

SA5.0 - SA170A series

500 WATT AXIAL TRANSIENT VOLTAGE SUPPRESSORS

Protect sensitive electronics against voltage transients induced by electro-static discharge (ESD), inductive load switching, and lightning. Ideal for the protection of I/O interfaces, Vcc bus, and other integrated circuits used in computer or datacom equipment.

FEATURES

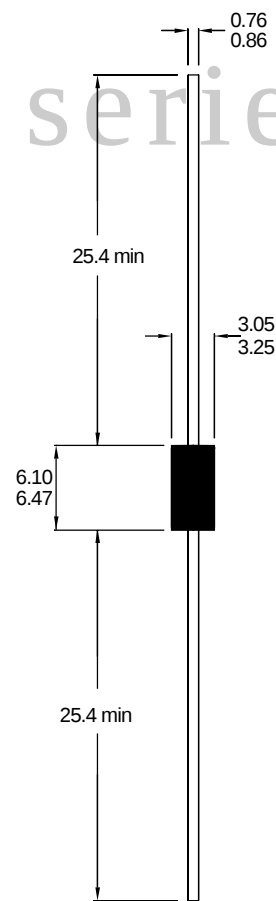
- Stand-off voltage Range 5.0 to 170 Volts
- Glass Passivated Junction
- Excellent clamping capability
- Uni-directional and Bi-directional
- 100% surge tested

MAXIMUM RATING

- Peak Pulse Power (Ppk): 500 Watts (10 X 1000µs)
(see diagrams on page 6 for wave form)
- 1.0 Watt Steady State
- Response time: 1×10^{-12} seconds (theoretical)
- Forward surge rating: 70 Amps, 8.3ms half sine wave, (uni-directional devices only)
- Operating & storage temperature: -55°C to +150°C

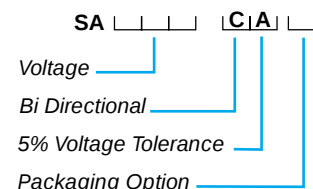
MECHANICAL DATA

- CASE: DO15, Moulded plastic over glass passivated junction
- Terminals: Axial leads, solderable per MIL-STD-202 Method 208
- Solderable leads = 230°C for 10 seconds (1.59mm from case)
- Marking: cathode band (positive terminal, uni-directional devices only), device code, logo
- Weight: 1 gram (approx)



All Dimensions in mm

ORDERING INFORMATION



B = Bulk (1000 pcs)

T = Tape and reeled (5000 pcs)

Figure 1 - Capacitance vs. Working Voltage

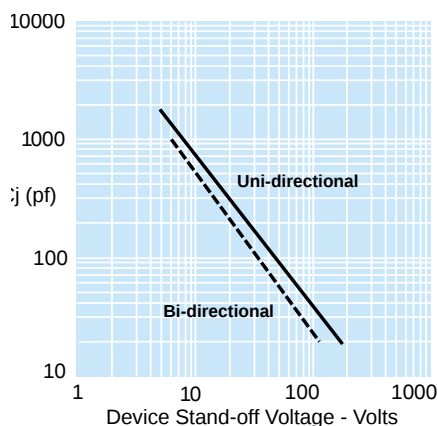
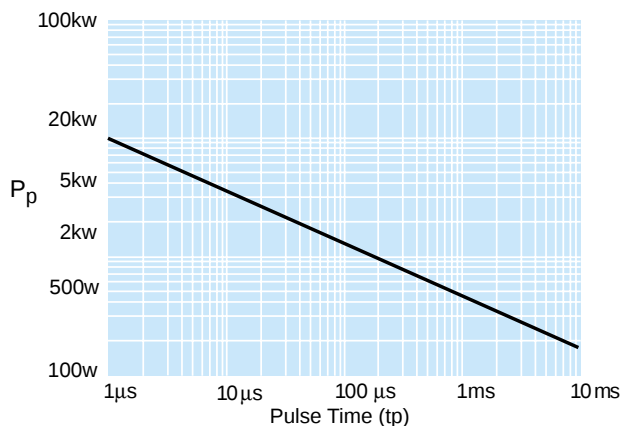


Figure 2 - Peak Pulse Power vs. Pulse Time



All products are sold to the commercial specifications shown, for any additional reliability testing or extended parameters, please consult the factory.

ELECTRICAL SPECIFICATIONS @ Tamb = 25°C

PART NUMBER (UNI)	PART NUMBER (BI)	REVERSE STANDOFF VOLTAGE V _R (Volts)	BREAKDOWN VOLTAGE V _{BR} (Volts) @ I _T			MAXIMUM REVERSE LEAKAGE I _R @ V _R (μA)	MAXIMUM CLAMPING VOLTAGE V _C @ I _{PP} (Volts)	MAXIMUM PEAK PULSE CURRENT I _{PP} (A)	MAX VOLTAGE TEMPERATURE VARIATION OF V _{BR} (mV/°C)
			MIN	MAX	mA				
SA5.0*	SA5.0C	5.0	6.40	7.30	10.0	600.0	9.6	52.0	5.0
SA5.0A*	N/A	5.0	6.40	7.00	10.0	600.0	9.2	54.3	5.0
SA6.0*	SA6.0C*	6.0	6.67	8.15	10.0	600.0	11.4	43.9	5.0
SA6.0A*	SA6.0CA*	6.0	6.67	7.37	10.0	600.0	10.3	48.5	5.0
SA6.5	SA6.5C	6.5	7.22	8.82	10.0	400.0	12.3	40.7	5.0
SA6.5A	SA6.5CA	6.5	7.22	7.98	10.0	400.0	11.2	44.7	5.0
SA7.0	SA7.0A	7.0	7.78	9.51	10.0	150.0	13.3	37.8	6.0
SA7.0A	SA7.0CA	7.0	7.78	8.60	10.0	150.0	12.0	41.7	6.0
SA7.5	SA7.5A	7.5	8.33	10.2	1.0	50.0	14.3	35.0	7.0
SA7.5A	SA7.5CA	7.5	8.33	9.21	1.0	50.0	12.9	38.8	7.0
SA8.0	SA8.0C	8.0	8.89	10.9	1.0	25.0	15.0	33.3	7.0
SA8.0A	SA8.0CA	8.0	8.89	9.83	1.0	25.0	13.6	36.7	7.0
SA8.5	SA8.5C	8.5	9.44	11.5	1.0	10.0	15.9	31.4	8.0
SA8.5A	SA8.5CA	8.5	9.44	10.4	1.0	10.0	14.4	34.7	8.0
SA9.0	SA9.0C	9.0	10.0	12.2	1.0	5.0	16.9	29.5	9.0
SA9.0A	SA9.0CA	9.0	10.0	11.1	1.0	5.0	15.4	32.5	9.0
SA10*	SA10C	10.0	11.1	13.6	1.0	3.0	18.8	26.6	10.0
SA10A*	SA10CA	10.0	11.1	12.3	1.0	3.0	17.0	29.4	10.0
SA11	SA11C	11.0	12.2	14.9	1.0	3.0	20.1	24.9	11.0
SA11A	SA11CA	11.0	12.2	13.5	1.0	3.0	18.2	27.4	11.0
SA12	SA12C	12.0	13.3	16.3	1.0	3.0	22.0	22.7	12.0
SA12A	SA12CA	12.0	13.3	14.7	1.0	3.0	19.9	25.1	12.0
SA13	SA13C*	13.0	14.4	17.6	1.0	3.0	23.8	21.0	13.0
SA13A	SA13CA*	13.0	14.4	15.9	1.0	3.0	21.5	23.2	13.0
SA14	SA14C	14.0	15.6	19.1	1.0	3.0	5.80	19.4	14.0
SA14A	SA14CA	14.0	15.6	17.2	1.0	3.0	23.2	21.5	14.0
SA15	SA15C	15.0	16.7	20.4	1.0	3.0	26.9	18.8	16.0
SA15A	SA15CA	15.0	16.7	18.5	1.0	3.0	24.4	20.6	16.0
SA16	SA16C	16.0	17.8	21.8	1.0	3.0	28.8	17.6	19.0
SA16A	SA16CA	16.0	17.8	19.7	1.0	3.0	26.0	19.2	17.0
SA17	SA17C	17.0	18.9	23.1	1.0	3.0	30.5	16.4	20.0
SA17A	SA17CA	17.0	18.9	20.9	1.0	3.0	27.6	18.1	19.0
SA18	SA18	18.0	20.0	24.4	1.0	3.0	32.2	15.5	21.0
SA18A	SA18CA	18.0	20.0	22.1	1.0	3.0	29.2	17.2	20.0
SA20*	SA20C	20.0	22.2	27.1	1.0	3.0	35.8	13.9	25.0
SA20A*	SA20CA	20.0	22.2	24.5	1.0	3.0	32.4	15.4	23.0
SA22	SA22C	22.0	24.4	29.8	1.0	3.0	39.4	12.7	28.0
SA22A	SA22CA	22.0	24.4	26.9	1.0	3.0	35.5	14.1	25.0
SA24	SA24C	24.0	26.7	32.6	1.0	3.0	3.00	11.6	31.0
SA24A	SA24CA	24.0	26.7	29.5	1.0	3.0	38.9	12.8	28.0
SA26*	SA26C*	26.0	28.9	35.3	1.0	3.0	6.60	10.7	31.0
SA26A*	SA26CA*	26.0	28.9	31.9	1.0	3.0	42.1	11.9	30.0
SA28	SA28C*	28.0	31.1	38.0	1.0	3.0	50.0	9.9	35.0
SA28A	SA28CA*	28.0	31.1	34.4	1.0	3.0	45.4	11.0	31.0
SA30	SA30C	30.0	33.3	40.7	1.0	3.0	53.5	9.3	39.0
SA30A	SA30CA	30.0	33.3	36.8	1.0	3.0	48.4	10.3	36.0

Note: SA5.0A is not available in Bi-directional.

Suffix 'C' denotes Bi-directional device. Suffix 'A' denotes 5% tolerance device, no suffix denotes a 10% tolerance device.

1. For Bi-directional devices having V_R of 10 volts and under the I_R limit is doubled.

2. For Uni-direction devices V_F = 3.5 Volts max at I_F 35A, 300 μs square wave pulse. * Preferred voltages.

All products are sold to the commercial specifications shown, for any additional reliability testing or extended parameters, please consult the factory.

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ELECTRICAL SPECIFICATIONS @ Tamb = 25°C

PART NUMBER (UNI)	PART NUMBER (BI)	REVERSE STANDOFF VOLTAGE V _R (Volts)	BREAKDOWN VOLTAGE V _{BR} (Volts) @ I _T			MAXIMUM REVERSE LEAKAGE I _R @ V _R (µA)	MAXIMUM CLAMPING VOLTAGE V _C @ I _{PP} (Volts)	MAXIMUM PEAK PULSE CURRENT I _{PP} (A)	MAX VOLTAGE TEMPERATURE VARIATION OF V _{BR} (mV/°C)
			MIN	MAX	mA				
SA33	SA33C	33.0	36.7	44.9	1.0	3.0	59.0	8.5	42.0
SA33A	SA33CA	33.0	36.7	40.6	1.0	3.0	53.3	9.4	39.0
SA36	SA36C	36.0	40.0	48.9	1.0	3.0	64.3	7.8	46.0
SA36A	SA36CA	36.0	40.0	44.2	1.0	3.0	58.1	8.6	41.0
SA40	SA40C	40.0	44.4	54.3	1.0	3.0	71.4	7.0	51.0
SA40A	SA40CA	40.0	44.4	49.1	1.0	3.0	64.5	7.8	46.0
SA43	SA43C	43.0	47.8	58.4	1.0	3.0	76.7	6.5	55.0
SA43A	SA43CA	43.0	47.8	52.8	1.0	3.0	69.4	7.2	50.0
SA45	SA45C	45.0	50.0	61.1	1.0	3.0	80.3	6.2	58.0
SA45A	SA45CA	45.0	50.0	55.3	1.0	3.0	72.7	6.9	52.0
SA48	SA48C	48.0	53.3	65.1	1.0	3.0	85.5	5.8	63.0
SA48A	SA48CA	48.0	53.3	58.9	1.0	3.0	77.4	6.5	56.0
SA51	SA51C*	51.0	56.7	69.3	1.0	3.0	91.1	5.5	66.0
SA51A	SA51CA*	51.0	56.7	62.7	1.0	3.0	82.4	6.1	61.0
SA54	SA54C	54.0	60.0	73.3	1.0	3.0	96.3	5.2	71.0
SA54A	SA54CA	54.0	60.0	66.3	1.0	3.0	87.1	5.7	65.0
SA58	SA58C	58.0	64.4	78.7	1.0	3.0	103.0	4.9	78.0
SA58A	SA58CA	58.0	64.4	71.2	1.0	3.0	93.6	5.3	70.0
SA60	SA60C	60.0	66.7	81.5	1.0	3.0	107.0	4.7	80.0
SA60A	SA60CA	60.0	66.7	73.7	1.0	3.0	96.8	5.2	71.0
SA64	SA64C	64.0	71.0	86.9	1.0	3.0	114.0	4.4	86.0
SA64A	SA64CA	64.0	71.1	78.6	1.0	3.0	103.0	4.9	76.0
SA70	SA70C	70.0	77.8	95.1	1.0	3.0	125.0	4.0	94.0
SA70A	SA70CA	70.0	77.0	86.0	1.0	3.0	113.0	4.4	85.0
SA75	SA75C	75.0	83.0	102.0	1.0	3.0	134.0	3.7	101.0
SA75A	SA75CA	75.0	83.0	92.1.0	1.0	3.0	121.0	4.1	91.0
SA78	SA78C	78.0	86.0	106.0	1.0	3.0	139.0	3.6	105.0
SA78A	SA78CA	78.0	86.0	95.8	1.0	3.0	126.0	4.0	95.0
SA85	SA85C	85.0	94.0	115.0	1.0	3.0	151.0	3.3	114.0
SA85A	SA85CA	85.0	94.0	104.0	1.0	3.0	137.0	3.6	103.0
SA90	SA90C	90.0	100.0	122.0	1.0	3.0	160.0	3.1	121.0
SA90A	SA90CA	90.0	100.0	111.0	1.0	3.0	146.0	3.4	110.0
SA100	SA100CA	100.0	111.0	136.0	1.0	3.0	179.0	2.8	135.0
SA100A	SA100CA	100.0	111.0	123.0	1.0	3.0	162.0	3.1	123.0
SA110	SA110C	110.0	122.0	149.0	1.0	3.0	196.0	2.6	148.0
SA110A	SA110CA	110.0	122.0	135.0	1.0	3.0	177.0	2.8	133.0
SA120	SA120C	120.0	133.0	163.0	1.0	3.0	214.0	2.3	162.0
SA120A	SA120CA	120.0	133.0	147.0	1.0	3.0	193.0	2.0	146.0
SA130	SA130C	130.0	144.0	176.0	1.0	3.0	231.0	2.2	175.0
SA130A	SA130CA	130.0	144.0	159.0	1.0	3.0	209.0	2.4	158.0
SA150	SA150C	150.0	167.0	204.0	1.0	3.0	268.0	1.9	203.0
SA150A	SA150CA	150.0	167.0	185.0	1.0	3.0	243.0	2.1	184.0
SA160	SA160C	160.0	178.0	218.0	1.0	3.0	287.0	1.7	217.0
SA160A	SA160CA	160.0	178.0	197.0	1.0	3.0	259.0	1.9	196.0
SA170	SA170C	170.0	189.0	231.0	1.0	3.0	304.0	1.6	230.0
SA170A	SA170CA	170.0	189.0	209.0	1.0	3.0	275.0	1.8	208.0

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