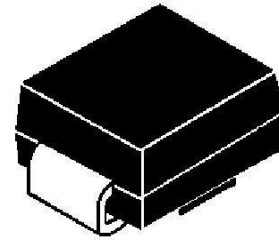


Surface Mount Unidirectional and Bidirectional Transient Voltage Suppresso

Features

- For surface mounted applications in order to optimize board space
- Low profile space
- Glass passivated chip
- Low inductance
- Excellent clamping capability
- Very fast response time
- Typical I_D less than $1\mu A$ at V_{WM}
- 1500 W peak pulse power capability with a 10/1000 μs waveform



SMC (DO-214AB)

Mechanical Date

- **Case:** JEDEC DO-214AB molded plastic body over glass passivated chip
- **Terminals:** Solder plated, solderable per MIL-STD-750 Method 2026
- **Polarity:** For uni-directional types the band by laser denotes the cathode, which is positive with respect to the anode under normal TVS operation

Major Ratings and Characteristics

P_{PPM}	1500 W
V_{RRM}	5 V to 440 V
I_{FSM}	200 A
T_j max.	150 °C

Devices for Bidirectional Applications

- For bi-directional devices, use suffix C or CA (e.g.SMCJ10C, SMCJ10CA). Electrical characteristics apply in both directions.

Maximum Ratings & Thermal Characteristics ($T_A = 25\text{ °C}$ unless otherwise noted)

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

Note 1: Mounted on P.C.B. with 0.32 x 0.32" (8.0 x 8.0mm) copper pads to each terminal..

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Device Type	Marking Code		Stand-off Voltage	Breakdown Voltage at $I_T^{(2)}$		Test Current	Maximum Reverse Leakage at $V_{WM}^{(4)}$	Maximum Peak Pulse Surge Current $I_{PPM}^{(3)}$	Maximum Clamping Voltage at I_{PPM}
				$V_{(BR)} (V)$					
UNI	UNI	BI	$V_{RWM} (V)$	Min	Max	$I_T (mA)$	$I_D (\mu A)$	$I_{PPM} (A)$	$V_C (V)$
SMCJ5.0A/CA	GDE	BDE	5	6.4	7	10	800	163	9.2
SMCJ6.0A/CA	GDG	BDG	6	6.67	7.37	10	800	145.7	10.3
SMCJ6.5A/CA	GDK	BDK	6.5	7.22	7.98	10	500	134.0	11.2
SMCJ7.0A/CA	GDM	BDM	7	7.78	8.60	10	200	125.0	12
SMCJ7.5A/CA	GDP	BDP	7.5	8.33	9.21	1	100	116.3	12.9
SMCJ8.0A/CA	GDR	BDR	8.0	8.89	9.83	1	50	110.3	13.6
SMCJ8.5A/CA	GDT	BDT	8.5	9.44	10.4	1	20	104.2	14.4
SMCJ9.0A/CA	GDV	BDV	9	10.00	11.1	1	10	97.4	15.4
SMCJ10A/CA	GDX	BDX	10	11.10	12.3	1	5	88.3	17
SMCJ11A/CA	GDZ	BDZ	11	12.20	13.5	1	1	82.5	18.2
SMCJ12A/CA	GEE	BEE	12	13.30	14.7	1	1	75.4	19.9
SMCJ13A/CA	GEG	BEG	13	14.40	15.9	1	1	69.8	21.5
SMCJ14A/CA	GEK	BEK	14	15.60	17.2	1	1	64.7	23.2
SMCJ15A/CA	GEM	BEM	15	16.70	18.5	1	1	61.5	24.4
SMCJ16A/CA	GEP	BEP	16	17.80	19.7	1	1	57.7	26
SMCJ17A/CA	GER	BER	17	18.90	20.9	1	1	54.4	27.6
SMCJ18A/CA	GET	BET	18	20.00	22.1	1	1	51.4	29.2
SMCJ20A/CA	GEV	BEV	20	22.20	24.5	1	1	46.3	32.4
SMCJ22A/CA	GEX	BEX	22	24.40	26.9	1	1	42.3	35.5
SMCJ24A/CA	GEZ	BEZ	24	26.70	29.5	1	1	38.6	38.9
SMCJ26A/CA	GFE	BFE	26	28.90	31.9	1	1	35.7	42.1
SMCJ28A/CA	GFG	BFG	28	31.10	34.4	1	1	33.1	45.4
SMCJ30A/CA	GFK	BFK	30	33.30	36.8	1	1	31.0	48.4
SMCJ33A/CA	GFM	BFM	33	36.70	40.6	1	1	28.2	53.3
SMCJ36A/CA	GFP	BFP	36	40.00	44.2	1	1	25.9	58.1
SMCJ40A/CA	GFR	BFR	40	44.40	49.1	1	1	23.3	64.5
SMCJ43A/CA	GFT	BFT	43	47.80	52.8	1	1	21.7	69.4
SMCJ45A/CA	GFV	BFV	45	50.00	55.3	1	1	20.6	72.7
SMCJ48A/CA	GFX	BFX	48	53.30	58.9	1	1	19.4	77.4
SMCJ51A/CA	GFZ	BFZ	51	56.70	62.7	1	1	18.2	82.4
SMCJ54A/CA	GGE	BGE	54	60.00	66.3	1	1	17.3	87.1
SMCJ58A/CA	GGG	BGG	58	64.40	71.2	1	1	16.1	93.6
SMCJ60A/CA	GGK	BGK	60	66.70	73.7	1	1	15.5	96.8
SMCJ64A/CA	GGM	BGM	64	71.10	78.6	1	1	14.6	103
SMCJ70A/CA	GGP	BGP	70	77.80	86.0	1	1	13.3	113
SMCJ75A/CA	GGR	BGR	75	83.30	92.1	1	1	12.4	121
SMCJ78A/CA	GGT	BGT	78	86.70	95.8	1	1	11.9	126
SMCJ85A/CA	GGV	BGV	85	94.40	104	1	1	11	137
SMCJ90A/CA	GGX	BGX	90	100.00	111	1	1	10.3	146

Device Type	Marking Code		Stand-off Voltage	Breakdown Voltage at $I_T^{(2)}$		Test Current	Maximum Reverse Leakage at $V_{WM}^{(4)}$	Maximum Peak Pulse Surge Current ⁽³⁾	Maximum Clamping Voltage at I_{PPM}
				$V_{(BR)} (V)$					
UNI	UNI	BI	$V_{RWM} (V)$	Min	Max	$I_T (mA)$	$I_D (\mu A)$	$I_{PPM} (A)$	$V_C (V)$
SMCJ100A/CA	GGZ	BGZ	100	111	123	1	1	9.3	162
SMCJ110A/CA	GHE	BHE	110	122	135	1	1	8.5	177
SMCJ120A/CA	GHG	BHG	120	133	147	1	1	7.8	193
SMCJ130A/CA	GHK	BHK	130	144	159	1	1	7.2	209
SMCJ150A/CA	GHM	BHM	150	167	185	1	1	6.2	243
SMCJ160A/CA	GHP	BHP	160	178	197	1	1	5.8	259
SMCJ170A/CA	GHR	BHR	170	189	209	1	1	5.5	275
SMCJ180A/CA	GHT	BHT	180	201	222	1	1	5.1	292
SMCJ200A/CA	GHV	BHV	200	224	247	1	1	4.6	324
SMCJ220A/CA	GHX	BHX	220	246	272	1	1	4.2	356
SMCJ250A/CA	GHZ	BHZ	250	279	309	1	1	3.7	405
SMCJ300A/CA	GJE	BJE	300	335	371	1	1	3.1	486
SMCJ350A/CA	GJG	BJG	350	391	432	1	1	2.6	567
SMCJ400A/CA	GJK	BJK	400	447	494	1	1	2.3	648
SMCJ440A/CA	GJM	BJM	440	492	543	1	1	2.1	713

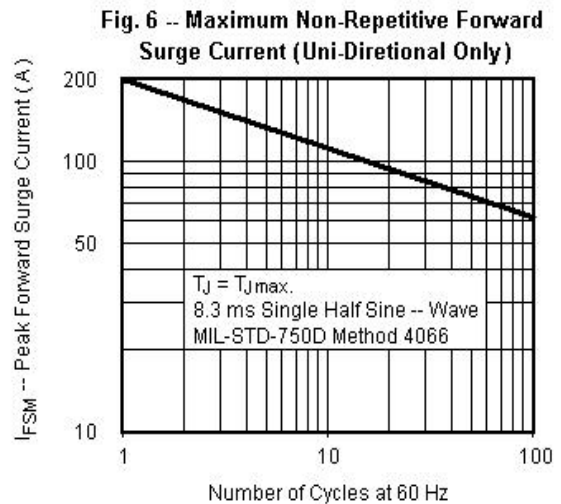
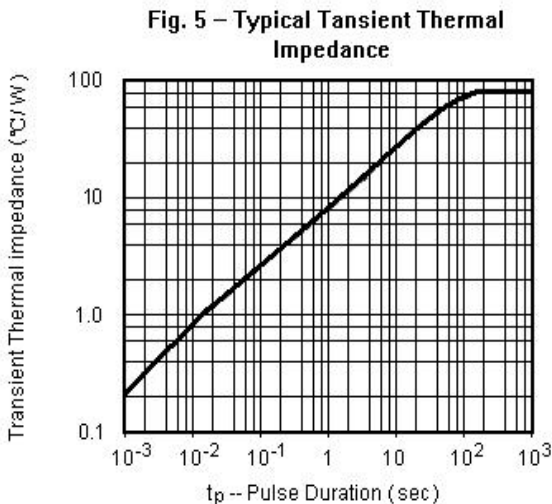
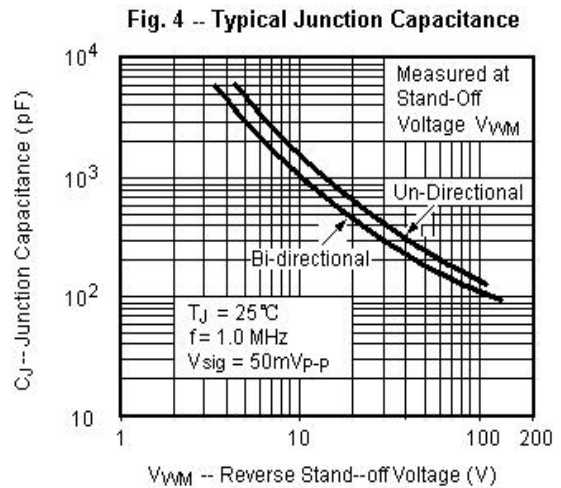
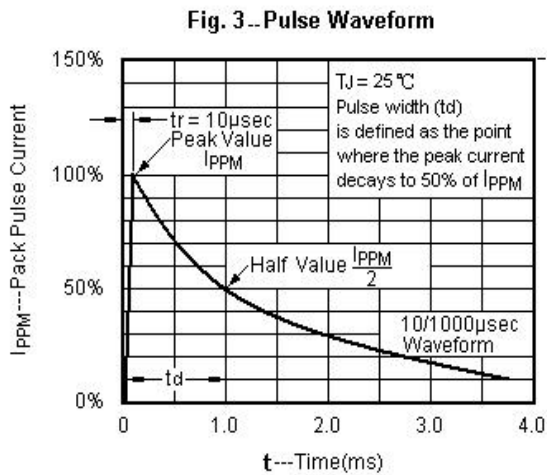
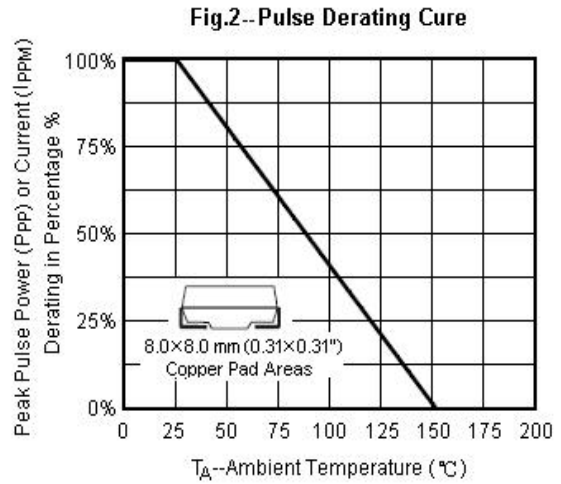
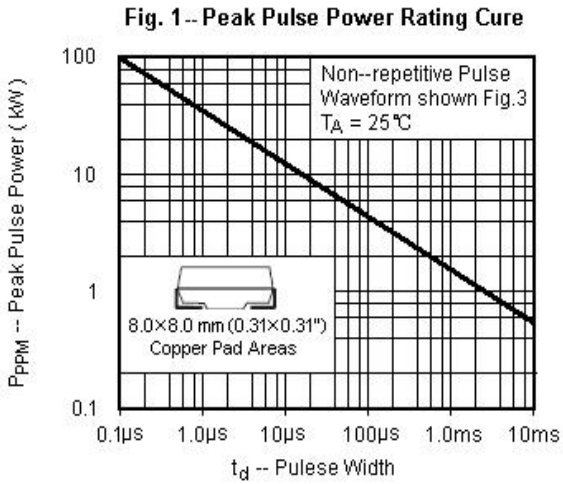
Note 2: Pulse test : $T_p \leq 50ms$.

Note 3: Surge current waveform Per Fig. 3 and derate Per Fig. 2.

Note 4: For bi-directional types with V_{WM} of 10 V and less, the I_D limit is doubled

Note 5: $V_F = 3.5 V$ at $I_F = 100 A$ (uni-directional only)

Characteristic Curves (TA=25 °C unless otherwise noted)



Package Outline

SMC

