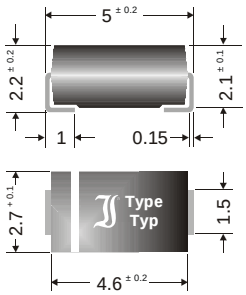
P4SMAJ5.0 ... P4SMAJ170CA

Surface mount unidirectional and bidirectional Transient Voltage Suppressor Diodes
Unidirektionale und bidirektionale Spannungs-Begrenzer-Dioden für die Oberflächenmontage

Version 2006-04-14



Dimensions - Maße [mm]

Peak pulse power dissipation Impuls-Verlustleistung	400 W
Nominal Stand-off voltage Nominale Sperrspannung	5.0...170 V
Plastic case Kunststoffgehäuse	~ SMA ~ DO-214AC
Weight approx. – Gewicht ca.	0.07 g
Plastic material has UL classification 94V-0 Gehäusematerial UL94V-0 klassifiziert	
Standard packaging taped and reeled Standard Lieferform gegurtet auf Rollen	

For bidirectional types (add suffix “C” or “CA”), electrical characteristics apply in both directions.
Für bidirektionale Dioden (ergänze Suffix “C” oder “CA”) gelten die elektrischen Werte in beiden Richtungen.

Maximum ratings and Characteristics			**Grenz- und Kennwerte**
Peak pulse power dissipation (10/1000 µs waveform) Impuls-Verlustleistung (Strom-Impuls 10/1000 µs)	T_A = 25°C	P_{PPM}	400 W [1]
Steady state power dissipation Verlustleistung im Dauerbetrieb	T_T = 75°C	$P_{M(AV)}$	1 W
Peak forward surge current, 60 Hz half sine-wave Stoßstrom für eine 60 Hz Sinus-Halbwelle	T_A = 25°C	I_{FSM}	40 A [2]
Max. instantaneous forward voltage Augenblickswert der Durchlass-Spannung	I_F = 25 A	V_F	< 3.5 V [2]
Operating junction temperature – Sperrschichttemperatur Storage temperature – Lagerungstemperatur		T_j T_S	-50...+150°C -50...+150°C
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft		R_{thA}	< 70 K/W [3]
Thermal resistance junction to terminal Wärmewiderstand Sperrschicht – Anschluss		R_{thT}	< 30 K/W

TVS diodes having breakdown voltage V_{BR} = 220 ... 550 V: please refer to datasheet P4SMA220
TVS-Dioden mit Abbruchspannung V_{BR} = 220 ... 550 V: siehe Datenblatt P4SMA220

1 Non-repetitive pulse see curve $I_{PP} = f(t) / P_{PP} = f(t)$
Höchstzulässiger Spitzenwert eines einmaligen Impulses, siehe Kurve $I_{PP} = f(t) / P_{PP} = f(t)$
2 Unidirectional diodes only – Nur für unidirektionale Dioden
3 Mounted on P.C. board with 25 mm² copper pads at each terminal
Montage auf Leiterplatte mit 25 mm² Kupferbelag (Lötpad) an jedem Anschluss

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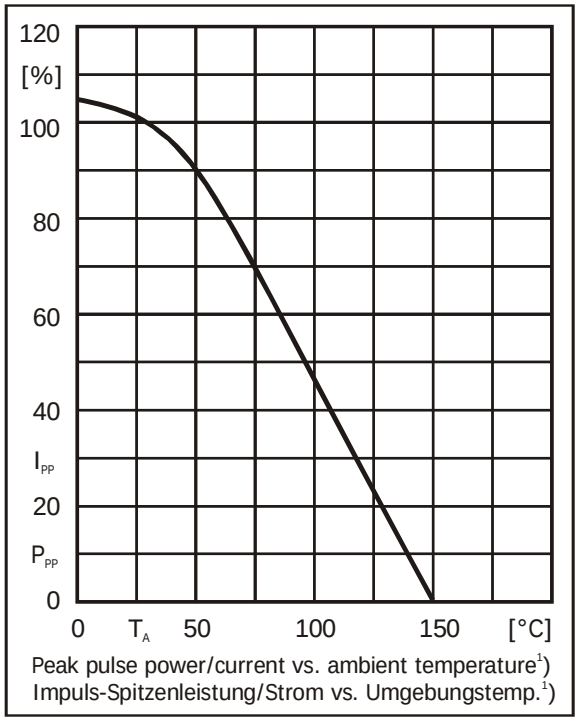
Maximum ratings — Grenzwerte

Type Typ	Stand-off voltage Sperrspannung	Max. rev. current Max. Sperrstrom at / bei V_{WM}	Breakdown voltage at I_T = 1 mA Abbruch-Spannung bei I_T = 1 mA *) at / bei I_T = 10 mA		Max. clamping voltage Max. Begrenzer-Spannung at / bei I_{PPM} (10/1000 µs)	
	V_{WM} [V]	I_D [µA]	V_{BR} min [V]	V_{BR} max [V]	V_C [V]	I_{PPM} [A]
P4SMAJ5.0	5.0	800	6.4 *)	7.8 *)	10.3	38.8
P4SMAJ5.0A	5.0	800	6.4 *)	7.0 *)	9.2	43.5
P4SMAJ6.5	6.5	500	7.2 *)	8.8 *)	12.3	32.5
P4SMAJ6.5A	6.5	500	7.2 *)	8.0 *)	11.2	35.7
P4SMAJ7.0	7.0	200	7.8 *)	9.5 *)	13.3	30.1
P4SMAJ7.0A	7.0	200	7.8 *)	8.7 *)	12.0	33.3
P4SMAJ7.5	7.5	100	8.3	10.1	14.3	28.0
P4SMAJ7.5A	7.5	100	8.3	9.2	12.9	31.0
P4SMAJ8.0	8.0	50	8.9	10.9	15.0	26.7
P4SMAJ8.0A	8.0	50	8.9	9.9	13.6	29.4
P4SMAJ8.5	8.5	10	9.4	11.5	15.9	25.2
P4SMAJ8.5A	8.5	10	9.4	10.4	14.4	27.8
P4SMAJ9.0	9.0	5	10.0	12.2	16.9	23.7
P4SMAJ9.0A	9.0	5	10.0	11.1	15.4	26.0
P4SMAJ10	10	5	11.1	13.5	18.8	21.3
P4SMAJ10A	10	5	11.1	12.3	17.0	23.5
P4SMAJ11	11	5	12.2	14.9	20.1	19.9
P4SMAJ11A	11	5	12.2	13.5	18.2	22.0
P4SMAJ12	12	5	13.3	16.2	22.0	18.2
P4SMAJ12A	12	5	13.3	14.8	19.9	20.1
P4SMAJ13	13	5	14.4	17.6	23.8	16.8
P4SMAJ13A	13	5	14.4	16.0	21.5	18.6
P4SMAJ14	14	5	15.6	19.0	25.8	15.5
P4SMAJ14A	14	5	15.6	17.3	23.2	17.2
P4SMAJ15	15	5	16.7	20.4	26.9	14.9
P4SMAJ15A	15	5	16.7	18.6	24.4	16.4
P4SMAJ16	16	5	17.8	21.7	28.8	13.9
P4SMAJ16A	16	5	17.8	19.8	26.0	15.4
P4SMAJ17	17	5	18.9	23.1	30.5	13.1
P4SMAJ17A	17	5	18.9	21.0	27.6	14.5
P4SMAJ18	18	5	20.0	24.4	32.2	12.4
P4SMAJ18A	18	5	20.0	22.2	29.2	13.7
P4SMAJ20	20	5	22.2	27.1	35.8	11.2
P4SMAJ20A	20	5	22.2	24.6	32.4	12.3
P4SMAJ22	22	5	24.4	29.8	39.4	10.2
P4SMAJ22A	22	5	24.4	27.1	35.5	11.3
P4SMAJ24	24	5	26.7	32.6	43.0	9.3
P4SMAJ24A	24	5	26.7	29.6	38.9	10.3
P4SMAJ26	26	5	28.9	35.3	46.6	8.6
P4SMAJ26A	26	5	28.9	32.1	42.1	9.5
P4SMAJ28	28	5	31.1	37.9	50.0	8.0
P4SMAJ28A	28	5	31.1	34.5	45.4	8.8
P4SMAJ30	30	5	33.3	40.1	53.5	7.5
P4SMAJ30A	30	5	33.3	36.9	48.4	8.3
P4SMAJ33	33	5	36.7	44.8	59.0	6.8

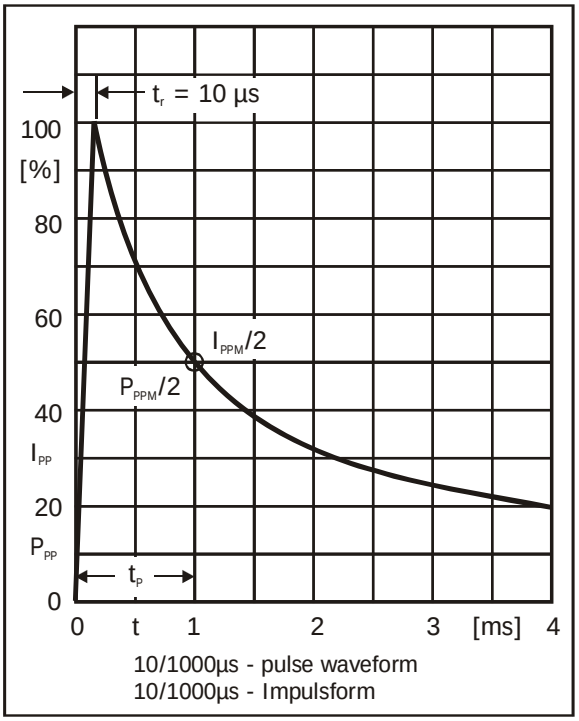
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Maximum ratings — Grenzwerte

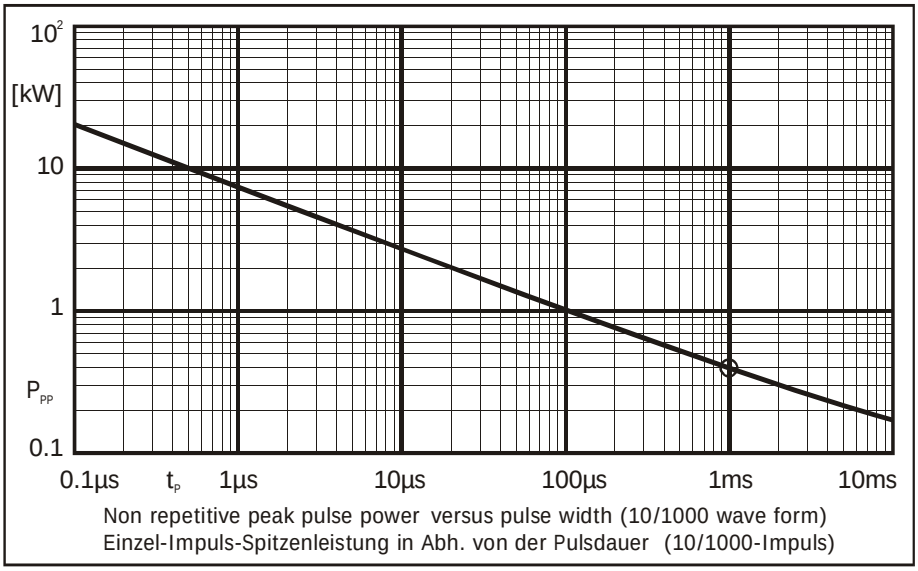
Type Typ	Stand-off voltage Sperrspannung	Max. rev. current Max. Sperrstrom at / bei V_{WM}	Breakdown voltage at I_T = 1 mA Abbruch-Spannung bei I_T = 1 mA *) at / bei I_T = 10 mA		Max. clamping voltage Max. Begrenzer-Spannung at / bei I_{PPM} (10/1000 µs)	
	V_{WM} [V]	I_D [µA]	V_{BR} min [V]	V_{BR} max [V]	V_C [V]	I_{PPM} [A]
P4SMAJ33A	33	5	36.7	40.7	53.3	7.5
P4SMAJ36	36	5	40.0	48.4	64.3	6.2
P4SMAJ36A	36	5	40.0	44.4	58.1	6.9
P4SMAJ40	40	5	44.4	54.2	71.4	5.6
P4SMAJ40A	40	5	44.4	49.3	64.5	6.2
P4SMAJ43	43	5	47.8	58.3	76.7	5.2
P4SMAJ43A	43	5	47.8	53.1	69.4	5.8
P4SMAJ45	45	5	50.0	61.0	80.3	5.0
P4SMAJ45A	45	5	50.0	55.5	72.7	5.5
P4SMAJ48	48	5	53.3	65.0	85.5	4.7
P4SMAJ48A	48	5	53.3	59.2	77.4	5.2
P4SMAJ51	51	5	56.7	69.2	91.1	4.4
P4SMAJ51A	51	5	56.7	62.9	82.4	4.9
P4SMAJ54	54	5	60.0	73.2	96.3	4.2
P4SMAJ54A	54	5	60.0	66.6	87.1	4.6
P4SMAJ58	58	5	64.4	78.6	103	3.9
P4SMAJ58A	58	5	64.4	71.5	93.6	4.3
P4SMAJ60	60	5	66.7	81.4	107	3.7
P4SMAJ60A	60	5	66.7	74.0	96.8	4.1
P4SMAJ64	64	5	71.1	86.7	114	3.5
P4SMAJ64A	64	5	71.1	78.9	103	3.9
P4SMAJ70	70	5	77.8	94.9	125	3.2
P4SMAJ70A	70	5	77.8	86.4	113	3.5
P4SMAJ75	75	5	83.3	102	134	3.0
P4SMAJ75A	75	5	83.3	92.5	121	3.3
P4SMAJ78	78	5	86.7	106	139	2.9
P4SMAJ78A	78	5	86.7	96.2	126	3.2
P4SMAJ85	85	5	94.4	115	151	2.6
P4SMAJ85A	85	5	94.4	105	137	2.9
P4SMAJ90	90	5	100	122	160	2.5
P4SMAJ90A	90	5	100	111	146	2.7
P4SMAJ100	100	5	111	135	179	2.2
P4SMAJ100A	100	5	111	123	162	2.5
P4SMAJ110	110	5	122	149	196	2.0
P4SMAJ110A	110	5	122	135	177	2.3
P4SMAJ120	120	5	133	162	214	1.9
P4SMAJ120A	120	5	133	148	193	2.1
P4SMAJ130	130	5	144	176	231	1.7
P4SMAJ130A	130	5	144	160	209	1.9
P4SMAJ150	150	5	167	204	268	1.5
P4SMAJ150A	150	5	167	185	243	1.6
P4SMAJ160	160	5	178	217	287	1.4
P4SMAJ160A	160	5	178	198	259	1.5
P4SMAJ170	170	5	189	231	304	1.3
P4SMAJ170A	170	5	189	210	275	1.5



Peak pulse power/current vs. ambient temperature[1])
Impuls-Spitzenleistung/Strom vs. Umgebungstemp.[1])



10/1000µs - pulse waveform
10/1000µs - Impulsform



Non repetitive peak pulse power versus pulse width (10/1000 wave form)
Einzel-Impuls-Spitzenleistung in Abh. von der Pulsdauer (10/1000-Impuls)

TVS diodes having breakdown voltage V_{BR} = 220 ... 550 V: please refer to datasheet P4SMA220
TVS-Dioden mit Abbruchspannung V_{BR} = 220 ... 550 V: siehe Datenblatt P4SMA220

1 Mounted on P.C. board with 25 mm² copper pads at each terminal
Montage auf Leiterplatte mit 25 mm² Kupferbelag (Lötpad) an jedem Anschluss

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