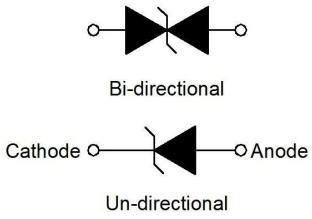
1000W Transient Voltage Suppressor

Parameter	Value	Unit
P_{PP}	1000	W
V_{RWM}	5~440	V
T_j	-55 to +150	°C



SMB / DO-214AA

Features

- For surface mounted applications
- Excellent clamping capability
- 1000W peak pulse power capability with a 10/1000μs waveform
- Low profile package and low inductance
- Typical I_R less than 1uA above 10V
- Fast response time: typically less than 1.0ps from 0V to V_{BR} min

Applications

- Computer System
- Domestic Appliance
- Video Input

Maximum Rated Values (at T_j = 25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000μs waveform	P_{PP}	1000	W
Steady state power dissipation at T_L=75℃	$P_{M(AV)}$	5.0	W
Operating junction temperature range	T_j	-55 to +150	°C
Storage temperature range	T_{stg}	-55 to +150	°C

Electrical Characteristics (at Tj = 25°C unless otherwise specified)

Part Number		VR	IR@VR	VBR@IT		IT	VC@IPP	IPP①
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
1.0SMBJ5.0A	1.0SMBJ5.0CA	5.0	800	6.40	7.00	10	9.2	108.70
1.0SMBJ6.0A	1.0SMBJ6.0CA	6.0	800	6.67	7.37	10	10.3	97.09
1.0SMBJ6.5A	1.0SMBJ6.5CA	6.5	500	7.22	7.98	10	11.2	89.29
1.0SMBJ7.0A	1.0SMBJ7.0CA	7.0	200	7.78	8.60	10	12.0	83.34
1.0SMBJ7.5A	1.0SMBJ7.5CA	7.5	100	8.33	9.21	1	12.9	77.52
1.0SMBJ8.0A	1.0SMBJ8.0CA	8.0	50	8.89	9.83	1	13.6	73.53
1.0SMBJ8.5A	1.0SMBJ8.5CA	8.5	20	9.44	10.40	1	14.4	69.45
1.0SMBJ9.0A	1.0SMBJ9.0CA	9.0	10	10.00	11.10	1	15.4	64.94
1.0SMBJ10A	1.0SMBJ10CA	10.0	5	11.10	12.30	1	17.0	58.83
1.0SMBJ11A	1.0SMBJ11CA	11.0	1	12.20	13.50	1	18.2	54.95
1.0SMBJ12A	1.0SMBJ12CA	12.0	1	13.30	14.70	1	19.9	50.26
1.0SMBJ13A	1.0SMBJ13CA	13.0	1	14.40	15.90	1	21.5	46.52

1.0SMBJ14A	1.0SMBJ14CA	14.0	1	15.60	17.20	1	23.2	43.11
1.0SMBJ15A	1.0SMBJ15CA	15.0	1	16.70	18.50	1	24.4	40.99
1.0SMBJ16A	1.0SMBJ16CA	16.0	1	17.80	19.70	1	26.0	38.47
1.0SMBJ17A	1.0SMBJ17CA	17.0	1	18.90	20.90	1	27.6	36.24
1.0SMBJ18A	1.0SMBJ18CA	18.0	1	20.00	22.10	1	29.2	34.25
1.0SMBJ20A	1.0SMBJ20CA	20.0	1	22.20	24.50	1	32.4	30.87
1.0SMBJ22A	1.0SMBJ22CA	22.0	1	24.40	26.90	1	35.5	28.17
1.0SMBJ24A	1.0SMBJ24CA	24.0	1	26.70	29.50	1	38.9	25.71
1.0SMBJ26A	1.0SMBJ26CA	26.0	1	28.90	31.90	1	42.1	23.76
1.0SMBJ28A	1.0SMBJ28CA	28.0	1	31.10	34.40	1	45.4	22.03
1.0SMBJ30A	1.0SMBJ30CA	30.0	1	33.30	36.80	1	48.4	20.67
1.0SMBJ33A	1.0SMBJ33CA	33.0	1	36.70	40.60	1	53.3	18.77
1.0SMBJ36A	1.0SMBJ36CA	36.0	1	40.00	44.20	1	58.1	17.22
1.0SMBJ40A	1.0SMBJ40CA	40.0	1	44.40	49.10	1	64.5	15.75
1.0SMBJ43A	1.0SMBJ43CA	43.0	1	47.80	52.80	1	69.4	14.41
1.0SMBJ45A	1.0SMBJ45CA	45.0	1	50.00	55.30	1	72.7	13.76
1.0SMBJ48A	1.0SMBJ48CA	48.0	1	53.30	58.90	1	77.4	12.92
1.0SMBJ51A	1.0SMBJ51CA	51.0	1	56.70	62.70	1	82.4	12.14
1.0SMBJ54A	1.0SMBJ54CA	54.0	1	60.00	66.30	1	87.1	11.40
1.0SMBJ75A	1.0SMBJ75CA	75.0	1	83.30	92.10	1	121.0	8.27
1.0SMBJ78A	1.0SMBJ78CA	78.0	1	86.70	95.80	1	126.0	7.94
1.0SMBJ85A	1.0SMBJ85CA	85.0	1	94.40	104.0	1	137.0	7.30
1.0SMBJ90A	1.0SMBJ90CA	90.0	1	100.0	111.0	1	146.0	6.85
1.0SMBJ100A	1.0SMBJ100CA	100.0	1	111.0	123.0	1	162.0	6.18
1.0SMBJ110A	1.0SMBJ110CA	110.0	1	122.0	135.0	1	177.0	5.65
1.0SMBJ120A	1.0SMBJ120CA	120.0	1	133.0	147.0	1	193.0	5.19
1.0SMBJ130A	1.0SMBJ130CA	130.0	1	144.0	159.0	1	209.0	4.79
1.0SMBJ150A	1.0SMBJ150CA	150.0	1	167.0	185.0	1	243.0	4.12
1.0SMBJ160A	1.0SMBJ160CA	160.0	1	178.0	197.0	1	259.0	3.87
1.0SMBJ170A	1.0SMBJ170CA	170.0	1	189.0	209.0	1	275.0	3.64
1.0SMBJ180A	1.0SMBJ180CA	180.0	1	201.0	222.0	1	292.0	3.43
1.0SMBJ190A	1.0SMBJ190CA	190.0	1	209.0	233.0	1	308.0	3.25
1.0SMBJ200A	1.0SMBJ200CA	200.0	1	224.0	247.0	1	324.0	3.09
1.0SMBJ210A	1.0SMBJ210CA	210.0	1	237.0	263.0	1	340.0	2.95
1.0SMBJ220A	1.0SMBJ220CA	220.0	1	246.0	272.0	1	356.0	2.81
1.0SMBJ250A	1.0SMBJ250CA	250.0	1	279.0	309.0	1	405.0	2.47
1.0SMBJ300A	1.0SMBJ300CA	300.0	1	335.0	371.0	1	486.0	2.06
1.0SMBJ350A	1.0SMBJ350CA	350.0	1	391.0	432.0	1	567.0	1.77
1.0SMBJ400A	1.0SMBJ400CA	400.0	1	447.0	494.0	1	648.0	1.55
1.0SMBJ440A	1.0SMBJ440CA	440.0	1	492.0	543.0	1	713.0	1.41

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

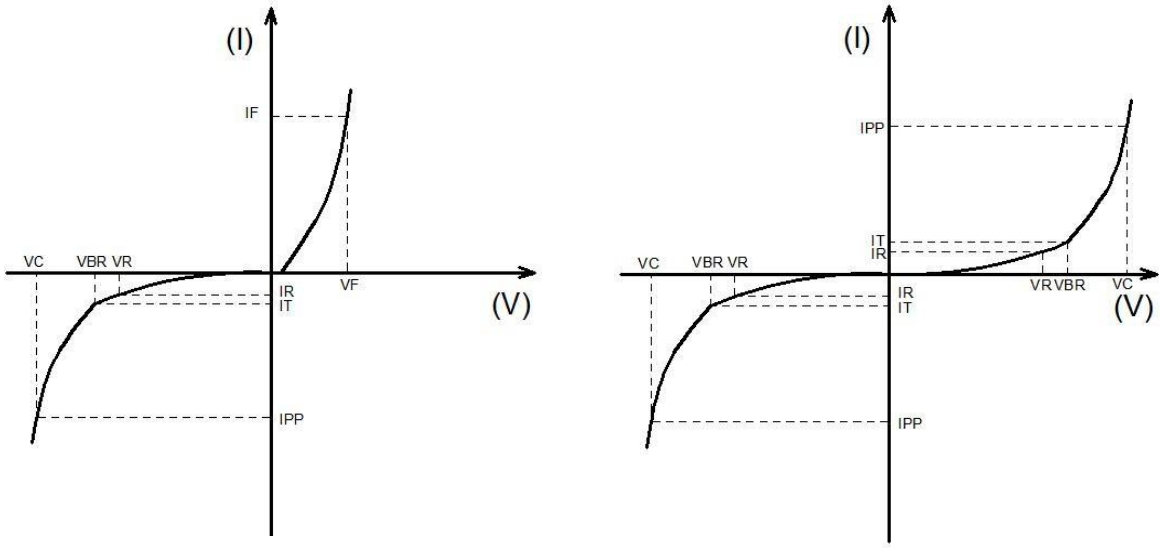


FIG1：V-I cure characteristics

Symbol	Parameter
I_F	Mean Forward Current
V_F	Maximum Forward Voltage @I_F
V_R	Peak Reverse Working Voltage
T_R	Reverse Leakage Current @ V_R
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}

Typical Characteristics

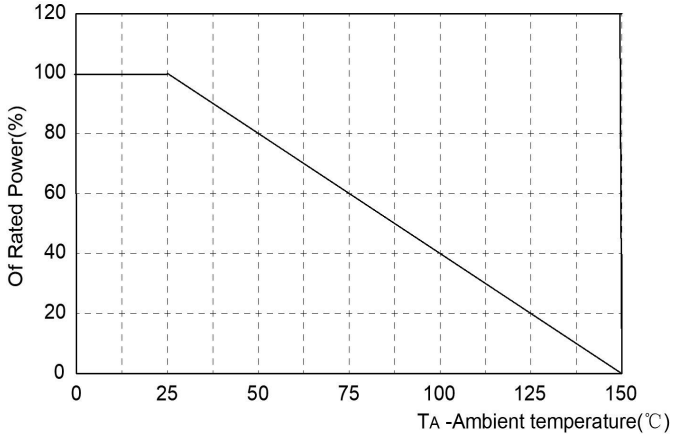


FIG2：Pulse Derating Curve

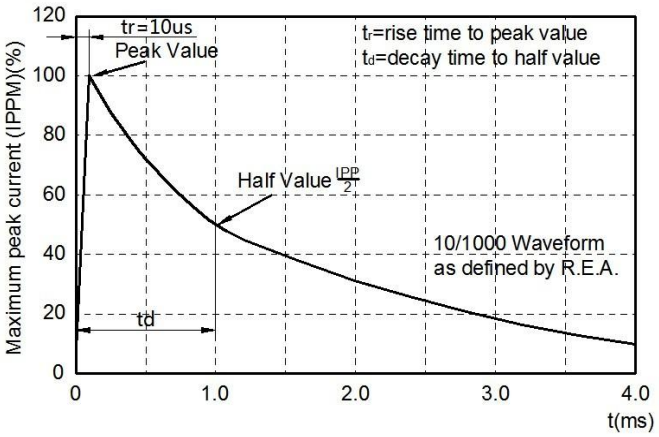


FIG3：Pulse Waveform

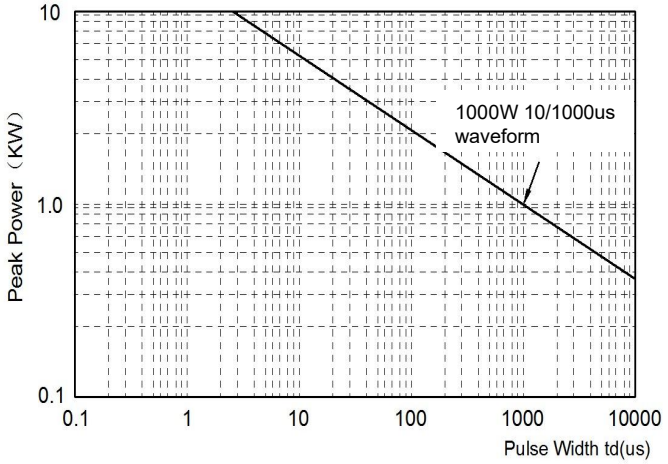


FIG4：Peak Pulse Power Rating Curve

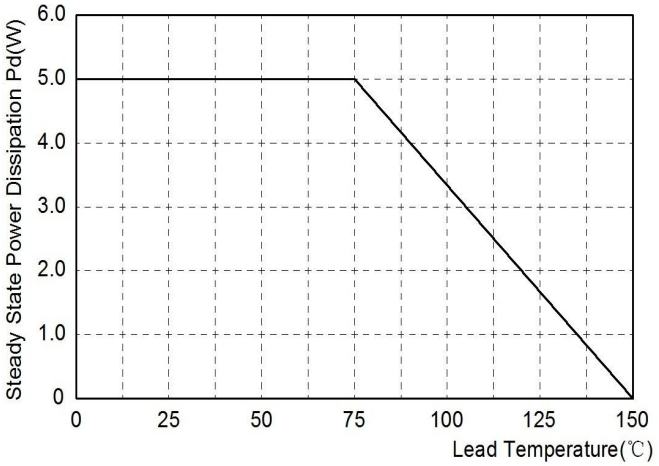
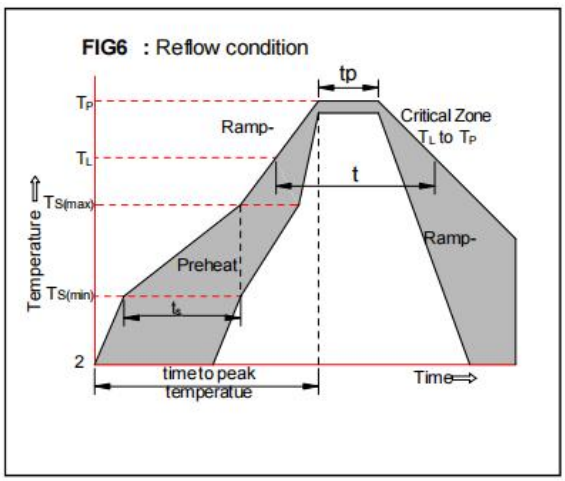


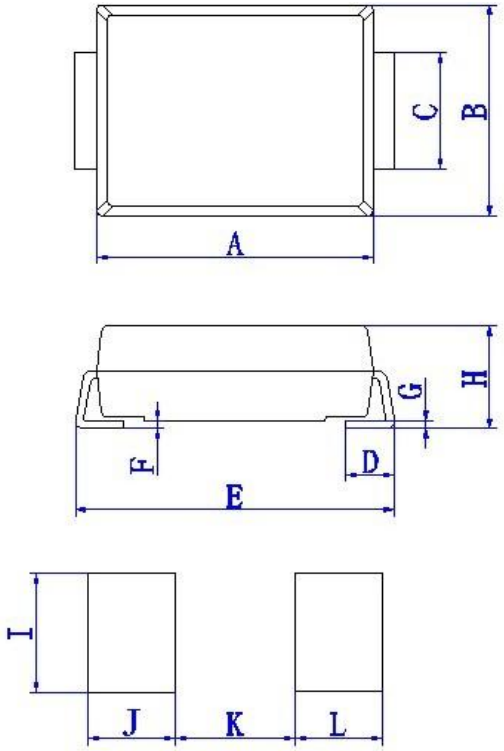
FIG5：Steady State Power Dissipation

Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
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℃



Package Outlines SMB / DO-214AA



Ref.(mm)	Millimeters	
	Min.	Max.
A	4.22	4.70
B	3.4	3.94
C	1.9	2.1
D	0.90	1.42
E	5.21	5.59
F	0	0.23
G	0.15	0.25
H	1.95	2.60
I	2.30	-
J	1.50	-
K	-	2.80

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