Micro Commercial Components
Micro Commercial C omponents
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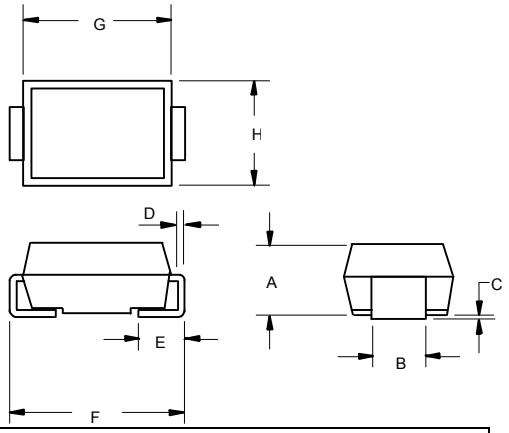
SMCJ5.0 THRU SMCJ220CA

Transient Voltage Suppressor 5.0 to 220 Volts 1500 Watt

Features

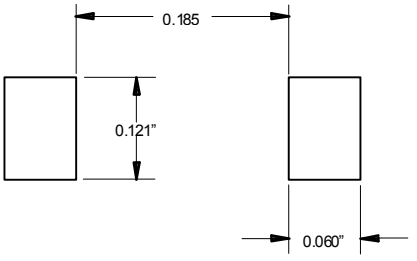
- For surface mount application in order to optimize board space
- Low inductance
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Typical I_D less than 1uA above 10V
- High temperature soldering: 260°C/10 seconds at terminals
- Plastic package has Underwrites Laboratory Flammability Classification 94V-O
- UL Recognized File # E222849

DO-214AB
(SMC) (LEAD FRAME)



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.079	.103	2.00	2.62	
B	.108	.128	2.75	3.25	
C	.002	.008	0.051	0.203	
D	.006	.012	0.152	0.305	
E	.030	.050	0.76	1.27	
F	.305	.320	7.75	8.13	
G	.260	.280	6.60	7.11	
H	.220	.245	5.59	6.22	

SUGGESTED SOLDER PAD LAYOUT



Mechanical Data

- CASE: JEDEC DO-214AB molded plastic body over passivated junction
- Terminals: solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes positive end(cathode) except Bi-directional types.
- Standard packaging: 16mm tape per (EIA 481).
- Weight: 0.007 ounce, 0.21 gram

Maximum Ratings @ 25°C Unless Otherwise Specified

Peak Pulse Current on 10/1000us waveform(Note1, Fig3)	**I_{PPM}**	**See Table 1**	**Amps**
Peak Pulse Power Disspation on 10/1000us waveform(Note1,2,Fig1)	**P_{PPM}**	**Minimum 1500**	**Watts**
Peak forward surge current (JEDEC Method) (Note 2,3)	**$I_{FSM)}$**	**200.0**	**Amps**
Operation And Storage Temperature Range	**T_J, T_{STG}**	**-55°C to +150°C**	

NOTES:

1. Non-repetitive current pulse per Fig.3 and derated above TA=25°C per Fig.2.
2. Mounted on 8.0mm^2 copper pads to each terminal.
3. 8.3ms, single half sine-wave or equivalent square wave, duty cycle=4 pulses per. Minutes maximum.

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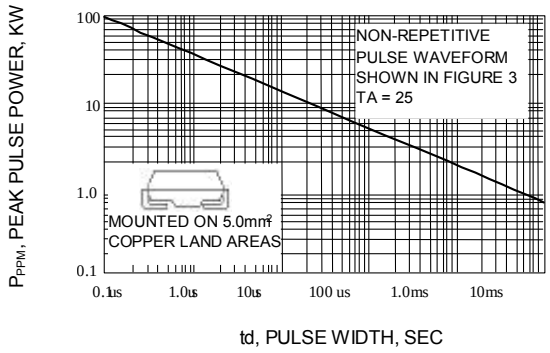

Fig. 1-PEAK PULSE POWER RATING CURVE

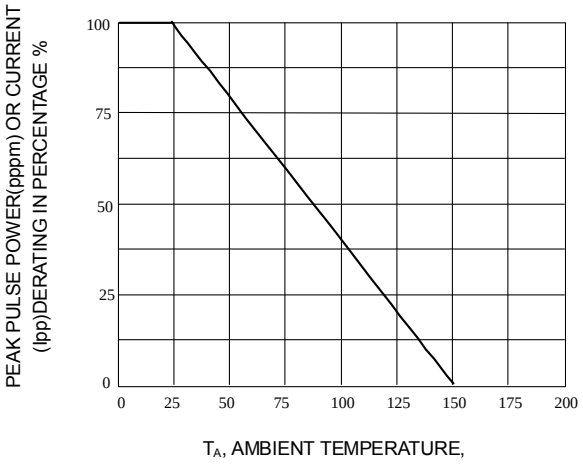

Fig. 2-PULSE DERATING CURVE

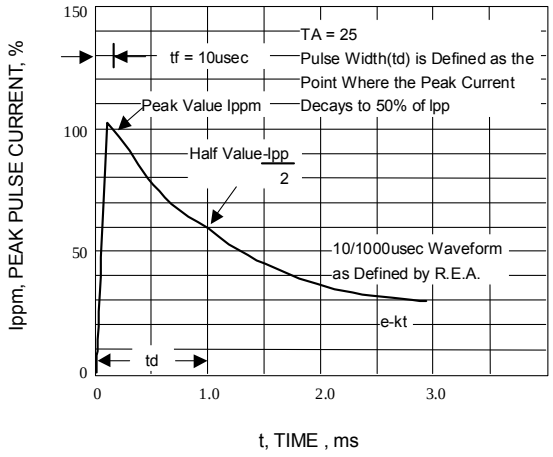

Fig. 3-PULSE WAVEFORM

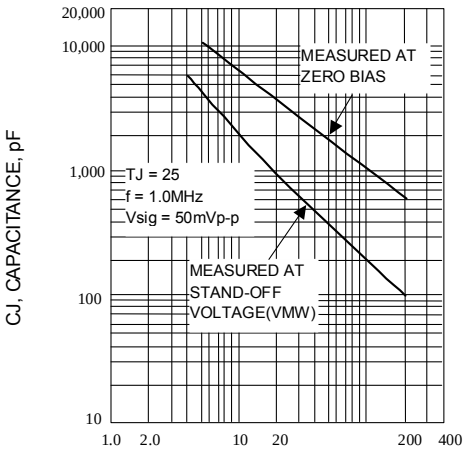

Fig. 4-TYPICAL JUNCTION CAPACITANCE

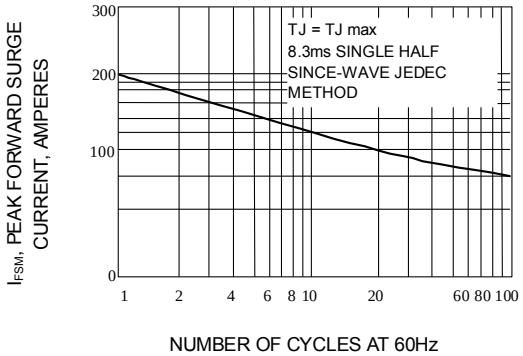

Fig. 5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

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ELECTRICAL CHARACTERISTICS @25°C

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE V_{WM}	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ I_{PP}	PEAK PULSE CURRENT I_{PP}	MAXIMUM REVERSE LEAKAGE @V_{WM} I_D	MARKING CODE	
	(VOLTS)	MIN	MAX	I_T (mA)	(VOLTS)	(AMPS)	(μA)	UNI	BI
SMCJ5.0(C)	5.0	6.40	7.30	10	9.6	156.2	1000	GDD	BDD
SMCJ6.0(C)	6.0	6.67	8.15	10	11.4	131.6	800	GDF	BDF
SMCJ6.5(C)	6.5	7.22	8.82	10	12.3	122.0	500	GDH	BDH
SMCJ7.0(C)	7.0	7.78	9.51	10	13.3	112.8	200	GDL	BDL
SMCJ7.5(C)	7.5	8.33	10.2	1	14.3	104.9	100	GDN	BDN
SMCJ8.0(C)	8.0	8.89	10.9	1	15.0	100.0	50	GDQ	BDQ
SMCJ8.5(C)	8.5	9.44	11.5	1	15.9	94.3	20	GDS	BDS
SMCJ9.0(C)	9.0	10.0	12.2	1	16.9	88.7	10	GDU	BDU
SMCJ10(C)	10	11.1	13.6	1	18.8	79.8	5	GDW	BDW
SMCJ11(C)	11	12.2	14.9	1	20.1	74.6	5	GDY	BDY
SMCJ12(C)	12	13.3	16.3	1	22.0	68.2	5	GED	BED
SMCJ13(C)	13	14.4	17.6	1	23.8	63.0	5	GEF	BEF
SMCJ14(C)	14	15.6	19.1	1	25.8	58.1	5	GEH	BEH
SMCJ15(C)	15	16.7	20.4	1	26.9	55.8	5	GEL	BEL
SMCJ16(C)	16	17.8	21.8	1	28.8	52.1	5	GEN	BEN
SMCJ17(C)	17	18.9	23.1	1	30.5	49.2	5	GEQ	BEQ
SMCJ18(C)	18	20.0	24.4	1	32.2	46.6	5	GES	BES
SMCJ20(C)	20	22.2	27.1	1	35.8	41.9	5	GEU	BEU
SMCJ22(C)	22	24.4	29.8	1	39.4	38.1	5	GEW	BEW
SMCJ24(C)	24	26.7	32.6	1	43.0	34.9	5	GEY	BEY
SMCJ26(C)	26	28.9	35.3	1	46.6	32.2	5	GFD	BFD
SMCJ28(C)	28	31.1	38.0	1	50.0	30.0	5	GFF	BFF
SMCJ30(C)	30	33.3	40.7	1	53.5	28.0	5	GFH	BFH
SMCJ33(C)	33	36.7	44.9	1	59.0	25.2	5	GFL	BFL
SMCJ36(C)	36	40.0	48.9	1	64.3	23.3	5	GFN	BFN
SMCJ40(C)	40	44.4	54.3	1	71.4	21.0	5	GFQ	BFQ
SMCJ43(C)	43	47.8	58.4	1	76.7	19.6	5	GFS	BFS
SMCJ45(C)	45	50.0	61.1	1	80.3	18.7	5	GFU	BFU
SMCJ48(C)	48	53.3	65.1	1	85.5	17.5	5	GFW	BFW
SMCJ51(C)	51	56.7	69.3	1	91.1	18.5	5	GFY	BFY
SMCJ54(C)	54	60.0	73.3	1	96.3	15.6	5	GGD	BGD
SMCJ58(C)	58	64.4	78.7	1	103	14.6	5	GGF	BGF
SMCJ60(C)	60	66.7	81.5	1	107	14.0	5	GGH	BGH
SMCJ64(C)	64	71.1	86.9	1	114	13.2	5	GGL	BGL
SMCJ70(C)	70	77.8	95.1	1	125	12.0	5	GGN	BGN
SMCJ75(C)	75	83.3	102	1	134	11.2	5	GGQ	BGQ
SMCJ78(C)	78	86.7	106	1	139	10.8	5	GGS	BGS
SMCJ85(C)	85	94.4	115	1	151	9.9	5	GGU	BGU
SMCJ90(C)	90	100	122	1	160	9.4	5	GGW	BGW
SMCJ100(C)	100	111	136	1	179	8.4	5	GGY	BGY
SMCJ110(C)	110	122	149	1	196	7.7	5	GHD	BHD
SMCJ120(C)	120	133	163	1	214	7.0	5	GHF	BHF
SMCJ130(C)	130	144	176	1	231	6.5	5	GHH	BHH
SMCJ150(C)	150	167	204	1	268	5.6	5	GHL	BHL
SMCJ160(C)	160	178	218	1	287	5.2	5	GHN	BHN
SMCJ170(C)	170	189	231	1	304	4.9	5	GHQ	BHQ
SMCJ180(C)	180	198	253.8	1	322	4.7	5	GHS	BHS
SMCJ200(C)	200	220	282	1	358	4.1	5	GHU	BHU
SMCJ220(C)	220	242	310.2	1	394	3.8	5	GHW	BHW

For bi-directional type having Vrwm of 10volts and less, the IR limit is double. For parts without A, the VBR is ±10%

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	(VOLTS)	MIN	MAX	I_T (mA)	(VOLTS)	(AMPS)	(μA)	UNI	BI
SMCJ5.0(C)A	5.0	6.40	7.00	10	9.2	163.0	1000	GDE	BDE
SMCJ6.0(C)A	6.0	6.67	7.37	10	10.3	145.6	1000	GDG	BDG
SMCJ6.5(C)A	6.5	7.22	7.98	10	11.2	133.9	500	GDK	BDK
SMCJ7.0(C)A	7.0	7.78	8.60	10	12.0	125.0	200	GDM	BDM
SMCJ7.5(C)A	7.5	8.33	9.21	1	12.9	116.3	100	GDP	BDP
SMCJ8.0(C)A	8.0	8.89	9.83	1	13.6	110.3	50	GDR	BDR
SMCJ8.5(C)A	8.5	9.44	10.4	1	14.4	104.2	10	GDT	BDT
SMCJ9.0(C)A	9.0	10.0	11.1	1	15.4	97.4	5	GDV	BDV
SMCJ10(C)A	10	11.1	12.3	1	17.0	88.2	5	GDX	BDX
SMCJ11(C)A	11	12.2	13.5	1	18.2	82.4	5	GDZ	BDZ
SMCJ12(C)A	12	13.3	14.7	1	19.9	75.3	5	GEE	BEE
SMCJ13(C)A	13	14.4	15.9	1	21.5	69.7	5	GEG	BEG
SMCJ14(C)A	14	15.6	17.2	1	23.2	64.7	5	GEK	BEK
SMCJ15(C)A	15	16.7	18.5	1	24.4	61.5	5	GEM	BEM
SMCJ16(C)A	16	17.8	19.7	1	26.0	57.7	5	GEP	BEP
SMCJ17(C)A	17	18.9	20.9	1	27.6	53.3	5	GER	BER
SMCJ18(C)A	18	20.0	22.1	1	29.2	51.4	5	GET	BET
SMCJ20(C)A	20	22.2	24.5	1	32.4	46.3	5	GEV	BEV
SMCJ22(C)A	22	24.4	26.9	1	35.5	42.2	5	GEX	BEX
SMCJ24(C)A	24	26.7	29.5	1	38.9	38.6	5	GEZ	BEZ
SMCJ26(C)A	26	28.9	31.9	1	42.1	35.6	5	GFE	BFE
SMCJ28(C)A	28	31.1	34.4	1	45.4	33.0	5	GFG	BFG
SMCJ30(C)A	30	33.3	36.8	1	48.4	31.0	5	GFK	BFK
SMCJ33(C)A	33	36.7	40.6	1	53.3	28.1	5	GFM	BFM
SMCJ36(C)A	36	40.0	44.2	1	58.1	25.8	5	GFP	BFP
SMCJ40(C)A	40	44.4	49.1	1	64.5	23.2	5	GFR	BFR
SMCJ43(C)A	43	47.8	52.8	1	69.4	21.6	5	GFT	BFT
SMCJ45(C)A	45	50.0	55.3	1	72.7	20.6	5	GFV	BFV
SMCJ48(C)A	48	53.3	58.9	1	77.4	19.4	5	GFX	BFX
SMCJ51(C)A	51	56.7	62.7	1	82.4	18.2	5	GFZ	BFZ
SMCJ54(C)A	54	60.0	66.3	1	87.1	17.2	5	GGE	BGE
SMCJ58(C)A	58	64.4	71.2	1	93.6	16.0	5	GGG	BGG
SMCJ60(C)A	60	66.7	73.7	1	96.8	15.5	5	GGK	BGK
SMCJ64(C)A	64	71.1	78.6	1	103	14.6	5	GGM	BGM
SMCJ70(C)A	70	77.8	86.0	1	113	13.3	5	GGP	BGP
SMCJ75(C)A	75	83.3	92.1	1	121	12.4	5	GGR	BGR
SMCJ78(C)A	78	86.7	95.8	1	126	11.4	5	GGT	BGT
SMCJ85(C)A	85	94.4	104	1	137	10.4	5	GGV	BGV
SMCJ90(C)A	90	100	111	1	146	10.3	5	GGX	BGX
SMCJ100(C)A	100	111	123	1	162	9.3	5	GGZ	BGZ
SMCJ110(C)A	110	122	135	1	177	8.4	5	GHE	BHE
SMCJ120(C)A	120	133	147	1	193	7.8	5	GHG	BHG
SMCJ130(C)A	130	144	159	1	209	7.2	5	GHK	BHK
SMCJ150(C)A	150	167	185	1	243	6.2	5	GHM	BHM
SMCJ160(C)A	160	178	197	1	259	5.8	5	GHP	BHP
SMCJ170(C)A	170	189	209	1	275	5.5	5	GHR	BHR
SMCJ180(C)A	180	198	230.4	1	292	5.1	5	GHT	BHT
SMCJ200(C)A	200	220	256	1	324	4.6	5	GHV	BHV
SMCJ220(C)A	220	242	281.6	1	356	4.2	5	GHX	BHX

For bi-directional type having Vrwm of 10volts and less, the IR limit is double. For parts without A, the VBR is ±10%