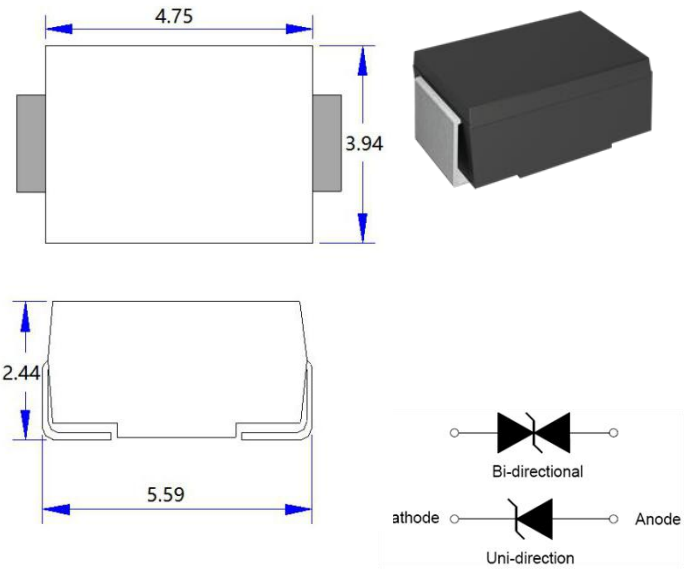
Description

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
- 1000W 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℃/10s at terminals.
- For surface mounted applications in order to optimize board space.

Dimensions & Symbol（Unit: mm Max）



Mechanical Characteristics

Package: SMB/DO-214AA

- Case Material: “Green” Molding Compound.
- Polarity: Color band denotes cathode except bi-directional models
- Standard Packaging: 12mm tape (EIA STD RS-481)
- Weight: 0.10g
- 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

C5 : Device Marking Code
1409: In ninth week, 2014

Ordering Information

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

Electrical Characteristics (T_A=25℃)

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	μA	min(V)	max(V)	mA	max(V)	A
10BJ5.0A	10BJ5.0CA	A5	C5	5.0	800	6.40	7.00	10	9.2	108.7
10BJ6.0A	10BJ6.0CA	A6	C6	6.0	800	6.67	7.37	10	10.3	97.1
10BJ6.5A	10BJ6.5CA	A6V	C6V	6.5	500	7.22	7.98	10	11.2	89.3
10BJ7.0A	10BJ7.0CA	A7	C7	7.0	200	7.78	8.60	10	12.0	83.4
10BJ7.5A	10BJ7.5CA	A7V	C7V	7.5	100	8.33	9.21	1	12.9	77.6
10BJ8.0A	10BJ8.0CA	A8	C8	8.0	50	8.89	9.83	1	13.6	73.6
10BJ8.5A	10BJ8.5CA	A8V	C8V	8.5	20	9.44	10.40	1	14.4	69.5
10BJ9.0A	10BJ9.0CA	A9	C9	9.0	10	10.00	11.10	1	15.4	65.0
10BJ10A	10BJ10CA	A10	C10	10	10	11.10	12.30	1	17.0	58.9
10BJ11A	10BJ11CA	A11	C11	11	1	12.20	13.50	1	18.2	55.0
10BJ12A	10BJ12CA	A12	C12	12	1	13.30	14.70	1	19.9	50.3
10BJ13A	10BJ13CA	A13	C13	13	1	14.40	15.90	1	21.5	46.6
10BJ14A	10BJ14CA	A14	C14	14	1	15.60	17.20	1	23.2	43.1
10BJ15A	10BJ15CA	A15	C15	15	1	16.70	18.50	1	24.4	41.0
10BJ16A	10BJ16CA	A16	C16	16	1	17.80	19.70	1	26.0	38.5
10BJ17A	10BJ17CA	A17	C17	17	1	18.90	20.90	1	27.6	36.3
10BJ18A	10BJ18CA	A18	C18	18	1	20.00	22.10	1	29.2	34.3
10BJ20A	10BJ20CA	A20	C20	20	1	22.20	24.50	1	32.4	30.9
10BJ22A	10BJ22CA	A22	C22	22	1	24.40	26.90	1	35.5	28.2
10BJ24A	10BJ24CA	A24	C24	24	1	26.70	29.50	1	38.9	25.7
10BJ26A	10BJ26CA	A26	C26	26	1	28.90	31.90	1	42.1	23.8
10BJ28A	10BJ28CA	A28	C28	28	1	31.10	34.40	1	45.4	22.1
10BJ30A	10BJ30CA	A30	C30	30	1	33.30	36.80	1	48.4	20.7
10BJ33A	10BJ33CA	A33	C33	33	1	36.70	40.60	1	53.3	18.8
10BJ36A	10BJ36CA	A36	C36	36	1	40.00	44.20	1	58.1	17.2
10BJ40A	10BJ40CA	A40	C40	40	1	44.40	49.10	1	64.5	15.5
10BJ43A	10BJ43CA	A43	C43	43	1	47.80	52.80	1	69.4	14.4
10BJ45A	10BJ45CA	A45	C45	45	1	50.00	55.30	1	72.7	13.8
10BJ48A	10BJ48CA	A48	C48	48	1	53.30	58.90	1	77.4	13.0

Electrical Characteristics (T_A=25℃, continued)

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	μA	min(V)	max(V)	mA	max(V)	A
10BJ51A	10BJ51CA	A51	C51	51	1	56.70	62.70	1	82.4	12.2
10BJ54A	10BJ54CA	A54	C54	54	1	60.00	66.30	1	87.1	11.5
10BJ58A	10BJ58CA	A58	C58	58	1	64.40	71.20	1	93.6	10.7
10BJ60A	10BJ60CA	A60	C60	60	1	66.70	73.70	1	96.8	10.3
10BJ64A	10BJ64CA	A64	C64	64	1	71.10	78.60	1	103.0	9.7
10BJ70A	10BJ70CA	A70	C70	70	1	77.80	86.00	1	113.0	8.9
10BJ75A	10BJ75CA	A75	C75	75	1	83.30	92.10	1	121.0	8.3
10BJ78A	10BJ78CA	A78	C78	78	1	86.70	95.80	1	126.0	7.9
10BJ85A	10BJ85CA	A85	C85	85	1	94.40	104.0	1	137.0	7.3
10BJ90A	10BJ90CA	A90	C90	90	1	100.0	111.0	1	146.0	6.9
10BJ100A	10BJ100CA	A100	C100	100	1	111.0	123.0	1	162.0	6.2
10BJ110A	10BJ110CA	A110	C100	110	1	122.0	135.0	1	177.0	5.6
10BJ120A	10BJ120CA	A120	C120	120	1	133.0	147.0	1	193.0	5.2
10BJ130A	10BJ130CA	A130	C130	130	1	144.0	159.0	1	209.0	4.8
10BJ150A	10BJ150CA	A150	C150	150	1	167.0	185.0	1	243.0	4.2
10BJ160A	10BJ160CA	A160	C160	160	1	178.0	197.0	1	259.0	3.9
10BJ170A	10BJ170CA	A170	C170	170	1	189.0	209.0	1	275.0	3.7
10BJ180A	10BJ180CA	A180	C180	180	1	201.0	222.0	1	292.0	3.5
10BJ190A	10BJ190CA	A190	C190	190	1	211.0	234.0	1	307.0	3.3
10BJ200A	10BJ200CA	A200	C200	200	1	224.0	247.0	1	324.0	3.1

① Surge waveform: 10/1000μs

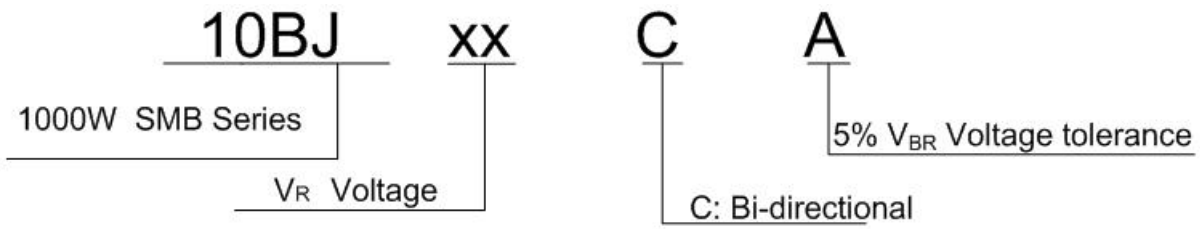
V_R ： Stand-off Voltage -- Maximum voltage that can be applied

V_{BR}： Breakdown Voltage

V_C：Clamping Voltage -- Peak voltage measured across the suppressor at a specified Ipp

I_R： Reverse Leakage Current

Part Number Code



Absolute Maximum Ratings (T_A=25ºC, RH=45%-75%, unless otherwise noted)

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

Ratings And V-I Characteristics Curves (T_A=25ºC, unless otherwise noted)

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

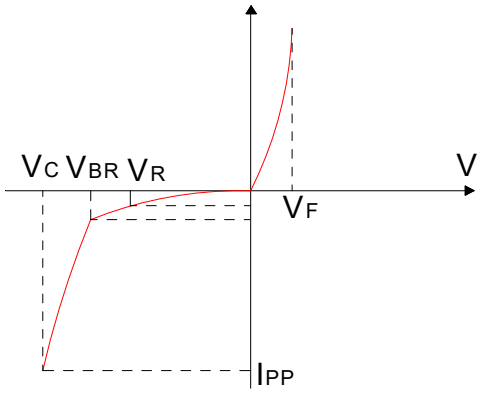


FIG.2:V- I curve characteristics (Bi-directional)

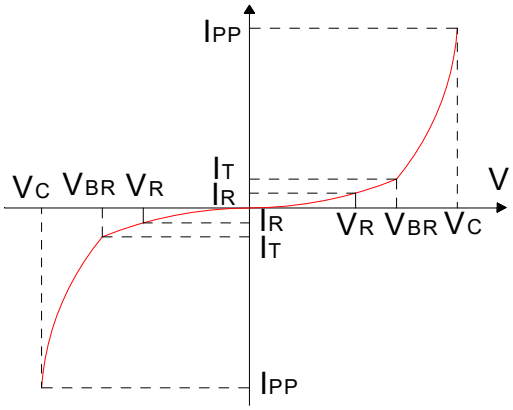


FIG.3: Pulse waveform

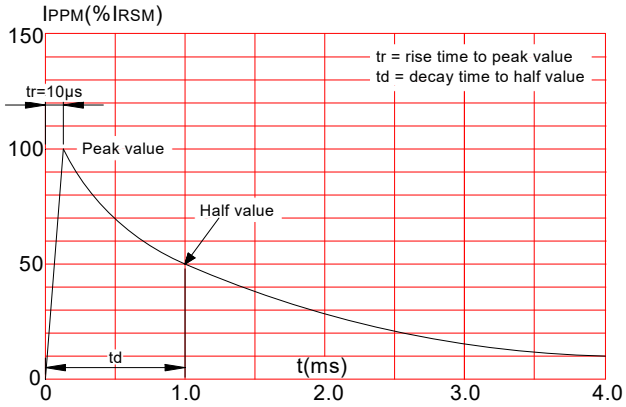
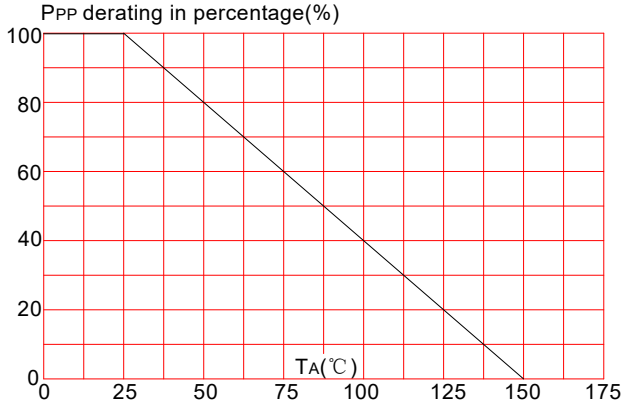


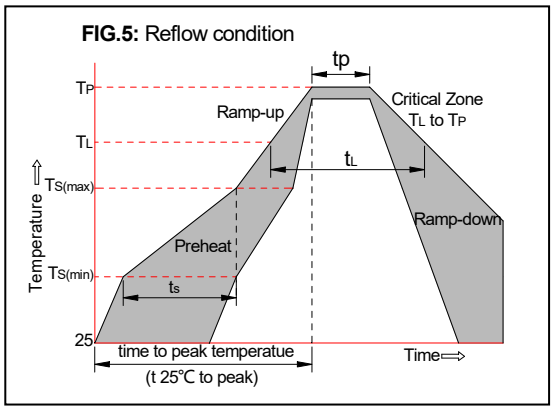
FIG.4: Pulse derating curve



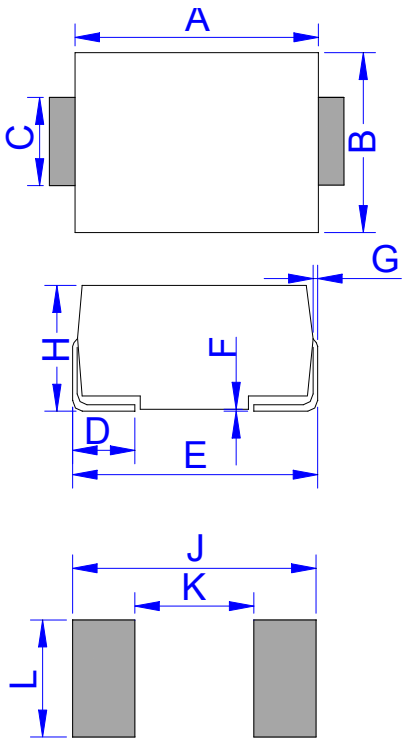
Soldering Parameters

Reflow Condition		Pb-Free assembly (see FIG.5)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG.5: Reflow condition



Package Mechanical Data

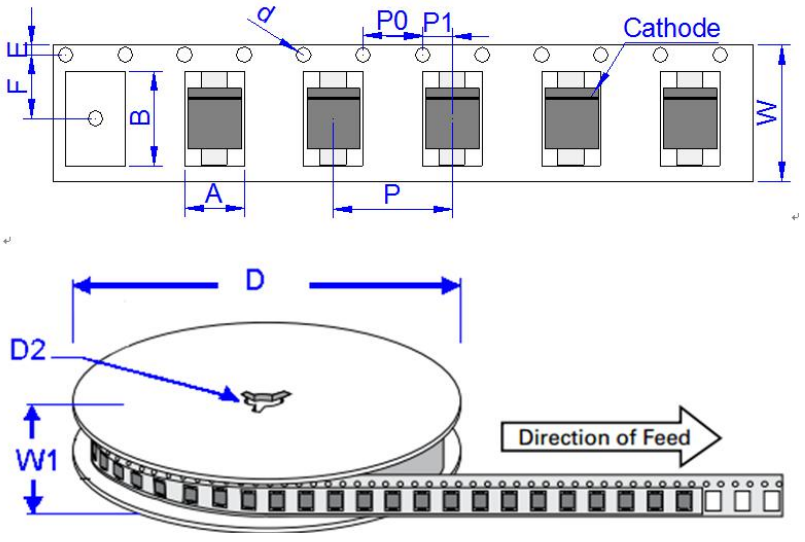


DO-214AA (SMB)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.22	4.75	0.166	0.187
B	3.30	3.94	0.130	0.155
C	1.85	2.21	0.073	0.087
D	0.76	1.52	0.030	0.060
E	5.08	5.59	0.200	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	1.95	2.44	0.077	0.096
J	6.80		0.270	
K		2.60		0.100
L	2.40		0.090	

Tape & Reel Specification - SMB

Ref.	Dimensions	
	Millimeters	Inches
A	3.76 ± 0.2	0.144 ± 0.012
B	5.69 ± 0.2	0.244 ± 0.012
d	1.5 ± 0.25	0.059 ± 0.004
D	330.0	13.0
D2	13 ± 1	0.512 ± 0.039
E	1.75 ± 0.2	0.059 ± 0.008
F	5.5 ± 0.1	0.222 ± 0.008
P	8.0 ± 0.2	0.315 ± 0.008
P0	4.0 ± 0.2	0.157 ± 0.008
P1	2.0 ± 0.2	0.079 ± 0.008
W	12.0 ± 0.3	0.472 ± 0.008
W1	16.8 ± 2.0	0.661 ± 0.079



Contact Information

WPMTEK Incorporated Limited

Floor 1 Building 4#, Binxianghua Industry Park, No.7,

Huada Road, Hualian Community, Longhua New District, Shenzhen

TEL：86755-29308003 FAX：86755-23739900