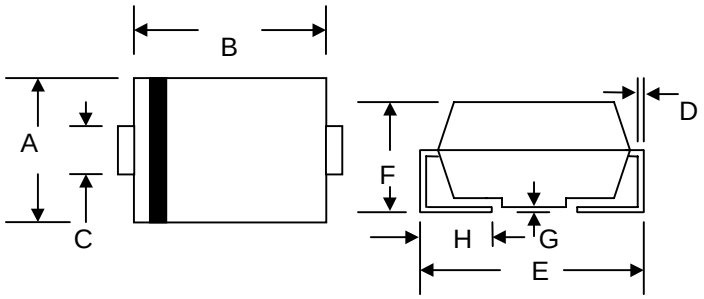
P4SMAJ SERIES

400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

Features

- Glass Passivated Die Construction
- 400W Peak Pulse Power Dissipation
- 5.0V – 170V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O



Mechanical Data

- Case: JEDEC DO-214AC Low Profile Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking:
  Unidirectional – Device Code and Cathode Band
  Bidirectional – Device Code Only
- Weight: 0.064 grams (approx.)

SMA/DO-214AC		
Dim	**Min**	**Max**
A	2.50	2.90
B	4.00	4.60
C	1.40	1.60
D	0.152	0.305
E	4.80	5.28
F	2.00	2.44
G	0.051	0.203
H	0.76	1.52
All Dimensions in mm		

"C" Suffix Designates Bi-directional Devices
"A" Suffix Designates 5% Tolerance Devices
No Suffix Designates 10% Tolerance Devices

Maximum Ratings and Electrical Characteristics @T_A=25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation at T_A = 25°C (Note 1, 2, 5) Figure 3	P_{PPM}	400 Minimum	W
Peak Forward Surge Current (Note 3)	I_{FSM}	40	A
Peak Pulse Current on 10/1000µS Waveform (Note 1) Figure 4	I_{PPM}	See Table 1	A
Steady State Power Dissipation (Note 4)	$P_{M(AV)}$	1.0	W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	°C

Note: 1. Non-repetitive current pulse, per Figure 4 and derated above T_A = 25°C per Figure 1.
2. Mounted on 5.0mm^2 copper pads to each terminal.
3. 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum.
4. Lead temperature at 75°C = T_L.
5. Peak pulse power waveform is 10/1000µS.

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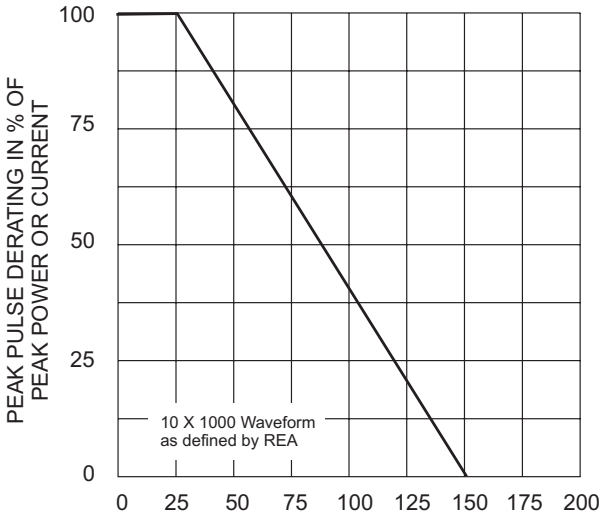

Fig. 1 Pulse Derating Curve

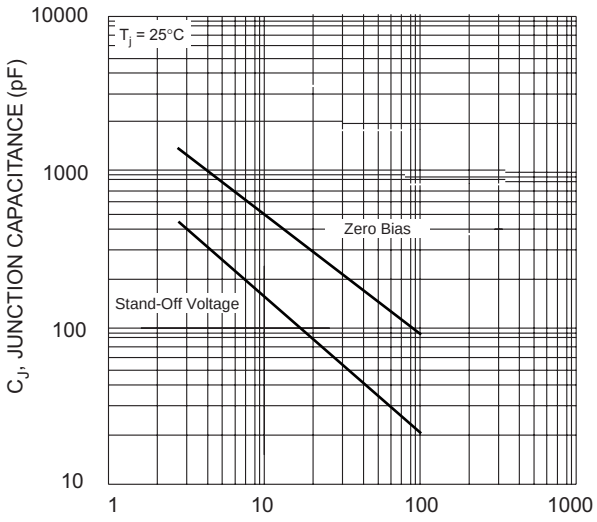

Fig. 2 Typical Junction Capacitance

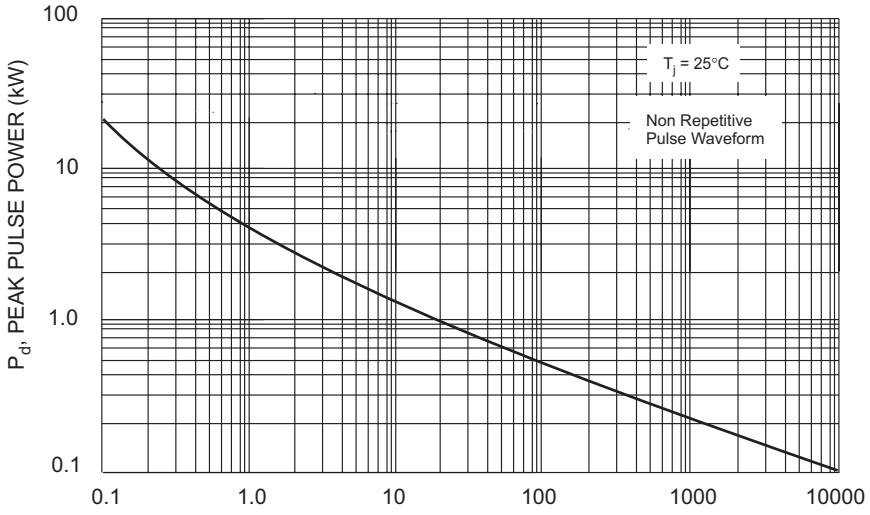

Fig. 3 Pulse Rating Curve

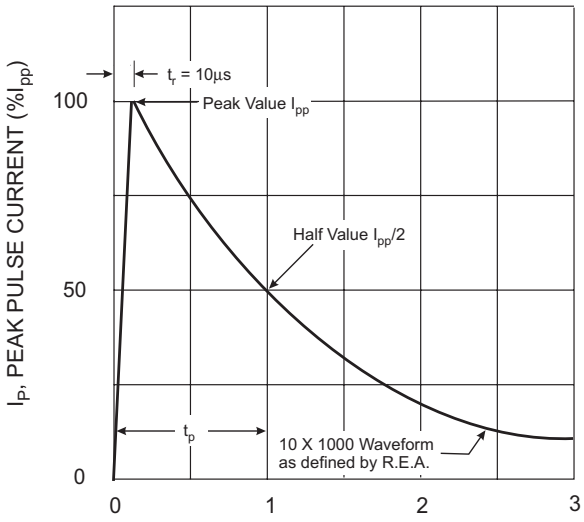

Fig. 4 Pulse Waveform

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UNI-DIRECTIONAL 400 WATT SURFACE MOUNT TVS

UNI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	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 (uA)
P4SMAJ5.0	HD	5.00	6.40	7.55	10	9.6	41.6	800
P4SMAJ5.0A	HE	5.00	6.40	7.25	10	9.2	43.5	800
P4SMAJ6.0	HF	6.00	6.67	8.45	10	11.4	35.1	800
P4SMAJ6.0A	HG	6.00	6.67	7.67	10	10.3	38.8	800
P4SMAJ6.5	HH	6.50	7.22	9.14	10	12.3	32.5	500
P4SMAJ6.5A	HK	6.50	7.22	8.30	10	11.2	35.7	500
P4SMAJ7.0	HL	7.00	7.78	9.86	10	13.3	30.1	200
P4SMAJ7.0A	HM	7.00	7.78	8.95	10	12.0	33.3	200
P4SMAJ7.5	HN	7.50	8.33	10.67	1	14.3	28.0	100
P4SMAJ7.5A	HP	7.50	8.33	9.58	1	12.9	31.0	100
P4SMAJ8.0	HQ	8.00	8.99	11.30	1	15.0	26.5	50
P4SMAJ8.0A	HR	8.00	8.99	10.23	1	13.6	29.4	50
P4SMAJ8.5	HS	8.50	9.44	11.92	1	15.9	25.1	10
P4SMAJ8.5A	HT	8.50	9.44	10.82	1	14.4	27.7	10
P4SMAJ9.0	HU	9.00	10.00	12.60	1	16.9	23.6	5
P4SMAJ9.0A	HV	9.00	10.00	11.50	1	15.4	26.0	5
P4SMAJ10	HW	10.00	11.10	14.10	1	18.8	21.2	5
P4SMAJ10A	HX	10.00	11.10	12.80	1	17.0	23.5	5
P4SMAJ11	HY	11.00	12.20	15.40	1	20.1	20.0	5
P4SMAJ11A	HZ	11.00	12.20	14.00	1	18.2	22.0	5
P4SMAJ12	ID	12.00	13.30	16.90	1	22.0	18.1	5
P4SMAJ12A	IE	12.00	13.30	15.30	1	19.9	20.1	5
P4SMAJ13	IF	13.00	14.40	18.20	1	23.8	16.8	5
P4SMAJ13A	IG	13.00	14.40	16.50	1	21.5	18.6	5
P4SMAJ14	IH	14.00	15.60	19.80	1	25.8	15.5	5
P4SMAJ14A	IK	14.00	15.60	17.90	1	23.2	17.2	5
P4SMAJ15	IL	15.00	16.70	21.10	1	26.9	14.8	5
P4SMAJ15A	IM	15.00	16.70	19.20	1	24.4	16.4	5
P4SMAJ16	IN	16.00	17.80	22.60	1	28.8	13.8	5
P4SMAJ16A	IP	16.00	17.80	20.50	1	26.0	15.3	5
P4SMAJ17	IQ	17.00	18.90	23.90	1	30.5	13.1	5
P4SMAJ17A	IR	17.00	18.90	21.70	1	27.6	14.5	5
P4SMAJ18	IS	18.00	20.00	25.30	1	32.2	12.4	5
P4SMAJ18A	IT	18.00	20.00	23.30	1	29.2	13.7	5
P4SMAJ20	IU	20.00	22.20	28.10	1	35.8	11.1	5
P4SMAJ20A	IV	20.00	22.20	25.50	1	32.4	12.3	5
P4SMAJ22	IW	22.00	24.40	30.90	1	39.4	10.1	5
P4SMAJ22A	IX	22.00	24.40	28.00	1	35.5	11.2	5
P4SMAJ24	IY	24.00	26.70	33.80	1	43.0	9.3	5
P4SMAJ24A	IZ	24.00	26.70	30.70	1	38.9	10.3	5
P4SMAJ26	JD	26.00	28.90	36.60	1	46.6	8.6	5
P4SMAJ26A	JE	26.00	28.90	33.20	1	42.1	9.5	5
P4SMAJ28	JF	28.00	31.10	39.40	1	50.0	8.0	5
P4SMAJ28A	JG	28.00	31.10	35.80	1	45.4	8.8	5
P4SMAJ30	JH	30.00	33.30	42.20	1	53.5	7.5	5
P4SMAJ30A	JK	30.00	33.30	38.30	1	48.4	8.3	5
P4SMAJ33	JL	33.00	36.70	46.50	1	59.0	6.8	5
P4SMAJ33A	JM	33.00	36.70	42.20	1	53.3	7.5	5
P4SMAJ36	JN	36.00	40.00	50.70	1	64.3	6.2	5
P4SMAJ36A	JP	36.00	40.00	46.00	1	58.1	6.9	5
P4SMAJ40	JQ	40.00	44.40	56.30	1	71.4	5.6	5
P4SMAJ40A	JR	40.00	44.40	51.10	1	64.5	6.2	5
P4SMAJ43	JS	43.00	47.80	60.50	1	76.7	5.2	5
P4SMAJ43A	JT	43.00	47.80	54.90	1	69.4	5.7	5
P4SMAJ45	JU	45.00	50.00	63.30	1	80.3	5.0	5
P4SMAJ45A	JV	45.00	50.00	57.50	1	72.7	5.5	5
P4SMAJ48	JW	48.00	53.30	67.50	1	85.5	4.7	5
P4SMAJ48A	JX	48.00	53.30	61.30	1	77.4	5.2	5
P4SMAJ51	JY	51.00	56.70	71.80	1	91.1	4.4	5
P4SMAJ51A	JZ	51.00	56.70	65.20	1	82.4	4.9	5
P4SMAJ54	RD	54.00	60.00	76.00	1	96.3	4.2	5
P4SMAJ54A	RE	54.00	60.00	69.00	1	87.1	4.6	5
P4SMAJ58	RF	58.00	64.40	81.60	1	103.0	3.9	5
P4SMAJ58A	RG	58.00	64.40	74.10	1	93.6	4.3	5
P4SMAJ60	RH	60.00	66.70	84.50	1	107.0	3.7	5
P4SMAJ60A	RK	60.00	66.70	76.70	1	96.8	4.1	5
P4SMAJ64	RL	64.00	71.10	90.10	1	114.0	3.5	5
P4SMAJ64A	RM	64.00	71.10	81.80	1	103.0	3.9	5
P4SMAJ70	RN	70.00	77.80	98.60	1	125.0	3.2	5
P4SMAJ70A	RP	70.00	77.80	89.50	1	113.0	3.5	5
P4SMAJ75	RQ	75.00	83.30	105.70	1	134.0	3.0	5
P4SMAJ75A	RR	75.00	83.30	95.80	1	121.0	3.3	5
P4SMAJ78	RS	78.00	86.70	109.80	1	139.0	2.9	5
P4SMAJ78A	RT	78.00	86.70	99.70	1	126.0	2.2	5
P4SMAJ85	RU	85.00	94.40	119.20	1	151.0	2.6	5
P4SMAJ85A	RV	85.00	94.40	108.20	1	137.0	2.9	5
P4SMAJ90	RW	90.00	100.00	126.50	1	160.0	2.5	5
P4SMAJ90A	RX	90.00	100.00	115.50	1	146.0	2.7	5
P4SMAJ100	RY	100.00	111.00	141.00	1	179.0	2.2	5
P4SMAJ100A	RZ	100.00	111.00	128.00	1	162.0	2.5	5
P4SMAJ110	SD	110.00	122.00	154.50	1	196.0	2.0	5
P4SMAJ110A	SE	110.00	122.00	140.50	1	177.0	2.3	5
P4SMAJ120	SF	120.00	133.00	169.00	1	214.0	1.9	5
P4SMAJ120A	SG	120.00	133.00	153.00	1	193.0	2.0	5
P4SMAJ130	SH	130.00	144.00	182.50	1	231.0	1.7	5
P4SMAJ130A	SK	130.00	144.00	165.50	1	209.0	1.9	5
P4SMAJ150	SL	150.00	167.00	211.50	1	269.0	1.5	5
P4SMAJ150A	SM	150.00	167.00	192.50	1	243.0	1.6	5
P4SMAJ160	SN	160.00	178.00	226.00	1	287.0	1.4	5
P4SMAJ160A	SP	160.00	178.00	205.00	1	259.0	1.5	5
P4SMAJ170	SQ	170.00	189.00	239.50	1	304.0	1.3	5
P4SMAJ170A	SR	170.00	189.00	217.50	1	275.0	1.4	5

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BI-DIRECTIONAL 400 WATT SURFACE MOUNT TVS

BI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	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 (uA)
P4SMAJ5.0C	TD	5.00	6.40	7.55	10	9.6	41.6	1600
P4SMAJ5.0CA	TE	5.00	6.40	7.25	10	9.2	43.5	1600
P4SMAJ6.0C	TF	6.00	6.67	8.45	10	11.4	35.1	1600
P4SMAJ6.0CA	TG	6.00	6.67	7.67	10	10.3	38.8	1600
P4SMAJ6.5C	TH	6.50	7.22	9.14	10	12.3	32.5	1000
P4SMAJ6.5CA	TK	6.50	7.22	8.30	10	11.2	35.7	1000
P4SMAJ7.0C	TL	7.00	7.78	9.86	10	13.3	30.1	400
P4SMAJ7.0CA	TM	7.00	7.78	8.95	10	12.0	33.3	400
P4SMAJ7.5C	TN	7.50	8.33	10.67	1	14.3	28.0	200
P4SMAJ7.5CA	TP	7.50	8.33	9.58	1	12.9	31.0	200
P4SMAJ8.0C	TQ	8.00	8.99	11.30	1	15.0	26.5	100
P4SMAJ8.0CA	TR	8.00	8.99	10.23	1	13.6	29.4	100
P4SMAJ8.5C	TS	8.50	9.44	11.92	1	15.9	25.1	20
P4SMAJ8.5CA	TT	8.50	9.44	10.82	1	14.4	27.7	20
P4SMAJ9.0C	TU	9.00	10.00	12.60	1	16.9	23.6	10
P4SMAJ9.0CA	TV	9.00	10.00	11.50	1	15.4	26.0	10
P4SMAJ10C	TW	10.00	11.10	14.10	1	18.8	21.2	5
P4SMAJ10CA	TX	10.00	11.10	12.80	1	17.0	23.5	5
P4SMAJ11C	TY	11.00	12.20	15.40	1	20.1	20.0	5
P4SMAJ11CA	TZ	11.00	12.20	14.00	1	18.2	22.0	5
P4SMAJ12C	UD	12.00	13.30	16.90	1	22.0	18.1	5
P4SMAJ12CA	UE	12.00	13.30	15.30	1	19.9	20.1	5
P4SMAJ13C	UF	13.00	14.40	18.20	1	23.8	16.8	5
P4SMAJ13CA	UG	13.00	14.40	16.50	1	21.5	18.6	5
P4SMAJ14C	UH	14.00	15.60	19.80	1	25.8	15.5	5
P4SMAJ14CA	UK	14.00	15.60	17.90	1	23.2	17.2	5
P4SMAJ15C	UL	15.00	16.70	21.10	1	26.9	14.8	5
P4SMAJ15CA	UM	15.00	16.70	19.20	1	24.4	16.4	5
P4SMAJ16C	UN	16.00	17.80	22.60	1	28.8	13.8	5
P4SMAJ16CA	UP	16.00	17.80	20.50	1	26.0	15.3	5
P4SMAJ17C	UQ	17.00	18.90	23.90	1	30.5	13.1	5
P4SMAJ17CA	UR	17.00	18.90	21.70	1	27.6	14.5	5
P4SMAJ18C	US	18.00	20.00	25.30	1	32.2	12.4	5
P4SMAJ18CA	UT	18.00	20.00	23.30	1	29.2	13.7	5
P4SMAJ20C	UU	20.00	22.20	28.10	1	35.8	11.1	5
P4SMAJ20CA	UV	20.00	22.20	25.50	1	32.4	12.3	5
P4SMAJ22C	UW	22.00	24.40	30.90	1	39.4	10.1	5
P4SMAJ22CA	UX	22.00	24.40	28.00	1	35.5	11.2	5
P4SMAJ24C	UY	24.00	26.70	33.80	1	43.0	9.3	5
P4SMAJ24CA	UZ	24.00	26.70	30.70	1	38.9	10.3	5
P4SMAJ26C	VD	26.00	28.90	36.60	1	46.6	8.6	5
P4SMAJ26CA	VE	26.00	28.90	33.20	1	42.1	9.5	5
P4SMAJ28C	VF	28.00	31.10	39.40	1	50.0	8.0	5
P4SMAJ28CA	VG	28.00	31.10	35.80	1	45.4	8.8	5
P4SMAJ30C	VH	30.00	33.30	42.20	1	53.5	7.5	5
P4SMAJ30CA	VK	30.00	33.30	38.30	1	48.4	8.3	5
P4SMAJ33C	VL	33.00	36.70	46.50	1	59.0	6.8	5
P4SMAJ33CA	VM	33.00	36.70	42.20	1	53.3	7.5	5
P4SMAJ36C	VN	36.00	40.00	50.70	1	64.3	6.2	5
P4SMAJ36CA	VP	36.00	40.00	46.00	1	58.1	6.9	5
P4SMAJ40C	VQ	40.00	44.40	56.30	1	71.4	5.6	5
P4SMAJ40CA	VR	40.00	44.40	51.10	1	64.5	6.2	5
P4SMAJ43C	VS	43.00	47.80	60.50	1	76.7	5.2	5
P4SMAJ43CA	VT	43.00	47.80	54.90	1	69.4	5.7	5
P4SMAJ45C	VU	45.00	50.00	63.30	1	80.3	5.0	5
P4SMAJ45CA	VV	45.00	50.00	57.50	1	72.7	5.5	5
P4SMAJ48C	VW	48.00	53.30	67.50	1	85.5	4.7	5
P4SMAJ48CA	VX	48.00	53.30	61.30	1	77.4	5.2	5
P4SMAJ51C	VY	51.00	56.70	71.80	1	91.1	4.4	5
P4SMAJ51CA	VZ	51.00	56.70	65.20	1	82.4	4.9	5
P4SMAJ54C	WD	54.00	60.00	76.00	1	96.3	4.2	5
P4SMAJ54CA	WE	54.00	60.00	69.00	1	87.1	4.6	5
P4SMAJ58C	WF	58.00	64.40	81.60	1	103.0	3.9	5
P4SMAJ58CA	WG	58.00	64.40	74.10	1	93.6	4.3	5
P4SMAJ60C	WH	60.00	66.70	84.50	1	107.0	3.7	5
P4SMAJ60CA	WK	60.00	66.70	76.70	1	96.8	4.1	5
P4SMAJ64C	WL	64.00	71.10	90.10	1	114.0	3.5	5
P4SMAJ64CA	WM	64.00	71.10	81.80	1	103.0	3.9	5
P4SMAJ70C	WN	70.00	77.80	98.60	1	125.0	3.2	5
P4SMAJ70CA	WP	70.00	77.80	89.50	1	113.0	3.5	5
P4SMAJ75C	WQ	75.00	83.30	105.70	1	134.0	3.0	5
P4SMAJ75CA	WR	75.00	83.30	95.80	1	121.0	3.3	5
P4SMAJ78C	WS	78.00	86.70	109.80	1	139.0	2.9	5
P4SMAJ78CA	WT	78.00	86.70	99.70	1	126.0	2.2	5
P4SMAJ85C	WU	85.00	94.40	119.20	1	151.0	2.6	5
P4SMAJ85CA	WV	85.00	94.40	108.20	1	137.0	2.9	5
P4SMAJ90C	WW	90.00	100.00	126.50	1	160.0	2.5	5
P4SMAJ90CA	WX	90.00	100.00	115.50	1	146.0	2.7	5
P4SMAJ100C	WY	100.00	111.00	141.00	1	179.0	2.2	5
P4SMAJ100CA	WZ	100.00	111.00	128.00	1	162.0	2.5	5
P4SMAJ110C	XD	110.00	122.00	154.50	1	196.0	2.0	5
P4SMAJ110CA	XE	110.00	122.00	140.50	1	177.0	2.3	5
P4SMAJ120C	XF	120.00	133.00	169.00	1	214.0	1.9	5
P4SMAJ120CA	XG	120.00	133.00	153.00	1	193.0	2.0	5
P4SMAJ130C	XH	130.00	144.00	182.50	1	231.0	1.7	5
P4SMAJ130CA	XK	130.00	144.00	165.50	1	209.0	1.9	5
P4SMAJ150C	XL	150.00	167.00	211.50	1	269.0	1.5	5
P4SMAJ150CA	XM	150.00	167.00	192.50	1	243.0	1.6	5
P4SMAJ160C	XN	160.00	178.00	226.00	1	287.0	1.4	5
P4SMAJ160CA	XP	160.00	178.00	205.00	1	259.0	1.5	5
P4SMAJ170C	XQ	170.00	189.00	239.50	1	304.0	1.3	5
P4SMAJ170CA	XR	170.00	189.00	217.50	1	275.0	1.4	5

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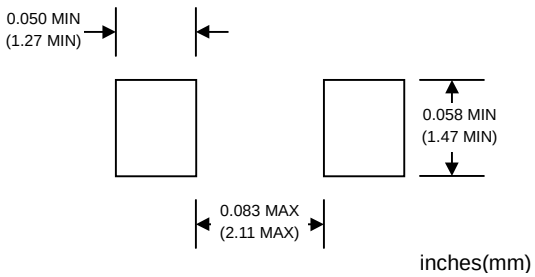
ORDERING INFORMATION

Product No.◆	Package Type	Shipping Quantity
P4SMAJxx-T1	SMA	1800/Tape & Reel
P4SMAJxx-T3	SMA	7500/Tape & Reel
P4SMAJxxA-T1	SMA	1800/Tape & Reel
P4SMAJxxA-T3	SMA	7500/Tape & Reel
P4SMAJxxC-T1	SMA	1800/Tape & Reel
P4SMAJxxC-T3	SMA	7500/Tape & Reel
P4SMAJxxCA-T1	SMA	1800/Tape & Reel
P4SMAJxxCA-T3	SMA	7500/Tape & Reel

Products listed in **bold** are WTE **Preferred** devices.
◆T1 suffix refers to a 7" reel. T3 suffix refers to a 13" reel.
Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.

RECOMMENDED FOOTPRINT



inches(mm)

Won-Top Electronics Co., Ltd (WTE) has checked all information carefully and believes it to be correct and accurate. However, WTE cannot assume any responsibility for inaccuracies. Furthermore, this information does not give the purchaser of semiconductor devices any license under patent rights to manufacturer. WTE reserves the right to change any or all information herein without further notice.

WARNING: DO NOT USE IN LIFE SUPPORT EQUIPMENT. WTE power semiconductor products are not authorized for use as critical components in life support devices or systems without the express written approval.

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We power your everyday.

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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

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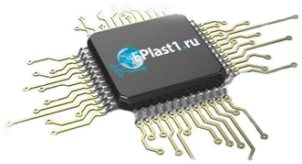
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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