FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Available in uni-directional and bi-directional
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance

SMC (DO-214AB)

TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive, and telecommunication.

PRIMARY CHARACTERISTICS	
V_{BR} uni-directional	6.40 V to 231 V
V_{BR} bi-directional	6.40 V to 231 V
V_{WM}	5.0 V to 188 V
P_{PPM}	1500 W
P_D	6.5 W
I_{FSM} (uni-directional only)	200 A
T_J max.	150 °C
Polarity	Uni-directional, bi-directional
Package	SMC (DO-214AB)

DEVICES FOR BI-DIRECTION APPLICATIONS

For bi-directional devices use CA suffix (e.g. SMCJ5359CA). Electrical characteristics apply in both directions.

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Peak pulse power dissipation with a 10/1000 µs waveform (1)(2)	P_{PPM}	1500	W
Peak pulse current with a 10/1000 µs waveform (1)	I_{PPM}	See next table	A
Peak forward surge current 8.3 ms single half sine-wave uni-directional only (2)	I_{FSM}	200	A
Power dissipation on infinite heatsink, T_A = 50 °C	P_D	6.5	W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Notes

(1) Non-repetitive current pulse, per fig. 3 and derated above T_A = 25 °C per fig. 2

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

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

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.					
SMCJ5348A	GDV	BDV	10.0	11.1	1.0	9.0	10	97.4	15.4
SMCJ5349A	GDX	BDX	11.1	12.3	1.0	10	5.0	88.2	17.0
SMCJ5350A	GDZ	GDZ	12.2	13.5	1.0	11	5.0	82.4	18.2
SMCJ5352A	GEE	BEE	13.3	14.7	1.0	12	5.0	75.4	19.9
SMCJ5353A	GEG	GEG	14.4	15.9	1.0	13	1.0	69.8	21.5
SMCJ5354A	GEK	BEK	15.6	17.2	1.0	14	1.0	64.7	23.2
SMCJ5355A	GEM	BEM	16.7	18.5	1.0	15	1.0	61.5	24.4
SMCJ5356A	GEP	GEP	17.8	19.7	1.0	16	1.0	57.7	26.0
SMCJ5357A	GER	GER	18.9	20.9	1.0	17	1.0	54.3	27.6
SMCJ5358A	GET	BET	20.0	22.1	1.0	18	1.0	51.4	29.2
SMCJ5359A	GEV	BEV	22.2	24.5	1.0	20	1.0	46.3	32.4
SMCJ5360A	GEX	BEX	24.4	26.9	1.0	22	1.0	42.3	35.5
SMCJ5362A	GEZ	BEZ	26.7	29.5	1.0	24	1.0	38.6	38.9
SMCJ5363A	GFE	BFE	28.9	31.9	1.0	26	1.0	35.6	42.1
SMCJ5364A	GFG	BFG	31.1	34.4	1.0	28	1.0	33.0	45.4
SMCJ5365A	GFK	BFK	33.3	36.8	1.0	30	1.0	31.0	48.4
SMCJ5366A	GFM	BFM	36.7	40.6	1.0	33	1.0	28.1	53.3
SMCJ5367A	GFP	BFP	40.0	44.2	1.0	36	1.0	25.8	58.1
SMCJ5368A	GFR	BFR	44.4	49.1	1.0	40	1.0	23.3	64.5
SMCJ5369A	GFT	BFT	47.8	52.8	1.0	43	1.0	21.6	69.4
SMCJ53691A	GFV	GFV	50.0	55.3	1.0	45	1.0	20.6	72.7
SMCJ5370A	GFX	GFX	53.3	58.9	1.0	48	1.0	19.4	77.4
SMCJ5371A	GFZ	GFZ	56.7	62.7	1.0	51	1.0	18.2	82.4
SMCJ5372A	GGE	GGE	60.0	66.3	1.0	54	1.0	17.2	87.1
SMCJ5373A	GGG	GGG	64.4	71.2	1.0	58	1.0	16.0	93.6
SMCJ5374A	GGK	GGK	66.7	73.7	1.0	60	1.0	15.5	96.8
SMCJ5375A	GGM	GGM	71.1	78.6	1.0	64	1.0	14.6	103
SMCJ5376A	GGP	GGP	77.8	86.0	1.0	70	1.0	13.3	113
SMCJ5378A	GGR	GGR	83.3	92.1	1.0	75	1.0	12.4	121
SMCJ5379A	GGT	GGT	86.7	95.8	1.0	78	1.0	11.9	126
SMCJ5380A	GGV	GGV	94.4	104	1.0	85	1.0	10.9	137
SMCJ5381A	GGX	GGX	100	111	1.0	90	1.0	10.3	146
SMCJ5382A	GGZ	GGZ	111	123	1.0	100	1.0	9.3	162
SMCJ5383A	GHE	GHE	122	135	1.0	110	1.0	8.5	177
SMCJ5384A	GHG	GHG	133	147	1.0	120	1.0	7.8	193
SMCJ5385A	GHK	GHK	144	159	1.0	130	1.0	7.2	209
SMCJ5386A	GHM	GHM	167	185	1.0	150	1.0	6.2	243
SMCJ5387A	GHP	GHP	178	197	1.0	160	1.0	5.8	259
SMCJ5388A	GHR	GHR	189	209	1.0	170	1.0	5.5	275
SMCJ5389A	GHS	GHS	209	231	1.0	188	1.0	4.6	328

Notes

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

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

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

(4) All terms and symbols are consistent with ANSI/IEEE C62.35

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

(6) V_F = 3.5 V at I_F = 100 A (uni-directional only)

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Typical thermal resistance, junction to ambient air (1)	$R_{\theta JA}$	75	°C/ W
Typical thermal resistance, junction to lead	$R_{\theta JL}$	15	

Note

(1) Mounted on minimum recommended pad layout

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

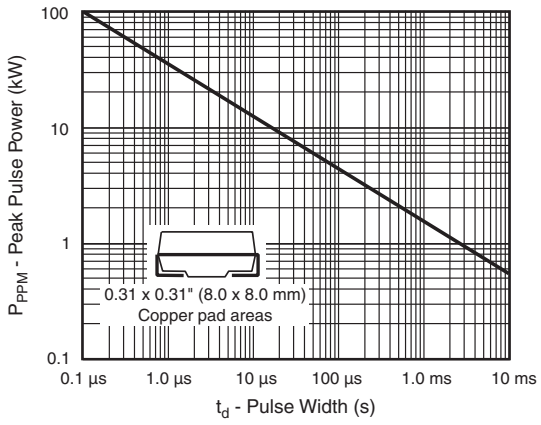


Fig. 1 - Peak Pulse Power Rating Curve

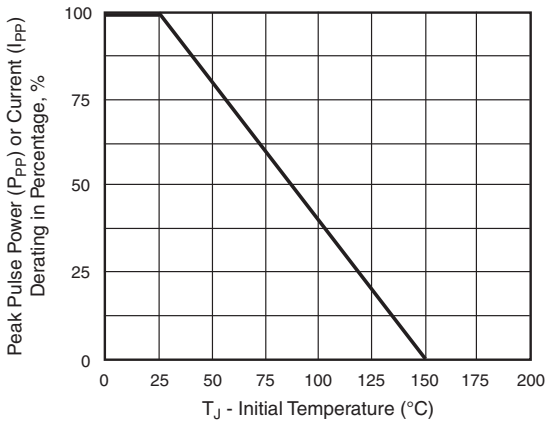


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

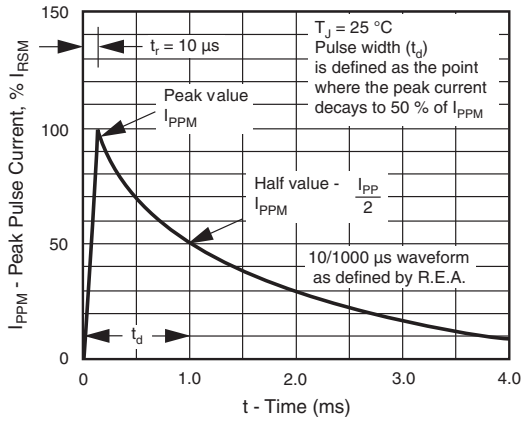


Fig. 3 - Pulse Waveform

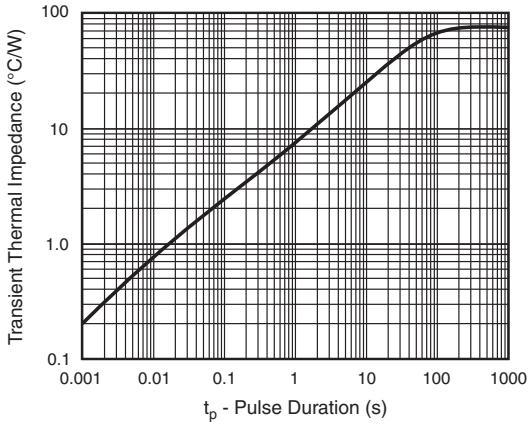


Fig. 5 - Typical Transient Thermal Impedance

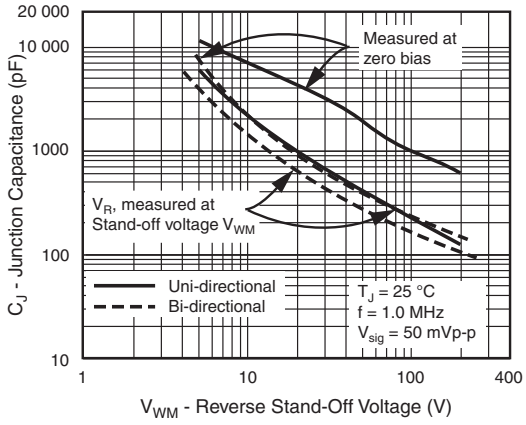


Fig. 4 - Typical Junction Capacitance Uni-Directional

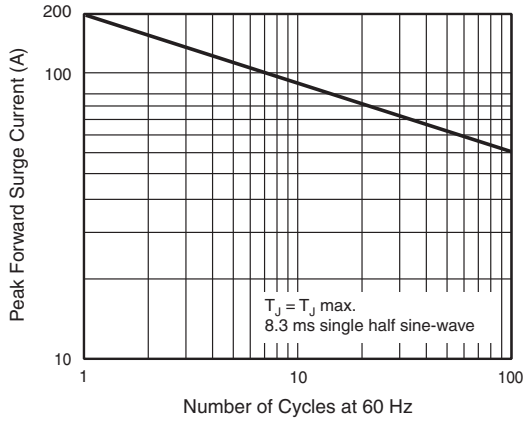
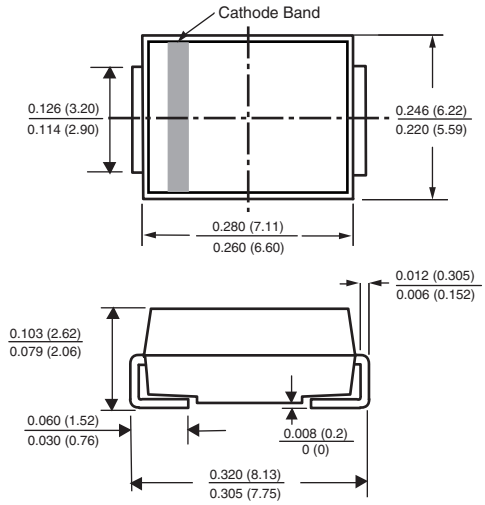


Fig. 6 - Maximum Non-Repetitive Peak Forward Surge Current
Uni-Directional Use On

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMC (DO-214AB)



Mounting Pad Layout