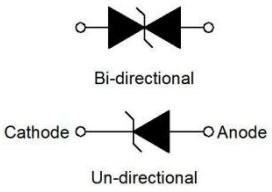
3000W Transient Voltage Suppressor SMDJ Series

Parameter	Value	Unit
P_{PP}	3000	W
V_R	5.0~440	V
T_j	-55 to +125	°C



SMC/DO-214AB

Features

- For surface mounted applications
- Excellent clamping capability
- 3000 W peak pulse power capability with a 10/1000μs Waveform.
- V_{RWM} 5.0-440V
- 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 TJ = 25℃, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000μs waveform	P_{PP}	3000	W
Steady state power dissipation at TL=75℃	$P_{M(AV)}$	6.5	W
Operating junction temperature range	T_j	-55 to +125	℃
Storage temperature range	T_{stg}	-55 to +150	℃

Electrical Characteristics (at TJ = 25℃ unless otherwise specified)

Part Number		VR	IR@VR	VBR@IT		IT	10/1000 μs		8/20 μs	
							VC@IPP	IPP①	VC@IPP	IPP②
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A	max(V)	A
SMDJ5.0A	SMDJ5.0CA	5.0	800	6.40	7.00	10	9.2	326.1	14.4	1772
SMDJ6.0A	SMDJ6.0CA	6.0	800	6.67	7.37	10	10.3	291.3	14.7	1742
SMDJ6.5A	SMDJ6.5CA	6.5	500	7.22	7.98	10	11.2	267.9	15.2	1678
SMDJ7.0A	SMDJ7.0CA	7.0	200	7.78	8.60	10	12.0	250.0	15.9	1604
SMDJ7.5A	SMDJ7.5CA	7.5	100	8.33	9.21	1	12.9	232.6	16.7	1528
SMDJ8.0A	SMDJ8.0CA	8.0	50	8.89	9.83	1	13.6	220.6	17.5	1459
SMDJ8.5A	SMDJ8.5CA	8.5	20	9.44	10.40	1	14.4	208.4	18.6	1371
SMDJ9.0A	SMDJ9.0CA	9.0	10	10.00	11.10	1	15.4	194.9	19.8	1286

SMDJ10A	SMDJ10CA	10.0	5	11.10	12.30	1	17.0	176.5	21.7	1186
SMDJ11A	SMDJ11CA	11.0	1	12.20	13.50	1	18.2	164.9	24.2	1364
SMDJ12A	SMDJ12CA	12.0	1	13.30	14.70	1	19.9	150.8	25.3	1305
SMDJ13A	SMDJ13CA	13.0	1	14.40	15.90	1	21.5	139.6	27.2	1218
SMDJ14A	SMDJ14CA	14.0	1	15.60	17.20	1	23.2	129.4	29	1138
SMDJ15A	SMDJ15CA	15.0	1	16.70	18.50	1	24.4	123.0	32.5	1021
SMDJ16A	SMDJ16CA	16.0	1	17.80	19.70	1	26.0	115.4	34.2	865
SMDJ17A	SMDJ17CA	17.0	1	18.90	20.90	1	27.6	108.7	39.3	841
SMDJ18A	SMDJ18CA	18.0	1	20.00	22.10	1	29.2	102.8	39.6	840
SMDJ20A	SMDJ20CA	20.0	1	22.20	24.50	1	32.4	92.60	42.8	795
SMDJ22A	SMDJ22CA	22.0	1	24.40	26.90	1	35.5	84.51	48.3	715
SMDJ24A	SMDJ24CA	24.0	1	26.70	29.50	1	38.9	77.13	50	700
SMDJ26A	SMDJ26CA	26.0	1	28.90	31.90	1	42.1	71.26	53.5	664
SMDJ28A	SMDJ28CA	28.0	1	31.10	34.40	1	45.4	66.08	59	614
SMDJ30A	SMDJ30CA	30.0	1	33.30	36.80	1	48.4	61.99	64.3	568
SMDJ33A	SMDJ33CA	33.0	1	36.70	40.60	1	53.3	56.29	69.7	532
SMDJ36A	SMDJ36CA	36.0	1	40.00	44.20	1	58.1	51.64	76	553
SMDJ40A	SMDJ40CA	40.0	1	44.40	49.10	1	64.5	46.52	84	536
SMDJ43A	SMDJ43CA	43.0	1	47.80	52.80	1	69.4	43.23	93	484
SMDJ45A	SMDJ45CA	45.0	1	50.00	55.30	1	72.7	41.27	98	460
SMDJ48A	SMDJ48CA	48.0	1	53.30	58.90	1	77.4	38.76	100	451
SMDJ51A	SMDJ51CA	51.0	1	56.70	62.70	1	82.4	36.41	108	418
SMDJ54A	SMDJ54CA	54.0	1	60.00	66.30	1	87.1	34.45	117	386
SMDJ58A	SMDJ58CA	58.0	1	64.40	71.20	1	93.6	32.06	121	372
SMDJ60A	SMDJ60CA	60.0	1	66.70	73.70	1	96.8	31.00	129	349
SMDJ64A	SMDJ64CA	64.0	1	71.10	78.60	1	103.0	29.13	133	339
SMDJ70A	SMDJ70CA	70.0	1	77.80	86.00	1	113.0	26.55	146	310
SMDJ75A	SMDJ75CA	75.0	1	83.30	92.10	1	121.0	24.80	157	243
SMDJ78A	SMDJ78CA	78.0	1	86.70	95.80	1	126.0	23.81	169	226
SMDJ85A	SMDJ85CA	85.0	1	94.40	104.0	1	137.0	21.90	178	214
SMDJ90A	SMDJ90CA	90.0	1	100.0	111.0	1	146.0	20.55	192	198
SMDJ100A	SMDJ100CA	100.0	1	111.0	123.0	1	162.0	18.52	212	180
SMDJ110A	SMDJ110CA	110.0	1	122.0	135.0	1	177.0	16.95	231	166
SMDJ120A	SMDJ120CA	120.0	1	133.0	147.0	1	193.0	15.55	246	154
SMDJ130A	SMDJ130CA	130.0	1	144.0	159.0	1	209.0	14.36	265	143
SMDJ150A	SMDJ150CA	150.0	1	167.0	185.0	1	243.0	12.35	317	107
SMDJ160A	SMDJ160CA	160.0	1	178.0	197.0	1	259.0	11.59	335	101
SMDJ170A	SMDJ170CA	170.0	1	189.0	209.0	1	275.0	10.91	353	96
SMDJ180A	SMDJ180CA	180.0	1	201.0	222.0	1	292.0	10.28	371	91
SMDJ190A	SMDJ190CA	190.0	1	209.0	233.0	1	308.0	9.75	388	87

SMDJ200A	SMDJ200CA	200.0	1	224.0	247.0	1	324.0	9.26	409	83
SMDJ210A	SMDJ210CA	210.0	1	237.0	263.0	1	340.0	8.83	428	79
SMDJ220A	SMDJ220CA	220.0	1	246.0	272.0	1	356.0	8.43	448	71
SMDJ250A	SMDJ250CA	250.0	1	279.0	309.0	1	405.0	7.41	504	63
SMDJ300A	SMDJ300CA	300.0	1	335.0	371.0	1	486.0	6.18	589	54
SMDJ350A	SMDJ350CA	350.0	1	391.0	432.0	1	567.0	5.30	685	46
SMDJ400A	SMDJ400CA	400.0	1	447.0	494.0	1	648.0	4.63	776	41
SMDJ440A	SMDJ440CA	440.0	1	492.0	543.0	1	713.0	4.21	846	37

Notes：

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

Symbol	Parameter
I_F	Mean Forward Current
V_F	Maximum Forward Voltage @I_F
V_R	Peak Reverse Working Voltage
I_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

Fig1: V-i cure characteristics

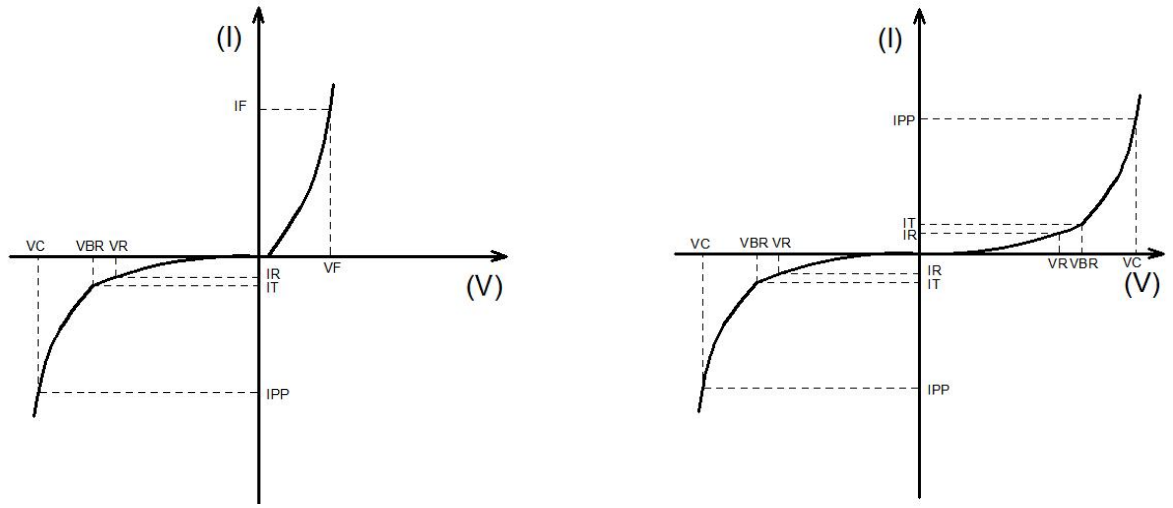


Fig2:Pulse derating curve

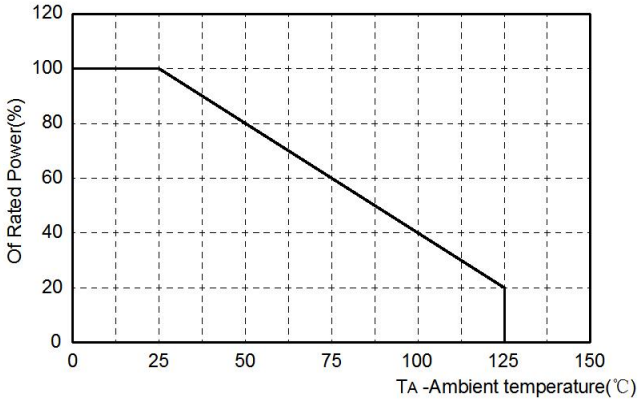


Fig3: Pulse waveform

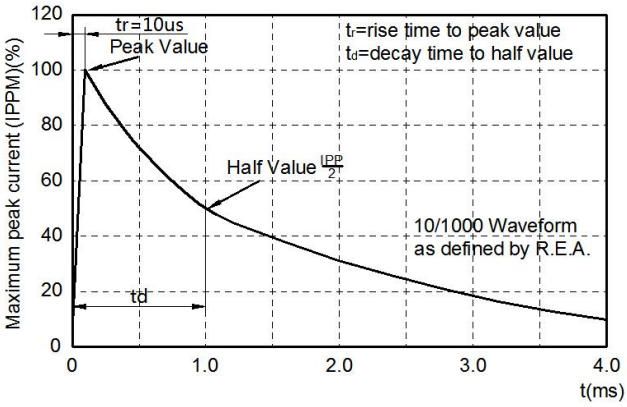


Fig4:Peak Pulse Power Rating Curve

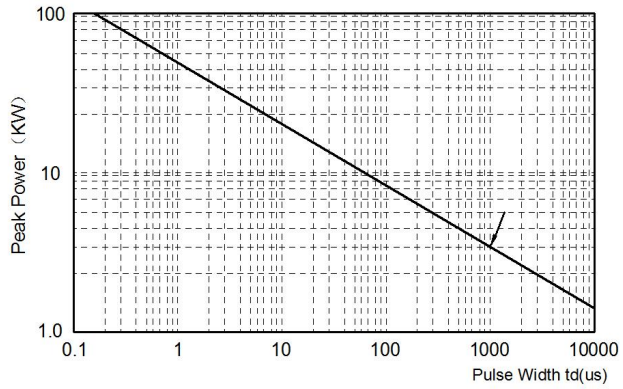
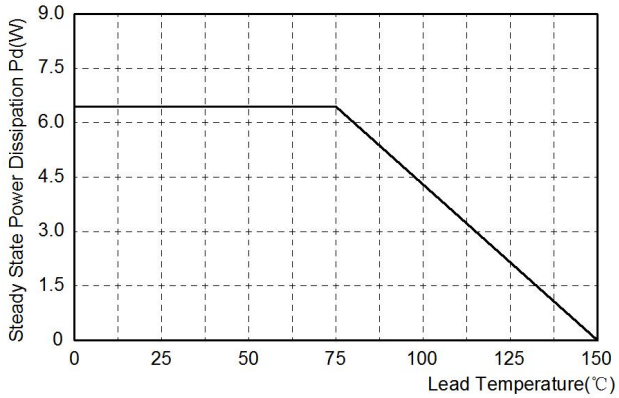
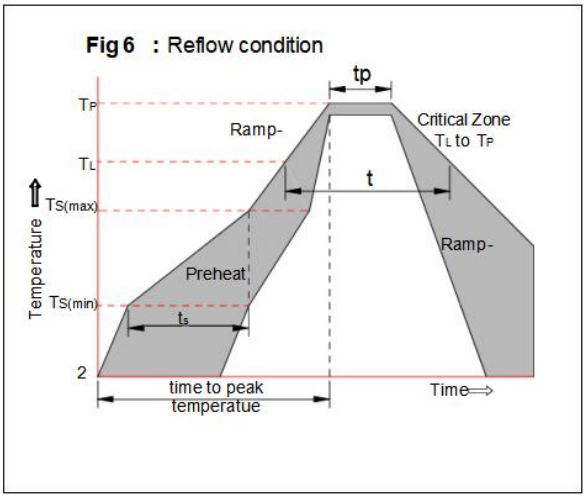


Fig5: Steady State Power Dissipation

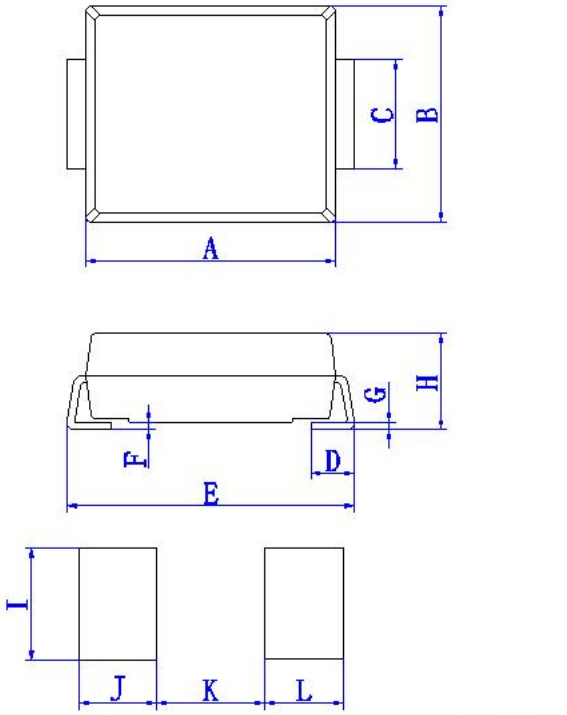


Soldering parameters

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



Ref.(mm)	Millimeters	
	Min.	Max.
A	6.60	7.11
B	5.59	6.20
C	2.75	3.20
D	0.76	1.52
E	7.71	8.13
F	0.051	0.203
G	0.15	0.25
H	2.06	2.75
I	3.30	
J	1.30	
K		5.30
L	1.30	

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