

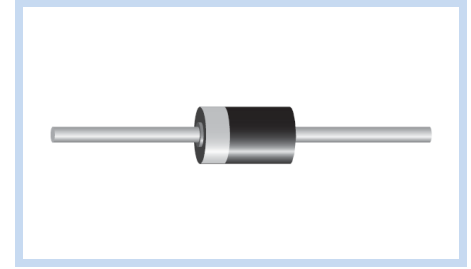
Transient Voltage Suppressors 500W DO-15

SA-E Series

MERITEK

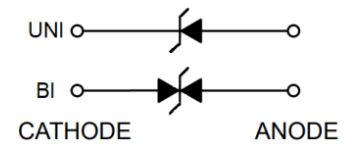
FEATURE

- IEC 61000-4-2 ESD: $\pm 30\text{kV}$ (Air), $\pm 30\text{kV}$ (Contact)
- 500W Peak Pulse Power (10/1000 μs Waveform)
- 5.0V to 220V 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-750, Method 2026
- Polarity: Color Band Denotes Cathode End Except Bipolar



MAXIMUM RATINGS



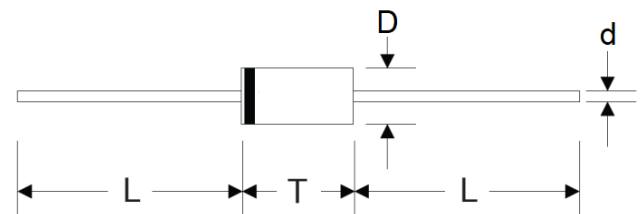
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 μs waveform.	P_{PPM}	500	W
Peak Pulse Current on 10/1000 μs waveform.	I_{PPM}	See Table	A
Typical Thermal Resistance Junction to Air Lead Length 0.375	$R_{\theta JA}$	50	$^{\circ}\text{C}/\text{W}$
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load	I_{FSM}	70	A
IEC 61000-4-2 ESD (Air)	V_{ESD}	± 30	kV
IEC 61000-4-2 ESD (Contact)	V_{ESD}	± 30	kV
Operating Junction And Storage Temperature Range	T_J, T_{STG}	-65 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. Mounted on Copper Leaf area of 1.57in²(40mm²).
4. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minute maximum.
5. A transient suppressor is selected according to the working peak reverse voltage, which should be equal to or greater than the DC or continuous peak operating voltage level.

DIMENSIONS

DO-15	Min(mm)	Max(mm)
D	2.60	3.60
T	5.80	7.60
L	25.4	-
d	0.71	0.86



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ELECTRICAL CHARACTERISTICS

Part Number		Working Reverse Voltage V_{RWM} (V)	Reverse Breakdown Voltage		Test Current I_T (mA)	Max Reverse Leakage Current I_R (μ A) @ V_{RWM}		Max Clamping Voltage V_C (V) @ I_{PP}	Reverse Surge Current I_{PP} (A) Max
Uni-Polar	Bi-Polar		V_{BR} Min(V)	V_{BR} Max(V)		Uni	Bi		
SA5.0-E	SA5.0C-E	5.0	6.40	7.55	10	600	1200	9.6	52.3
SA5.0A-E	SA5.0CA-E	5.0	6.40	7.25	10	600	1200	9.2	54.3
SA6.0-E	SA6.0C-E	6.0	6.67	8.45	10	600	1200	11.4	43.9
SA6.0A-E	SA6.0CA-E	6.0	6.67	7.67	10	600	800	10.3	48.5
SA6.5-E	SA6.5C-E	6.5	7.22	9.14	10	400	800	12.3	40.7
SA6.5A-E	SA6.5CA-E	6.5	7.22	8.30	10	400	300	11.2	44.7
SA7.0-E	SA7.0C-E	7.0	7.78	9.86	10	150	300	13.3	37.8
SA7.0A-E	SA7.0CA-E	7.0	7.78	8.95	10	150	100	12.0	41.7
SA7.5-E	SA7.5C-E	7.5	8.33	10.67	1	50	100	14.3	35.0
SA7.5A-E	SA7.5CA-E	7.5	8.33	9.58	1	50	50	12.9	38.8
SA8.0-E	SA8.0C-E	8.0	8.89	11.30	1	25	50	15.0	33.3
SA8.0A-E	SA8.0CA-E	8.0	8.89	10.23	1	25	20	13.6	36.7
SA8.5-E	SA8.5C-E	8.5	9.44	11.92	1	10	20	15.9	31.4
SA8.5A-E	SA8.5CA-E	8.5	9.44	10.82	1	10	8	14.4	34.7
SA9.0-E	SA9.0C-E	9.0	10.00	12.60	1	5	8	16.9	29.5
SA9.0A-E	SA9.0CA-E	9.0	10.00	11.50	1	5	1	15.4	32.5
SA10-E	SA10C-E	10.0	11.10	14.10	1	1	1	18.8	26.6
SA10A-E	SA10CA-E	10.0	11.10	12.80	1	1	1	17.0	29.4
SA11-E	SA11C-E	11.0	12.20	15.40	1	1	1	20.1	24.9
SA11A-E	SA11CA-E	11.0	12.20	14.00	1	1	1	18.2	27.4
SA12-E	SA12C-E	12.0	13.30	16.90	1	1	1	22.0	22.7
SA12A-E	SA12CA-E	12.0	13.30	15.30	1	1	1	19.9	25.1
SA13-E	SA13C-E	13.0	14.40	18.20	1	1	3	23.8	21.0
SA13A-E	SA13CA-E	13.0	14.40	16.50	1	3	1	21.5	23.2
SA14-E	SA14C-E	14.0	15.60	19.80	1	1	1	25.8	19.4
SA14A-E	SA14CA-E	14.0	15.60	17.90	1	1	1	23.2	21.5
SA15-E	SA15C-E	15.0	16.70	21.10	1	1	1	26.9	18.8
SA15A-E	SA15CA-E	15.0	16.70	19.20	1	1	1	24.4	20.6
SA16-E	SA16C-E	16.0	17.80	22.60	1	1	1	28.8	17.6
SA16A-E	SA16CA-E	16.0	17.80	20.50	1	1	1	26.0	19.2
SA17-E	SA17C-E	17.0	18.90	23.90	1	1	1	30.5	16.4
SA17A-E	SA17CA-E	17.0	18.90	21.70	1	1	1	27.6	16.1
SA18-E	SA18C-E	18.0	20.00	25.30	1	1	1	32.2	15.5
SA18A-E	SA18CA-E	18.0	20.00	23.30	1	1	1	29.2	17.2
SA20-E	SA20C-E	20.0	22.20	28.10	1	1	1	35.8	13.9
SA20A-E	SA20CA-E	20.0	22.20	25.50	1	1	1	32.4	15.4
SA22-E	SA22C-E	22.0	24.40	30.90	1	1	1	39.4	12.7
SA22A-E	SA22CA-E	22.0	24.40	28.00	1	1	1	35.5	14.1
SA24-E	SA24C-E	24.0	26.70	33.80	1	1	1	43.0	11.6
SA24A-E	SA24CA-E	24.0	26.70	30.70	1	1	1	38.9	12.8
SA26-E	SA26C-E	26.0	28.90	36.60	1	1	1	46.6	10.7
SA26A-E	SA26CA-E	26.0	28.90	33.20	1	1	1	42.1	11.9
SA28-E	SA28C-E	28.0	31.10	39.40	1	1	1	50.0	9.9
SA28A-E	SA28CA-E	28.0	31.10	35.80	1	1	1	45.4	11.0
SA30-E	SA30C-E	30.0	33.30	42.20	1	1	1	53.5	9.3
SA30A-E	SA30CA-E	30.0	33.30	38.30	1	1	1	48.4	10.3
SA33-E	SA33C-E	33.0	36.70	46.50	1	1	1	59.0	5.8
SA33A-E	SA33CA-E	33.0	36.70	42.20	1	1	1	53.3	9.4
SA36-E	SA36C-E	36.0	40.00	50.70	1	1	1	64.3	7.8
SA36A-E	SA36CA-E	36.0	40.00	46.00	1	1	1	58.1	8.6
SA40-E	SA40C-E	40.0	44.40	56.30	1	1	1	71.4	7.0
SA40A-E	SA40CA-E	40.0	44.40	51.10	1	1	1	64.5	7.8
SA43-E	SA43C-E	43.0	47.80	60.50	1	1	1	76.7	6.5
SA43A-E	SA43CA-E	43.0	47.80	54.90	1	1	1	69.4	7.2

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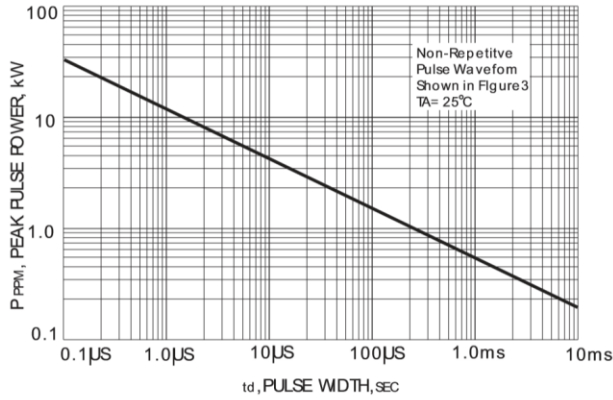
ELECTRICAL CHARACTERISTICS

Part Number		Working Reverse Voltage	Reverse Breakdown Voltage		Test Current	Max Reverse Leakage Current I_R (uA) @ V_{RWM}		Max Clamping Voltage	Reverse Surge Current
Uni-Polar	Bi-Polar	V_{RWM} (V)	V_{BR} Min(V)	V_{BR} Max(V)	I_T (mA)	Uni	Bi	V_C (V) @ I_{PP}	I_{PP} (A) Max
SA45-E	SA45C-E	45.0	50.00	63.30	1	1	1	80.3	6.2
SA45A-E	SA45CA-E	45.0	50.00	57.50	1	1	1	72.7	6.9
SA48-E	SA48C-E	48.0	53.30	67.50	1	1	1	85.5	5.8
SA48A-E	SA48CA-E	48.0	53.30	61.30	1	1	1	77.4	6.5
SA51-E	SA51C-E	51.0	56.70	71.80	1	1	1	91.1	5.5
SA51A-E	SA51CA-E	51.0	56.70	65.20	1	1	1	82.4	6.1
SA54-E	SA54C-E	54.0	60.00	76.00	1	1	1	96.3	5.2
SA54A-E	SA54CA-E	54.0	60.00	69.00	1	1	1	87.1	5.7
SA58-E	SA58C-E	58.0	64.40	81.60	1	1	1	103.0	4.9
SA58A-E	SA58CA-E	58.0	64.40	74.10	1	1	1	93.6	5.3
SA60-E	SA60C-E	60.0	66.70	84.50	1	1	1	107.0	4.7
SA60A-E	SA60CA-E	60.0	66.70	76.70	1	1	1	96.8	5.2
SA64-E	SA64C-E	64.0	71.10	90.10	1	1	1	114	4.4
SA64A-E	SA64CA-E	64.0	71.10	81.80	1	1	1	103	4.9
SA70-E	SA70C-E	70.0	77.80	98.60	1	1	1	125	4.0
SA70A-E	SA70CA-E	70.0	77.80	89.50	1	1	1	113	4.4
SA75-E	SA75C-E	75.0	83.30	105.70	1	1	1	134	3.7
SA75A-E	SA75CA-E	75.0	83.30	95.80	1	1	1	121	4.1
SA78-E	SA78C-E	78.0	86.70	109.80	1	1	1	139	3.6
SA78A-E	SA78CA-E	78.0	86.70	99.70	1	1	1	126	4.0
SA85-E	SA85C-E	85.0	94.40	119.20	1	1	1	151	3.3
SA85A-E	SA85CA-E	85.0	94.40	108.20	1	1	1	137	3.6
SA90-E	SA90C-E	90.0	100	126.50	1	1	1	160	3.1
SA90A-E	SA90CA-E	90.0	100	115.50	1	1	1	146	3.4
SA100-E	SA100C-E	100	111	141.00	1	1	1	179	2.8
SA100A-E	SA100CA-E	100	111	128.00	1	1	1	162	3.1
SA110-E	SA110C-E	110	122	154.50	1	1	1	196	2.6
SA110A-E	SA110CA-E	110	122	140.50	1	1	1	177	2.8
SA120-E	SA120C-E	120	133	169.00	1	1	1	214	2.3
SA120A-E	SA120CA-E	120	133	153.00	1	1	1	193	2.0
SA130-E	SA130C-E	130	144	182.50	1	1	1	231	2.2
SA130A-E	SA130CA-E	130	144	165.50	1	1	1	209	2.4
SA150-E	SA150C-E	150	167	211.50	1	1	1	268	1.9
SA150A-E	SA150CA-E	150	167	192.50	1	1	1	243	2.1
SA160-E	SA160C-E	160	178	226.00	1	1	1	287	1.7
SA160A-E	SA160CA-E	160	178	205.00	1	1	1	259	1.9
SA170-E	SA170C-E	170	189	239.50	1	1	1	304	1.6
SA170A-E	SA170CA-E	170	189	217.50	1	1	1	275	1.8
SA180-E	SA180C-E	180	198	253.80	1	1	1	322	1.6
SA180A-E	SA180CA-E	180	198	230.40	1	1	1	292	1.7
SA190-E	SA190C-E	190	209	267.90	1	1	1	340	1.5
SA190A-E	SA190CA-E	190	209	243.20	1	1	1	308	1.6
SA200-E	SA200C-E	200	220	282.00	1	1	1	358	1.4
SA200A-E	SA200CA-E	200	220	256.00	1	1	1	324	1.5
SA210-E	SA210C-E	210	231	296.10	1	1	1	376	1.3
SA210A-E	SA210CA-E	210	231	268.80	1	1	1	340	1.5
SA220-E	SA220C-E	220	242	310.20	1	1	1	394	1.3
SA220A-E	SA220CA-E	220	242	281.60	1	1	1	356	1.4

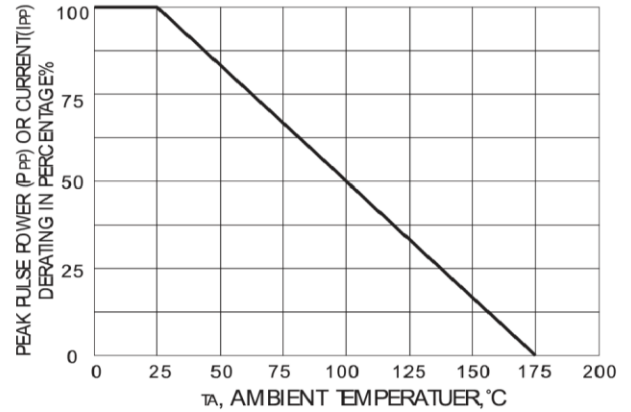
Note: $T_A = 25^\circ\text{C}$ ambient temperature unless otherwise specified.

CHARACTERISTIC CURVES

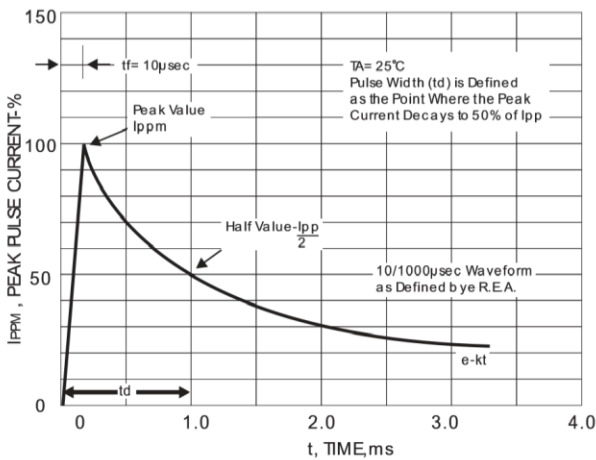
PEAK PULSE POWER RATING VERSUS PULSE TIME CURVE



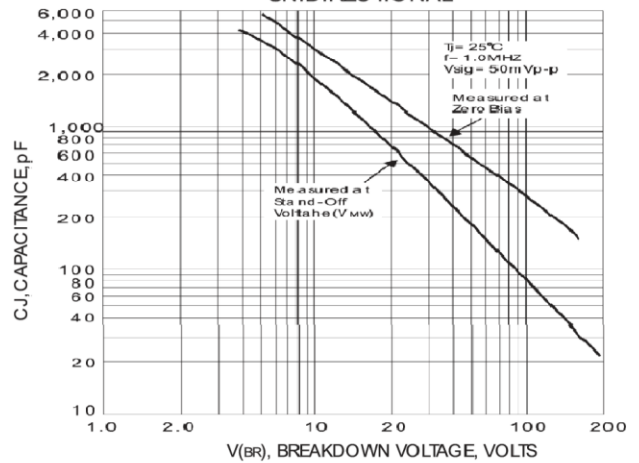
PULSE DERATING CURVE



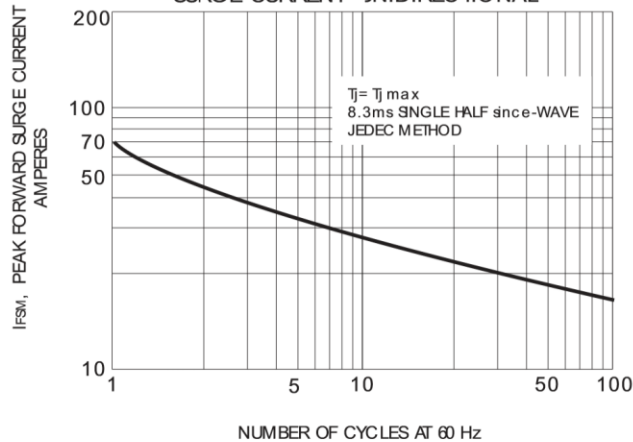
PULSE WAVEFORM



TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL



MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL



*Specifications subject to change without notice.