



# P4SMAJ8.5AS ~ P4SMAJ220CAS Series

## Surface Mount Transient Voltage Suppressor

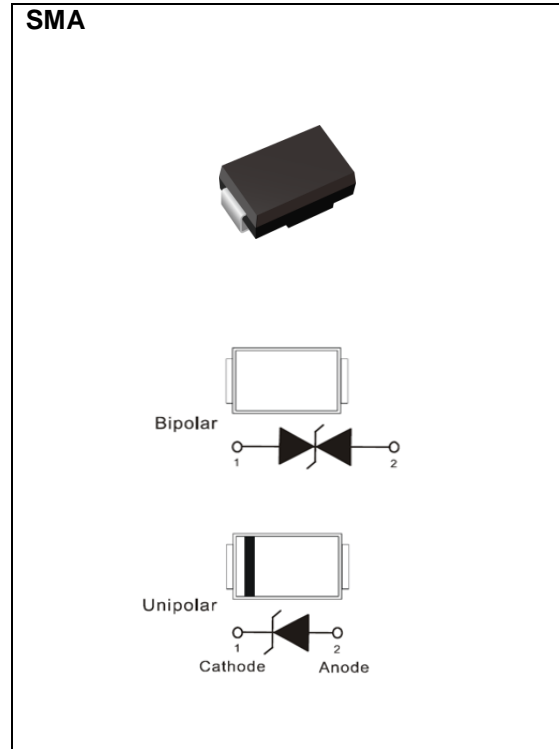
**Voltage** 8.5~220 V **Power** 400 W

### Features

- For surface mounted applications in order to optimize board space.
- Package suitable for automated handling
- Low inductance
- High temperature soldering : 260°C/10 seconds at terminals
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : Molded plastic, SMA
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0024 ounces, 0.0679 grams



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

PARAMETER	SYMBOL	LIMIT	UNITS
Peak Pulse Power Dissipation(tp = 10 / 1000 us)	P <sub>PP</sub> <sup>(1) (2)</sup>	400	W
Peak Pulse Current on tp = 10 / 1000 us waveform <sup>(Fig.2)</sup>	I <sub>PPM</sub> <sup>(1)</sup>	See table 1	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	R <sub>θJA</sub> <sup>(3)</sup>	150	°C/W
Operating Junction Temperature Range	T <sub>J</sub>	-55~150	°C
Storage Temperature Range	T <sub>STG</sub>	-55~150	°C



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

Part Number		V <sub>RWM</sub>	V <sub>BR</sub>			I <sub>R</sub>		V <sub>C@IPP</sub>		Marking Code	
			Min.	Max.	I <sub>T</sub>	@ V <sub>RWM</sub>					
UNI	BI	V	V	V	mA	UNI	BI	V	A	UNI	BI
400W Transient Voltage Suppressor											
P4SMAJ8.5AS	P4SMAJ8.5CAS	8.5	9.44	10.4	1	10	20	14.4	27.7	PZA	RZX
P4SMAJ9.0AS	P4SMAJ9.0CAS	9	10	11.1	1	5	5	15.4	26	PZB	RZY
P4SMAJ10AS	P4SMAJ10CAS	10	11.1	12.3	1	5	5	17	23.5	PZC	RZZ
P4SMAJ11AS	P4SMAJ11CAS	11	12.2	13.5	1	1	1	18.2	22	PZD	SZA
P4SMAJ12AS	P4SMAJ12CAS	12	13.3	14.7	1	1	1	19.9	20.1	PZE	SZB
P4SMAJ13AS	P4SMAJ13CAS	13	14.4	15.9	1	1	1	21.5	18.6	PZF	SZC
P4SMAJ14AS	P4SMAJ14CAS	14	15.6	17.2	1	1	1	23.2	17.2	PZG	SZD
P4SMAJ15AS	P4SMAJ15CAS	15	16.7	18.5	1	1	1	24.4	16.4	PZH	SZE
P4SMAJ16AS	P4SMAJ16CAS	16	17.8	19.7	1	1	1	26	15.3	PZJ	SZF
P4SMAJ17AS	P4SMAJ17CAS	17	18.9	20.9	1	1	1	27.6	14.5	PZK	SZG
P4SMAJ18AS	P4SMAJ18CAS	18	20	22.1	1	1	1	29.2	13.7	PZL	SZH
P4SMAJ20AS	P4SMAJ20CAS	20	22.2	24.5	1	1	1	32.4	12.3	PZM	SZJ
P4SMAJ22AS	P4SMAJ22CAS	22	24.4	26.9	1	1	1	35.5	11.2	PZN	SZK
P4SMAJ24AS	P4SMAJ24CAS	24	26.7	29.5	1	1	1	38.9	10.3	PZP	SZL
P4SMAJ26AS	P4SMAJ26CAS	26	28.9	31.9	1	1	1	42.1	9.5	PZQ	SZM
P4SMAJ28AS	P4SMAJ28CAS	28	31.1	34.4	1	1	1	45.4	8.8	PZR	SZN
P4SMAJ30AS	P4SMAJ30CAS	30	33.3	36.8	1	1	1	48.4	8.3	PZS	SZP
P4SMAJ33AS	P4SMAJ33CAS	33	36.7	40.6	1	1	1	53.3	7.5	PZT	SZQ
P4SMAJ36AS	P4SMAJ36CAS	36	40	44.2	1	1	1	58.1	6.9	PZU	SZR
P4SMAJ40AS	P4SMAJ40CAS	40	44.4	49.1	1	1	1	64.5	6.2	PZV	SZS
P4SMAJ43AS	P4SMAJ43CAS	43	47.8	52.8	1	1	1	69.4	5.7	PZW	SZT
P4SMAJ45AS	P4SMAJ45CAS	45	50	55.3	1	1	1	72.7	5.5	PZX	SZU
P4SMAJ48AS	P4SMAJ48CAS	48	53.3	58.9	1	1	1	77.4	5.2	PZY	SZV
P4SMAJ51AS	P4SMAJ51CAS	51	56.7	62.7	1	1	1	82.4	4.9	PZZ	SZW
P4SMAJ54AS	P4SMAJ54CAS	54	60	66.3	1	1	1	87.1	4.6	RZA	SZX
P4SMAJ58AS	P4SMAJ58CAS	58	64.4	71.2	1	1	1	93.6	4.3	RZB	SZY
P4SMAJ60AS	P4SMAJ60CAS	60	66.7	73.7	1	1	1	96.8	4.1	RZC	SZZ
P4SMAJ64AS	P4SMAJ64CAS	64	71.1	78.6	1	1	1	103	3.9	RZD	TZA
P4SMAJ70AS	P4SMAJ70CAS	70	77.8	86	1	1	1	113	3.5	RZE	TZB



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

Part Number		$V_{RWM}$	$V_{BR}$			$I_R$ @ $V_{RWM}$		$V_C @ I_{PP}$		Marking Code	
			Min.	Max.	$I_T$	$\mu\text{A}$					
UNI	BI	V	V	V	mA	UNI	BI	V	A	UNI	BI
400W Transient Voltage Suppressor											
P4SMAJ75AS	P4SMAJ75CAS	75	83.3	92.1	1	1	1	121	3.3	RZF	TZC
P4SMAJ78AS	P4SMAJ78CAS	78	86.7	95.8	1	1	1	126	3.2	RZG	TZD
P4SMAJ85AS	P4SMAJ85CAS	85	94.4	104	1	1	1	137	2.9	RZH	TZE
P4SMAJ90AS	P4SMAJ90CAS	90	100	111	1	1	1	146	2.7	RZJ	TZF
P4SMAJ100AS	P4SMAJ100CAS	100	111	123	1	1	1	162	2.5	RZK	TZG
P4SMAJ110AS	P4SMAJ110CAS	110	122	135	1	1	1	177	2.3	RZL	TZH
P4SMAJ120AS	P4SMAJ120CAS	120	133	147	1	1	1	193	2	RZM	TZJ
P4SMAJ130AS	P4SMAJ130CAS	130	144	159	1	1	1	209	1.9	RZN	TZK
P4SMAJ150AS	P4SMAJ150CAS	150	167	185	1	1	1	243	1.6	RZP	TZL
P4SMAJ160AS	P4SMAJ160CAS	160	178	197	1	1	1	259	1.5	RZQ	TZM
P4SMAJ170AS	P4SMAJ170CAS	170	189	209	1	1	1	275	1.4	RZR	TZN
P4SMAJ180AS	P4SMAJ180CAS	180	198	222	1	1	1	292	1.3	RZS	TZP
P4SMAJ190AS	P4SMAJ190CAS	190	209	243.2	1	1	1	308	1.3	RZT	TZQ
P4SMAJ200AS	P4SMAJ200CAS	200	220	247	1	1	1	324	1.2	RZU	TZR
P4SMAJ210AS	P4SMAJ210CAS	210	231	268.8	1	1	1	340	1.2	RZV	TZS
P4SMAJ220AS	P4SMAJ220CAS	220	242	272	1	1	1	356	1.1	RZW	TZT

Notes :

1. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ\text{C}$  per Fig.2
2. Mounted on 100cm<sup>2</sup> copper pads to each terminal
3. Mounted on a FR4 PCB, single-sided copper, standard footprint



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## TYPICAL CHARACTERISTIC CURVES

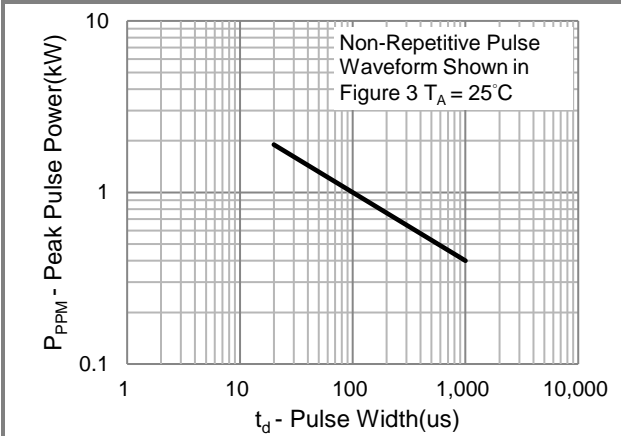


Fig.1 Pulse Power Rating Curve

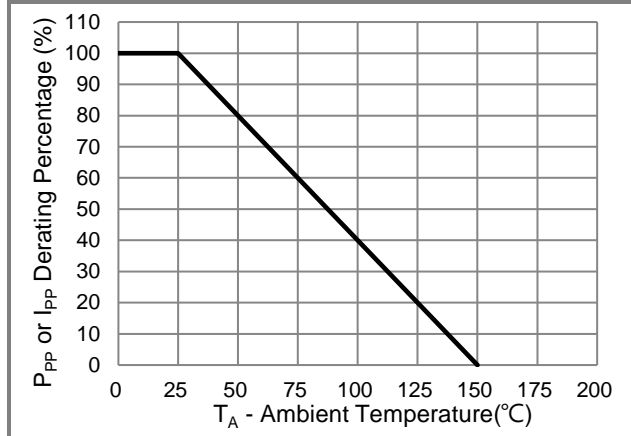


Fig.2 Derating Curve

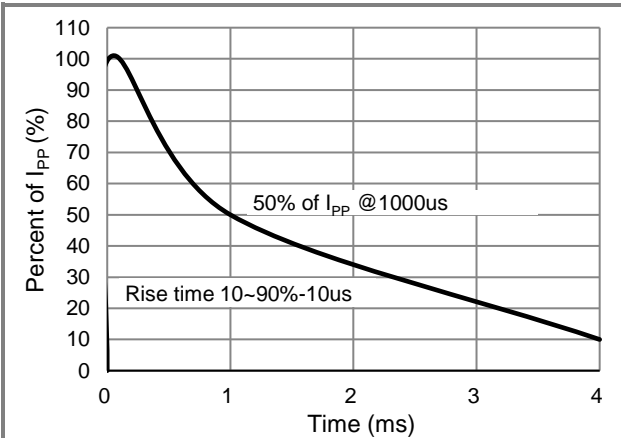


Fig.3 10/1000us Pulse Waveform

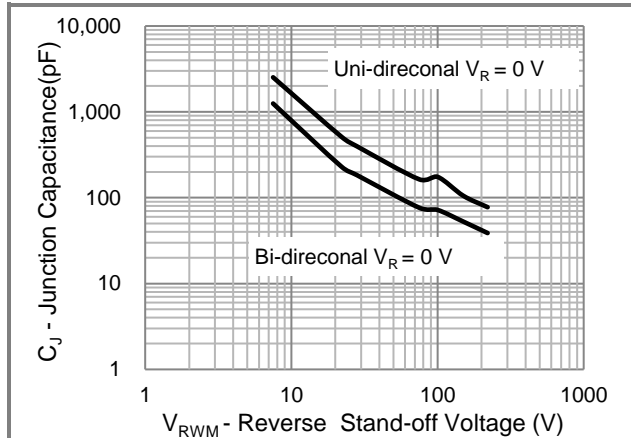


Fig.4 Typical Capacitance



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Part No. Packing Code Version

Part No. Packing Code	Package Type	Packing Type	Marking	Version
P4SMAJxxxxAS_R1_00001	SMA	1.8K pcs / 7" reel	See Table	Halogen free RoHS compliant

### Packaging Information & Mounting Pad Layout

