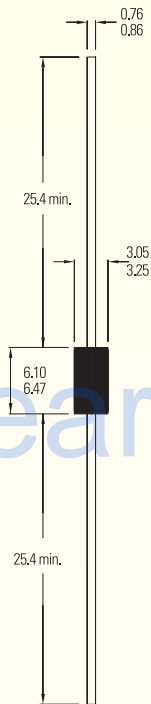


SA5.0 – SA170A  
Series



**CRYDOM**

Control over power



All dimensions in mm

**Invisible Protection**

*When no problems exist, Crydom TVS Diodes are totally invisible to the circuits they're protecting. But when potentially damaging transients occur, they provide high-speed "clamping" to prevent damage – and then return to their electronically invisible state.*

**APPLICATIONS FOR SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS**

Protect sensitive electronics against voltage transients induced by electrostatic discharge (ESD), inductive load switching, and lightning. Ideal for the protection of I/O interfaces, Vcc bus, and other integrated circuits.

**FEATURES**

- Glass passivated junction
- Stand-off voltage range: 5-170 V
- Excellent clamping capability
- Uni-directional and bi-directional
- 100% surge tested
- UL listed

**MAXIMUM RATINGS**

- Peak pulse power (PPK): 500 watts (10 X 1000  $\mu$ s)
- 3.0 watt steady state
- Response time: 1 X 10<sup>-12</sup>s (theoretical)
- Forward surge rating: 70 A, 8.3 ms half sine wave (uni-directional devices only)
- Operating and storage temperature: -55°C to +175°C

**MECHANICAL CHARACTERISTICS**

- Case: DO15, molded plastic over glass passivated junction
- Terminals: Axial leads, solderable per MIL-STD-202 Method 208
- Marking: Cathode band (positive terminal, uni-directional devices only), device code, logo
- Weight: 1 gram (approx.)

## Transient Voltage Suppression (TVS) Diodes

### SA5.0 – SA170A Series

PART NUMBER	REVERSE STAND-OFF VOLTAGE Vr (V)	BREAKDOWN VOLTAGE VBR (V) @ Ir			MAXIMUM REVERSE LEAKAGE Ir @ Vr (µA)	MAXIMUM CLAMPING VOLTAGE Vc @ IPP (V)	MAXIMUM PEAK PULSE CURRENT IPP (A)	MAX. VOLTAGE TEMPERATURE VARIATION OF VBR (mV/°C)
		MIN.	MAX.	(mA)				
SA5.0	5.0	6.40	7.30	10.0	600.0	9.6	52.0	5.0
SA5.0A	5.0	6.40	7.00	10.0	600.0	9.2	54.3	5.0
SA6.0	6.0	6.67	8.15	10.0	600.0	11.4	43.9	5.0
SA6.0A	6.0	6.67	7.37	10.0	600.0	10.3	48.5	5.0
SA6.5	6.5	7.22	8.82	10.0	400.0	12.3	40.7	5.0
SA6.5A	6.5	7.22	7.98	10.0	400.0	11.2	44.7	5.0
SA7.0	7.0	7.78	9.51	10.0	150.0	13.3	37.8	6.0
SA7.0A	7.0	7.78	8.60	10.0	150.0	12.0	41.7	6.0
SA7.5	7.5	8.33	10.2	1.0	50.0	14.3	35.0	7.0
SA7.5A	7.5	8.33	9.21	1.0	50.0	12.9	38.8	7.0
SA8.0	8.0	8.89	10.9	1.0	25.0	15.0	33.3	7.0
SA8.0A	8.0	8.89	9.83	1.0	25.0	13.6	36.7	7.0
SA8.5	8.5	9.44	11.5	1.0	10.0	15.9	31.4	8.0
SA8.5A	8.5	9.44	10.4	1.0	10.0	14.4	34.7	8.0
SA9.0	9.0	10.0	12.2	1.0	5.0	16.9	29.5	9.0
SA9.0A	9.0	10.0	11.1	1.0	5.0	15.4	32.5	9.0
SA10	10.0	11.1	13.6	1.0	3.0	18.8	26.6	10.0
SA10A	10.0	11.1	12.3	1.0	3.0	17.0	29.4	10.0
SA11	11.0	12.2	14.9	1.0	3.0	20.1	24.9	11.0
SA11A	11.0	12.2	13.5	1.0	3.0	18.2	27.4	11.0
SA12	12.0	13.3	16.3	1.0	3.0	22.0	22.7	12.0
SA12A	12.0	13.3	14.7	1.0	3.0	19.9	25.1	12.0
SA13	13.0	14.4	17.6	1.0	3.0	23.8	21	13.0
SA13A	13.0	14.4	15.9	1.0	3.0	21.5	23.2	13.0
SA14	14.0	15.6	19.1	1.0	3.0	5.8	19.4	14.0
SA14A	14.0	15.6	17.2	1.0	3.0	23.2	21.5	14.0
SA15	15.0	16.7	20.4	1.0	3.0	26.9	18.8	16.0
SA15A	15.0	16.7	18.5	1.0	3.0	24.4	20.6	16.0
SA16	16.0	17.8	21.8	1.0	3.0	28.8	17.6	19.0
SA16A	16.0	17.8	19.7	1.0	3.0	26.0	19.2	17.0
SA17	17.0	18.9	23.1	1.0	3.0	30.5	16.4	20.0
SA17A	17.0	18.9	20.9	1.0	3.0	27.6	18.1	19.0
SA18	18.0	20.0	24.4	1.0	3.0	32.2	15.5	21.0
SA18A	18.0	20.0	22.1	1.0	3.0	29.2	17.2	20.0
SA20	20.0	22.2	27.1	1.0	3.0	35.8	13.9	25.0
SA20A	20.0	22.2	24.5	1.0	3.0	32.4	15.4	23.0
SA22	22.0	24.4	29.8	1.0	3.0	39.4	12.7	28.0
SA22A	22.0	24.4	26.9	1.0	3.0	35.5	14.1	25.0
SA24	24.0	26.7	32.6	1.0	3.0	3.0	11.6	31.0
SA24A	24.0	26.7	29.5	1.0	3.0	38.9	12.8	28.0
SA26	26.0	28.9	35.3	1.0	3.0	6.6	10.7	31.0
SA26A	26.0	28.9	31.9	1.0	3.0	42.1	11.9	30.0
SA28	28.0	31.1	38	1.0	3.0	50.0	9.9	35.0
SA28A	28.0	31.1	34.4	1.0	3.0	45.4	11.0	31.0
SA30	30.0	33.3	40.7	1.0	3.0	53.5	9.3	39.0
SA30A	30.0	33.3	36.8	1.0	3.0	48.4	10.3	36.0

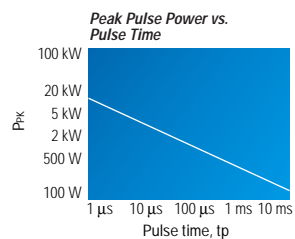
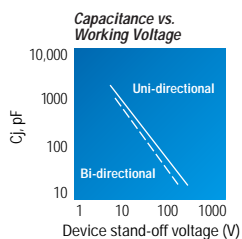
Note: Suffix "C" denotes bi-directional device. Suffix "A" denotes 5% tolerance device. No suffix denotes 10% tolerance device. For bi-directional devices having Vr of 10 V and under the Ir limit is doubled. For uni-direction devices Vr = 3.5 V max. at Ir 35 A, 300 µs square wave pulse. SA5.0C not available in 5% tolerance. Electrical specifications @ 25°C.

SA5.0 – SA170A Series 

PART NUMBER	REVERSE STAND-OFF VOLTAGE Vr (V)	BREAKDOWN VOLTAGE VBR (V) @ It			MAXIMUM REVERSE LEAKAGE Ir @ Vr (µA)	MAXIMUM CLAMPING VOLTAGE Vc @ Ipp (V)	MAXIMUM PEAK PULSE CURRENT Ipp (A)	MAX. VOLTAGE TEMPERATURE VARIATION OF VBR (mV/°C)
		MIN.	MAX.	(mA)				
SA33	33.0	36.7	44.9	1.0	3.0	59.0	8.5	42.0
SA33A	33.0	36.7	40.6	1.0	3.0	53.3	9.4	39.0
SA36	36.0	40.0	48.9	1.0	3.0	64.3	7.8	46.0
SA36A	36.0	40.0	44.2	1.0	3.0	58.1	8.6	41.0
SA40	40.0	44.4	54.3	1.0	3.0	71.4	7.0	51.0
SA40A	40.0	44.4	49.1	1.0	3.0	64.5	7.8	46.0
SA43	43.0	47.8	58.4	1.0	3.0	76.7	6.5	55.0
SA43A	43.0	47.8	52.8	1.0	3.0	69.4	7.2	50.0
SA45	45.0	50.0	61.1	1.0	3.0	80.3	6.2	58.0
SA45A	45.0	50.0	55.3	1.0	3.0	72.7	6.9	52.0
SA48	48.0	53.3	65.1	1.0	3.0	85.5	5.8	63.0
SA48A	48.0	53.3	58.9	1.0	3.0	77.4	6.5	56.0
SA51	51.0	56.7	69.3	1.0	3.0	91.1	5.5	66.0
SA51A	51.0	56.7	62.7	1.0	3.0	82.4	6.1	61.0
SA54	54.0	60.0	73.3	1.0	3.0	96.3	5.2	71.0
SA54A	54.0	60.0	66.3	1.0	3.0	87.1	5.7	65.0
SA58	58.0	64.4	78.7	1.0	3.0	103.0	4.9	78.0
SA58A	58.0	64.4	71.2	1.0	3.0	93.6	5.3	70.0
SA60	60.0	66.7	81.5	1.0	3.0	107.0	4.7	80.0
SA60A	60.0	66.7	73.7	1.0	3.0	96.8	5.2	71.0
SA64	64.0	71.0	86.9	1.0	3.0	114.0	4.4	86.0
SA64A	64.0	71.1	78.6	1.0	3.0	103.0	4.9	76.0
SA70	70.0	77.8	95.1	1.0	3.0	125.0	4.0	94.0
SA70A	70.0	77.0	86.0	1.0	3.0	113.0	4.4	85.0
SA75	75.0	83.0	102.0	1.0	3.0	134.0	3.7	101.0
SA75A	75.0	83.0	92.1	1.0	3.0	121.0	4.1	91.0
SA78	78.0	86.0	106.0	1.0	3.0	139.0	3.6	105.0
SA78A	78.0	86.0	95.8	1.0	3.0	126.0	4.0	95.0
SA85	85.0	94.0	115.0	1.0	3.0	151.0	3.3	114.0
SA85A	85.0	94.0	104.0	1.0	3.0	137.0	3.6	103.0
SA90	90.0	100.0	122.0	1.0	3.0	160.0	3.1	121.0
SA90A	90.0	100.0	111.0	1.0	3.0	146.0	3.4	110.0
SA100	100.0	111.0	136.0	1.0	3.0	179.0	2.8	135.0
SA100A	100.0	111.0	123.0	1.0	3.0	162.0	3.1	123.0
SA110	110.0	122.0	149.0	1.0	3.0	196.0	2.6	148.0
SA110A	110.0	122.0	135.0	1.0	3.0	177.0	2.8	133.0
SA120	120.0	133.0	163.0	1.0	3.0	214.0	2.3	162.0
SA120A	120.0	133.0	147.0	1.0	3.0	193.0	2.0	146.0
SA130	130.0	144.0	176.0	1.0	3.0	231.0	2.2	175.0
SA130A	130.0	144.0	159.0	1.0	3.0	209.0	2.4	158.0
SA150	150.0	167.0	204.0	1.0	3.0	268.0	1.9	203.0
SA150A	150.0	167.0	185.0	1.0	3.0	243.0	2.1	184.0
SA160	160.0	178.0	218.0	1.0	3.0	287.0	1.7	217.0
SA160A	160.0	178.0	197.0	1.0	3.0	259.0	1.9	196.0
SA170	170.0	189.0	231.0	1.0	3.0	304.0	1.6	230.0
SA170A	170.0	189.0	209.0	1.0	3.0	275.0	1.8	208.0



## SA5.0 – SA170A Series



### Specify Crydom

...for these industry-leading components and products:

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  - Printed Circuit Board Mount
  - Panel Mount
  - DIN Rail Mount
- **Power Cubes**
- **I/O Modules**
- **Transient Voltage Suppression Components**
  - TVS Diodes
  - Thyristor Suppression Devices
  - Gas Discharge Tubes (GDT)
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For recommended applications and more information contact:

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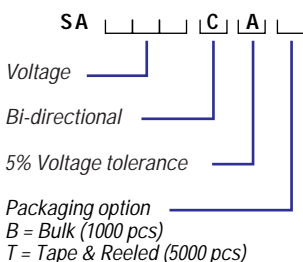
Technical support: 1-877-702-7700

Corporate Headquarters: 1-619-715-7200

Fax: 1-619-715-7280

E-mail: sales@crydom.com

Website: www.crydom.com



FASTFAX Product Info: 1-888-267-9191

### About Crydom

Over the years Crydom has become the supplier of choice for advanced, high-quality products like those featured here. It's the result of our teams of design and production engineers – material, production control, and quality assurance experts, and more – working seamlessly together to create, produce, and deliver superior components and products that satisfy the most demanding environmental and performance requirements. We focus on timely delivery and competitive pricing aimed at meeting your needs and helping you succeed in today's fast-paced, fast-changing global markets.

### Crydom

9525 Chesapeake Drive  
San Diego, CA 92123 USA



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