

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
- Component in accordance to RoHS 2002/95/1 and WEEE 2002/96/EC



SMC (DO – 214AB)

Mechanical Data

- **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}	3000 W
V_{RRM}	5 V to 190 V
I_{FSM}	200 A
$T_j \text{ max.}$	150 °C

Devices for Bidirectional Applications

- For bi-directional devices, use suffix C or CA (e.g.SMDJ10C, SMDJ10CA).
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}	3000	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 pad areas.

Electrical Characteristics

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

TRR House No.	MarkinP Code		Breakdown Voltage at $I_T^{(1)}$ $V_{(BR)}$ (V)		Test Current	Stand-off Voltage	Maximum Reverse Leakage at V_{WM}	Maximum Peak Pulse Surge Current $I_{PPM}^{(2)}$	Maximum Clamping Voltage at I_{PPM}
	UNI	DI	Min	Max	I_T (mA)	V_{WM} (V)	I_D (μA)	I_{PPM} (A)	V_C (V)
SMDJ5.0A /CA	RDE	DDE	6.40	7	10	5	800	326.1	9.2
SMDJ6.0A /CA	RDG	DDG	6.67	7.37	10	6	800	291.3	10.3
SMDJ6.5A /CA	RDK	DDK	7.22	7.98	10	6.5	500	267.9	11.2
SMDJ7.0A /CA	PDM	DDM	7.78	8.6	10	7	200	250	12
SMDJ7.5A /CA	PDP	DDP	8.33	9.21	1	7.5	100	232.6	12.9
SMDJ8.0A /CA	PDR	DDR	8.89	9.83	1	8	50	220.6	13.6
SMDJ8.5A /CA	PDT	DDT	9.44	10.4	1	8.5	20	208.3	14.4
SMDJ9.0A /CA	PDV	DDV	10	11.1	1	9	10	194.8	15.4
SMDJ10A /CA	PDX	DDX	11.1	12.3	1	10	5	176.5	17
SMDJ11A /CA	PDZ	DDZ	12.2	13.5	1	11	2	164.8	18.2
SMDJ12A /CA	PEE	DEE	13.3	14.7	1	12	2	150.8	19.9
SMDJ13A /CA	PEG	DEG	14.4	15.9	1	13	2	139.5	21.5
SMDJ14A /CA	PEK	DEK	15.6	17.2	1	14	2	129.3	23.2
SMDJ15A /CA	PEM	DEM	16.7	18.5	1	15	2	123	24.4
SMDJ16A /CA	PEP	DEP	17.8	19.7	1	16	2	115.4	26
SMDJ17A /CA	PER	DER	18.9	20.9	1	17	2	108.7	27.6
SMDJ18A /CA	PET	DET	20.0	22.1	1	18	2	102.7	29.2
SMDJ20A /CA	PEV	DEV	22.2	24.5	1	20	2	92.6	32.4
SMDJ22A /CA	PEX	DEX	24.4	26.9	1	22	2	84.5	35.5
SMDJ24A /CA	PEZ	DEZ	26.7	29.5	1	24	2	77.1	38.9
SMDJ26A /CA	PFE	DFE	28.9	31.9	1	26	2	71.3	42.1
SMDJ28A /CA	PFG	DFG	31.1	34.4	1	28	2	66.1	45.4
SMDJ30A /CA	PFK	DFK	33.3	36.8	1	30	2	62.0	48.4
SMDJ33A /CA	PFM	DFM	36.7	40.6	1	33	2	56.3	53.3
SMDJ36A /CA	PFP	DFP	40.0	44.2	1	36	2	51.6	58.1
SMDJ40A /CA	PFR	DFR	44.4	49.1	1	40	2	46.5	64.5
SMDJ43A /CA	PFT	DFT	47.8	52.8	1	43	2	43.2	69.4
SMDJ45A /CA	PFV	DFV	50.0	55.3	1	45	2	41.3	72.7
SMDJ48A /CA	PFX	DFX	53.3	58.9	1	48	2	38.8	77.4
SMDJ51A /CA	PFZ	DFZ	56.7	62.7	1	51	2	36.4	82.4
SMDJ54A /CA	RGE	DGE	60.0	66.3	1	54	2	34.4	87.1
SMDJ58A /CA	PGG	DGG	64.4	71.2	1	58	2	32.1	93.6
SMDJ60A /CA	PGK	DGK	66.7	73.7	1	60	2	31.0	96.8
SMDJ64A /CA	PGM	DGM	71.1	78.6	1	64	2	29.1	103
SMDJ70A /CA	PGP	DGP	77.8	86.0	1	70	2	26.5	113
SMDJ75A /CA	PGR	DGR	83.3	92.1	1	75	2	24.8	121
SMDJ78A /CA	PGT	DGT	86.7	95.8	1	78	2	23.8	126



TVS: SMDJ5.0A(CA) thru SMDJ220A(CA)

Glass Passivated TVS

Electrical Characteristics

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

TRR House No.		MarkinP Code		Breakdown Voltage at $I_T^{(1)}$ $V_{(BR)}$ (V)		Test Current	Stand-off Voltage	Maximum Reverse Leakage at V_{WM}	Maximum Peak Pulse Surge Current $I_{PPM}^{(2)}$	Maximum Clamping Voltage at I_{PPM}
UNI	BI	UNI	DI	Min	Max	I_T (mA)	V_{WM} (V)	I_D (μA)	I_{PPM} (A)	V_C (V)
SMDJ85A /CA		PGV	DGV	94.4	104	1	85	2	21.9	137
SMDJ90A /CA		PGX	DGX	100	111	1	90	2	20.5	146
SMDJ100A /CA		PGZ	DGZ	111	123	1	100	2	18.5	162
SMDJ110A /CA		PHE	DHE	122	135	1	110	2	16.9	177
SMDJ120A/CA		PHG	DHG	133	147	1	120	2	15.5	193
SMDJ130A/CA		PHK	DHK	144	159	1	130	2	14.4	209
SMDJ150A/CA		PHM	DHM	167	185	1	150	2	12.3	243
SMDJ160A/CA		PHP	DHP	178	197	1	160	2	11.6	259
SMDJ170A/CA		PHR	DHR	189	209	1	170	2	10.9	275
SMDJ180A/CA		PHT	DHT	200	221	1	180	2	10.3	292
SMDJ220A/CA		PKE	DKE	244	270	1	220	2	8.4	356

Notes: (1) Pulse test : $T_p \leq 50\text{ms}$

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

(3) Ratings at 25°C ambient temperature unless otherwise specified.

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

Fig. 1-- Peak Pulse Power Rating Cure

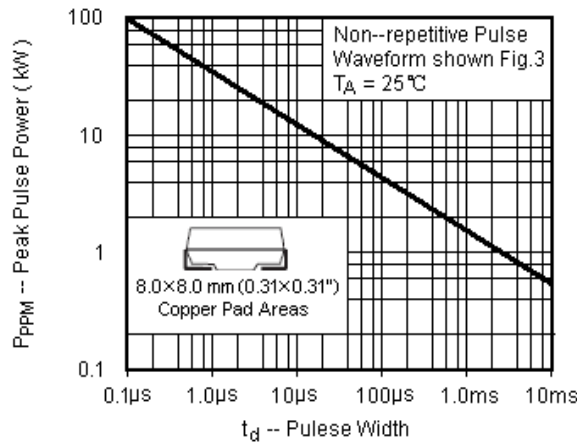


Fig.2--Pulse Derating Cure

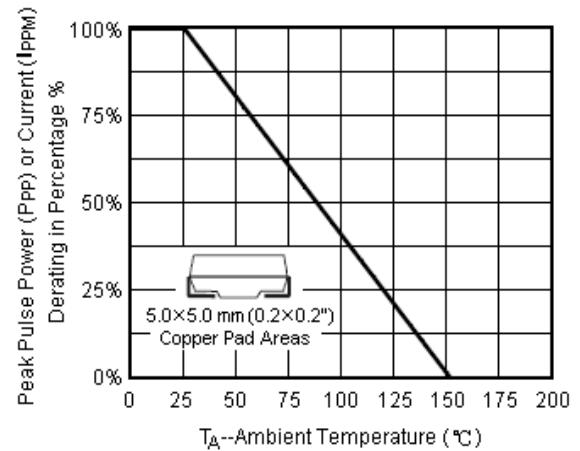


Fig. 3--Pulse Waveform

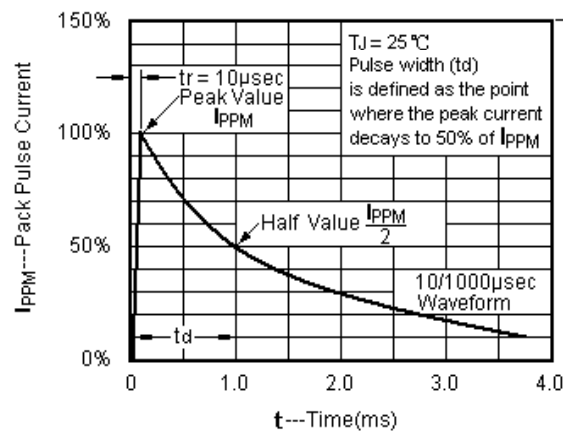


Fig. 4 -- Typical Junction Capacitance

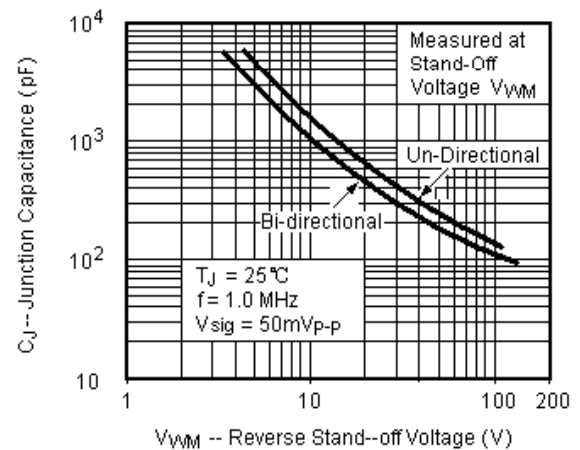


Fig. 5 -- Typical Transient Thermal Impedance

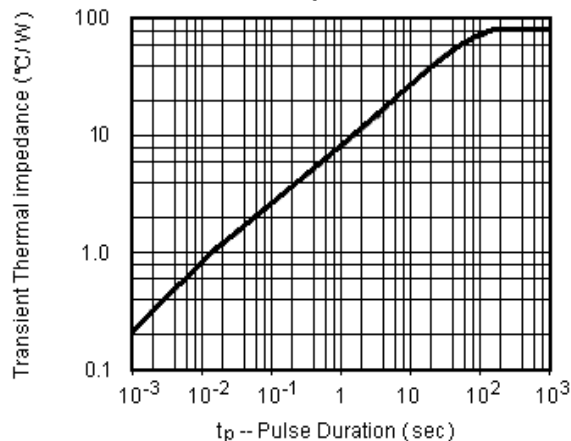
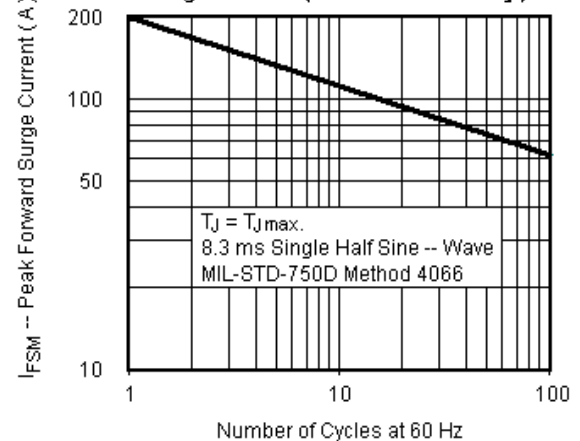
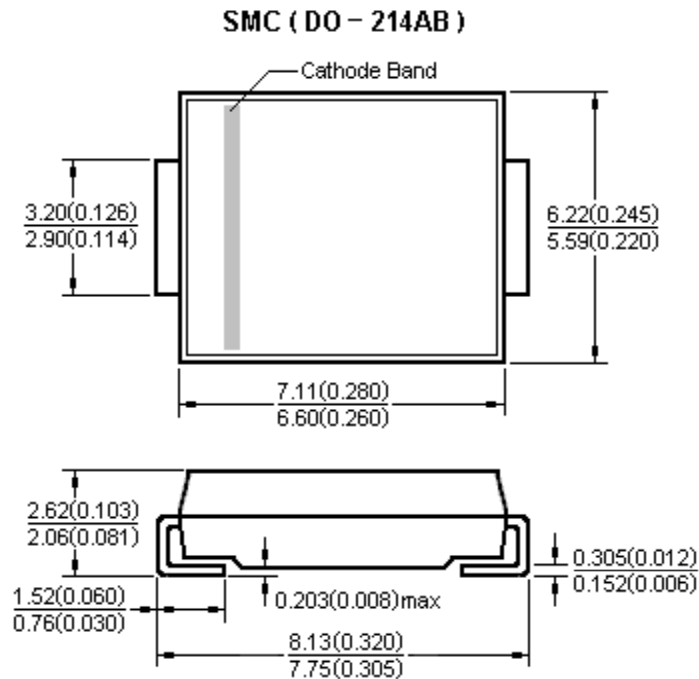


Fig. 6 -- Maximum Non-Repetitive Forward Surge Current (Uni-Directional Only)



Package Outline

Dimensions in millimeters and (inches)

- TRR is registered trademark of Zhejiang TRR Microelectronics Inc.. Zhejiang TRR Microelectronics Inc. reserves the right to make changes to any product in this specification without notice.
- Zhejiang TRR Microelectronics Inc. does not assure any liability arising out of the applications or use of any product described in this specification.
- Zhejiang TRR Microelectronics Inc. advises customers to obtain the latest version of the device information before placing orders to verify that the required information is current.