

1500W Surface Mount Transient Voltage Suppressor

Features

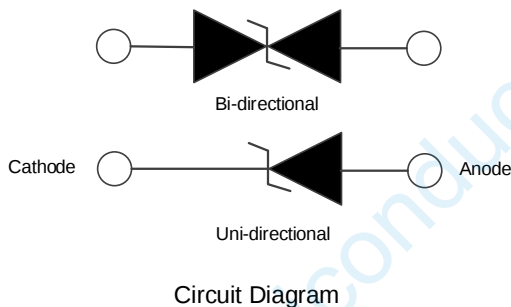
- ✧ 1500W Peak Pulse power capability at 10/1000us Waveform
- ✧ Typical I_R less than $1\mu A$ above 10V
- ✧ High temperature soldering: $260^{\circ}C/10s$ at terminals
- ✧ Glass passivated junction
- ✧ Low profile package

Applications

- ✧ I/O interfaces, VCC bus
- ✧ Power lines
- ✧ Automotive and Telecommunication
- ✧ Industrial Electronics
- ✧ Computers & Consumer Electronics

Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ RoHS/WEEE Compliant



DO-214AB

Absolute Maximum Rating at $T_A = 25^{\circ}C$, unless otherwise specified

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 10/1000\mu s$)	P_{PPM}	1500	W
Peak Pulse Current ($t_p = 10/1000\mu s$)	I_{pp}	See next table	A
Power Dissipation on Infinite Heat Sink at $T_L = 50^{\circ}C$	P_D	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave	I_{FSM}	200	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional Only	V_F	3.5/5.0	V
Operating Temperature	T_J	-55 to + 150	$^{\circ}C$

Electrical Characteristics at $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Part Number		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	I_{PP}
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
SMCJ5.0A	SMCJ5.0CA	5.0	800	6.40	7.00	10	9.2	163.0
SMCJ6.0A	SMCJ6.0CA	6.0	800	6.67	7.37	10	10.3	145.7
SMCJ6.5A	SMCJ6.5CA	6.5	500	7.22	7.98	10	11.2	134.0
SMCJ7.0A	SMCJ7.0CA	7.0	200	7.78	8.60	10	12.0	125.0
SMCJ7.5A	SMCJ7.5CA	7.5	100	8.33	9.21	1	12.9	116.3
SMCJ8.0A	SMCJ8.0CA	8.0	50	8.89	9.83	1	13.6	110.3
SMCJ8.5A	SMCJ8.5CA	8.5	20	9.44	10.40	1	14.4	104.2
SMCJ9.0A	SMCJ9.0CA	9.0	10	10.00	11.10	1	15.4	97.4
SMCJ10A	SMCJ10CA	10	5	11.10	12.30	1	17.0	88.3
SMCJ11A	SMCJ11CA	11	1	12.20	13.50	1	18.2	82.5
SMCJ12A	SMCJ12CA	12	1	13.30	14.70	1	19.9	75.4
SMCJ13A	SMCJ13CA	13	1	14.40	15.90	1	21.5	69.8
SMCJ14A	SMCJ14CA	14	1	15.60	17.20	1	23.2	64.7
SMCJ15A	SMCJ15CA	15	1	16.70	18.50	1	24.4	61.5
SMCJ16A	SMCJ16CA	16	1	17.80	19.70	1	26.0	57.7
SMCJ17A	SMCJ17CA	17	1	18.90	20.90	1	27.6	54.4
SMCJ18A	SMCJ18CA	18	1	20.00	22.10	1	29.2	51.4
SMCJ20A	SMCJ20CA	20	1	22.20	24.50	1	32.4	46.3
SMCJ22A	SMCJ22CA	22	1	24.40	26.90	1	35.5	42.3
SMCJ24A	SMCJ24CA	24	1	26.70	29.50	1	38.9	38.6
SMCJ26A	SMCJ26CA	26	1	28.90	31.90	1	42.1	35.7
SMCJ28A	SMCJ28CA	28	1	31.10	34.40	1	45.4	33.1
SMCJ30A	SMCJ30CA	30	1	33.30	36.80	1	48.4	31.0
SMCJ33A	SMCJ33CA	33	1	36.70	40.60	1	53.3	28.2
SMCJ36A	SMCJ36CA	36	1	40.00	44.20	1	58.1	25.9
SMCJ40A	SMCJ40CA	40	1	44.40	49.10	1	64.5	23.3
SMCJ43A	SMCJ43CA	43	1	47.80	52.80	1	69.4	21.7
SMCJ45A	SMCJ45CA	45	1	50.00	55.30	1	72.7	20.6
SMCJ48A	SMCJ48CA	48	1	53.30	58.90	1	77.4	19.4
SMCJ51A	SMCJ51CA	51	1	56.70	62.70	1	82.4	18.2
SMCJ54A	SMCJ54CA	54	1	60.00	66.30	1	87.1	17.3
SMCJ58A	SMCJ58CA	58	1	64.40	71.20	1	93.6	16.1
SMCJ60A	SMCJ60CA	60	1	66.70	73.70	1	96.8	15.5
SMCJ64A	SMCJ64CA	64	1	71.10	78.60	1	103.0	14.6
SMCJ70A	SMCJ70CA	70	1	77.80	86.00	1	113.0	13.3
SMCJ75A	SMCJ75CA	75	1	83.30	92.10	1	121.0	12.4
SMCJ78A	SMCJ78CA	78	1	86.70	95.80	1	126.0	11.9
SMCJ85A	SMCJ85CA	85	1	94.40	104.0	1	137.0	11.0
SMCJ90A	SMCJ90CA	90	1	100.0	111.0	1	146.0	10.3
SMCJ100A	SMCJ100CA	100	1	111.0	123.0	1	162.0	9.3
SMCJ110A	SMCJ110CA	110	1	122.0	135.0	1	177.0	8.5
SMCJ120A	SMCJ120CA	120	1	133.0	147.0	1	193.0	7.8
SMCJ130A	SMCJ130CA	130	1	144.0	159.0	1	209.0	7.2
SMCJ150A	SMCJ150CA	150	1	167.0	185.0	1	243.0	6.2
SMCJ160A	SMCJ160CA	160	1	178.0	197.0	1	259.0	5.8
SMCJ170A	SMCJ170CA	170	1	189.0	209.0	1	275.0	5.5
SMCJ180A	SMCJ180CA	180	1	201.0	222.0	1	292.0	5.1
SMCJ190A	SMCJ190CA	190	1	211.0	243.0	1	308.0	4.8
SMCJ200A	SMCJ200CA	200	1	224.0	247.0	1	324.0	4.6
SMCJ220A	SMCJ220CA	220	1	246.0	272.0	1	356.0	4.2
SMCJ250A	SMCJ250CA	250	1	279.0	309.0	1	405.0	3.7
SMCJ300A	SMCJ300CA	300	1	335.0	371.0	1	486.0	3.1
SMCJ350A	SMCJ350CA	350	1	391.0	432.0	1	567.0	2.6
SMCJ400A	SMCJ400CA	400	1	447.0	494.0	1	648.0	2.3
SMCJ440A	SMCJ440CA	440	1	492.0	543.0	1	713.0	2.1

Typical Characteristics at $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Fig.1 Peak Pulse Power Rating Curve

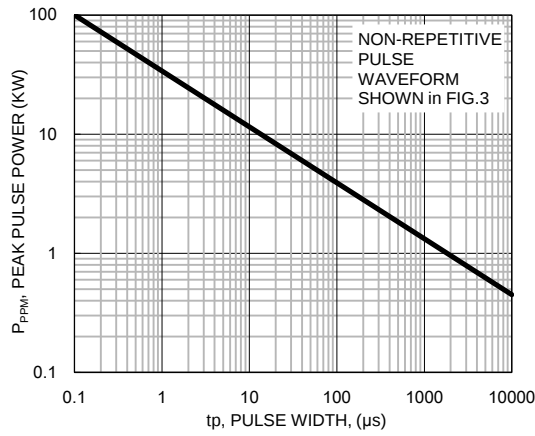


Fig.2 Pulse Derating Curve

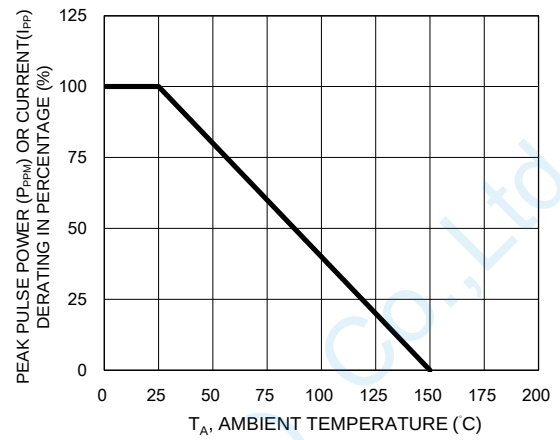


Fig.3 Clamping Power Pulse Waveform

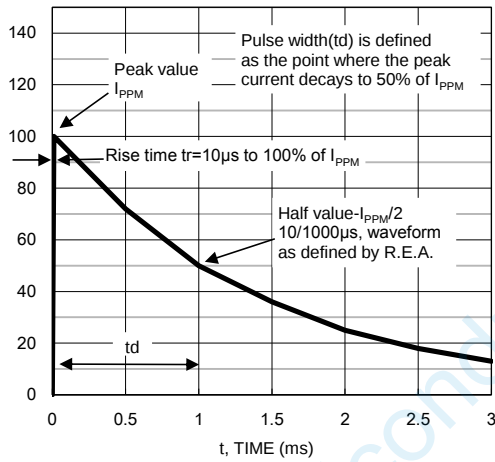


Fig.4 Typical Junction Capacitance

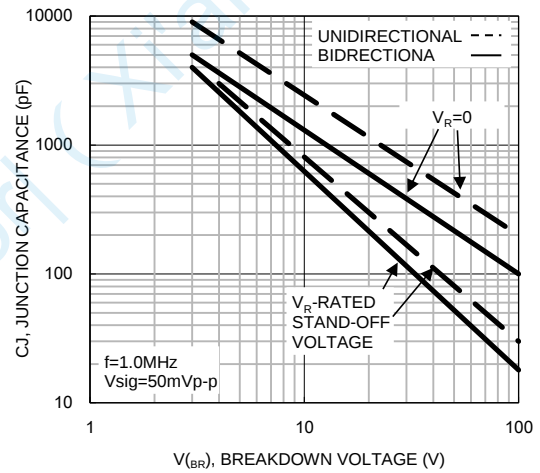
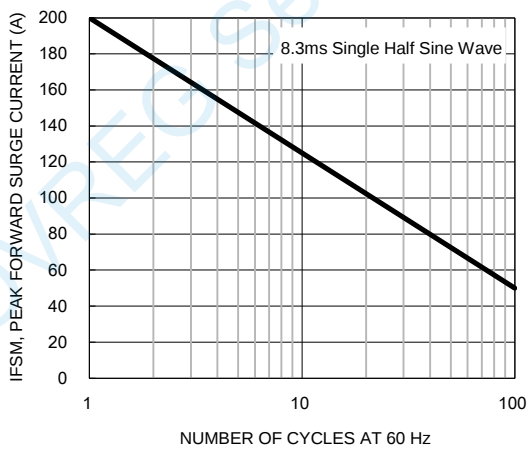
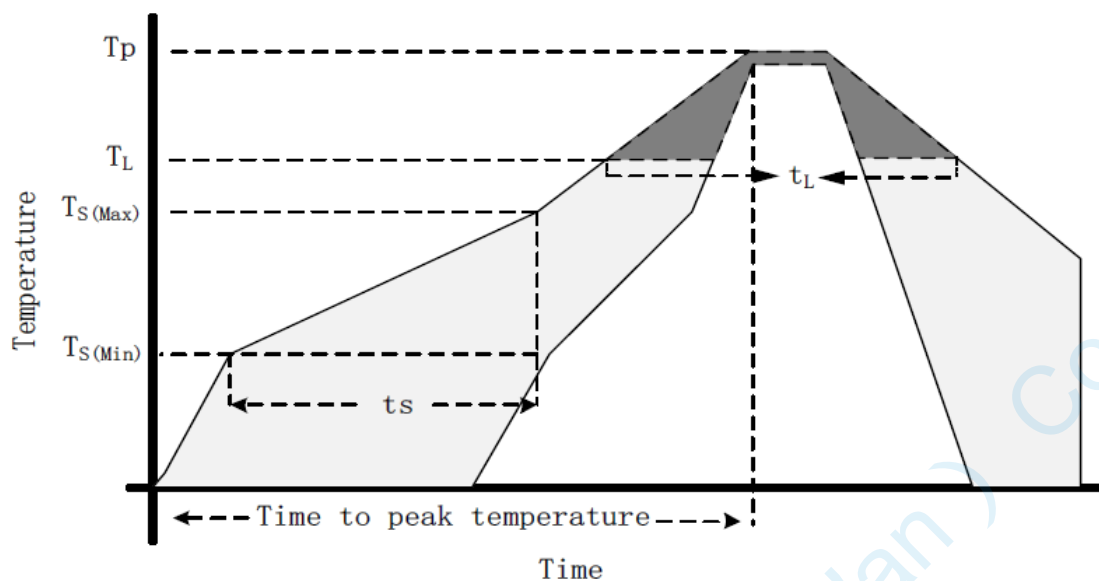


Fig.5 Maximum Non-repetitive Forward Surge Current Unidirectional Only

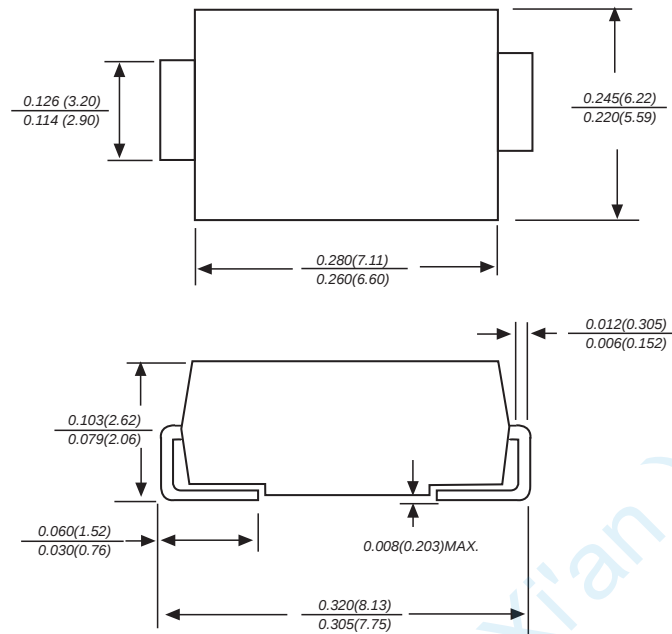


Soldering Parameters

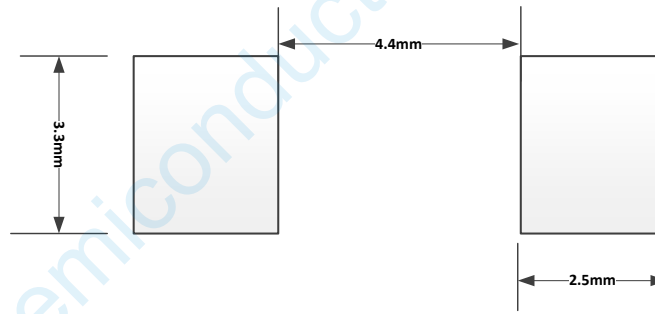


Reflow Condition		Pb – Free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus) Temp(T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	220°C
	- Temperature (t_L)	60 – 150 seconds
Peak Temp(T_p)		260 $\pm$ 0.5 °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes Max.
Do not exceed		260°C

Package Information

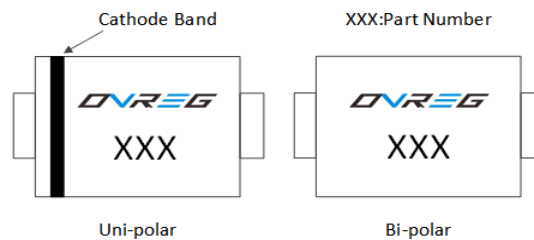


Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only

Marking



Ordering Information

Part number	Package	Type	Reel size	MOQ	Packaging specification
SMCJxxx(C)A	DO-214AB	T/R	13 inch	3k/reel	EIA STD RS-481