



THE DATASHEET OF SA33A-TP





Micro Commercial Components



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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 _{PPM}	500W	T _A =25°C
Maximum Instantaneous Forward Voltage	V _F	3.5V	I _{FM} =35A; T _J =25°C*
Steady State Power Dissipation	P _{M(AV)}	3.0W	T _L =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	INCHES		MM		NOTE
	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	-----	

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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 _(BR) (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%

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

Fig.1 - Peak Pulse Power Rating Curve

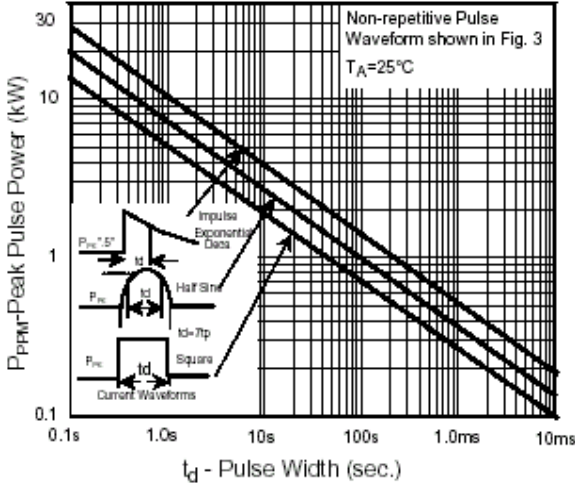


Fig.2 - Power Derating Curve

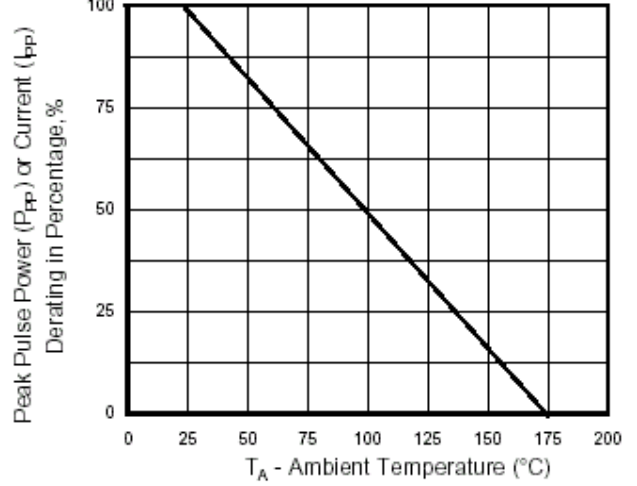


Fig.3 - Pulse Waveform

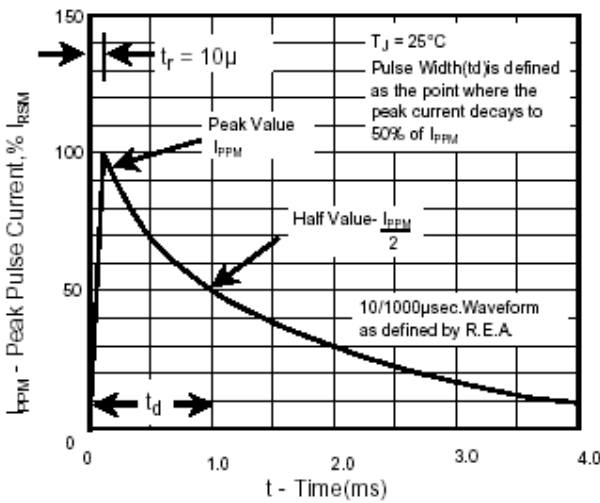


Fig.4 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

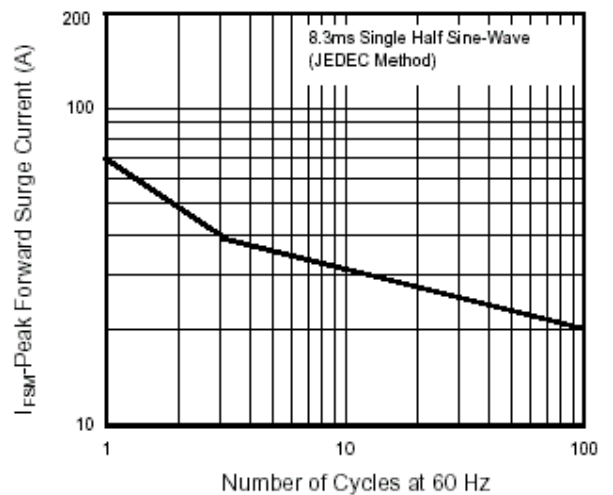


Fig.5 - Steady State Power Derating Curve

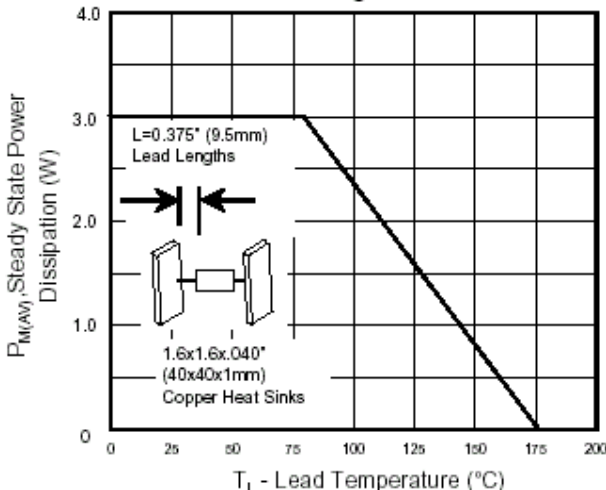
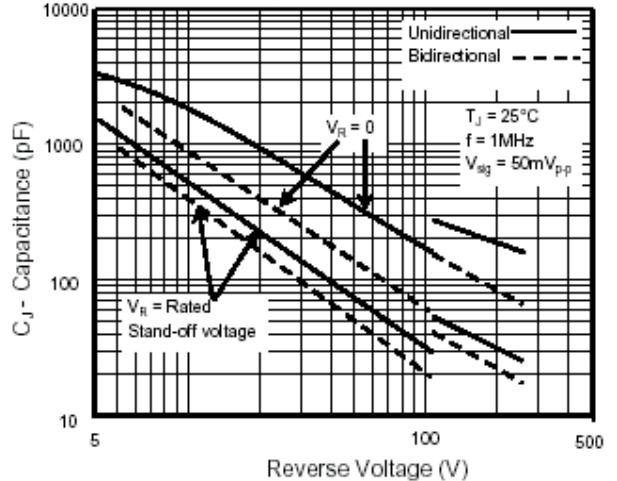


Fig.6 - Capacitance





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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

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