

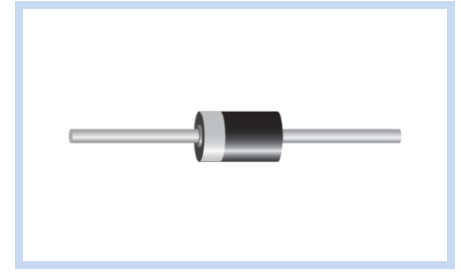
# Transient Voltage Suppressors 500W DO-15

SA Series

MERITEK

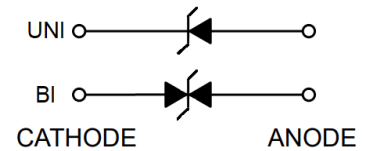
## FEATURE

- 500W Peak Pulse Power (10/1000 $\mu$ s Waveform)
- 5.0V to 190V Standoff Voltage
- Fast Response Time
- Excellent Clamping Capability
- Glass Passivated Junction
- UL Flammability Classification Rating 94V-0



## MECHANICAL DATA

- Case: DO-15, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-202, Method 208
- Polarity: Color Band Denotes Cathode End Except Bipolar



## MAXIMUM RATINGS

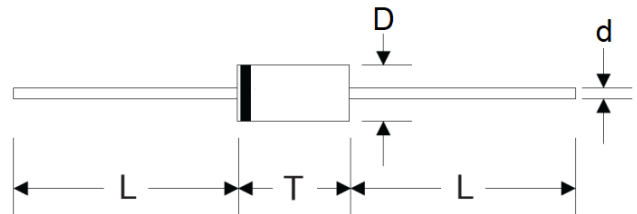
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 $\mu$ s Waveform.	$P_{PPM}$	500	W
Peak Pulse Current on 10/1000 $\mu$ s Waveform.	$I_{PPM}$	See Table	A
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$	$P_{M(AV)}$	3.0	W
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load	$I_{FSM}$	70	A
Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only	$V_F$	3.5/5.0	V
Operating Junction and Storage Temperature Range.	$T_J, T_{STG}$	-55 to +175	$^\circ\text{C}$

Note:

1.  $T_A = 25^\circ\text{C}$  Ambient temperature unless otherwise specified.
2. Non-repetitive current pulse, and derated above  $T_A = 25^\circ\text{C}$ .
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minute maximum.
4.  $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 5.0\text{V}$  for devices of  $V_{BR} > 201\text{V}$ .

## DIMENSIONS

DO-15	Min(mm)	Max(mm)
D	2.60	3.61
T	5.85	7.63
L	25.4	-
d	0.71	0.84



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## ELECTRICAL CHARACTERISTICS

Part Number		Working Reverse Voltage	Reverse Breakdown Voltage		Test Current	Max Reverse Leakage Current	Max Clamping Voltage	Reverse Surge Current
Uni-Polar	Bi-Polar	V <sub>RWM</sub> (V)	V <sub>BR</sub> Min(V)	V <sub>BR</sub> Max(V)	I <sub>T</sub> (mA)	I <sub>R</sub> (uA) @ V <sub>RWM</sub>	V <sub>C</sub> (V) @ I <sub>PP</sub>	I <sub>PP</sub> (A) Max
SA5.0	SA5.0C	5.0	6.40	7.30	10	600	9.6	52.08
SA5.0A	SA5.0CA	5.0	6.40	7.00	10	600	9.2	54.35
SA6.0	SA6.0C	6.0	6.67	8.15	10	600	11.4	43.86
SA6.0A	SA6.0CA	6.0	6.67	7.37	10	600	10.3	48.54
SA6.5	SA6.5C	6.5	7.22	8.82	10	400	12.3	40.65
SA6.5A	SA6.5CA	6.5	7.22	7.98	10	400	11.2	44.64
SA7.0	SA7.0C	7.0	7.78	9.51	10	150	13.3	37.59
SA7.0A	SA7.0CA	7.0	7.78	8.60	10	150	12.0	41.67
SA7.5	SA7.5C	7.5	8.33	10.20	1	50	14.3	34.97
SA7.5A	SA7.5CA	7.5	8.33	9.21	1	50	12.9	38.76
SA8.0	SA8.0C	8.0	8.89	10.90	1	25	15.0	33.33
SA8.0A	SA8.0CA	8.0	8.89	9.83	1	25	13.6	36.76
SA8.5	SA8.5C	8.5	9.44	11.50	1	5	15.9	31.45
SA8.5A	SA8.5CA	8.5	9.44	10.40	1	5	14.4	34.72
SA9.0	SA9.0C	9.0	10.00	12.20	1	5	16.9	29.59
SA9.0A	SA9.0CA	9.0	10.00	11.10	1	5	15.4	32.47
SA10	SA10C	10.0	11.10	13.60	1	5	18.8	26.60
SA10A	SA10CA	10.0	11.10	12.30	1	5	17.0	29.41
SA11	SA11C	11.0	12.20	14.90	1	5	20.1	24.88
SA11A	SA11CA	11.0	12.20	13.50	1	5	18.2	27.47
SA12	SA12C	12.0	13.30	16.30	1	5	22.0	22.73
SA12A	SA12CA	12.0	13.30	14.70	1	5	19.9	25.13
SA13	SA13C	13.0	14.40	17.60	1	5	23.8	21.01
SA13A	SA13CA	13.0	14.40	15.90	1	5	21.5	23.26
SA14	SA14C	14.0	15.60	19.10	1	5	25.8	19.38
SA14A	SA14CA	14.0	15.60	17.20	1	5	23.2	21.55
SA15	SA15C	15.0	16.70	20.40	1	5	26.9	18.59
SA15A	SA15CA	15.0	16.70	18.50	1	5	24.4	20.49
SA16	SA16C	16.0	17.80	21.80	1	5	28.8	17.36
SA16A	SA16CA	16.0	17.80	19.70	1	5	26.0	19.23
SA17	SA17C	17.0	18.90	23.10	1	5	30.5	16.39
SA17A	SA17CA	17.0	18.90	20.90	1	5	27.6	18.12
SA18	SA18C	18.0	20.00	24.40	1	5	32.2	15.53
SA18A	SA18CA	18.0	20.00	22.10	1	5	29.2	17.12
SA19	SA19C	19.0	21.13	25.76	1	5	34.0	14.70
SA19A	SA19CA	19.0	21.10	23.30	1	5	30.8	16.24
SA20	SA20C	20.0	22.20	27.10	1	5	35.8	13.97
SA20A	SA20CA	20.0	22.20	24.50	1	5	32.4	15.43
SA22	SA22C	22.0	24.40	29.80	1	5	39.4	12.69
SA22A	SA22CA	22.0	24.40	26.90	1	5	35.5	14.08
SA24	SA24C	24.0	26.70	32.60	1	5	43.0	11.63
SA24A	SA24CA	24.0	26.70	29.50	1	5	38.9	12.85
SA26	SA26C	26.0	28.90	35.30	1	5	46.6	10.73
SA26A	SA26CA	26.0	28.90	31.90	1	5	42.1	11.88
SA28	SA28C	28.0	31.10	38.00	1	5	50.0	10.00
SA28A	SA28CA	28.0	31.10	34.40	1	5	45.4	11.01
SA30	SA30C	30.0	33.30	40.70	1	5	53.5	9.35
SA30A	SA30CA	30.0	33.30	36.80	1	5	48.4	10.33
SA33	SA33C	33.0	36.70	44.90	1	5	59.0	8.47
SA33A	SA33CA	33.0	36.70	40.60	1	5	53.3	9.38
SA36	SA36C	36.0	40.00	48.90	1	5	64.3	7.78
SA36A	SA36CA	36.0	40.00	44.20	1	5	58.1	8.61
SA40	SA40C	40.0	44.40	54.30	1	5	71.4	7.00
SA40A	SA40CA	40.0	44.40	49.10	1	5	64.5	7.75

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## ELECTRICAL CHARACTERISTICS

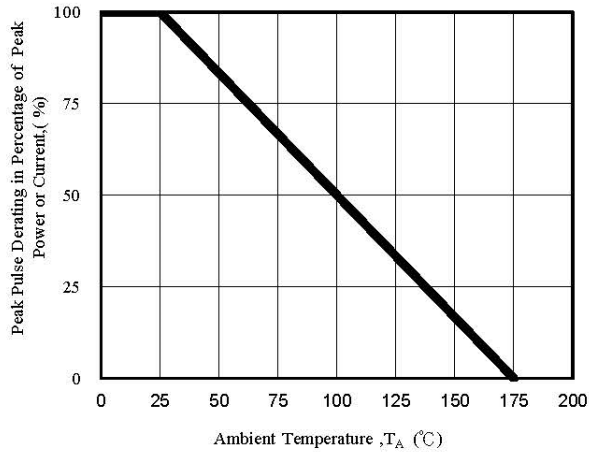
Part Number		Working Reverse Voltage	Reverse Breakdown Voltage		Test Current	Max Reverse Leakage Current	Max Clamping Voltage	Reverse Surge Current
Uni-Polar	Bi-Polar	V <sub>RWM</sub> (V)	V <sub>BR</sub> Min(V)	V <sub>BR</sub> Max(V)	I <sub>T</sub> (mA)	I <sub>R</sub> (uA) @ V <sub>RWM</sub>	V <sub>C</sub> (V) @ I <sub>PP</sub>	I <sub>PP</sub> (A) Max
SA43	SA43C	43.0	47.80	58.40	1	5	76.7	6.52
SA43A	SA43CA	43.0	47.80	52.80	1	5	69.4	7.20
SA45	SA45C	45.0	50.00	61.10	1	5	80.3	6.23
SA45A	SA45CA	45.0	50.00	55.30	1	5	72.7	6.88
SA48	SA48C	48.0	53.30	65.10	1	5	85.5	5.85
SA48A	SA48CA	48.0	53.30	58.90	1	5	77.4	6.46
SA51	SA51C	51.0	56.70	69.30	1	5	91.1	5.49
SA51A	SA51CA	51.0	56.70	62.70	1	5	82.4	6.07
SA54	SA54C	54.0	60.00	73.30	1	5	96.3	5.19
SA54A	SA54CA	54.0	60.00	66.30	1	5	87.1	5.74
SA58	SA58C	58.0	64.40	78.70	1	5	103.0	4.85
SA58A	SA58CA	58.0	64.40	71.20	1	5	93.6	5.34
SA60	SA60C	60.0	66.70	81.50	1	5	107.0	4.67
SA60A	SA60CA	60.0	66.70	73.70	1	5	96.8	5.17
SA64	SA64C	64.0	71.10	86.90	1	5	114.0	4.39
SA64A	SA64CA	64.0	71.10	78.60	1	5	103.0	4.85
SA70	SA70C	70.0	77.80	95.10	1	5	125.0	4.00
SA70A	SA70CA	70.0	77.80	86.00	1	5	113.0	4.42
SA75	SA75C	75.0	83.30	102.00	1	5	134.0	3.73
SA75A	SA75CA	75.0	83.30	92.10	1	5	121.0	4.13
SA78	SA78C	78.0	86.70	106.00	1	5	139.0	3.60
SA78A	SA78CA	78.0	86.70	95.80	1	5	126.0	3.97
SA80	SA80C	80.0	88.96	108.80	1	5	143.2	3.49
SA80A	SA80CA	80.0	88.80	97.60	1	5	129.6	3.86
SA85	SA85C	85.0	94.40	115.0	1	5	151.0	3.31
SA85A	SA85CA	85.0	94.40	104.0	1	5	137.0	3.65
SA90	SA90C	90.0	100.00	122.0	1	5	160.0	3.13
SA90A	SA90CA	90.0	100.00	111.0	1	5	146.0	3.42
SA100	SA100C	100	111.00	136.0	1	5	179.0	2.79
SA100A	SA100CA	100	111.00	123.0	1	5	162.0	3.09
SA110	SA110C	110	122.00	149.0	1	5	196.0	2.55
SA110A	SA110CA	110	122.00	135.0	1	5	177.0	2.82
SA120	SA120C	120	133.00	163.0	1	5	214.0	2.34
SA120A	SA120CA	120	133.00	147.0	1	5	193.0	2.59
SA130	SA130C	130	144.00	176.0	1	5	231.0	2.16
SA130A	SA130CA	130	144.00	159.0	1	5	209.0	2.39
SA140	SA140C	140	155.68	190.4	1	5	250.6	2.00
SA140A	SA140CA	140	155.00	171.0	1	5	226.8	2.20
SA150	SA150C	150	167.00	204.0	1	5	268.0	1.87
SA150A	SA150CA	150	167.00	185.0	1	5	243.0	2.06
SA160	SA160C	160	178.00	218.0	1	5	287.0	1.74
SA160A	SA160CA	160	178.00	197.0	1	5	259.0	1.93
SA170	SA170C	170	189.00	231.0	1	5	304.0	1.64
SA170A	SA170CA	170	189.00	209.0	1	5	275.0	1.82
SA180	SA180C	180	200.16	244.8	1	5	322.2	1.55
SA180A	SA180CA	180	200.00	220.0	1	5	291.6	1.71
SA190	SA190C	190	211.28	258.4	1	5	340.1	1.47
SA190A	SA190CA	190	211.00	232.0	1	5	307.8	1.62

Note:

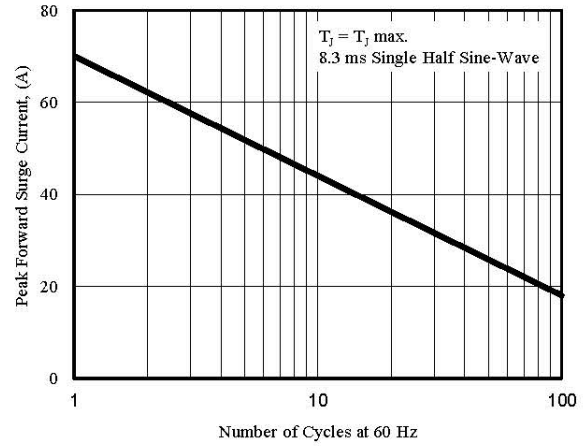
1. T<sub>a</sub> = 25°C ambient temperature unless otherwise specified.
2. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device.
3. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices.
4. For Bi-Directional devices having V<sub>R</sub> of 10 volts and under, the I<sub>R</sub> limit is double.

## CHARACTERISTIC CURVES

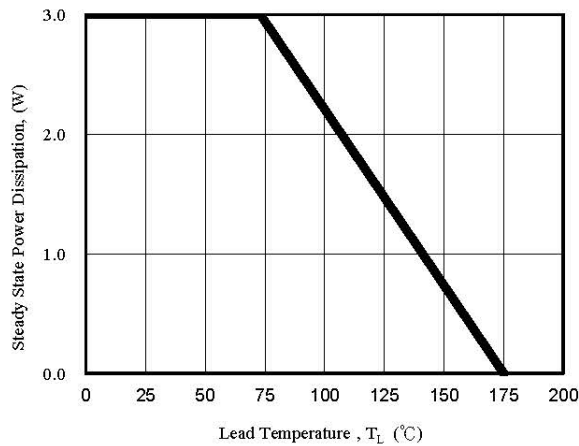
Pulse Derating Curve



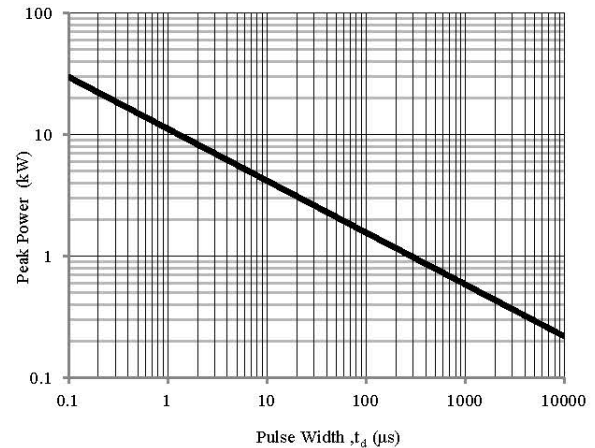
Maximum Non-Repetitive Surge Current



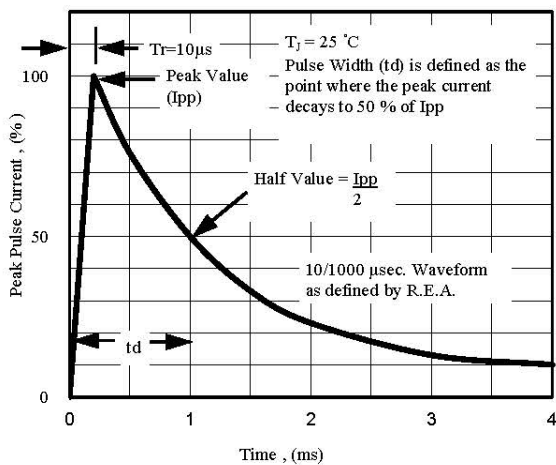
Steady State Power Derating Curve



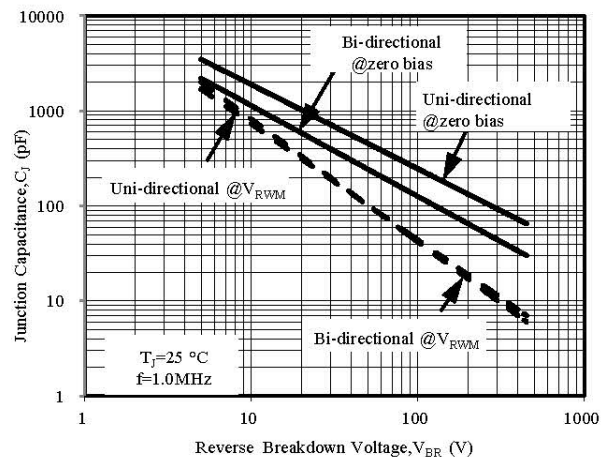
Peak Pulse Power Rating Curve



Pulse Waveform



Typical Junction Capacitance



\*Specifications subject to change without notice.