

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
- 5000 W peak pulse power capability with a 10/1000 μ s 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

P_{PPM}	5000 W
V_{RRM}	11 V to 190 V
I_{FSM}	300 A
$T_j \text{ max.}$	150 °C

Devices for Bidirectional Applications

- For bi-directional devices, use suffix C or CA (e.g. 5.0SMDJ12C, 5.0SMDJ12CA).
Electrical characteristics apply in both directions.

Maximum Ratings & Thermal Characteristics

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

Items	Symbol	Value	UNIT
Peak pulse power dissipation with a 10/1000 μ s waveform	P_{PPM}	5000	W
Peak pulse current with a waveform (single pulse)	I_{PPM}	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave uni-directional only	I_{FSM}	300	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°C unless otherwise noted

TRR House No.	Marking 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	Maximum Clamping Voltage at I _{PPM}
	UNI	BI	Min	Max	I _T (mA)	V _{WM} (V)	I _D (μA)	I _{PPM} (A)	V _C (V)
5.0SMDJ11A	5PDX	5BDX	12.2	13.5	1	11	800	277.5	18.2
5.0SMDJ12A	5PDZ	5BDZ	13.3	14.7	1	12	800	253.8	19.9
5.0SMDJ13A	5PEE	5BEE	14.4	15.9	1	13	500	234.9	21.5
5.0SMDJ14A	5PEG	5BEG	15.6	17.2	1	14	200	217.7	23.2
5.0SMDJ15A	5PEK	5BEK	16.7	18.5	1	15	100	207	24.4
5.0SMDJ16A	5PEM	5BEM	17.8	19.7	1	16	50	194.2	26
5.0SMDJ17A	5PEP	5BEP	18.9	20.9	1	17	20	183	27.6
5.0SMDJ18A	5PER	5BER	20	22.1	1	18	10	172.9	29.2
5.0SMDJ19A	5PET	5BET	21.1	23.3	1	19	10	164.1	30.8
5.0SMDJ20A	5PEV	5BEV	22.2	24.5	1	20	5	155.9	32.4
5.0SMDJ22A	5PEX	5BEX	24.4	26.9	1	22	5	142.3	35.5
5.0SMDJ24A	5PEZ	5BEZ	26.7	29.5	1	24	5	129.8	38.9
5.0SMDJ26A	5PFE	5BFE	28.9	31.9	1	26	5	120	42.1
5.0SMDJ28A	5PFG	5BFG	31.1	34.4	1	28	5	111.2	45.4
5.0SMDJ30A	5PFK	5BFK	33.3	36.8	1	30	5	104.3	48.4
5.0SMDJ33A	5PFM	5BFM	36.7	40.6	1	33	5	94.7	53.3
5.0SMDJ36A	5PFP	5BFP	40.0	44.2	1	36	5	86.9	58.1
5.0SMDJ40A	5PFR	5BFR	44.4	49.1	1	40	5	78.3	64.5
5.0SMDJ43A	5PFT	5BFT	47.8	52.8	1	43	5	72.8	69.4
5.0SMDJ45A	5PFV	5BFV	50	55.3	1	45	5	69.5	72.7
5.0SMDJ48A	5PFX	5BFX	53.3	58.9	1	48	5	65.2	77.4
5.0SMDJ51A	5PFZ	5BFZ	56.7	62.7	1	51	5	61.3	82.4
5.0SMDJ54A	5PGE	5BGE	60	66.3	1	54	5	58	87.1
5.0SMDJ58A	5PGG	5BGG	64	71.2	1	58	5	54	93.6
5.0SMDJ60A	5PGK	5BGK	66.7	73.7	1	60	5	52.2	96.8
5.0SMDJ64A	5PGM	5BGM	71.1	78.6	1	64	5	49	103
5.0SMDJ70A	5PGP	5BGP	77.8	86.0	1	70	5	44.7	113
5.0SMDJ75A	5PGR	5BGR	83.3	92.1	1	75	5	41.7	121
5.0SMDJ78A	5PGT	5BGT	86.7	95.8	1	78	5	40.1	126
5.0SMDJ80A	5PGB	5BGB	88.8	97.6	1	80	5	39.0	130
5.0SMDJ85A	5PGV	5BGV	94.4	104	1	85	5	36.9	137
5.0SMDJ90A	5PGX	5BGX	100	111	1	90	5	34.6	146
5.0SMDJ100A	5PGZ	5BGZ	111	123	1	100	5	31.2	162
5.0SMDJ110A	5PHE	5BHE	122	135	1	110	5	28.5	177
5.0SMDJ120A	5PHG	5BHG	133	147	1	120	5	26.2	193
5.0SMDJ130A	5PHK	5BHK	144	159	1	130	5	24.2	209
5.0SMDJ140A	5PHB	5BHB	155	171	1	140	5	22.3	227
5.0SMDJ150A	5PHM	5BHM	167	185	1	150	5	20.8	243



TVS: 5.0SMDJ11A thru 5.0SMDJ190A

Glass Passivated TVS

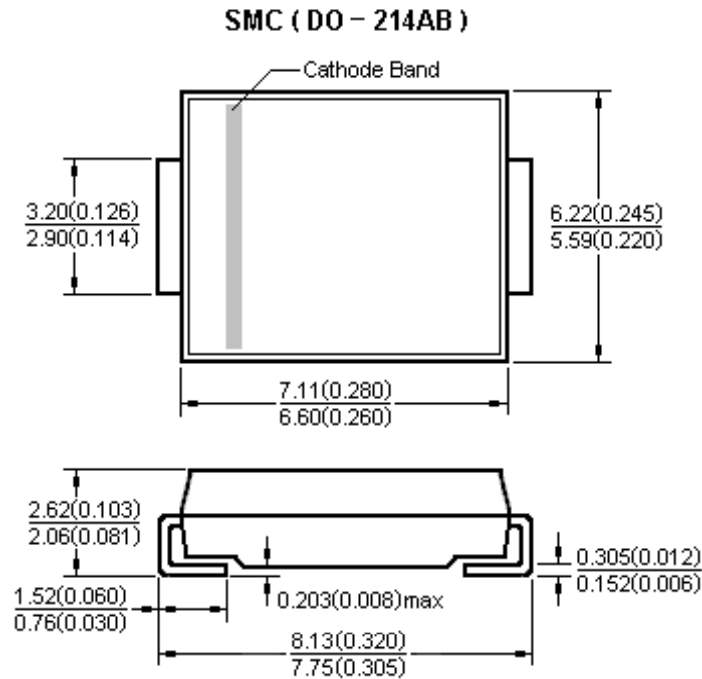
Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

TRR House No.	Marking 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	Maximum Clamping Voltage at I_{PPM}
	UNI	BI	Min	Max	I_T (mA)	V_{WM} (V)	I_D (μA)	I_{PPM} (A)	V_C (V)
5.0SMDJ160A	5PHP	5BHP	178	197	1	160	5	19.5	259
5.0SMDJ170A	5PHR	5BHR	189	209	1	170	5	18.4	275
5.0SMDJ180A	5PHT	5BHT	200	220	1	180	5	17.3	292
5.0SMDJ190A	5PHV	5BHV	211	232	1	190	5	16.4	308

Note 2: Pulse test : $T_p \leq 50\text{ms}$

Note 3: Ratings at 25°C ambient temperature unless otherwise specified.

Package Outline



Dimensions in millimeters and (inches)

Notice

- Product is intended for use in general electronics applications.
- Product should be worked less than the ratings; if exceeded, may cause permanent damage or introduce latent failure mechanisms.
- The absolute maximum ratings are rated values and must not be exceeded during operation. The following are the general derating methods you design a circuit with a device.
 - $I_{F(AV)}$: We recommend that the worst case current be no greater than 80% .
 - I_{FSM} : This rating specifies the non-repetitive peak current. This is only applied for an abnormal operation, which the general during the lifespan of the device.
 - T_J : Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a T_J of below 125°C.

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