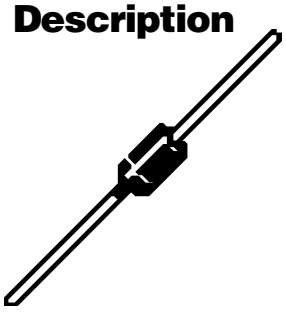
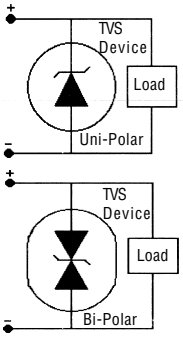
FCI Semiconductor *Data Sheet*

5.0V to 170V GPP TRANSIENT VOLTAGE SUPPRESSORS

SA5.0...170

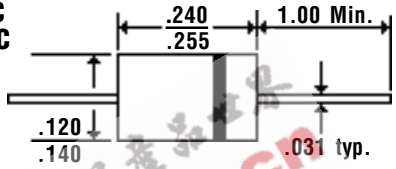
Description





Mechanical Dimensions

JEDEC 204-AC



Features

- 500 WATT PEAK POWER PROTECTION
- EXCELLENT CLAMPING CAPABILITY
- FAST RESPONSE TIME
- TYPICAL I_R < 1μA ABOVE 10V
- GLASS PASSIVATED CHIP CONSTRUCTION
- MEETS UL SPECIFICATION 94V-0

	SA5.0...170	Units
Maximum Ratings		
Peak Power Dissipation...P_{PK} T_P = 1ms *(Note 5)*	500 Min.	Watts
Steady State Power Dissipation...P_D @ T_L = 75°C	1	Watts
Non-Repetitive Peak Forward Surge Current...I_{FSM} @ Rated Load Conditions, 8.3 ms, ½ Sine Wave, Single Phase *(Note 3)*	70	Amps
Forward Voltage @ 50A...V_F *(Undirectional Only)*	3.5	Volts
Weight...G_{RM}	0.4	Grams
Soldering Requirements (Time & Temp)...S_T @ 300°C	10 Sec.	Min. to Solder
Operating & Storage Temperature Range...T_J, T_{STRG}	-55 to 175	°C

NOTES: 1. For Bi-Directional Applications, Use C or CA. Electrical Characteristics Apply in Both Directions.
2. Lead Length .375 Inches.
3. 8.3 ms, ½ Sine Wave, Single Phase Duty Cycle, @ 4 Pulses Per Minute Maximum.
4. V_{BR} Measured After I_T Applies for 300 μs. I_T = Square Wave Pulse or Equivalent.
5. Non-Repetitive Current Pulse. Per Fig. 3 and Derated Above T_A = 25°C per Fig. 2.

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Fig. 1 Pulse Rating Curve

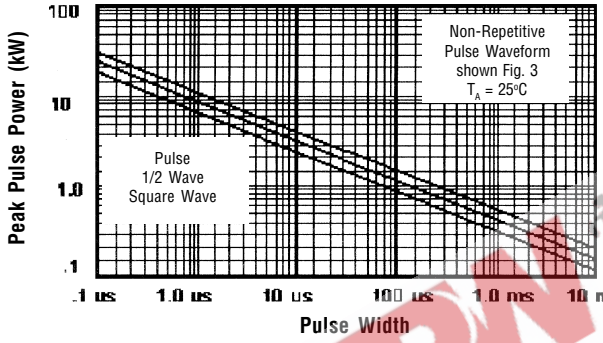


Fig. 2 Pulse Derating Curve

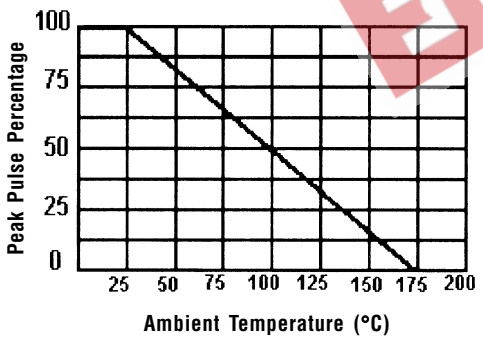


Fig. 5 Steady State Power Derating

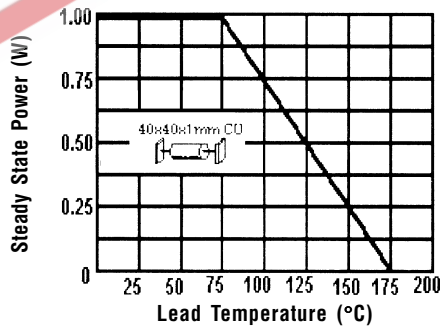


Fig. 3 Pulse Waveform

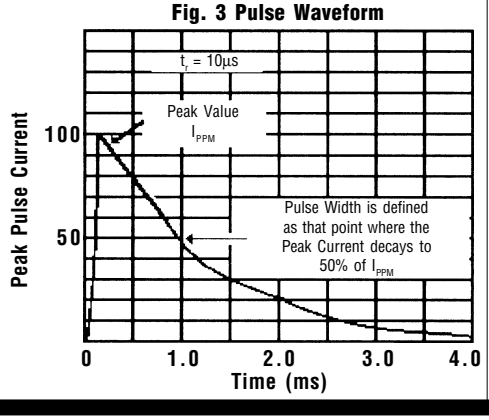
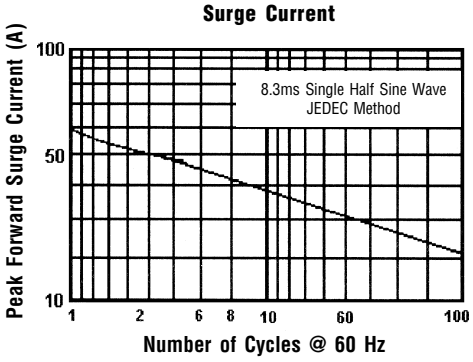


Fig. 6 Maximum Non-Repetitive Surge Current



Ratings at 25 Deg. C ambient temperature unless otherwise specified.

Single Phase Half Wave, 60 Hz Resistive or Inductive Load.

For Capacitive Load, Derate Current by 20%.

5.0V to 170V GPP TRANSIENT VOLTAGE SUPPRESSORS

DEVICE	Breakdown Voltage V_{BR} Volts *(Note 1)* Min.	Breakdown Voltage V_{BR} Volts *(Note 1)* Max.	@ I_T (mA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Leakage @ V_{PPM} I_R (μA)	Peak Pulse Current I_{PPM} (A) *(Note 2)*	Maximum Clamping Voltage @ I_{PPM} V_C (V)	Maximum Temperature Coefficient of V_{BR} % /°C
SA5.0	6.40	7.30	10.00	5.00	600	52.00	9.60	5.00
SA5.0A	6.40	7.00	10.00	5.00	600	54.30	9.20	5.00
SA6.0	6.67	8.15	10.00	6.00	600	43.90	11.40	5.00
SA6.0A	6.67	7.37	10.00	6.00	600	48.50	10.30	5.00
SA6.5	7.22	8.82	10.00	6.50	400	40.70	12.30	5.00
SA6.5A	7.22	7.98	10.00	6.50	400	44.70	11.20	5.00
SA7.0	7.78	9.51	10.00	7.00	150	37.80	13.30	6.00
SA7.0A	7.78	8.60	10.00	7.00	150	41.70	12.00	6.00
SA7.5	8.33	10.20	1.00	7.50	50.00	35.00	14.30	7.00
SA7.5A	8.33	9.21	1.00	7.50	50.00	38.80	12.90	7.00
SA8.0	8.89	10.90	1.00	8.00	25.00	33.30	15.00	7.00
SA8.0A	8.89	9.83	1.00	8.00	25.00	36.70	13.60	7.00
SA8.5	9.44	11.50	1.00	8.50	10.00	31.40	15.90	8.00
SA8.5A	9.44	10.40	1.00	8.50	10.00	34.70	14.40	8.00
SA9.0	10.00	12.20	1.00	9.00	5.00	29.50	16.90	9.00
SA9.0A	10.00	11.10	1.00	9.00	5.00	32.50	15.40	9.00
SA10	11.10	13.60	1.00	10.00	1.00	26.60	18.80	10.00
SA10A	11.10	12.30	1.00	10.00	1.00	29.40	17.00	10.00
SA11	12.20	14.90	1.00	11.00	1.00	24.90	20.10	11.00
SA11A	12.20	13.50	1.00	11.00	1.00	27.40	18.20	11.00
SA12	13.30	16.30	1.00	12.00	1.00	22.70	22.00	12.00
SA12A	13.30	14.70	1.00	12.00	1.00	25.10	19.90	12.00
SA13	14.40	17.60	1.00	13.00	1.00	21.00	23.80	13.00
SA13A	14.40	15.90	1.00	13.00	1.00	23.20	21.50	13.00
SA14	15.60	19.10	1.00	14.00	1.00	19.40	25.80	14.00
SA14A	15.60	17.20	1.00	14.00	1.00	21.50	23.20	14.00
SA15	16.70	20.40	1.00	15.00	1.00	18.80	26.90	16.00
SA15A	16.70	18.50	1.00	15.00	1.00	20.60	24.40	16.00
SA16	17.80	21.80	1.00	16.00	1.00	17.60	28.80	19.00
SA16A	17.80	19.70	1.00	16.00	1.00	19.20	26.00	17.00
SA17	18.90	23.10	1.00	17.00	1.00	16.40	30.50	20.00
SA17A	18.90	20.90	1.00	17.00	1.00	18.10	27.60	19.00
SA18	20.00	24.40	1.00	18.00	1.00	15.50	32.20	21.00
SA18A	20.00	22.10	1.00	18.00	1.00	17.20	29.20	20.00
SA20	22.20	27.10	1.00	20.00	1.00	13.90	35.80	25.00
SA20A	22.20	24.50	1.00	20.00	1.00	15.40	32.40	23.00
SA22	24.40	29.80	1.00	22.00	1.00	12.70	39.40	28.00
SA22A	24.40	26.90	1.00	22.00	1.00	14.10	35.50	25.00
SA24	26.70	32.60	1.00	24.00	1.00	11.60	43.00	31.00
SA24A	26.70	29.50	1.00	24.00	1.00	12.80	38.90	28.00
SA26	28.90	35.30	1.00	26.00	1.00	10.70	46.60	31.00
SA26A	28.90	31.90	1.00	26.00	1.00	11.90	42.10	30.00

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SA28	31.10	38.00	1.00	28.00	1.00	9.90	50.10	35.00
SA28A	31.10	34.40	1.00	28.00	1.00	11.00	45.40	31.00
SA30	33.30	40.70	1.00	30.00	1.00	9.30	53.50	39.00
SA30A	33.30	36.80	1.00	30.00	1.00	10.30	48.40	36.00
SA33	36.70	44.90	1.00	33.00	1.00	8.60	59.00	42.00
SA33A	36.70	40.60	1.00	33.00	1.00	9.40	53.30	39.00
SA36	40.00	48.90	1.00	36.00	1.00	7.80	64.30	46.00
SA36A	40.00	44.20	1.00	36.00	1.00	8.60	58.10	41.00
SA40	44.40	54.30	10.00	40.00	1.00	7.00	71.40	51.00
SA40A	44.40	49.10	10.00	40.00	1.00	7.80	64.50	46.00
SA43	47.80	58.40	10.00	43.00	1.00	6.50	76.70	55.00
SA43A	47.80	52.80	10.00	43.00	1.00	7.20	69.40	50.00
SA45	50.00	61.10	10.00	45.00	1.00	6.20	80.30	58.00
SA45A	50.00	55.30	10.00	45.00	1.00	6.90	72.70	52.00
SA48	53.30	65.10	10.00	48.00	1.00	5.80	85.50	63.00
SA48A	53.30	58.90	10.00	48.00	1.00	6.50	77.40	56.00
SA51	56.70	69.30	1.00	51.00	1.00	5.50	91.10	66.00
SA51A	56.70	62.70	1.00	51.00	1.00	6.10	82.40	61.00
SA54	60.00	73.30	1.00	54.00	1.00	5.20	96.30	71.00
SA54A	60.00	66.30	1.00	54.00	1.00	5.70	87.10	65.00
SA58	64.40	78.70	1.00	58.00	1.00	4.90	103.00	78.00
SA58A	64.40	71.20	1.00	58.00	1.00	5.30	93.60	70.00
SA60	66.70	81.50	1.00	60.00	1.00	4.70	107.00	80.00
SA60A	66.70	73.70	1.00	60.00	1.00	5.20	96.80	71.00
SA64	71.10	86.90	1.00	64.00	1.00	4.40	114.00	86.00
SA64A	71.10	78.60	1.00	64.00	1.00	4.90	103.00	75.00
SA70	77.80	95.00	1.00	70.00	1.00	4.00	125.00	94.00
SA70A	77.80	86.00	1.00	70.00	1.00	4.40	113.00	85.00
SA75	83.30	102.00	1.00	75.00	1.00	3.70	134.00	101.00
SA75A	83.30	92.10	1.00	75.00	1.00	4.10	121.00	91.00
SA78	86.70	106.00	1.00	78.00	1.00	3.60	139.00	105.00
SA78A	86.70	95.80	1.00	78.00	1.00	4.00	126.00	95.00
SA85	94.40	115.00	1.00	85.00	1.00	3.30	151.00	114.00
SA85A	94.40	104.00	1.00	85.00	1.00	3.60	137.00	103.00
SA90	100.00	122.00	1.00	90.00	1.00	3.10	160.00	121.00
SA90A	100.00	111.00	1.00	90.00	1.00	3.40	146.00	110.00
SA100	111.00	136.00	1.00	100.00	1.00	2.80	179.00	135.00
SA100A	111.00	123.00	1.00	100.00	1.00	3.10	162.00	123.00
SA110	122.00	149.00	1.00	110.00	1.00	2.60	196.00	148.00
SA110A	122.00	135.00	1.00	110.00	1.00	2.80	177.00	133.00
SA120	133.00	163.00	1.00	120.00	1.00	2.30	214.00	162.00
SA120A	133.00	147.00	1.00	120.00	1.00	2.00	193.00	145.00
SA130	144.00	176.00	1.00	130.00	1.00	2.20	231.00	175.00
SA130A	144.00	159.00	1.00	130.00	1.00	2.40	209.00	158.00
SA150	167.00	204.00	1.00	150.00	1.00	1.90	268.00	203.00
SA150A	167.00	185.00	1.00	150.00	1.00	2.10	243.00	184.00
SA160	178.00	218.00	1.00	160.00	1.00	1.70	287.00	217.00
SA160A	178.00	197.00	1.00	160.00	1.00	1.90	259.00	196.00
SA170	189.00	231.00	1.00	170.00	1.00	1.60	304.00	230.00
SA170A	189.00	209.00	1.00	170.00	1.00	1.80	275.00	208.00