

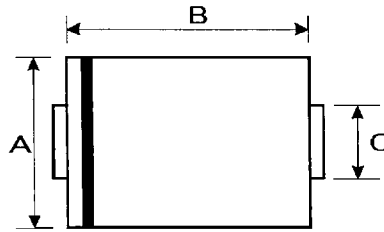
SMC5.0 - SMC170CA SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

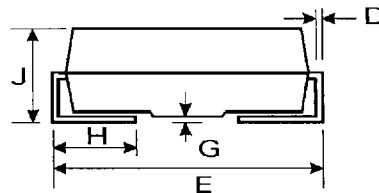
Features

- 1500 Watts Peak Pulse Power Dissipation
- 5.0 - 170 V Standoff Voltages
- Constructed with Glass Passivated Die
- Excellent Clamping Capability
- Fast Response Time
- 100% Tested at Rated Peak Pulse Power

SMC - DO-214AB



DIM	MM
A	5.90 ± 0.31
B	6.85 ± 0.25
C	3.00 ± 0.07
D	0.23 ± 0.08
E	7.94 ± 0.19
G	0.152 ± 0.05
H	1.14 ± 0.38
J	2.31 ± 0.31



Mechanical Data

- Case: Transfer Molded Epoxy
- Terminals: Solderable per MIL-STD-202 Method 208
- Marking: Unidirectional - Device Code Number and Cathode Band
Bidirectional - Device Code Only
- Weight: 0.2 gram (approx.)
- Plastic Case Material has U/L Flammability Rating 94V-0

Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Power Dissipation at $T_A = 25^\circ\text{C}$, $T_P = 1$ ms (Non repetitive current pulse, per Figure 1 and derated above $T_A = 25^\circ\text{C}$ per Figure 4) (See Note 1)	P_{pk}	1500	W
Peak Forward Surge Current, 8.3 Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (See Notes 1, 2, & 3)	I_{FSM}	200	A
Max Instantaneous Forward Voltage @ $I_P = 100\text{A}$ (See Notes 1, 2, & 3)	V_F	3.5	v
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +175	$^\circ\text{C}$

- Notes:
1. Mounted on 8.0 mm² copper land areas
 2. Measured with 8.3 ms single half sine-wave
Duty cycle = 4 pulses per minute maximum
 3. Unidirectional units only

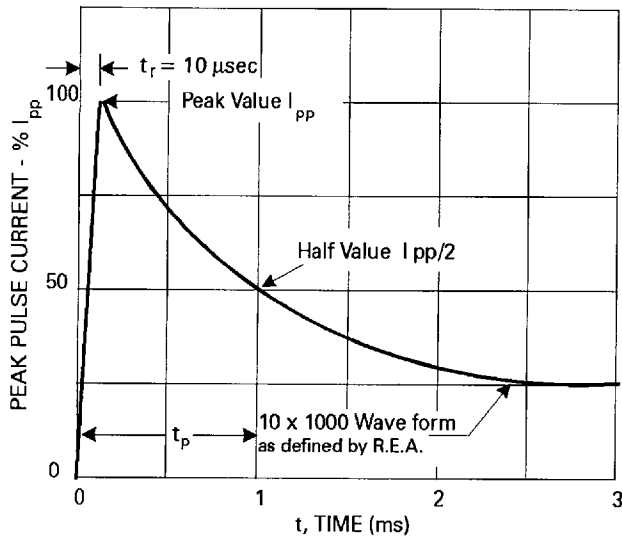


Fig. 1 Pulse Waveform

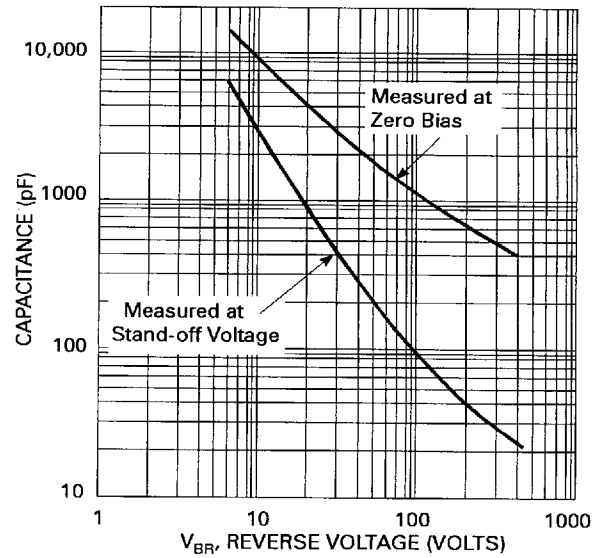


Fig. 2 Typical Junction Capacitance

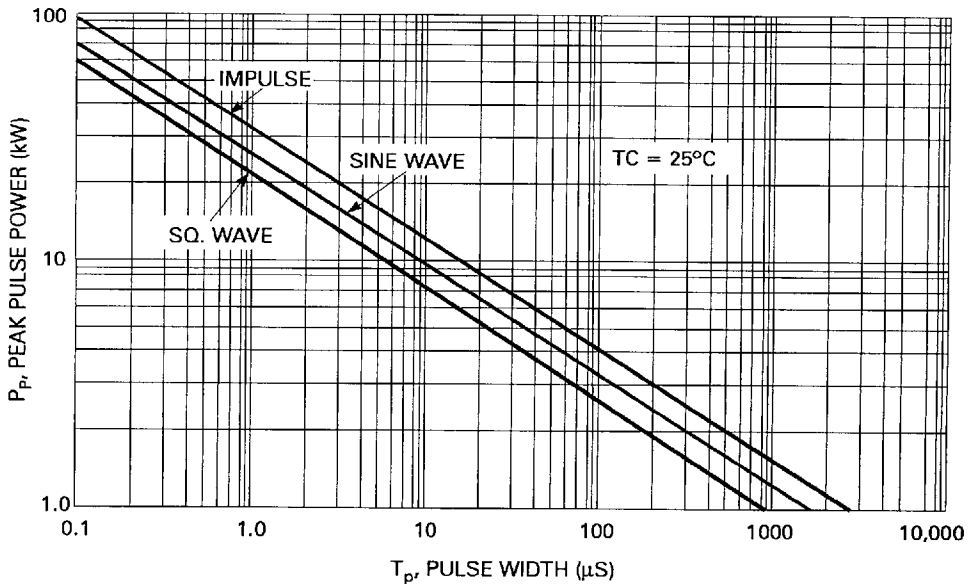


Fig. 3 Pulse Rating Curve

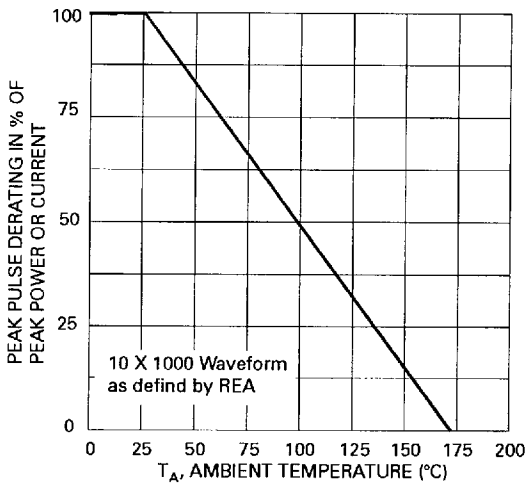


Fig. 4 Pulse Derating Curve

PART NUMBER	PART NUMBER	REVERSE STANDOFF VOLTAGE	BREAKDOWN VOLTAGE By VOLTS @ I _T (Note 3)			MAX. REVERSE LEAKAGE	MAX. CLAMPING VOLTAGE	MAX. PEAK PULSE CURRENT	MARKING CODE
			(UNI)	(BI)	V _R (V)	MIN (V)	MAX (V)	I _T (mA)	
SMC5.0	SMC5.0C	5.0	6.40	7.3	10	1000	9.6	156.2	DD
SMC5.0A	SMC5.0CA	5.0	6.40	7.0	10	1000	9.2	163.0	DE
SMC6.0	SMC6.0C	6.0	6.67	8.15	10	500	11.4	131.6	DF
SMC6.0A	SMC6.0CA	6.0	6.67	7.37	10	500	10.3	145.6	DG
SMC6.5	SMC6.5C	6.5	7.22	8.82	10	500	12.3	122.0	DH
SMC6.5A	SMC6.5CA	6.5	7.22	7.98	10	500	11.2	133.9	DK
SMC7.0	SMC7.0C	7.0	7.78	9.51	10	200	13.3	112.8	DL
SMC7.0A	SMC7.0CA	7.0	7.78	8.60	10	200	12.0	125.0	DM
SMC7.5	SMC7.5C	7.5	8.33	10.2	1	50	14.3	104.9	DN
SMC7.5A	SMC7.5CA	7.5	8.33	9.21	1	50	12.9	116.3	DP
SMC8.0	SMC8.0C	8.0	8.89	10.9	1	10	15.0	100.0	DQ
SMC8.0A	SMC8.0CA	8.0	8.89	9.83	1	10	13.6	110.3	DR
SMC8.5	SMC8.5C	8.5	9.44	11.5	1	10	15.9	94.3	DS
SMC8.5A	SMC8.5CA	8.5	9.44	10.4	1	10	14.4	104.2	DT
SMC9.0	SMC9.0C	9.0	10.0	12.2	1	5	16.9	88.7	DU
SMC9.0A	SMC9.0CA	9.0	10.0	11.1	1	5	15.4	97.4	DV
SMC10	SMC10C	10.0	11.1	13.6	1	5	18.8	79.8	DW
SMC10A	SMC10CA	10.0	11.1	12.3	1	5	17.0	88.2	DX
SMC11	SMC11C	11.0	12.2	14.9	1	5	20.1	74.6	DY
SMC11A	SMC11CA	11.0	12.2	13.5	1	5	18.2	82.4	DZ
SMC12	SMC12C	12.0	13.3	16.3	1	5	22.0	68.2	ED
SMC12A	SMC12CA	12.0	13.3	14.7	1	5	19.9	75.3	EE
SMC13	SMC13C	13.0	14.4	17.6	1	5	23.8	63.0	EF
SMC13A	SMC13CA	13.0	14.4	15.9	1	5	21.5	69.7	EG
SMC14	SMC14C	14.0	15.6	19.1	1	5	25.8	58.1	EH
SMC14A	SMC14CA	14.0	15.6	17.2	1	5	23.2	64.7	EK
SMC15	SMC15C	15.0	16.7	20.4	1	5	26.9	55.8	EL
SMC15A	SMC15CA	15.0	16.7	18.5	1	5	24.4	61.5	EM
SMC16	SMC16C	16.0	17.8	21.8	1	5	28.8	52.1	EN
SMC16A	SMC16CA	16.0	17.8	19.7	1	5	26.0	57.7	EP
SMC17	SMC17C	17.0	18.9	23.1	1	5	30.5	49.2	EQ
SMC17A	SMC17CA	17.0	18.9	20.9	1	5	27.6	53.3	ER
SMC18	SMC18C	18.0	20.0	24.4	1	5	32.2	46.6	ES
SMC18A	SMC18CA	18.0	20.0	22.1	1	5	29.2	51.4	ET
SMC20	SMC20C	20.0	22.2	27.1	1	5	35.8	41.9	EU
SMC20A	SMC20CA	20.0	22.2	24.5	1	5	32.4	46.3	EV
SMC22	SMC22C	22.0	24.4	29.8	1	5	39.4	38.1	EW
SMC22A	SMC22CA	22.0	24.4	26.9	1	5	35.5	42.2	EX
SMC24	SMC24C	24.0	26.7	32.6	1	5	43.0	34.9	EY
SMC24A	SMC24CA	24.0	26.7	29.5	1	5	38.9	38.6	EZ
SMC26	SMC26C	26.0	28.9	35.3	1	5	46.6	32.2	FD
SMC26A	SMC26CA	26.0	28.9	31.9	1	5	42.1	35.6	FE
SMC28	SMC28C	28.0	31.1	38.0	1	5	50.0	30.0	FF
SMC28A	SMC28CA	28.0	31.1	34.4	1	5	45.4	33.0	FG
SMC30	SMC30C	30.0	33.3	40.7	1	5	53.5	28.0	FH
SMC30A	SMC30CA	30.0	33.3	36.8	1	5	48.4	31.0	FK
SMC33	SMC33C	33.0	36.7	44.9	1	5	59.0	25.2	FL
SMC33A	SMC33CA	33.0	36.7	40.6	1	5	53.3	28.1	FM
SMC36	SMC36C	36.0	40.0	48.9	1	5	64.3	23.3	FN
SMC36A	SMC36CA	36.0	40.0	44.2	1	5	58.1	25.8	FP
SMC40	SMC40C	40.0	44.4	54.3	1	5	71.4	21.0	FQ
SMC40A	SMC40CA	40.0	44.4	49.1	1	5	64.5	23.2	FR
SMC43	SMC43C	43.0	47.8	58.4	1	5	76.7	19.6	FS
SMC43A	SMC43CA	43.0	47.8	52.8	1	5	69.4	21.6	FT
SMC45	SMC45C	45.0	50.0	61.1	1	5	80.3	18.7	FU

PART NUMBER	PART NUMBER	REVERSE STANDOFF VOLTAGE	BREAKDOWN VOLTAGE By VOLTS @ I _T (Note 3)			MAX. REVERSE LEAKAGE	MAX. CLAMPING VOLTAGE	MAX. PEAK PULSE CURRENT	MARKING CODE
			V _R (V)	MIN (V)	MAX (V)	I _T (mA)	@ V _R I _R (μA)	@ I _{pp} V _C (V)	
(UNI)	(BI)	V _R (V)	MIN (V)	MAX (V)	I _T (mA)	I _R (μA)	V _C (V)	I _{pp} (A)	
SMC45A	SMC45CA	45.0	50.0	55.3	1	5	72.7	20.6	FV
SMC48	SMC48C	48.0	53.3	65.1	1	5	85.5	17.5	FW
SMC48A	SMC48CA	48.0	53.3	58.9	1	5	77.4	19.4	FX
SMC51	SMC51C	51.0	56.7	69.3	1	5	91.1	16.5	FY
SMC51A	SMC51CA	51.0	56.7	62.7	1	5	82.4	18.2	FZ
SMC54	SMC54C	54.0	60.0	73.3	1	5	96.3	15.6	GD
SMC54A	SMC54CA	54.0	60.0	66.3	1	5	87.1	17.2	GE
SMC58	SMC58C	58.0	64.4	78.7	1	5	103	14.6	GF
SMC58A	SMC58CA	58.0	64.4	71.2	1	5	93.6	16.0	GG
SMC60	SMC60C	60.0	66.7	81.5	1	5	107	14.0	GH
SMC60A	SMC60CA	60.0	66.7	73.7	1	5	96.8	15.5	GK
SMC64	SMC64C	64.0	71.1	86.9	1	5	114	13.2	GL
SMC64A	SMC64CA	64.0	71.1	78.6	1	5	103	14.6	GM
SMC70	SMC70C	70.0	77.8	95.1	1	5	125	12.0	GN
SMC70A	SMC70CA	70.0	77.8	86.0	1	5	113	13.3	GP
SMC75	SMC75C	75.0	83.3	102.1	1	5	134	11.2	GO
SMC75A	SMC75CA	75.0	83.3	92.1	1	5	121	12.4	GR
SMC78	SMC78C	78.0	86.7	106	1	5	139	10.8	GS
SMC78A	SMC78CA	78.0	86.7	95.8	1	5	126	11.4	GT
SMC85	SMC85C	85.0	94.4	115	1	5	151	9.9	GU
SMC85A	SMC85CA	85.0	94.4	104	1	5	137	10.4	GV
SMC90	SMC90C	90.0	100	122	1	5	160	9.4	GW
SMC90A	SMC90CA	90.0	100	111	1	5	146	10.3	GX
SMC100	SMC100C	100	111	136	1	5	179	8.4	GY
SMC100A	SMC100CA	100	111	123	1	5	162	9.3	GZ
SMC110	SMC110C	110	122	149	1	5	196	7.7	HD
SMC110A	SMC110CA	110	122	135	1	5	177	8.4	HE
SMC120	SMC120C	120	133	163	1	5	214	7.0	HF
SMC120A	SMC120CA	120	133	147	1	5	193	7.8	HG
SMC130	SMC130C	130	144	176	1	5	231	6.5	HH
SMC130A	SMC130CA	130	144	159	1	5	209	7.2	HK
SMC150	SMC150C	150	167	204	1	5	268	5.6	HL
SMC150A	SMC150CA	150	167	185	1	5	243	6.2	HM
SMC160	SMC160C	160	178	218	1	5	287	5.2	HN
SMC160A	SMC160CA	160	178	197	1	5	259	5.8	HP
SMC170	SMC170C	170	189	231	1	5	304	4.9	HQ
SMC170A	SMC170CA	170	189	209	1	5	275	5.5	HR

1. Suffix 'C' denotes Bi-directional device. Suffix 'A' denotes 5% tolerance device, no suffix denotes 10% tolerance device.
2. For Bi-directional devices having V_R of 10 volts and under, the I_R limit is doubled
3. By measured with I_T current pulse = 300 μsec