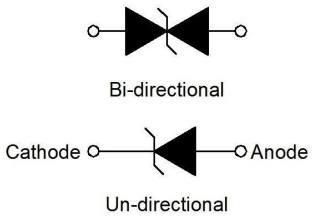
600W Transient Voltage Suppressor

Parameter	Value	Unit
P_{PP}	600	W
V_{RWM}	6.8~550	V
T_j	-55 to +125	°C



SMB / DO-214AA

Features

- For surface mounted applications
- Excellent clamping capability
- 600W peak pulse power capability with a 10/1000μs waveform
- Low profile package and low inductance
- Typical I_R less than 1uA above 12V
- 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}	600	W
Steady state power dissipation at T_L=75℃	$P_{M(AV)}$	5.0	W
Operating junction temperature range	T_j	-55 to +125	°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
P6SMB6.8A	P6SMB6.8CA	5.8	1000	6.45	7.14	10	10.5	95.24
P6SMB7.5A	P6SMB7.5CA	6.4	500	7.13	7.88	10	11.3	88.50
P6SMB8.2A	P6SMB8.2CA	7.02	200	7.79	8.61	10	12.1	82.64
P6SMB9.1A	P6SMB9.1CA	7.78	50	8.65	9.50	1	13.4	74.63
P6SMB10A	P6SMB10CA	8.55	10	9.50	10.5	1	14.5	68.97
P6SMB11A	P6SMB11CA	9.4	5	10.5	11.6	1	15.6	64.10
P6SMB12A	P6SMB12CA	10.2	5	11.4	12.6	1	16.7	59.88
P6SMB13A	P6SMB13CA	11.1	1	12.4	13.7	1	18.2	54.95
P6SMB15A	P6SMB15CA	12.8	1	14.3	15.8	1	21.2	47.17
P6SMB16A	P6SMB16CA	13.6	1	15.2	16.8	1	22.5	44.44
P6SMB18A	P6SMB18CA	15.3	1	17.1	18.9	1	25.2	39.68

P6SMB20A	P6SMB20CA	17.1	1	19	21	1	27.7	36.10
P6SMB22A	P6SMB22CA	18.8	1	20.9	23.1	1	30.6	32.68
P6SMB24A	P6SMB24CA	20.5	1	22.8	25.2	1	33.2	30.12
P6SMB27A	P6SMB27CA	23.1	1	25.7	28.4	1	37.5	26.67
P6SMB30A	P6SMB30CA	25.6	1	28.5	31.5	1	41.4	24.15
P6SMB33A	P6SMB33CA	28.2	1	31.4	34.7	1	45.7	21.88
P6SMB36A	P6SMB36CA	30.8	1	34.2	37.8	1	49.9	20.04
P6SMB39A	P6SMB39CA	33.3	1	37.1	41	1	53.9	18.55
P6SMB43A	P6SMB43CA	36.8	1	40.9	45.2	1	59.3	16.86
P6SMB47A	P6SMB47CA	40.2	1	44.7	49.4	1	64.8	15.43
P6SMB51A	P6SMB51CA	43.6	1	48.5	53.6	1	70.1	14.27
P6SMB56A	P6SMB56CA	47.8	1	53.2	58.8	1	77	12.99
P6SMB62A	P6SMB62CA	53	1	58.9	65.1	1	85	11.76
P6SMB68A	P6SMB68CA	58.1	1	64.6	71.4	1	92	10.87
P6SMB75A	P6SMB75CA	64.1	1	71.3	78.8	1	103	9.71
P6SMB82A	P6SMB82CA	70.1	1	77.9	86.1	1	113	8.85
P6SMB91A	P6SMB91CA	77.8	1	86.5	95.5	1	125	8.00
P6SMB100A	P6SMB100CA	84	1	95	105	1	137	7.30
P6SMB110A	P6SMB110CA	94	1	105	116	1	152	6.58
P6SMB120A	P6SMB120CA	102	1	114	126	1	165	6.06
P6SMB130A	P6SMB130CA	111	1	124	137	1	179	5.59
P6SMB150A	P6SMB150CA	128	1	143	158	1	207	4.83
P6SMB160A	P6SMB160CA	136	1	152	168	1	219	4.57
P6SMB170A	P6SMB170CA	145	1	162	179	1	234	4.27
P6SMB180A	P6SMB180CA	154	1	171	189	1	246	2.44
P6SMB200A	P6SMB200CA	171	1	190	210	1	274	2.19
P6SMB220A	P6SMB220CA	185	1	209	231	1	328	1.83
P6SMB250A	P6SMB250CA	214	1	237	263	1	344	1.75
P6SMB300A	P6SMB300CA	256	1	285	315	1	414	1.45
P6SMB350A	P6SMB350CA	300	1	332	368	1	482	1.25
P6SMB400A	P6SMB400CA	342	1	380	420	1	548	1.10
P6SMB440A	P6SMB440CA	376	1	418	462	1	602	1.00
P6SMB480A	P6SMB480CA	408	1	456	504	1	658	0.92
P6SMB510A	P6SMB510CA	434	1	485	535	1	698	0.86
P6SMB520A	P6SMB520CA	444	1	494	546	1	711	0.85
P6SMB530A	P6SMB530CA	450	1	504	557	1	725	0.83
P6SMB540A	P6SMB540CA	459	1	513	567	1	740	0.82
P6SMB550A	P6SMB550CA	467	1	523	578	1	760	0.79

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

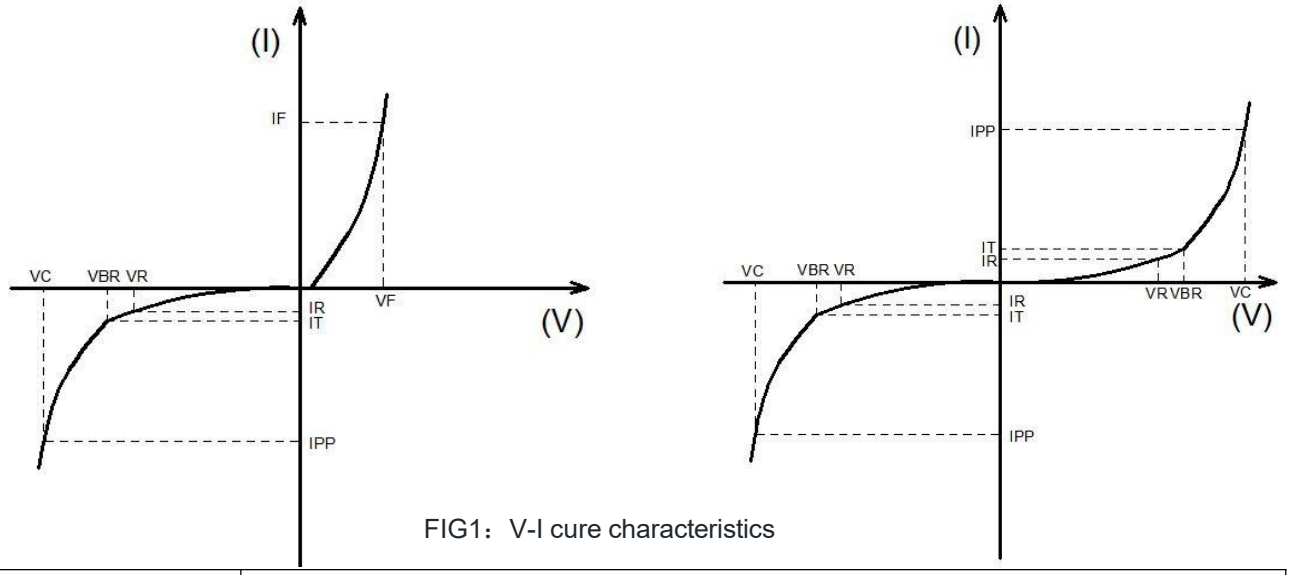


FIG1：V-I cure characteristics

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

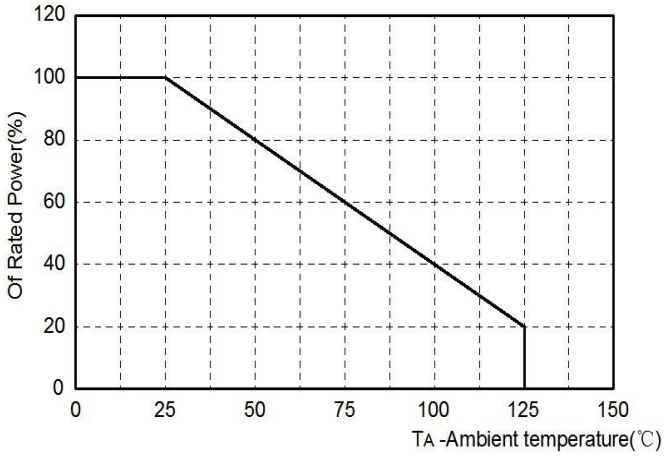


FIG2：Pulse Derating Curve

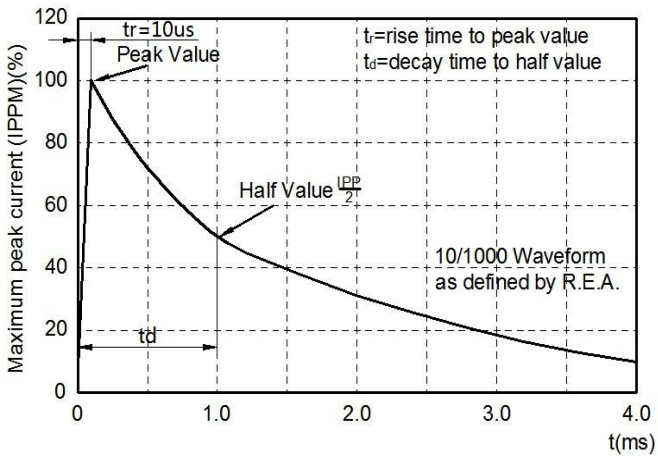


FIG3：Pulse Waveform

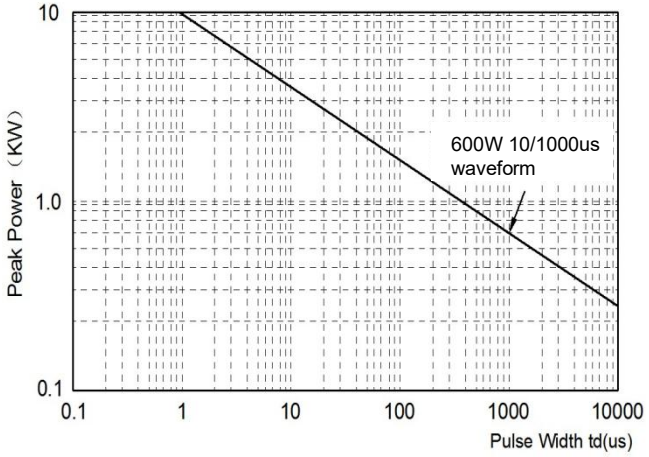


FIG4：Peak Pulse Power Rating Curve

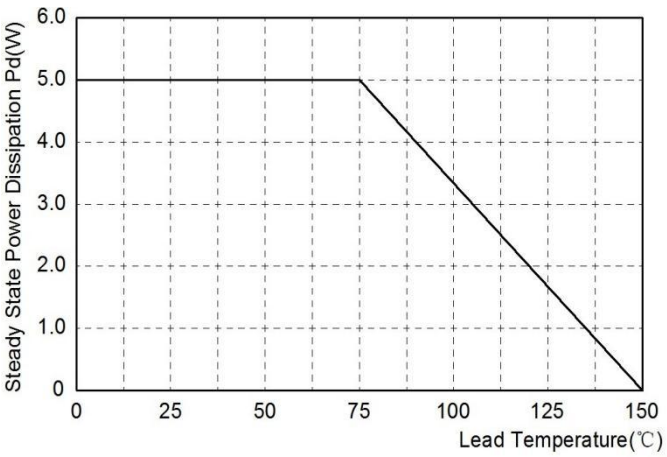
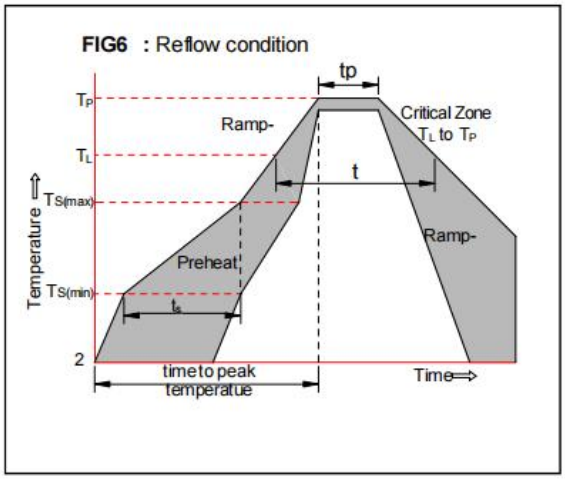


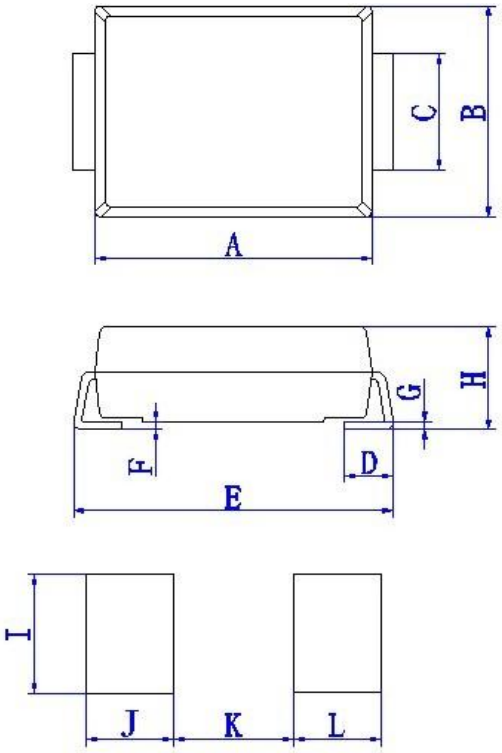
FIG5：Steady State Power Dissipation

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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