



Micro Commercial Components



Micro Commercial Components  
20736 Marilla Street Chatsworth  
CA 91311

Phone: (818) 701-4933  
Fax: (818) 701-4939

# SA5.0(C)(A) THRU SA170(C)(A)

**500WATTS TRANSIENT  
VOLTAGE SUPPRESSOR  
5.0 TO 170 VOLTS**

## Features

- Glass passivated chip
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- UL Recognized file # E331408
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Fast Response Time
- Halogen free available upon request by adding suffix "-HF"

## MECHANICAL DATA

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: Unidirectional-type number and cathode band  
Bidirectional-type number only
- Weight: 0.4 grams

## Maximum Ratings

- Operating Temperature: -55°C to +175°C
- Storage Temperature: -55°C to +175°C
- For capacitive load, derate current by 20%

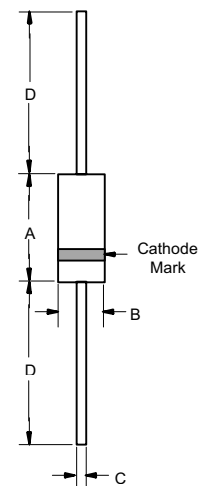
## Electrical Characteristics @ 25°C Unless Otherwise Specified

Peak Pulse Power Dissipation	P <sub>PPM</sub>	500W	T <sub>A</sub> =25°C
Maximum Instantaneous Forward Voltage	V <sub>F</sub>	3.5V	I <sub>FM</sub> =35A; T <sub>J</sub> =25°C*
Steady State Power Dissipation	P <sub>M(AV)</sub>	3.0W	T <sub>L</sub> =75°C

\*Pulse test: Pulse width 300 usec, Duty cycle 1%

Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7(a).

DO-15



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.230	0.300	5.80	7.60	
B	0.104	0.140	2.60	3.60	
C	0.026	0.034	0.70	0.90	
D	1.000	-----	25.40	-----	

# SA5.0(C)(A) THRU SA170(C)(A)

Micro Commercial Components

MCC PART NUMBER		REVERSE STAND- OFF VOLTAGE VRWM(V)	BREAKDOWN VOLTAGE VBR(V) MIN.@IT	BREAKDOWN VOLTAGE VBR(V) MAX.@IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc(V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @ VRWM IR(μ A)	Maxium Temperature Coefficient of V <sub>(BR)</sub> (mV/°C)
UNI-Polar	BI-Polar								
SA5.0A	SA5.0CA	5.0	6.40	7.00	10	9.2	55.4	600	5
SA6.0A	SA6.0CA	6.0	6.67	7.37	10	10.3	49.5	600	5
SA6.5A	SA6.5CA	6.5	7.22	7.98	10	11.2	45.5	400	5
SA7.0A	SA7.0CA	7.0	7.78	8.60	10	12	42.5	150	6
SA7.5A	SA7.5CA	7.5	8.33	9.21	1	12.9	39.5	50	7
SA8.0A	SA8.0CA	8.0	8.89	9.83	1	13.6	37.5	25	7
SA8.5A	SA8.5CA	8.5	9.44	10.40	1	14.4	35.4	10	8
SA9.0A	SA9.0CA	9.0	10.00	11.10	1	15.4	33.1	5	9
SA10A	SA10CA	10.0	11.10	12.30	1	17	30	1	10
SA11A	SA11CA	11.0	12.20	13.50	1	18.2	28	1	11
SA12A	SA12CA	12.0	13.30	14.70	1	19.9	25.6	1	12
SA13A	SA13CA	13.0	14.40	15.90	1	21.5	23.7	1	13
SA14A	SA14CA	14.0	15.60	17.20	1	23.2	22	1	14
SA15A	SA15CA	15.0	16.70	18.50	1	24.4	20.9	1	16
SA16A	SA16CA	16.0	17.80	19.70	1	26	19.6	1	17
SA17A	SA17CA	17.0	18.90	20.90	1	27.6	18.5	1	19
SA18A	SA18CA	18.0	20.00	22.10	1	29.2	17.5	1	20
SA20A	SA20CA	20.0	22.20	24.50	1	32.4	15.7	1	23
SA22A	SA22CA	22.0	24.40	26.90	1	35.5	14.4	1	25
SA24A	SA24CA	24.0	26.70	29.50	1	38.9	13.1	1	28
SA26A	SA26CA	26.0	28.90	31.90	1	42.1	12.1	1	30
SA28A	SA28CA	28.0	31.10	34.40	1	45.4	11.2	1	31
SA30A	SA30CA	30.0	33.30	36.80	1	48.4	10.5	1	36
SA33A	SA33CA	33.0	36.70	40.60	1	53.3	9.6	1	39
SA36A	SA36CA	36.0	40.00	44.20	1	58.1	8.8	1	41
SA40A	SA40CA	40.0	44.40	49.10	1	64.5	7.9	1	46
SA43A	SA43CA	43.0	47.80	52.80	1	69.4	7.3	1	50
SA45A	SA45CA	45.0	50.00	55.30	1	72.7	7	1	52
SA48A	SA48CA	48.0	53.30	58.90	1	77.4	6.6	1	56
SA51A	SA51CA	51.0	56.70	62.70	1	82.4	6.2	1	61
SA54A	SA54CA	54.0	60.00	66.30	1	87.1	5.9	1	65
SA58A	SA58CA	58.0	64.40	71.20	1	93.6	5.4	1	70
SA60A	SA60CA	60.0	66.70	73.70	1	96.8	5.3	1	71
SA64A	SA64CA	64.0	71.10	78.60	1	103	5	1	76
SA70A	SA70CA	70.0	77.80	86.00	1	113	4.5	1	85
SA75A	SA75CA	75.0	83.30	92.10	1	121	4.2	1	91
SA78A	SA78CA	78.0	86.70	95.80	1	126	4	1	95
SA85A	SA85CA	85.0	94.40	104.00	1	137	3.7	1	103
SA90A	SA90CA	90.0	100.00	111.00	1	146	3.5	1	110
SA100A	SA100CA	100.0	111.00	123.00	1	162	3.1	1	123
SA110A	SA110CA	110.0	122.00	135.00	1	177	2.9	1	133
SA120A	SA120CA	120.0	133.00	147.00	1	193	2.6	1	146
SA130A	SA130CA	130.0	144.00	159.00	1	209	2.4	1	158
SA150A	SA150CA	150.0	167.00	185.00	1	243	2.1	1	184
SA160A	SA160CA	160.0	178.00	197.00	1	259	2	1	196
SA170A	SA170CA	170.0	189.00	209.00	1	275	1.9	1	208

For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.

For parts without A , the VBR is +/-10%

# SA5.0(C)(A) THRU SA170(C)(A)

## Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1 - Peak Pulse Power Rating Curve

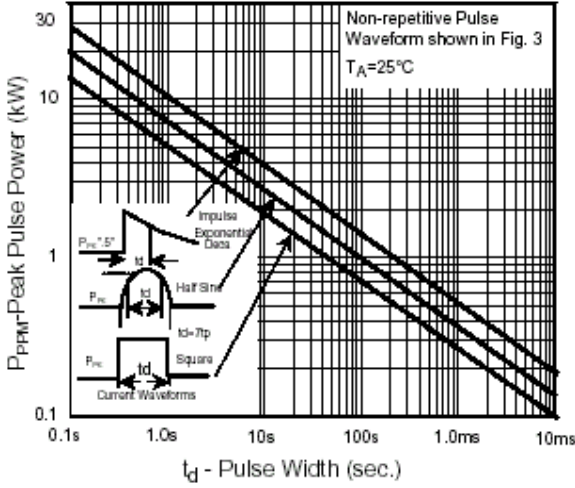


Fig.2-Power Derating Curve

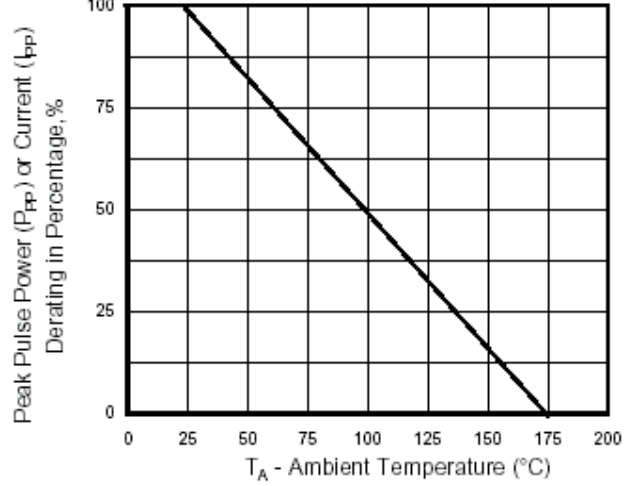


Fig.3 - Pulse Waveform

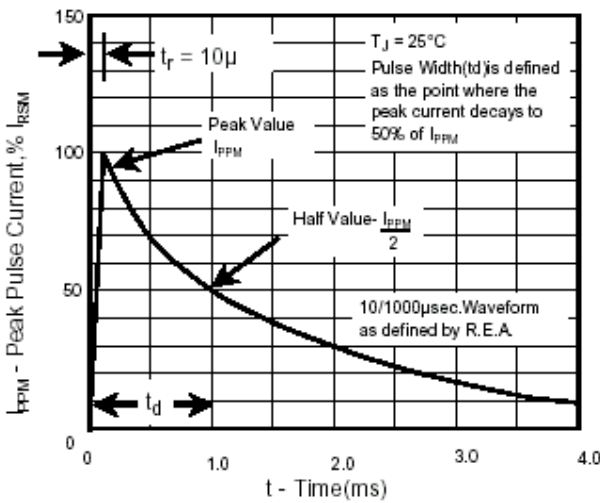


Fig.4 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

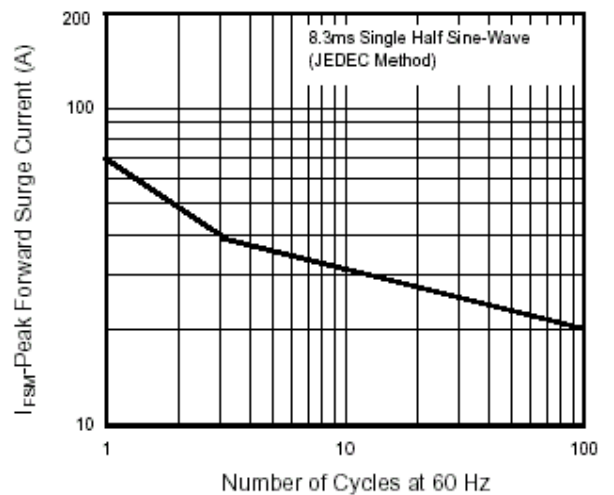


Fig. 5 - Steady State Power Derating Curve

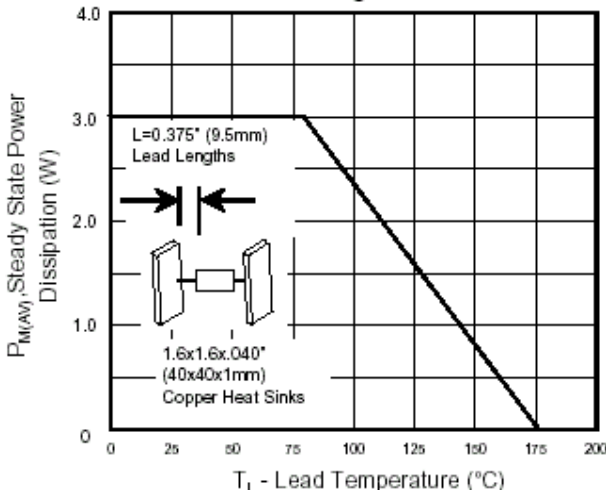
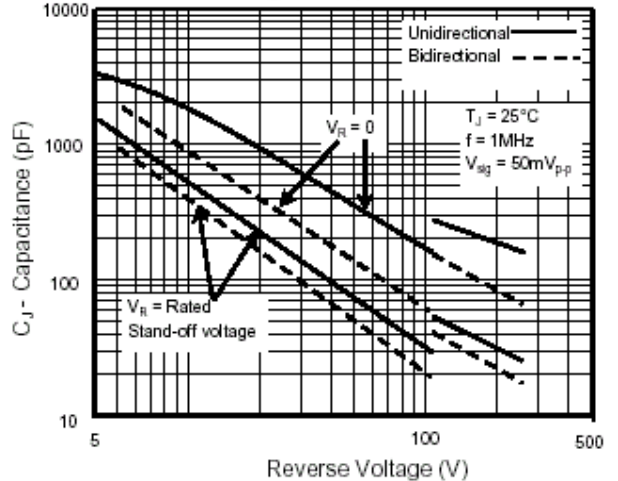


Fig. 6 - Capacitance





Micro Commercial Components

### Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 4Kpcs/Reel
Part Number-AP	Ammo Packing: 3Kpcs/Ammo Box
Part Number-BP	Bulk: 25Kpcs/Carton

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

#### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp .** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp .** and all the companies whose products are represented on our website, harmless against all damages.

#### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

#### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

[www.mccsemi.com](http://www.mccsemi.com)