can be applied

V_{BR} : Breakdown Voltage

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

I_R : Reverse Leakage Current

Part Number Code



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 +150	$^{\circ}C$
Steady state power dissipation at $T_L=75^{\circ}C$	$P_{M(AV)}$	8.0	W
Peak pulse power dissipation on 10/1000 μ s waveform	P_{PP}	3000	W
Maximum Instantaneous Forward Voltage at 30A for Unidirectional	V_F	5.0	V

Ratings And V-I Characteristics Curves ($T_A=25^{\circ}C$, unless otherwise noted)

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

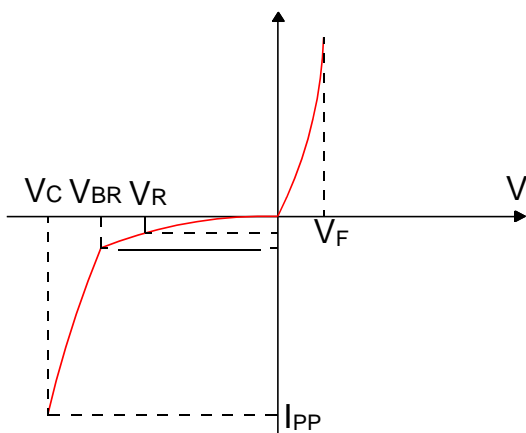
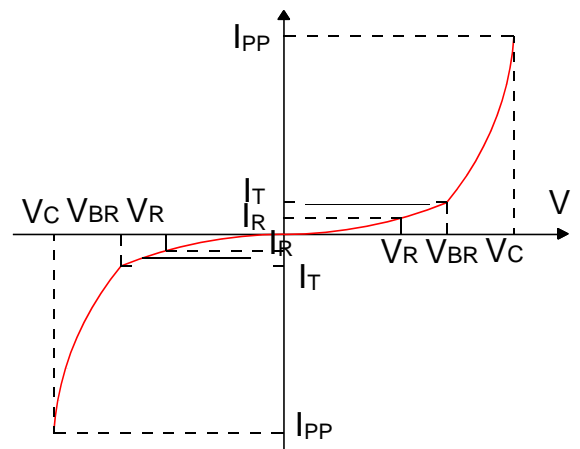


FIG.2:V- I curve characteristics (Bi-directional)



Typical Characteristics

FIG.3: Pulse waveform

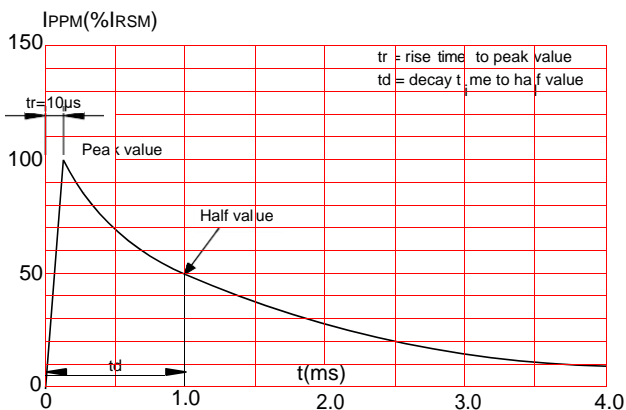
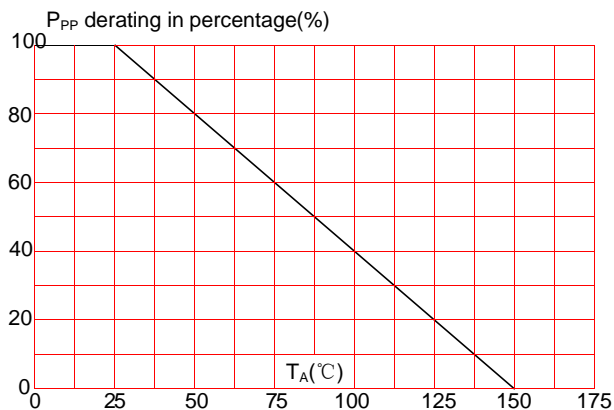
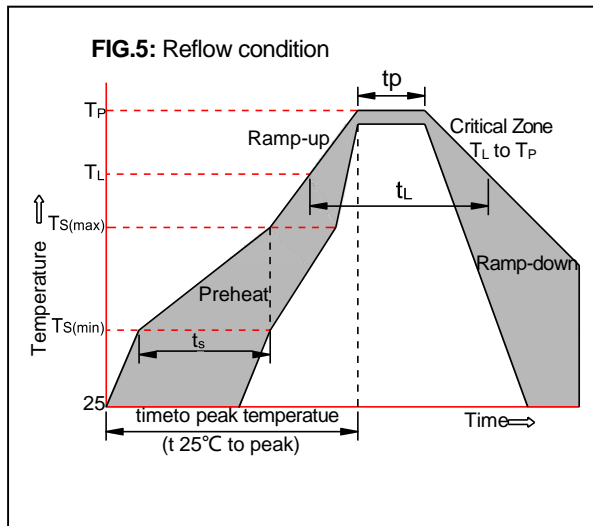


FIG.4: Pulse derating curve

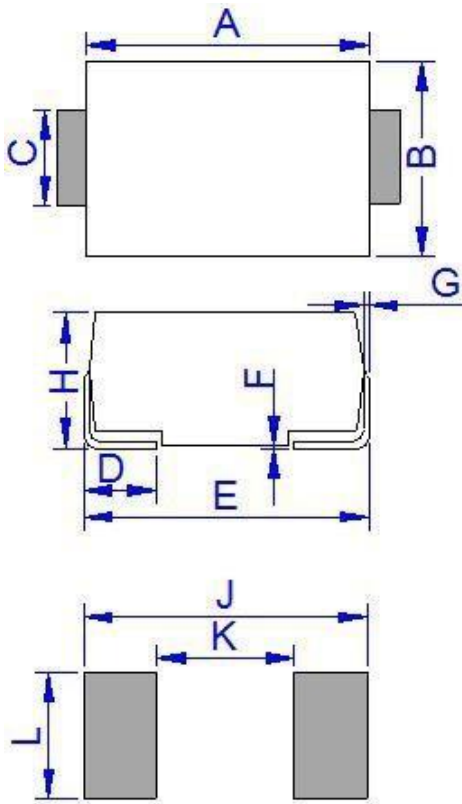


Soldering Parameters

Reflow Condition		Pb-Free assembly (see as below)
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-214AB (SMC)

Ref	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	6.60	7.11	0.260	0.280
B	5.59	6.20	0.220	0.24
C	2.75	3.20	0.108	0.126
D	0.76	1.52	0.030	0.060
E	7.71	8.13	0.305	0.320
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.06	2.75	0.085	0.180
J	8.12		0.32	
K		4.69		0.185
L	3.07		0.121	