



Data Sheet

Customer :

Product : Transient Voltage Suppressor

Part No.: P4SMBJ Series

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Edition : REV.A



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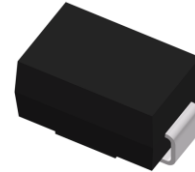
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Voltage 5.0 to 170volts 400 watt Peak Power Pulse

■ Features

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- Repetition rate(duty cycle):0.01%
- Fast response time: typically less than 1.0ps from 0 volts to BV for bidirectional types
- Typical I_D less than 1uA above 10V
- High temperature soldering guaranteed: 250°C/10seconds at terminals
- Plastic package has Underwrites Laboratory Flammability Classification 94V-O



■ Mechanical Data

Case : JEDEC DO-214AA low profile molded plastic

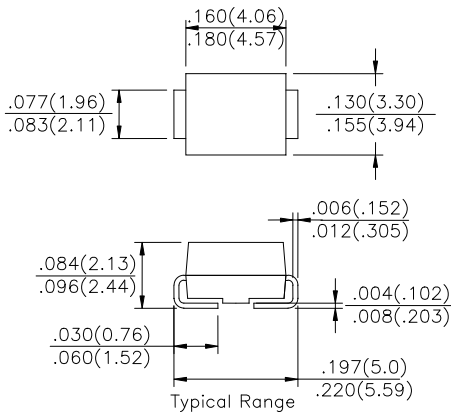
Terminals : Solder plated solderable per MIL-STD-750, Method 2026

Polarity : Indicated by cathode band except bi-directional types

Standard Packaging: 12mm tape (EIA STD EIA-481-1)

Weight : 0.003 ounce, 0.093 gram

■ Package Dimensions in inches(millimeters): DO-214AA



■ Maximum Ratings And Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C, TP=1ms(Note 1,2,5) Fig.1	P_{PPM}	Minimum 400	W
Peak Forward Surge Current per Figure 5(Note 3)	I_{FSM}	40	A
Peak Pulse Current on 10/1000 s waveform (Note 1) Fig.2	I_{ppm}	See Table 1	A
Steady Power Dissipation(Note 4)	$P_{M(AV)}$	1.0	W
Operating Junction and Storage temperature Range	T_J, T_{STG}	-55 ~ +150	°C

Note: 1. Non-repetitive current pulse, per Fig.3 and derated above TA=25°C per Fig.2

2. Mounted on 5.0mm² copper pads to each terminal

3. 8.3mm single half sine-wave, duty cycle=4 pulses minutes maximum

4. Lead temperature at 75°C=TL

5. Peak pulse power waveform is 10/1000S



■ Electrical Characteristics

Item		Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage VBR(V) @IT		Test Current IT (mA)	Maximum Clamping Voltage @I _{PP} VC(V)	Peak Pulse Current I _{PP} (A)	Reveres Leakage @VRWM IR(μA)	
Part No.		UNI	BI	VTWN(V)	Min	Max				UNI	BI
P4SMBJ5.0	P4SMBJ5.0C	HD	TD	5.0	6.40	7.55	10	9.6	41.6	800	1600
P4SMBJ5.0A	P4SMBJ5.0CA	HE	TE	5.0	6.40	7.25	10	9.2	43.5	800	1600
P4SMBJ6.0	P4SMBJ6.0C	HF	TF	6.0	6.67	8.45	10	11.4	35.1	800	1600
P4SMBJ6.0A	P4SMBJ6.0CA	HG	TG	6.0	6.67	7.67	10	10.3	38.8	800	1600
P4SMBJ6.5	P4SMBJ6.5C	HH	TH	6.5	7.22	9.14	10	12.3	32.5	500	1000
P4SMBJ6.5A	P4SMBJ6.5CA	HK	TK	6.5	7.22	8.30	10	11.2	35.7	500	1000
P4SMBJ7.0	P4SMBJ7.0C	HL	TL	7.0	7.78	9.86	10	13.3	30.1	200	400
P4SMBJ7.0A	P4SMBJ7.0CA	HM	TM	7.0	7.78	8.95	10	12.0	33.3	200	400
P4SMBJ7.5	P4SMBJ7.5C	HN	TN	7.5	8.33	10.67	1	14.3	28.0	100	200
P4SMBJ7.5A	P4SMBJ7.5CA	HP	TP	7.5	8.33	9.58	1	12.9	31.0	100	200
P4SMBJ8.0	P4SMBJ8.0C	HQ	TQ	8.0	8.89	11.30	1	15.0	26.5	50	100
P4SMBJ8.0A	P4SMBJ8.0CA	HR	TR	8.0	8.89	10.23	1	13.6	29.4	50	100
P4SMBJ8.5	P4SMBJ8.5C	HS	TS	8.5	9.44	11.92	1	15.9	25.1	10	20
P4SMBJ8.5A	P4SMBJ8.5CA	HT	TT	8.5	9.44	10.82	1	14.4	27.7	10	20
P4SMBJ9.0	P4SMBJ9.0C	HU	TU	9.0	10.0	12.60	1	16.9	23.6	5	10
P4SMBJ9.0A	P4SMBJ9.0CA	HV	TV	9.0	10.0	11.50	1	15.4	26.0	5	10
P4SMBJ10	P4SMBJ10C	HW	TW	10.0	11.1	14.10	1	18.8	21.2	5	
P4SMBJ10A	P4SMBJ10CA	HX	TX	10.0	11.1	12.80	1	17.0	23.5	5	
P4SMBJ11	P4SMBJ11C	HY	TY	11.0	12.2	15.40	1	20.1	20.0	5	
P4SMBJ11A	P4SMBJ11CA	HZ	TZ	11.0	12.2	14.00	1	18.2	22.0	5	
P4SMBJ12	P4SMBJ12C	ID	UD	12.0	13.3	16.90	1	22.0	18.1	5	
P4SMBJ12A	P4SMBJ12CA	IE	UE	12.0	13.3	15.30	1	19.9	20.1	5	
P4SMBJ13	P4SMBJ13C	IF	UF	13.0	14.4	18.20	1	23.8	16.8	5	
P4SMBJ13A	P4SMBJ13CA	IG	UG	13.0	14.4	16.50	1	21.5	18.6	5	
P4SMBJ14	P4SMBJ14C	IH	UH	14.0	15.6	19.80	1	25.8	15.5	5	
P4SMBJ14A	P4SMBJ14CA	IK	UK	14.0	15.6	17.90	1	23.2	17.2	5	
P4SMBJ15	P4SMBJ15C	IL	UL	15.0	16.7	21.10	1	26.9	14.8	5	
P4SMBJ15A	P4SMBJ15CA	IM	UM	15.0	16.7	19.20	1	24.4	16.4	5	
P4SMB16	P4SMB16C	IN	UN	16.0	17.8	22.60	1	28.8	13.8	5	
P4SMBJ16A	P4SMBJ16CA	IP	UP	16.0	17.8	20.50	1	26.0	15.3	5	
P4SMBJ17	P4SMBJ17C	IQ	UQ	17.0	18.9	23.90	1	30.5	13.1	5	
P4SMBJ17A	P4SMBJ17CA	IR	UR	17.0	18.9	21.70	1	27.6	14.5	5	
P4SMBJ18	P4SMBJ18C	IS	US	18.0	20.0	25.30	1	32.2	12.4	5	
P4SMBJ18A	P4SMBJ18CA	IT	UT	18.0	20.0	23.30	1	29.2	13.7	5	
P4SMBJ20	P4SMBJ20C	IU	UU	20.0	22.2	28.10	1	35.8	11.1	5	
P4SMBJ20A	P4SMBJ20CA	IV	UV	20.0	22.2	25.50	1	32.4	12.3	5	
P4SMBJ22	P4SMBJ22C	IW	UW	22.0	24.4	30.90	1	39.4	10.1	5	
P4SMBJ22A	P4SMBJ22CA	IX	UX	22.0	24.4	28.00	1	35.5	11.2	5	
P4SMBJ24	P4SMBJ24C	IY	UY	24.0	26.7	33.80	1	43.0	9.3	5	
P4SMBJ24A	P4SMBJ24CA	IZ	UZ	24.0	26.7	30.70	1	38.9	10.3	5	
P4SMBJ26	P4SMBJ26C	JD	VD	26.0	28.9	36.60	1	46.6	8.6	5	
P4SMBJ26A	P4SMBJ26CA	JE	VE	26.0	28.9	33.20	1	42.1	9.5	5	
P4SMBJ28	P4SMBJ28C	JF	VF	28.0	31.1	39.40	1	50.0	8.0	5	
P4SMBJ28A	P4SMBJ28CA	JG	VG	28.0	31.1	35.80	1	45.4	8.8	5	
P4SMBJ30	P4SMBJ30C	JH	VH	30.0	33.3	42.20	1	53.5	7.5	5	
P4SMBJ30A	P4SMBJ30CA	JK	VK	30.0	33.3	38.30	1	48.4	8.3	5	



■ Electrical Characteristics

Item		Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage VBR(V) @IT		Test Current IT (mA)	Maximum Clamping Voltage @I _{PP} VC(V)	Peak Pulse Current I _{PP} (A)	Reveres Leakage @VRWM IR(uA)	
Part No.		UNI	BI		VTWN(V)	Min				Max	UNI
P4SMBJ33	P4SMBJ33C	JL	VL	33.0	36.7	46.50	1	59.0	6.8	5	
P4SMBJ33A	P4SMBJ33CA	JM	VM	33.0	36.7	42.20	1	53.3	7.5	5	
P4SMBJ36	P4SMBJ36C	JN	VN	36.0	40.0	50.70	1	64.3	6.2	5	
P4SMBJ36A	P4SMBJ36CA	JP	VP	36.0	40.0	46.00	1	58.1	6.9	5	
P4SMBJ40	P4SMBJ40C	JQ	VQ	40.0	44.4	56.30	1	71.4	5.6	5	
P4SMBJ40A	P4SMBJ40CA	JR	VR	40.0	44.4	51.10	1	64.5	6.2	5	
P4SMBJ43	P4SMBJ43C	JS	VS	43.0	47.8	60.50	1	76.7	5.2	5	
P4SMBJ43A	P4SMBJ43CA	JT	VT	43.0	47.8	54.90	1	69.4	5.7	5	
P4SMBJ45	P4SMBJ45C	JU	VU	45.0	50.0	63.30	1	80.3	5.0	5	
P4SMBJ45A	P4SMBJ45CA	JV	VV	45.0	50.0	57.50	1	72.7	5.5	5	
P4SMBJ48	P4SMBJ48C	JW	VW	48.0	53.3	67.50	1	85.5	4.7	5	
P4SMBJ48A	P4SMBJ48CA	JX	VX	48.0	53.3	61.30	1	77.4	5.2	5	
P4SMBJ51	P4SMBJ51C	JY	VY	51.0	56.7	71.80	1	91.1	4.4	5	
P4SMBJ51A	P4SMBJ51CA	RD	VZ	51.0	56.7	65.20	1	82.4	4.9	5	
P4SMBJ54	P4SMBJ54C	RE	WD	54.0	60.0	76.00	1	96.3	4.2	5	
P4SMBJ54A	P4SMBJ54CA	RF	WE	54.0	60.0	69.00	1	87.1	4.6	5	
P4SMBJ58	P4SMBJ58C	RG	WF	58.0	64.4	81.60	1	103.0	3.9	5	
P4SMBJ58A	P4SMBJ58CA	RH	WG	58.0	64.4	74.10	1	93.6	4.3	5	
P4SMBJ60	P4SMBJ60C	RK	WH	60.0	66.7	84.50	1	107.0	3.7	5	
P4SMBJ60A	P4SMBJ60CA	RL	WK	60.0	66.7	76.70	1	96.8	4.1	5	
P4SMBJ110	P4SMBJ110C	SD	XD	110.0	122.0	154.5	1	196.0	2.0	5	
P4SMBJ110A	P4SMBJ110CA	SE	XE	110.0	122.0	140.5	1	177.0	2.3	5	
P4SMBJ120	P4SMBJ120C	SF	XF	120.0	133.0	169.0	1	214.0	1.9	5	
P4SMBJ120A	P4SMBJ120CA	SG	XG	120.0	133.0	153.0	1	193.0	2.0	5	
P4SMBJ130	P4SMBJ130C	SH	XH	130.0	144.0	182.5	1	231.0	1.7	5	
P4SMBJ130A	P4SMBJ130CA	SK	XK	130.0	144.0	165.5	1	209.0	1.9	5	
P4SMBJ150	P4SMBJ150C	SL	XL	150.0	167.0	211.5	1	268.0	1.5	5	
P4SMBJ15A	P4SMBJ150CA	SM	XM	150.0	167.0	192.5	1	243.0	1.6	5	
P4SMBJ160	P4SMBJ160C	SN	XN	160.0	178.0	226.0	1	287.0	1.4	5	
P4SMBJ160A	P4SMBJ160CA	SP	XP	160.0	178.0	205.0	1	259.0	1.5	5	
P4SMBJ170	P4SMBJ170C	SQ	XQ	170.0	189.0	239.5	1	304.0	1.3	5	
P4SMBJ170A	P4SMBJ170CA	SR	XR	170.0	189.0	217.5	1	275.0	1.4	5	

Rating and Characteristic Curve

Fig. 1 - PEAK PULSE POWER RATING CURVE

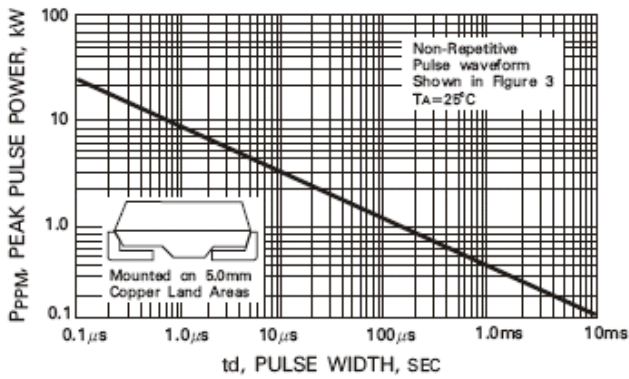


Fig. 3 - PULSE WAVEFORM

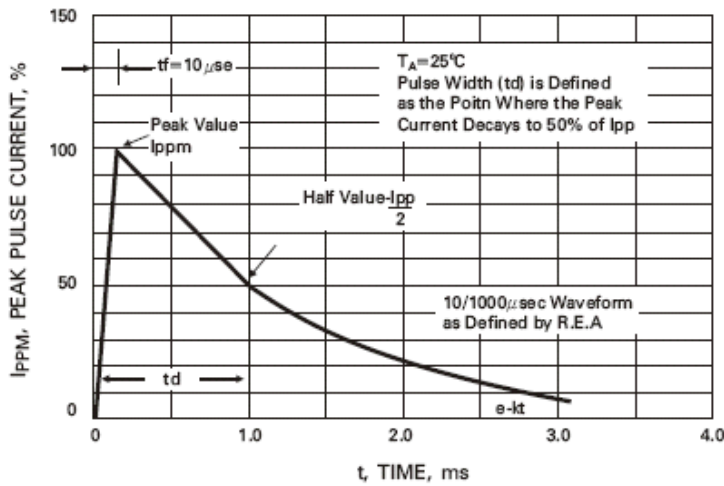


Fig. 5 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

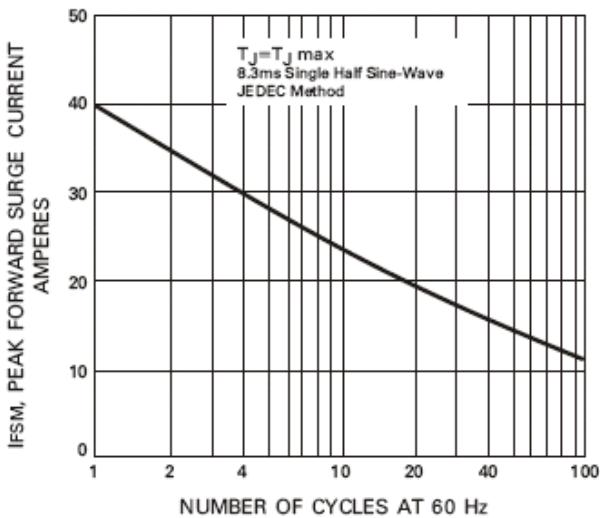


Fig. 2 - PULSE DERATING CURVE

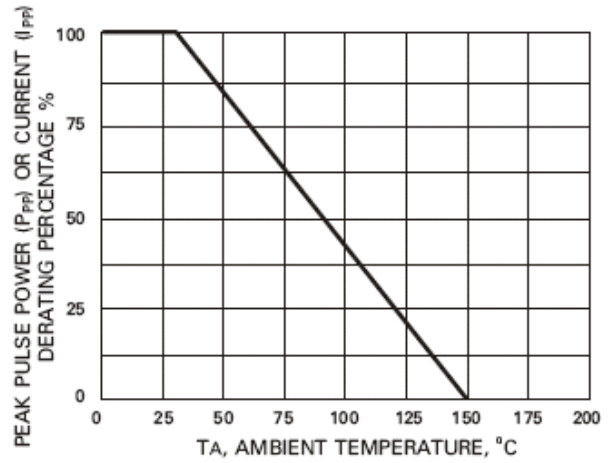


Fig. 4 - TYPICAL JUNCTION CAPACITANCE

