Micro Commercial Components
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SMAJ5.0 THRU SMAJ170CA

400 Watt Transient Voltage Suppressors 5.0 to 170 Volts

Features

- For Surface Mount Applications
- Unidirectional And Bidirectional
- Low Inductance
- High Temp Soldering: 250°C for 10 Seconds At Terminals
- For Bidirectional Devices Add “C” To The Suffix Of The Part Number: i.e.SMAJ5.0C or P4SMAJ5.0CA for 5% Tolerance
- SMAJ5.0~SMAJ170CA can be also named as P4SMAJ5.0~P4SMAJ170CA
- UL Recognized File # E222849

Mechanical Data

- Case: JEDEC DO-214AC
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Indicated by cathode band except bi-directional types

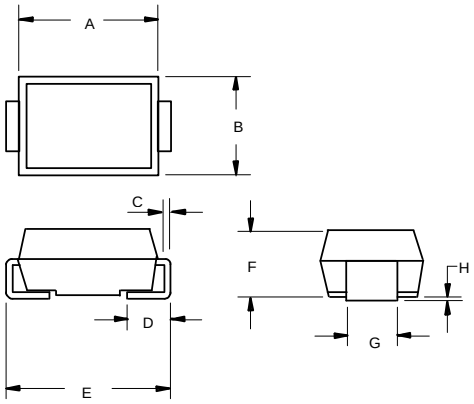
Maximum Rating:

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Typical Thermal Resistance: 25℃/W Junction to Ambient

Peak Pulse Current on 10/1000μs Waveform	I_{PPM}	See Table 1	Note 1
Peak Pulse Power Dissipation	P_{PPM}	Min 400 W	Note 1, 5
Steady State Power Dissipation	$P_{M(AV)}$	1.0 W	Note 2, 4
Peak Forward Surge Current	I_{FSM}	40A	Note:4

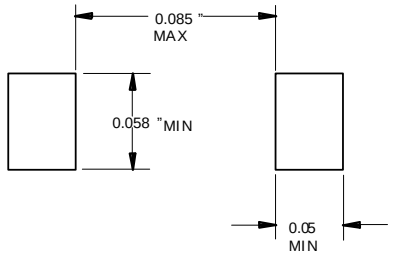
Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25℃ per Fig.2.
2. Mounted on 5.0mm^2 copper pads to each terminal.
3. 8.3ms, single half sine wave duty cycle = 4 pulses per Minutes maximum.
4. Lead temperature at T_L = 75℃.
5. Peak pulse power waveform is 10/1000μs.

DO-214AC
(SMA)(LEAD FRAME)



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.157	.181	4.00	4.60	
B	.098	.114	2.50	2.90	
C	.006	.012	0.152	0.305	
D	.030	.060	0.76	1.52	
E	.188	.208	4.80	5.28	
F	.078	.096	2.00	2.44	
G	.055	.062	1.40	1.60	
H	.002	.008	0.051	0.203	

SUGGESTED SOLDER PAD LAYOUT



SMAJ5.0 thru SMAJ170CA

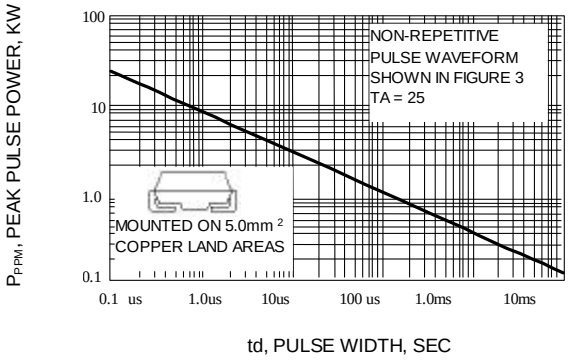


Fig. 1-PEAK PULSE POWER RATING CURVE

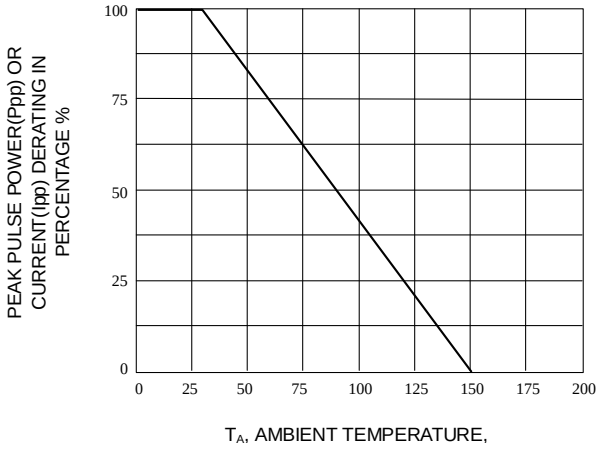


Fig. 2-PULSE RATING CURVE

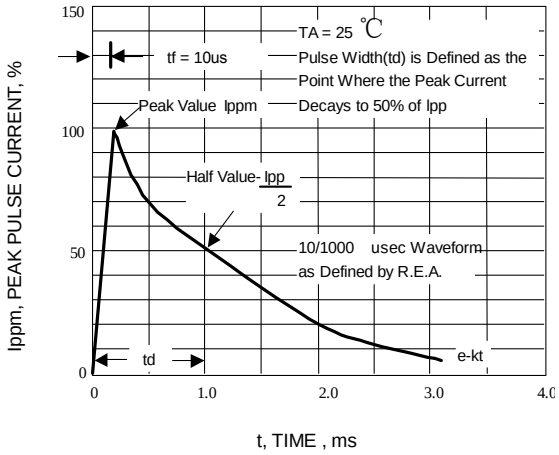


Fig. 3-PULSE WAVEFORM

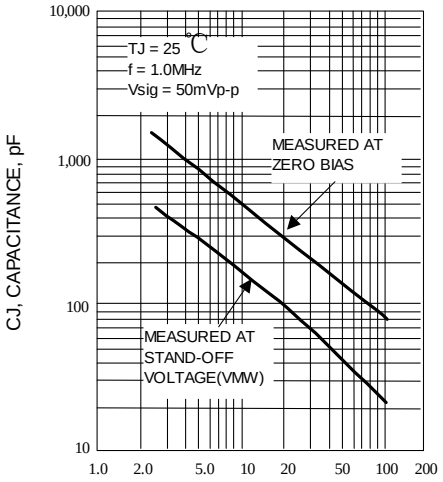


Fig. 4-TYPICAL JUNCTION CAPACITANCE

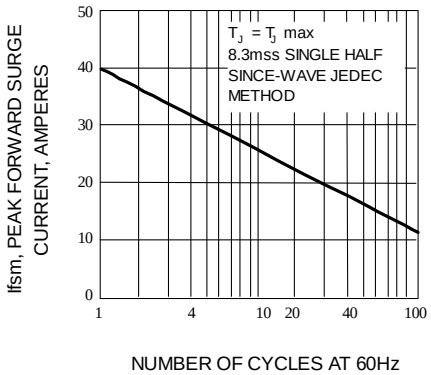


Fig. 5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

SMAJ5.0 thru SMAJ170CA

Micro Commercial Components

ELECTRICAL CHARACTERISTICS @25°C

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE V_{WM} (VOLTS)	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T (VOLTS) MIN	MAX	I_T (mA)	MAXIMUM CLAMPING VOLTAGE @ I_{PP} (VOLTS)	PEAK PULSE CURRENT I_{PP} (AMPS)	MAXIMUM REVERSE LEAKAGE @V_{WM} I_D (µA)	MARKING CODE 1	2
SMAJ5.0	5.0	6.40	7.30	10	9.6	41.6	800	AD	HD
SMAJ5.0A	5.0	6.40	7.00	10	9.2	43.5	800	AE	HE
SMAJ6.0	6.0	6.67	8.15	10	11.4	35.1	800	AF	HF
SMAJ6.0A	6.0	6.67	7.37	10	10.3	38.8	800	AG	HG
SMAJ6.5	6.5	7.22	8.82	10	12.3	32.5	500	AH	HH
SMAJ6.5A	6.5	7.22	7.98	10	11.2	35.7	500	AK	HK
SMAJ7.0	7.0	7.78	9.51	10	13.3	30.1	200	AL	HL
SMAJ7.0A	7.0	7.78	8.60	10	12.0	33.3	200	AM	HM
SMAJ7.5	7.5	8.33	10.2	1	14.3	28.0	100	AN	HN
SMAJ7.5A	7.5	8.33	9.21	1	12.9	31.0	100	AP	HP
SMAJ8.0	8.0	8.89	10.9	1	15.0	26.5	50	AQ	HQ
SMAJ8.0A	8.0	8.89	9.83	1	13.6	29.4	50	AR	HR
SMAJ8.5	8.5	9.44	11.5	1	15.9	25.1	10	AS	HS
SMAJ8.5A	8.5	9.44	10.4	1	14.4	27.7	10	AT	HT
SMAJ9.0	9.0	10.0	12.2	1	16.9	23.6	5	AU	HU
SMAJ9.0A	9.0	10.0	11.1	1	15.4	26.0	5	AV	HV
SMAJ10	10	11.1	13.6	1	18.8	21.2	5	AW	HW
SMAJ10A	10	11.1	12.3	1	17.0	23.5	5	AX	HX
SMAJ11	11	12.2	14.9	1	20.1	20.0	5	AY	HY
SMAJ11A	11	12.2	13.5	1	18.2	22.0	5	AZ	HZ
SMAJ12	12	13.3	16.3	1	22.0	18.1	5	BD	ID
SMAJ12A	12	13.3	14.7	1	19.9	20.1	5	BE	IE
SMAJ13	13	14.4	17.6	1	23.8	16.8	5	BF	IF
SMAJ13A	13	14.4	15.9	1	21.5	18.6	5	BG	IG
SMAJ14	14	15.6	19.1	1	25.8	15.5	5	BH	IH
SMAJ14A	14	15.6	17.2	1	23.2	17.2	5	BK	IK
SMAJ15	15	16.7	20.4	1	26.9	14.8	5	BL	IL
SMAJ15A	15	16.7	18.5	1	24.4	16.4	5	BM	IM
SMAJ16	16	17.8	21.8	1	28.8	13.8	5	BN	IN
SMAJ16A	16	17.8	19.7	1	26.0	15.3	5	BP	IP
SMAJ17	17	18.9	23.1	1	30.5	13.1	5	BQ	IQ
SMAJ17A	17	18.9	20.9	1	27.6	14.5	5	BR	IR
SMAJ18	18	20.0	24.4	1	32.2	12.4	5	BS	IS
SMAJ18A	18	20.0	22.1	1	29.2	13.7	5	BT	IT
SMAJ20	20	22.2	27.1	1	35.8	11.1	5	BU	IU
SMAJ20A	20	22.2	24.5	1	32.4	12.3	5	BV	IV

ELECTRICAL CHARACTERISTICS @25°C

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE V_{WM} (VOLTS)	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T (VOLTS) MIN	MAX	I_T (mA)	MAXIMUM CLAMPING VOLTAGE @ I_{PP} (VOLTS)	PEAK PULSE CURRENT I_{PP} (AMPS)	MAXIMUM REVERSE LEAKAGE @V_{WM} I_D (μA)	MARKING CODE 1	2
SMAJ22	22	24.4	29.8	1	39.4	10.1	5	BW	IW
SMAJ22A	22	24.4	26.9	1	35.5	11.2	5	BX	IX
SMAJ24	24	26.7	32.6	1	43.0	9.3	5	BY	IY
SMAJ24A	24	26.7	29.5	1	38.9	10.3	5	BZ	IZ
SMAJ26	26	28.9	35.3	1	46.6	8.6	5	CD	JD
SMAJ26A	26	28.9	31.9	1	42.1	9.5	5	CE	JE
SMAJ28	28	31.1	38.0	1	50.0	8.0	5	CF	JF
SMAJ28A	28	31.1	34.4	1	45.4	8.8	5	CG	JG
SMAJ30	30	33.3	40.7	1	53.5	7.5	5	CH	JH
SMAJ30A	30	33.3	36.8	1	48.4	8.3	5	CK	JK
SMAJ33	33	36.7	44.9	1	59.0	6.8	5	CL	JL
SMAJ33A	33	36.7	40.6	1	53.3	7.5	5	CM	JM
SMAJ36	36	40.0	48.9	1	64.3	6.2	5	CN	JN
SMAJ36A	36	40.0	44.2	1	58.1	6.9	5	CP	JP
SMAJ40	40	44.4	54.3	1	71.4	5.6	5	CQ	JQ
SMAJ40A	40	44.4	49.1	1	64.5	6.2	5	CR	JR
SMAJ43	43	47.8	58.4	1	76.7	5.2	5	CS	JS
SMAJ43A	43	47.8	52.8	1	69.4	5.7	5	CT	JT
SMAJ45	45	50.0	61.1	1	80.3	5.0	5	CU	JU
SMAJ45A	45	50.0	55.3	1	72.7	5.5	5	CV	JV
SMAJ48	48	53.3	65.1	1	85.5	4.7	5	CW	JW
SMAJ48A	48	53.3	58.9	1	77.4	5.2	5	CX	JX
SMAJ51	51	56.7	69.3	1	91.1	4.4	5	CY	JY
SMAJ51A	51	56.7	62.7	1	82.4	4.9	5	CZ	JZ
SMAJ54	54	60.0	73.3	1	96.3	4.2	5	RD	
SMAJ54A	54	60.0	66.3	1	87.1	4.6	5	RE	
SMAJ58	58	64.4	78.7	1	103	3.9	5	RF	
SMAJ58A	58	64.4	71.2	1	93.6	4.3	5	RG	
SMAJ60	60	66.7	81.5	1	107	3.7	5	RH	
SMAJ60A	60	66.7	73.7	1	96.8	4.1	5	RK	
SMAJ64	64	71.1	86.9	1	114	3.5	5	RL	
SMAJ64A	64	71.1	78.6	1	103	3.9	5	RM	
SMAJ70	70	77.8	95.1	1	125	3.2	5	RN	
SMAJ70A	70	77.8	86.0	1	113	3.5	5	RP	
SMAJ75	75	83.3	102	1	134	3.0	5	RQ	
SMAJ75A	75	83.3	92.1	1	121	3.3	5	RR	
SMAJ78	78	86.7	106	1	139	2.9	5	RS	
SMAJ78A	78	86.7	95.8	1	126	2.2	5	RT	
SMAJ85	85	94.4	115	1	151	2.6	5	RU	
SMAJ85A	85	94.4	104	1	137	2.9	5	RV	
SMAJ90	90	100	122	1	160	2.5	5	RW	
SMAJ90A	90	100	111	1	146	2.7	5	RX	
SMAJ100	100	111	136	1	179	2.2	5	RY	
SMAJ100A	100	111	123	1	162	2.5	5	RZ	
SMAJ110	110	122	149	1	196	2.0	5	SD	
SMAJ110A	110	122	135	1	177	2.3	5	SE	
SMAJ120	120	133	163	1	214	1.9	5	SF	
SMAJ120A	120	133	147	1	193	2.0	5	SG	
SMAJ130	130	144	176	1	231	1.7	5	SH	
SMAJ130A	130	144	159	1	209	1.9	5	SK	
SMAJ150	150	167	204	1	268	1.5	5	SL	
SMAJ150A	150	167	185	1	243	1.6	5	SM	
SMAJ160	160	178	218	1	287	1.4	5	SN	
SMAJ160A	160	178	197	1	259	1.5	5	SP	
SMAJ170	170	189	231	1	304	1.3	5	SQ	
SMAJ170A	170	189	209	1	275	1.4	5	SR	

SMAJ5.0 thru SMAJ170CA

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	(VOLTS)	MIN	MAX	I_T (mA)	(VOLTS)	(AMPS)	(µA)	1	2
SMAJ5.0C	5.0	6.40	7.30	10	9.6	41.6	1600	WD	TD
SMAJ5.0CA	5.0	6.40	7.00	10	9.2	43.5	1600	WE	TE
SMAJ6.0C	6.0	6.67	8.15	10	11.4	35.1	1600	WF	TF
SMAJ6.0CA	6.0	6.67	7.37	10	10.3	38.8	1600	WG	TG
SMAJ6.5C	6.5	7.22	8.82	10	12.3	32.5	1000	WH	TH
SMAJ6.5CA	6.5	7.22	7.98	10	11.2	35.7	1000	WK	TK
SMAJ7.0C	7.0	7.78	9.51	10	13.3	30.1	400	WL	TL
SMAJ7.0CA	7.0	7.78	8.60	10	12.0	33.3	400	WM	TM
SMAJ7.5C	7.5	8.33	10.2	1	14.3	28.0	200	WN	TN
SMAJ7.5CA	7.5	8.33	9.21	1	12.9	31.0	200	WP	TP
SMAJ8.0C	8.0	8.89	10.9	1	15.0	26.5	100	WQ	TQ
SMAJ8.0CA	8.0	8.89	9.83	1	13.6	29.4	100	WR	TR
SMAJ8.5C	8.5	9.44	11.5	1	15.9	25.1	20	WS	TS
SMAJ8.5CA	8.5	9.44	10.4	1	14.4	27.7	20	WT	TT
SMAJ9.0C	9.0	10.0	12.2	1	16.9	23.6	10	WU	TU
SMAJ9.0CA	9.0	10.0	11.1	1	15.4	26.0	10	WV	TV
SMAJ10C	10	11.1	13.6	1	18.8	21.2	5	WW	TW
SMAJ10CA	10	11.1	12.3	1	17.0	23.5	5	WX	TX
SMAJ11C	11	12.2	14.9	1	20.1	20.0	5	WY	TY
SMAJ11CA	11	12.2	13.5	1	18.2	22.0	5	WZ	TZ
SMAJ12C	12	13.3	16.3	1	22.0	18.1	5	XD	UD
SMAJ12CA	12	13.3	14.7	1	19.9	20.1	5	XE	UE
SMAJ13C	13	14.4	17.6	1	23.8	16.8	5	XF	UF
SMAJ13CA	13	14.4	15.9	1	21.5	18.6	5	XG	UG
SMAJ14C	14	15.6	19.1	1	25.8	15.5	5	XH	UH
SMAJ14CA	14	15.6	17.2	1	23.2	17.2	5	XK	UK
SMAJ15C	15	16.7	20.4	1	26.9	14.8	5	XL	UL
SMAJ15CA	15	16.7	18.5	1	24.4	16.4	5	XM	UM
SMAJ16C	16	17.8	21.8	1	28.8	13.8	5	XN	UN
SMAJ16CA	16	17.8	19.7	1	26.0	15.3	5	XP	UP
SMAJ17C	17	18.9	23.1	1	30.5	13.1	5	XQ	UQ
SMAJ17CA	17	18.9	20.9	1	27.6	14.5	5	XR	UR
SMAJ18C	18	20.0	24.4	1	32.2	12.4	5	XS	US
SMAJ18CA	18	20.0	22.1	1	29.2	13.7	5	XT	UT
SMAJ20C	20	22.2	27.1	1	35.8	11.1	5	XU	UU
SMAJ20CA	20	22.2	24.5	1	32.4	12.3	5	XV	UV

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SMAJ22C	22	24.4	29.8	1	39.4	10.1	5	XW	UW
SMAJ22CA	22	24.4	26.9	1	35.5	11.2	5	XX	UX
SMAJ24C	24	26.7	32.6	1	43.0	9.3	5	XY	UY
SMAJ24CA	24	26.7	29.5	1	38.9	10.3	5	XZ	UZ
SMAJ26C	26	28.9	35.3	1	46.6	8.6	5	YD	VD
SMAJ26CA	26	28.9	31.9	1	42.1	9.5	5	YE	VE
SMAJ28C	28	31.1	38.0	1	50.0	8.0	5	YF	VF
SMAJ28CA	28	31.1	34.4	1	45.4	8.8	5	YG	VG
SMAJ30C	30	33.3	40.7	1	53.5	7.5	5	YH	VH
SMAJ30CA	30	33.3	36.8	1	48.4	8.3	5	YK	VK
SMAJ33C	33	36.7	44.9	1	59.0	6.8	5	YL	VL
SMAJ33CA	33	36.7	40.6	1	53.3	7.5	5	YM	VM
SMAJ36C	36	40.0	48.9	1	64.3	6.2	5	YN	VN
SMAJ36CA	36	40.0	44.2	1	58.1	6.9	5	YP	VP
SMAJ40C	40	44.4	54.3	1	71.4	5.6	5	YQ	VQ
SMAJ40CA	40	44.4	49.1	1	64.5	6.2	5	YR	VR
SMAJ43C	43	47.8	58.4	1	76.7	5.2	5	YS	VS
SMAJ43CA	43	47.8	52.8	1	69.4	5.7	5	YT	VT
SMAJ45C	45	50.0	61.1	1	80.3	5.0	5	YU	VU
SMAJ45CA	45	50.0	55.3	1	72.7	5.5	5	YV	VV
SMAJ48C	48	53.3	65.1	1	85.5	4.7	5	YW	VW
SMAJ48CA	48	53.3	58.9	1	77.4	5.2	5	YX	VX
SMAJ51C	51	56.7	69.3	1	91.1	4.4	5	YY	VY
SMAJ51CA	51	56.7	62.7	1	82.4	4.9	5	YZ	VZ
SMAJ54C	54	60.0	73.3	1	96.3	4.2	5	ZD	WD
SMAJ54CA	54	60.0	66.3	1	87.1	4.6	5	ZE	WE
SMAJ58C	58	64.4	78.7	1	103	3.9	5	ZF	WF
SMAJ58CA	58	64.4	71.2	1	93.6	4.3	5	ZG	WG
SMAJ60C	60	66.7	81.5	1	107	3.7	5	ZH	WH
SMAJ60CA	60	66.7	73.7	1	96.8	4.1	5	ZK	WK
SMAJ64C	64	71.1	86.9	1	114	3.5	5	ZL	WL
SMAJ64CA	64	71.1	78.6	1	103	3.9	5	ZM	WM
SMAJ70C	70	77.8	95.1	1	125	3.2	5	ZN	WN
SMAJ70CA	70	77.8	86.0	1	113	3.5	5	ZP	WP
SMAJ75C	75	83.3	102	1	134	3.0	5	ZQ	WQ
SMAJ75CA	75	83.3	92.1	1	121	3.3	5	ZR	WR
SMAJ78C	78	86.7	106	1	139	2.9	5	ZS	WS
SMAJ78CA	78	86.7	95.8	1	126	2.2	5	ZT	WT
SMAJ85C	85	94.4	115	1	151	2.6	5	ZU	WU
SMAJ85CA	85	94.4	104	1	137	2.9	5	ZV	WV
SMAJ90C	90	100	122	1	160	2.5	5	ZW	WW
SMAJ90CA	90	100	111	1	146	2.7	5	ZX	WX
SMAJ100C	100	111	136	1	179	2.2	5	ZY	WY
SMAJ100CA	100	111	123	1	162	2.5	5	ZZ	WZ
SMAJ110C	110	122	149	1	196	2.0	5	VD	XD
SMAJ110CA	110	122	135	1	177	2.3	5	VE	XE
SMAJ120C	120	133	163	1	214	1.9	5	VF	XF
SMAJ120CA	120	133	147	1	193	2.0	5	VG	XG
SMAJ130C	130	144	176	1	231	1.7	5	VH	XH
SMAJ130CA	130	144	159	1	209	1.9	5	VK	XK
SMAJ150C	150	167	204	1	268	1.5	5	VL	XL
SMAJ150CA	150	167	185	1	243	1.6	5	VM	XM
SMAJ160C	160	178	218	1	287	1.4	5	VN	XN
SMAJ160CA	160	178	197	1	259	1.5	5	VP	XP
SMAJ170C	170	189	231	1	304	1.3	5	VQ	XQ
SMAJ170CA	170	189	209	1	275	1.4	5	VR	XR