

5000W Surface Mount Transient Voltage Suppressor

Features

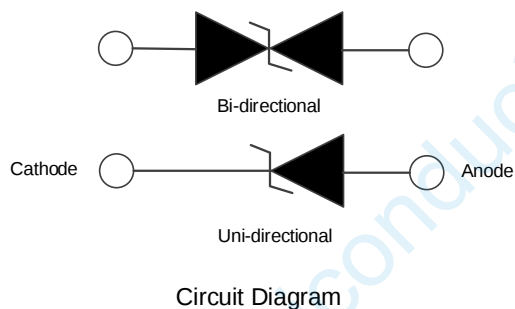
- ✧ 5000W Peak Pulse power capability at 10/1000us Waveform
- ✧ Excellent clamping capability
- ✧ High temperature soldering: 260°C/10s at terminals
- ✧ Glass passivated junction
- ✧ Low profile package

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

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 10/1000\mu\text{s}$)	P_{PPM}	5000	W
Peak Pulse Current ($t_p = 10/1000\mu\text{s}$)	I_{pp}	See next table	A
Power Dissipation on Infinite Heat Sink at $T_L = 75^{\circ}\text{C}$	P_D	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave	I_{FSM}	300	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional Only	V_F	3.5/6.5	V
Operating Temperature	T_J	-55 to + 125	$^{\circ}\text{C}$

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

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage V_{BR} @ I_T		Test Current	Max. Clamping Voltage @ I_{PP}	Max. Peak Pulse Current	Max. Reverse Leakage @ V_{RWM}
UNI-POLAR	BI-POLAR	UNI	BI	$V_{RWM}(V)$	Min.(V)	Max.(V)	$I_T(mA)$	$V_{C\text{ MAX.}}(V)$	$I_{PP}(A)$	$I_R(\mu A)$
5.0SMDJ11A	5.0SMDJ11CA	5PEN	5BEN	11.0	12.20	13.50	10	18.2	274.7	800
5.0SMDJ12A	5.0SMDJ12CA	5PEP	5BEP	12.0	13.30	14.70	10	19.9	251.3	800
5.0SMDJ13A	5.0SMDJ13CA	5PEQ	5BEQ	13.0	14.40	15.90	10	21.5	232.6	500
5.0SMDJ14A	5.0SMDJ14CA	5PER	5BER	14.0	15.60	17.20	10	23.2	215.5	200
5.0SMDJ15A	5.0SMDJ15CA	5PES	5BES	15.0	16.70	18.50	1	24.4	204.9	100
5.0SMDJ16A	5.0SMDJ16CA	5PET	5BET	16.0	17.80	19.70	1	26.0	192.3	50
5.0SMDJ17A	5.0SMDJ17CA	5PEU	5BEU	17.0	18.90	20.90	1	27.6	181.2	20
5.0SMDJ18A	5.0SMDJ18CA	5PEV	5BEV	18.0	20.00	22.10	1	29.2	171.2	10
5.0SMDJ20A	5.0SMDJ20CA	5PEW	5BEW	20.0	22.20	24.50	1	32.4	154.3	5
5.0SMDJ22A	5.0SMDJ22CA	5PEX	5BEX	22.0	24.40	26.90	1	35.5	140.8	5
5.0SMDJ24A	5.0SMDJ24CA	5PEZ	5BEZ	24.0	26.70	29.50	1	38.9	128.5	5
5.0SMDJ26A	5.0SMDJ26CA	5PFE	5BFE	26.0	28.90	31.90	1	42.1	118.8	5
5.0SMDJ28A	5.0SMDJ28CA	5PFG	5BFG	28.0	31.10	34.40	1	45.4	110.1	5
5.0SMDJ30A	5.0SMDJ30CA	5PFK	5BFK	30.0	33.30	36.80	1	48.4	103.3	5
5.0SMDJ33A	5.0SMDJ33CA	5PFM	5BFM	33.0	36.70	40.60	1	53.3	93.8	5
5.0SMDJ36A	5.0SMDJ36CA	5PFP	5BFP	36.0	40.00	44.20	1	58.1	86.1	5
5.0SMDJ40A	5.0SMDJ40CA	5PFR	5BFR	40.0	44.40	49.10	1	64.5	77.5	5
5.0SMDJ43A	5.0SMDJ43CA	5PFT	5BFT	43.0	47.80	52.80	1	69.4	72.0	5
5.0SMDJ45A	5.0SMDJ45CA	5PFV	5BFV	45.0	50.00	55.30	1	72.7	68.8	5
5.0SMDJ48A	5.0SMDJ48CA	5PFX	5BFX	48.0	53.30	58.90	1	77.4	64.6	5
5.0SMDJ51A	5.0SMDJ51CA	5PFZ	5BFZ	51.0	56.70	62.70	1	82.4	60.7	5
5.0SMDJ54A	5.0SMDJ54CA	5PGE	5BGE	54.0	60.00	66.30	1	87.1	57.4	5
5.0SMDJ58A	5.0SMDJ58CA	5PGG	5BGG	58.0	64.40	71.20	1	93.6	53.4	5
5.0SMDJ60A	5.0SMDJ60CA	5PGK	5BGK	60.0	66.70	73.70	1	96.8	51.7	5
5.0SMDJ64A	5.0SMDJ64CA	5PGM	5BGM	64.0	71.10	78.60	1	103.0	48.5	5
5.0SMDJ70A	5.0SMDJ70CA	5PGP	5BGP	70.0	77.80	86.00	1	113.0	44.2	5
5.0SMDJ75A	5.0SMDJ75CA	5PGR	5BGR	75.0	83.30	92.10	1	121.0	41.3	5
5.0SMDJ78A	5.0SMDJ78CA	5PGT	5BGT	78.0	86.70	95.80	1	126.0	39.7	5
5.0SMDJ85A	5.0SMDJ85CA	5PGV	5BGV	85.0	94.40	104.00	1	137.0	36.5	5
5.0SMDJ90A	5.0SMDJ90CA	5PGX	5BGX	90.0	100.00	111.00	1	146.0	34.2	5
5.0SMDJ100A	5.0SMDJ100CA	5PGZ	5BGZ	100.0	111.00	123.00	1	162.0	30.9	5
5.0SMDJ110A	5.0SMDJ110CA	5PHE	5BHE	110.0	122.00	135.00	1	177.0	28.2	5
5.0SMDJ120A	5.0SMDJ120CA	5PHG	5BHG	120.0	133.00	147.00	1	193.0	25.9	5
5.0SMDJ130A	5.0SMDJ130CA	5PHK	5BHK	130.0	144.00	159.00	1	209.0	23.9	5
5.0SMDJ150A	5.0SMDJ150CA	5PHM	5BHM	150.0	155.00	171.00	1	226.8	22.0	5
5.0SMDJ160A	5.0SMDJ160CA	5PHP	5BHP	160.0	167.00	185.00	1	243.0	20.6	5
5.0SMDJ170A	5.0SMDJ170CA	5PHR	5BHR	170.0	178.00	197.00	1	259.0	19.3	5
5.0SMDJ180A	5.0SMDJ180CA	5PHT	5BHT	180.0	189.0	209.0	1	275.0	18.2	5
5.0SMDJ190A		5PHV		190.0	200.0	220.0	1	291.6	17.1	5
5.0SMDJ200A		5PHX		200.0	211.0	232.0	1	307.8	16.2	5
5.0SMDJ210A		5PHZ		210.0	224.0	247.0	1	324.0	15.4	5
5.0SMDJ220A		5PIE		220.0	246.0	272.0	1	356.0	14.0	5

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

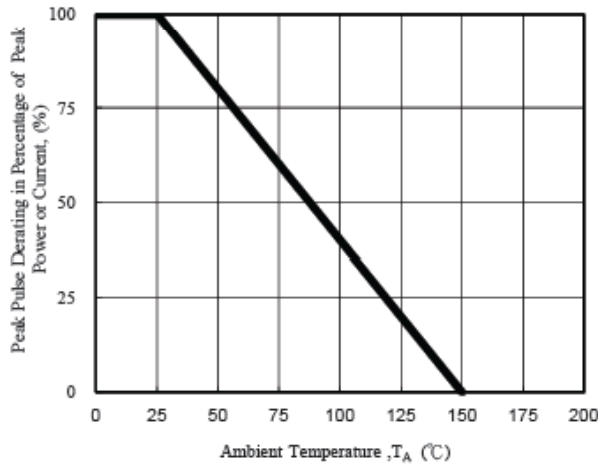


Fig. 1 - Pulse Derating Curve

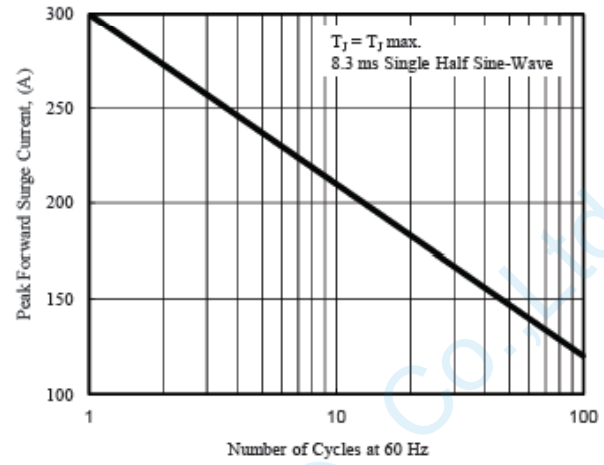


Fig. 2 - Maximum Non-Repetitive Surge Current

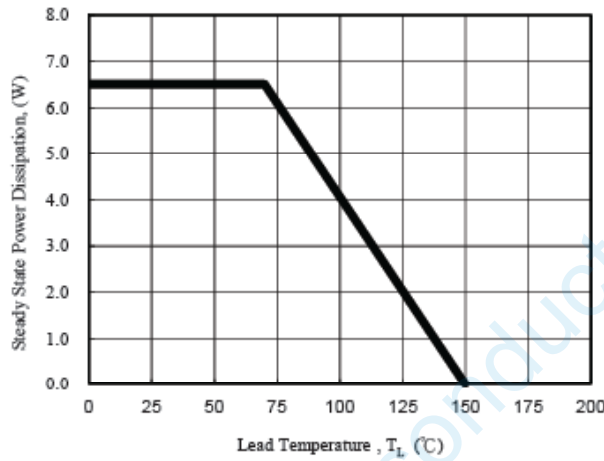


Fig. 3 - Steady State Power Derating Curve

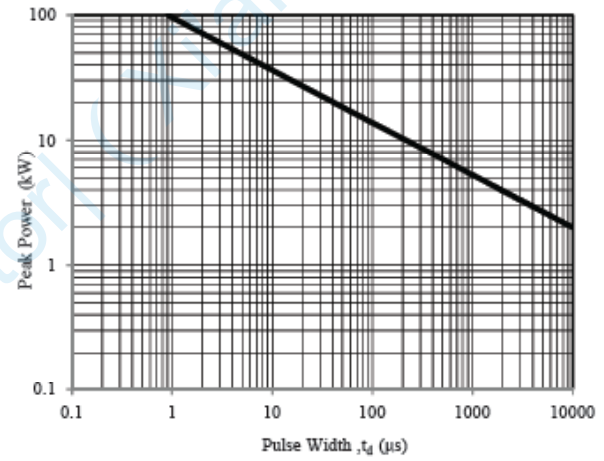


Fig. 4 - Peak Pulse Power Rating Curve

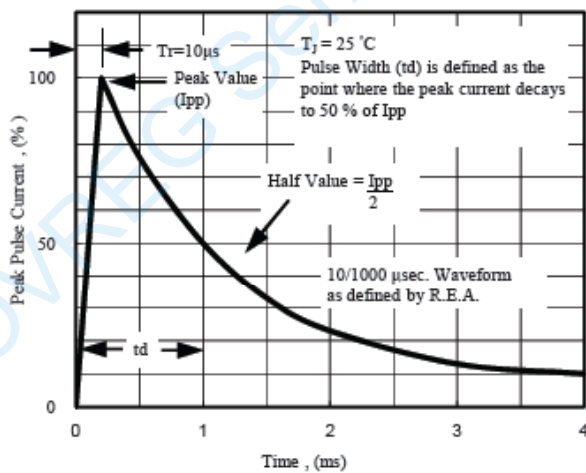


Fig. 5 - Pulse Waveform

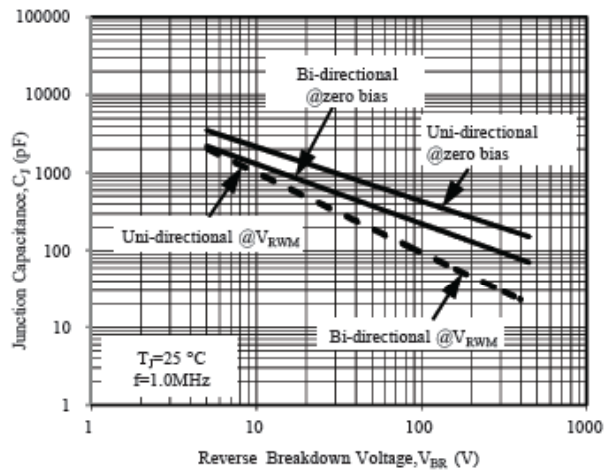
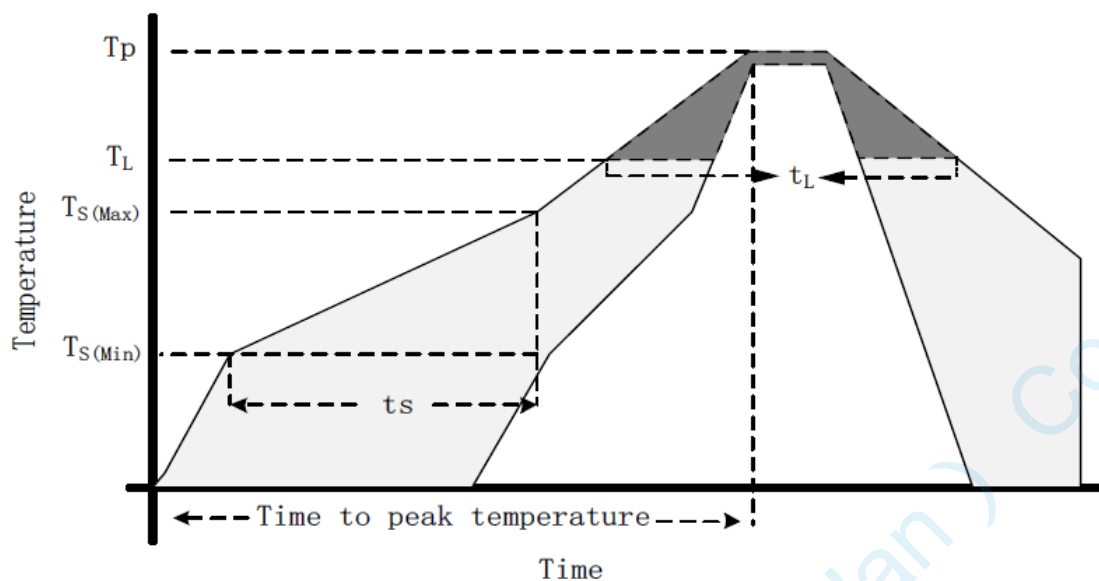


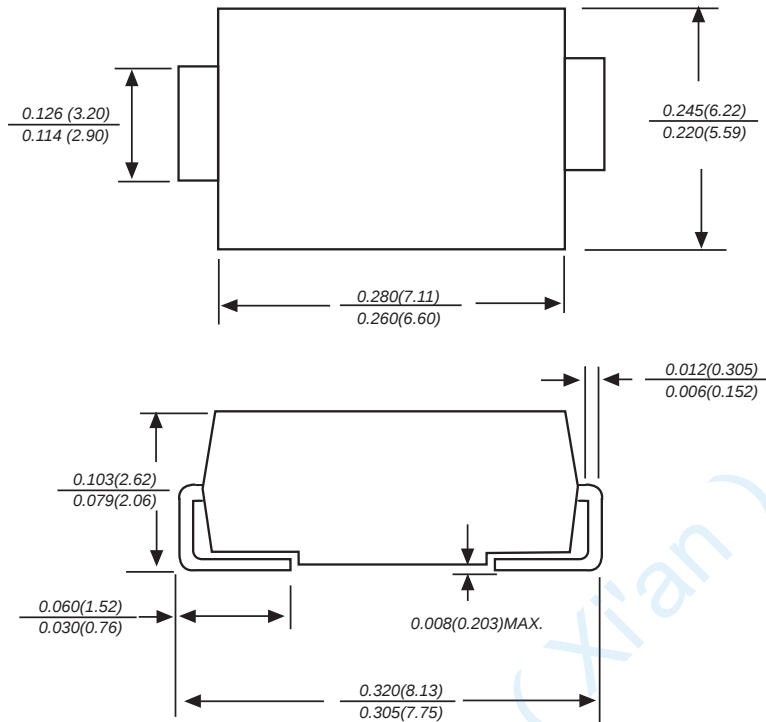
Fig. 6 - Typical Junction Capacitance

Soldering Parameters

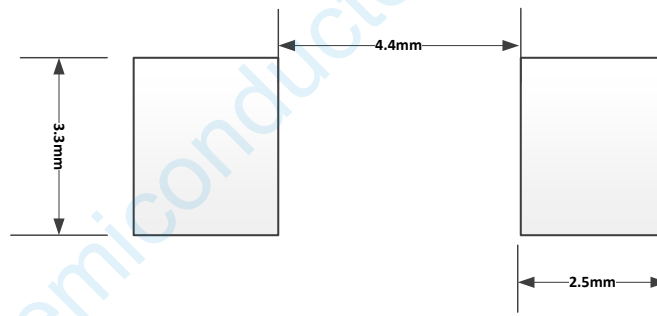


Reflow Condition		Pb – Free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus) Temp(T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (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

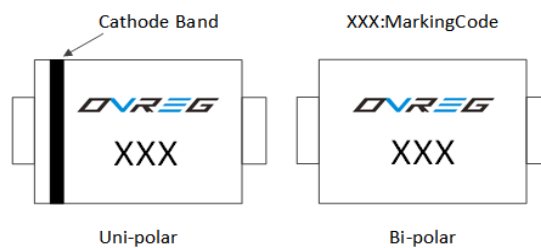


Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only

Marking



Ordering Information

Part number	Package	Type	Reel size	MOQ	Packaging specification
5.0SMDJxxx(C)A	DO-214AB	T/R	13 inch	3k/reel	EIA STD RS-481