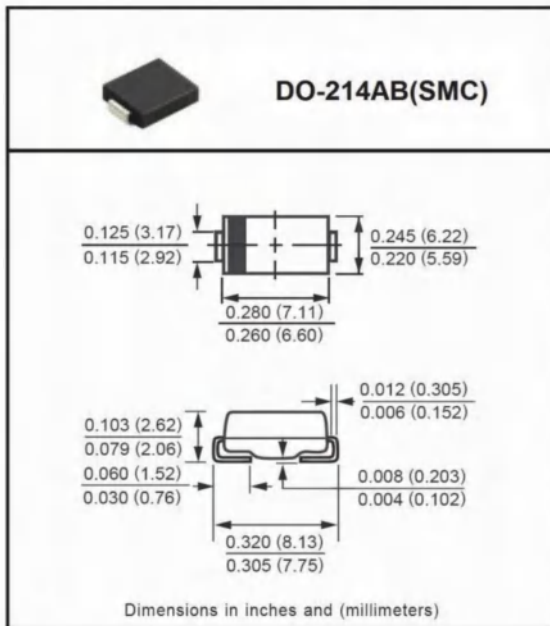




SMCJ5.0 thru 170CAQ

表面贴装瞬间抑制二极管
 隔离电压5.0 --- 170 V
 峰值功率1500W

Surface Mount Transient Voltage Suppressors
 Stand-off Voltage 5.0 to 170V
 Peak Pulse Power 1500W



特征 Features

- For surface mount applications
- Glass passivated junction
- Very fast response time
- Excellent clamping capability
- 260°C/10 秒
- High temperature soldering guaranteed:
 260°C/10 seconds at terminals
- 1500W
 1500W peak pulse power capability
- 10/1000μs 波形, 重复率:0.01%
 a 10/1000μs waveform, repetition rate (duty cycle) 0.01%
 Lead and body according with RoHS standard
- 符合 AEC-Q101 标准 AEC-Q101 qualified

机械数据 Mechanical Data

- Case: Molded plastic body
- Terminals: Solder plated
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- 0.21克 Weight: 0.007 ounce, 0.21 gram

产品的双向应用 Devices for Bidirectional Applications

“BI”为双向, 使用“CA”作后缀(如: SMCJ10CA) For bi-directional devices, use suffix CA (e.g. SMCJ10CA).

极限值和温度特性 $T_A = 25^\circ\text{C}$ 除非另有规定。

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000μs waveform ^(1, 2)	P_{PPM}	1500	W
Peak pulse current with a 10/1000μs waveform ⁽¹⁾	I_{PPM}	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave uni-directional only ⁽²⁾	I_{FSM}	200	A
Typical thermal resistance ⁽³⁾	$R_{\theta JA}$ $R_{\theta JL}$	75 15	$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55---+150	$^\circ\text{C}$

Notes: (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A = 25^\circ\text{C}$ per Fig. 2

(2) Mounted on 0.31 x 0.31" (8.0 x 8.0mm) copper pads to each terminal

(3) Mounted on minimum recommended pad layout



SMCJ5.0 thru 170CAQ

Surface Mount Transient Voltage Suppressors

Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified. $V_F = 3.5V$ at $I_F = 100A$ (uni-directional only)

Device Type Modified "J" Bend Lead	Device Marking Code		Breakdown Voltage $V_{(BR)}$ at $I_T^{(1)}$ (V)		Test Current I_T (mA)	Stand-off Voltage V_{WM} (V)	Maximum Reverse Leakage at V_{WM} I_D (μA) ⁽³⁾	Maximum Peak Pulse Surge Current I_{PPM} (A) ⁽²⁾	Maximum Clamping Voltage at I_{PPM} V_C (V)
	UNI	BI	Min	Max					
SMCJ5.0A ⁽⁴⁾	GDE	GDE	6.40	7.07	10.0	5.0	1000	163.0	9.2
SMCJ6.0A	GDG	GDG	6.67	7.37	10.0	6.0	1000	145.6	10.3
SMCJ6.5A	GDK	BDK	7.22	7.98	10.0	6.5	500	133.9	11.2
SMCJ6.8A	GDL	GDL	7.56	8.34	10.0	6.8	200	125.0	11.6
SMCJ7.0A	GDM	GDM	7.78	8.60	10.0	7.0	200	125.0	12.0
SMCJ7.5A	GDP	BDP	8.33	9.21	1.0	7.5	100	116.3	12.9
SMCJ8.0A	GDR	BDR	8.89	9.83	1.0	8.0	50	110.3	13.6
SMCJ8.5A	GDT	BDT	9.44	10.4	1.0	8.5	20	104.2	14.4
SMCJ9.0A	GDV	BDV	10.0	11.1	1.0	9.0	10	97.4	15.4
SMCJ10A	GDX	BDX	11.1	12.3	1.0	10	5.0	88.2	17.0
SMCJ11A	GDZ	GDZ	12.2	13.5	1.0	11	5.0	82.4	18.2
SMCJ12A	GEE	BEE	13.3	14.7	1.0	12	5.0	75.4	19.9
SMCJ13A	GEG	GEG	14.4	15.9	1.0	13	1.0	69.8	21.5
SMCJ14A	GEK	BEK	15.6	17.2	1.0	14	1.0	64.7	23.2
SMCJ15A	GEM	BEM	16.7	18.5	1.0	15	1.0	61.5	24.4
SMCJ16A	GEP	GEP	17.8	19.7	1.0	16	1.0	57.7	26.0
SMCJ17A	GER	GER	18.9	20.9	1.0	17	1.0	54.3	27.6
SMCJ18A	GET	BET	20.0	22.1	1.0	18	1.0	51.4	29.2
SMCJ20A	GEV	BEV	22.2	24.5	1.0	20	1.0	46.3	32.4
SMCJ22A	GEX	BEX	24.4	26.9	1.0	22	1.0	42.3	35.5
SMCJ24A	GEZ	BEZ	26.7	29.5	1.0	24	1.0	38.6	38.9
SMCJ26A	GFE	BFE	28.9	31.9	1.0	26	1.0	35.6	42.1
SMCJ28A	GFG	BFG	31.1	34.4	1.0	28	1.0	33.0	45.4
SMCJ30A	GFK	BFK	33.3	36.8	1.0	30	1.0	31.0	48.4
SMCJ33A	GFM	BFM	36.7	40.6	1.0	33	1.0	28.1	53.3
SMCJ36A	GFP	BFP	40.0	44.2	1.0	36	1.0	25.8	58.1
SMCJ40A	GFR	BFR	44.4	49.1	1.0	40	1.0	23.3	64.5
SMCJ43A	GFT	BFT	47.8	52.8	1.0	43	1.0	21.6	69.4
SMCJ45A	GFV	GFV	50.0	55.3	1.0	45	1.0	20.6	72.7
SMCJ48A	GFX	GFX	53.3	58.9	1.0	48	1.0	19.4	77.4
SMCJ51A	GFZ	GFZ	56.7	62.7	1.0	51	1.0	18.2	82.4
SMCJ54A	GGE	GGE	60.0	66.3	1.0	54	1.0	17.2	87.1
SMCJ58A	GGG	GGG	64.4	71.2	1.0	58	1.0	16.0	93
SMCJ60A	G GK	G GK	66.7	73.7	1.0	60	1.0	15.5	96
SMCJ64A	GGM	GGM	71.1	78.6	1.0	64	1.0	14.6	103
SMCJ70A	G GP	G GP	77.8	86.0	1.0	70	1.0	13.3	113
SMCJ75A	G GR	G GR	83.3	92.1	1.0	75	1.0	12.4	121
SMCJ78A	G GT	G GT	86.7	95.8	1.0	78	1.0	11.9	126
SMCJ85A	G GV	G GV	94.4	104	1.0	85	1.0	10.9	137
SMCJ90A	G GX	G GX	100	111	1.0	90	1.0	10.3	146
SMCJ100A	G GZ	G GZ	111	123	1.0	100	1.0	9.3	162
SMCJ110A	G HE	G HE	122	135	1.0	110	1.0	8.5	177
SMCJ120A	G HG	G HG	133	147	1.0	120	1.0	7.8	193
SMCJ130A	G HK	G HK	144	159	1.0	130	1.0	7.2	209
SMCJ150A	G HM	G HM	167	185	1.0	150	1.0	6.2	243
SMCJ160A	G HP	G HP	178	197	1.0	160	1.0	5.8	259
SMCJ170A	G HR	G HR	189	209	1.0	170	1.0	5.5	275

Notes: (1) Pulse test: $t_p \leq 50ms$

(2) Surge current waveform per Fig. 3 and derate per Fig. 2

(3) For bi-directional types having V_{WM} of 10 Volts and less, the I_D limit is doubled

(4) For the bi-directional SMCJ5.0CA, the maximum $V_{(BR)}$ is 7.25V



SMCJ5.0 thru 170CAQ

Surface Mount Transient Voltage Suppressors

Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 – Peak Pulse Power Rating Curve

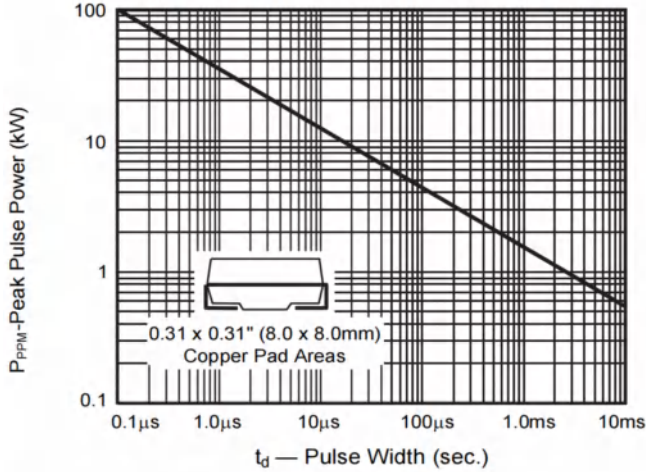


Fig. 2 – Pulse Derating Curve

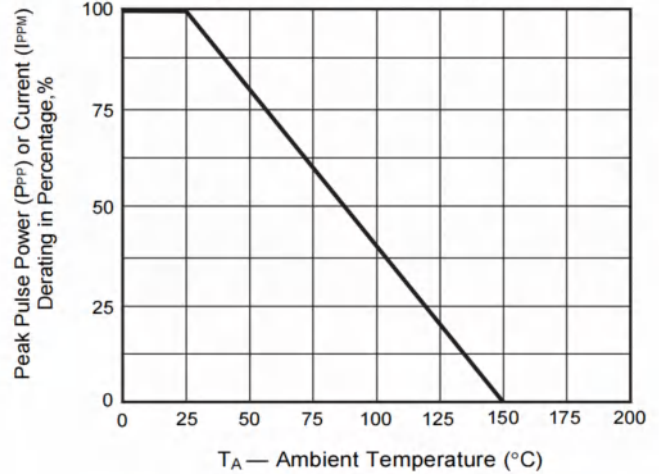


Fig. 3 – Pulse Waveform

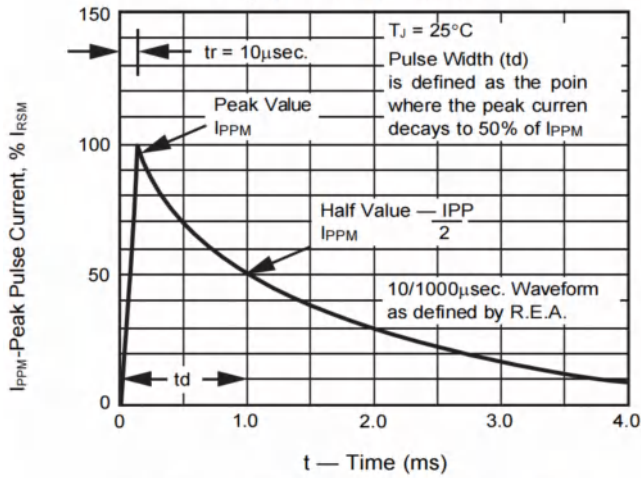


Fig. 4 – Typical Junction Capacitance Uni-Directional

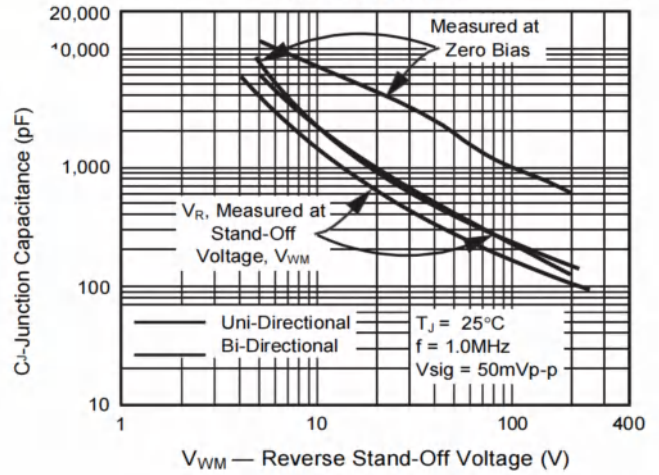


Fig. 5 – Typical Transient Thermal Impedance

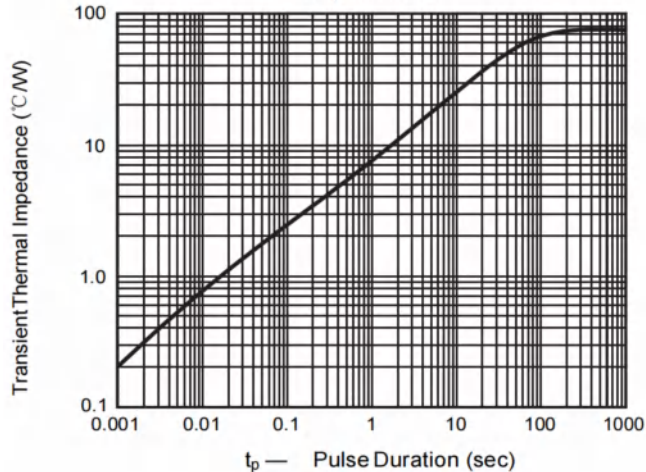
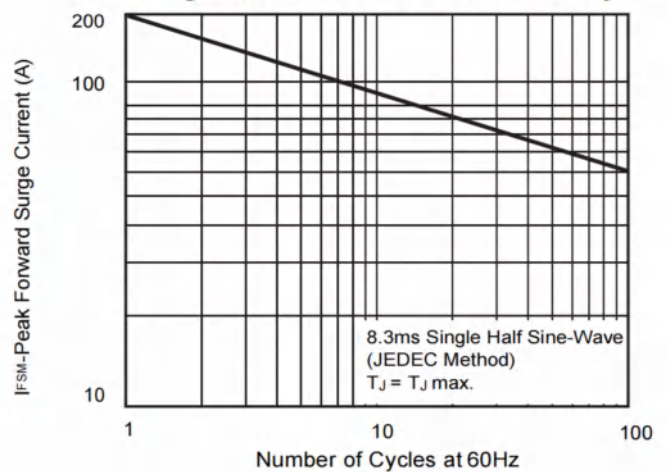


Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Use Only

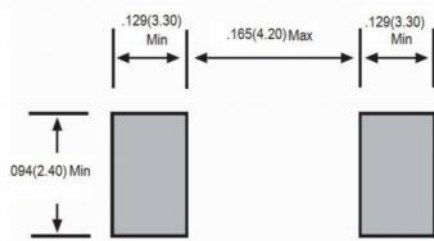




SMCJ5.0 thru 170CAQ

Surface Mount Transient Voltage Suppressors

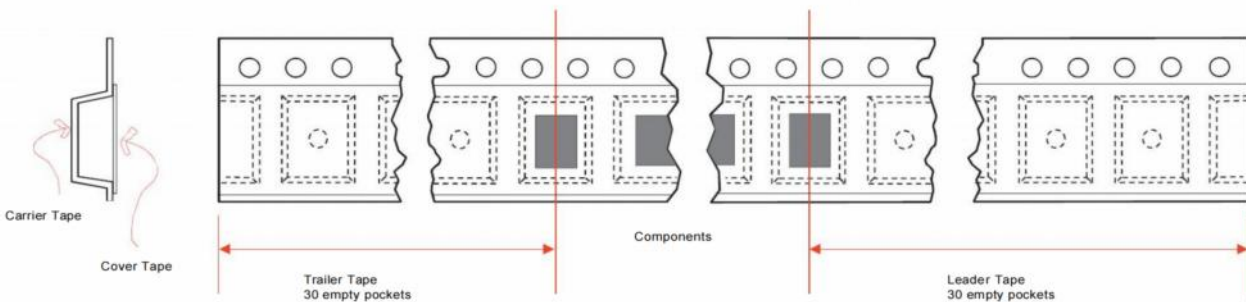
Mounting Pad Layout



Packing

Part number	Component Package	Quantity	Packaging Option
SMCJ5.0A-170CAQ	DO-214AB	3000	Tape & Reel – 16mm/13" tape

DO-214AB SMC Tape Leader and Trailer Configuration



Tape and Reel Specification

