



## P4AFC8.5AS-AU ~ P4AFC220AS-AU Series

### Transient Voltage Suppressor

**Voltage** 8.5~220 V **Power** 400 W

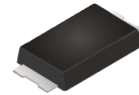
#### Features

- Small plastic package suitable for surface-mounted design
- Very low package height : 1 mm
- Excellent clamping capability
- High temperature soldering : 260°C/10 seconds at terminals
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

#### Mechanical Data

- Case : Molded plastic, SMAF-C
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0012 ounces, 0.034 grams

#### SMAF-C



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Peak Pulse Power Dissipation(tp=10/1000us) <sup>(Note 1,2)</sup>	P <sub>PP</sub>	400	W
Peak Forward Surge Current (8.3ms single half sine-wave)	I <sub>FSM</sub>	40	A
Peak Pulse Current on tp=10/1000us Waveform <sup>(Note1, Fig.2)</sup>	I <sub>PPM</sub>	See next table	A
Power Dissipation on Infinite Heat Sink at T <sub>L</sub> = 50 °C	P <sub>D</sub>	3.3	W
ESD IEC61000-4-2(Air)	V <sub>ESD</sub>	±30	kV
ESD IEC61000-4-2(Contact)		±30	
Typical Thermal Resistance Junction to Ambient <sup>(Note 3)</sup>	R <sub>θJA</sub>	150	°C/W
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

Notes : 1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.2

2. Mounted on 5.0x5.0mm copper pads to each terminal

3. Mounted on a FR4 PCB, single-sided copper, recommend pad layout

4. A transient suppressor is selected according to the working peak reverse voltage(V<sub>RWM</sub>), which should be equal to or greater than the DC or continuous peak operation voltage level

5. TVS is a transient protection device, it is strongly recommended not to use as a Zener



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**Electrical Characteristics** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

Part Number	V <sub>RWM</sub> (Note 4)	V <sub>BR</sub>			I <sub>R</sub> @V <sub>RWM</sub>	V <sub>C</sub> @I <sub>PP</sub>		Marking Code
		Min.	Max.	I <sub>T</sub>		Max.		
	V	V	V	mA	µA	V	A	
P4AFC8.5AS-AU	8.5	9.44	10.82	1	10	14.4	27.7	4S8V5
P4AFC9.0AS-AU	9	10	11.5	1	5	15.4	26	4S9V0
P4AFC10AS-AU	10	11.1	12.8	1	5	17	23.5	4S10
P4AFC11AS-AU	11	12.2	14	1	1	18.2	22	4S11
P4AFC12AS-AU	12	13.3	15.3	1	1	19.9	20.1	4S12
P4AFC13AS-AU	13	14.4	16.5	1	1	21.5	18.6	4S13
P4AFC14AS-AU	14	15.6	17.9	1	1	23.2	17.2	4S14
P4AFC15AS-AU	15	16.7	19.2	1	1	24.4	16.4	4S15
P4AFC16AS-AU	16	17.8	20.5	1	1	26	15.3	4S16
P4AFC17AS-AU	17	18.9	21.7	1	1	27.6	14.5	4S17
P4AFC18AS-AU	18	20	23.3	1	1	29.2	13.7	4S18
P4AFC20AS-AU	20	22.2	25.5	1	1	32.4	12.3	4S20
P4AFC22AS-AU	22	24.4	28	1	1	35.5	11.2	4S22
P4AFC24AS-AU	24	26.7	30.7	1	1	38.9	10.3	4S24
P4AFC26AS-AU	26	28.9	33.2	1	1	42.1	9.5	4S26
P4AFC28AS-AU	28	31.1	35.8	1	1	45.4	8.8	4S28
P4AFC30AS-AU	30	33.3	38.3	1	1	48.4	8.3	4S30
P4AFC33AS-AU	33	36.7	42.2	1	1	53.3	7.5	4S33
P4AFC36AS-AU	36	40	46	1	1	58.1	6.9	4S36
P4AFC40AS-AU	40	44.4	51.1	1	1	64.5	6.2	4S40
P4AFC43AS-AU	43	47.8	54.9	1	1	69.4	5.7	4S43
P4AFC45AS-AU	45	50	57.5	1	1	72.7	5.5	4S45
P4AFC48AS-AU	48	53.3	61.3	1	1	77.4	5.2	4S48
P4AFC51AS-AU	51	56.7	65.2	1	1	82.4	4.9	4S51
P4AFC54AS-AU	54	60	69	1	1	87.1	4.6	4S54
P4AFC58AS-AU	58	64.4	74.1	1	1	93.6	4.3	4S58
P4AFC60AS-AU	60	66.7	76.7	1	1	96.8	4.1	4S60
P4AFC64AS-AU	64	71.1	81.8	1	1	103	3.9	4S64
P4AFC70AS-AU	70	77.8	89.5	1	1	113	3.5	4S70
P4AFC75AS-AU	75	83.3	95.8	1	1	121	3.3	4S75
P4AFC78AS-AU	78	86.7	99.7	1	1	126	3.2	4S78
P4AFC85AS-AU	85	94.4	108.2	1	1	137	2.9	4S85
P4AFC90AS-AU	90	100	115.5	1	1	146	2.7	4S90
P4AFC100AS-AU	100	111	128	1	1	162	2.5	4S100
P4AFC110AS-AU	110	122	140.5	1	1	177	2.3	4S110
P4AFC120AS-AU	120	133	153	1	1	193	2	4S120
P4AFC130AS-AU	130	144	165.5	1	1	209	1.9	4S130



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### Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

Part Number	V <sub>RWM</sub> (Note 4)	V <sub>BR</sub>			I <sub>R</sub> @V <sub>RWM</sub>	V <sub>C</sub> @I <sub>PP</sub>		Marking Code
		Min.	Max.	I <sub>T</sub>		Max.		
	V	V	V	mA	uA	V	A	
P4AFC150AS-AU	150	167	192.5	1	1	243	1.6	4S150
P4AFC160AS-AU	160	178	205	1	1	259	1.5	4S160
P4AFC170AS-AU	170	189	217.5	1	1	275	1.4	4S170
P4AFC180AS-AU	180	198	221	1	1	291	1.4	4S180
P4AFC190AS-AU	190	209	233	1	1	307	1.3	4S190
P4AFC200AS-AU	200	220	246	1	1	324	1.2	4S200
P4AFC220AS-AU	220	246	272	1	1	356	1.1	4S220



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## TYPICAL CHARACTERISTIC CURVES

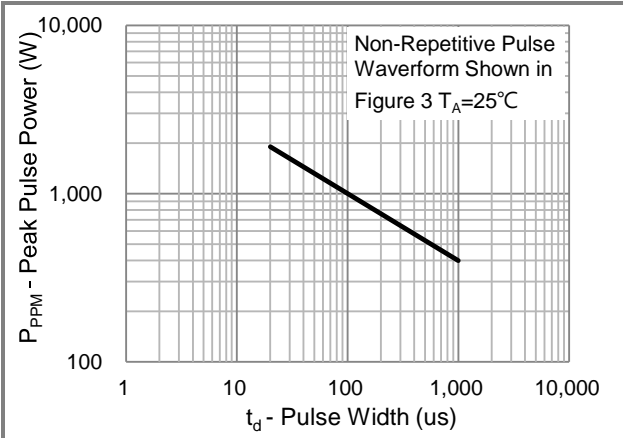


Fig.1 Pulse Power Rating Curve

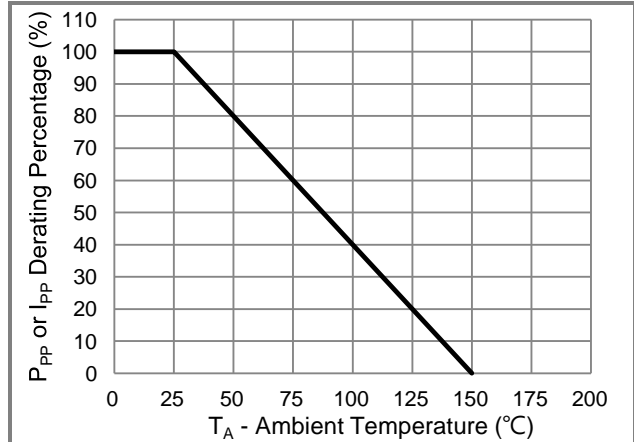


Fig.2 Derating Curve

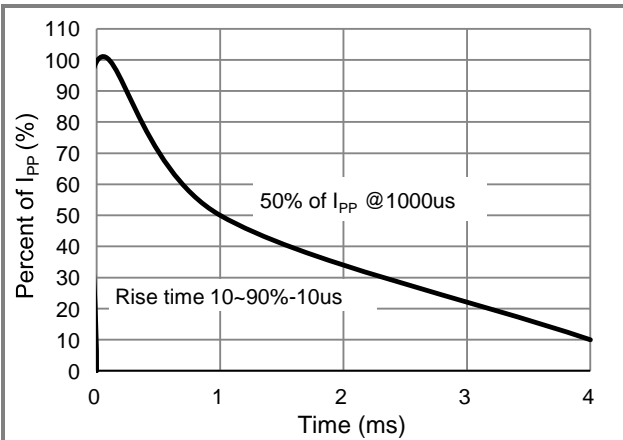


Fig.3 10/1000us Pulse Waveform

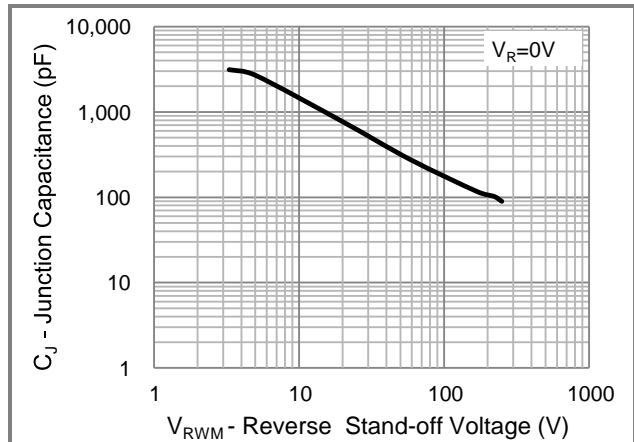


Fig.4 Typical Capacitance

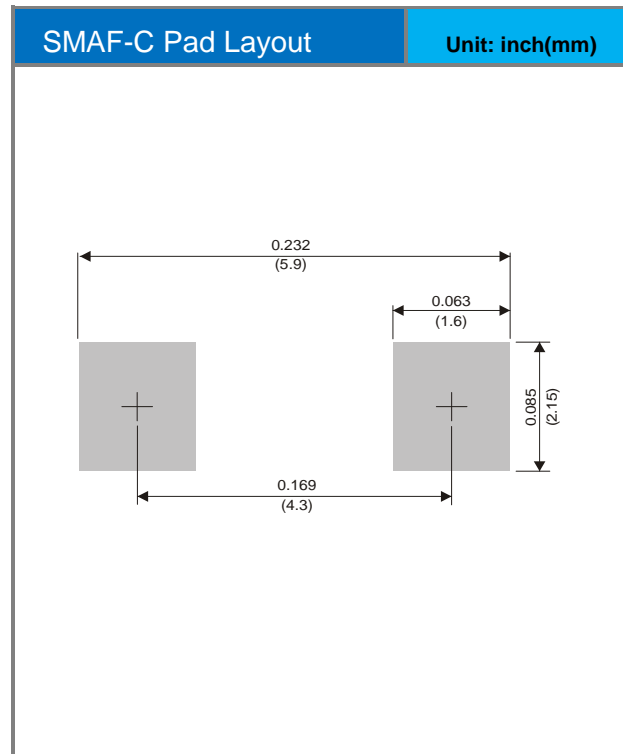
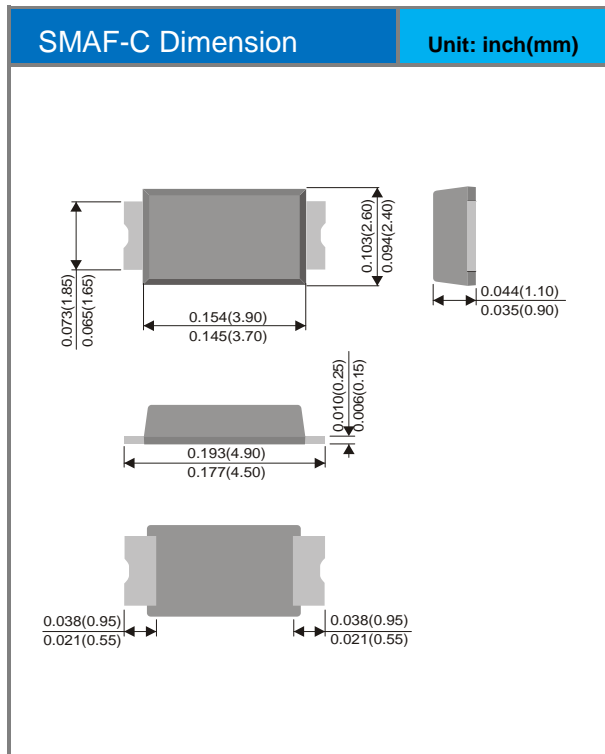


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Part No. Packing Code Version

Part No. Packing Code	Package Type	Packing Type	Marking	Version
P4AFCxxxAS-AU_R1_000A1	SMAF-C	3K pcs / 7" reel	See Table	Halogen free

## Packaging Information & Mounting Pad Layout





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