

SMCJ-AM Series

Product Name	ESD TVS (Transient Voltage Suppressor)
Series	SMCJ-AM Series
Package Size	DO-214AB



SMCJ-AM Series Engineering Specification

1. Features

- 1500W surface mount transient voltage suppressors
- Glass passivated chip junction
- Reliable low cost construction utilizing molded plastic technique
- Excellent clamping capability
- Low incremental surge resistance.
- Fast response time
- Qualified to AEC-Q101 standards for high reliability

2. Mechanical Date

- Case: Molded plastic DO-214AB
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

3. Pinning Information

Pin	Simplified outline	Symbol
Uni-Directional Pin1 cathode Pin2 anode		
Bi-Directional		

4. Maximum Ratings @Ta=25°C unless otherwise noted

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000μs waveform ⁽¹⁾	P _{PP}	1500	W
Peak pulse current with a 10/1000μs waveform ⁽¹⁾	I _{PP}	See Next Table	A
Power dissipation on infinite heatsink at T _L = 75 °C	P _D	6.5	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾	I _{FSM}	200	A
Maximum instantaneous forward voltage at 25A for unidirectional only ⁽³⁾	V _F	3.5/5.0	V
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to +150	°C

(1)Non-repetitive current pulse per Fig.5 and derated above TA= 25 °C per Fig.1

(2)Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

(3)V_F<3.5V for devices of VBR<200V and V_F<5.0V for devices of VBR>201V

5. Electrical characteristics

Part Number		Device Marking Code		Breakdown Voltage V_{BR} @ I_T			Maximum Reverse Leakage I_R @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @ I_{PP} (V)
Uni	Bi	Uni	Bi	Min (V)	Max (V)	I_T (mA)				
SMCJ10A-AM	SMCJ10CA-AM	GDXA	BDXA	11.1	12.3	1	5	10.0	88.24	17.0
SMCJ11A-AM	SMCJ11CA-AM	GDZA	BDZA	12.2	13.5	1	1	11.0	82.42	18.2
SMCJ12A-AM	SMCJ12CA-AM	GEEA	BEEA	13.3	14.7	1	1	12.0	75.38	19.9
SMCJ13A-AM	SMCJ13CA-AM	GEGA	BEGA	14.4	15.9	1	1	13.0	69.77	21.5
SMCJ14A-AM	SMCJ14CA-AM	GEKA	BEKA	15.6	17.2	1	1	14.0	64.66	23.2
SMCJ15A-AM	SMCJ15CA-AM	GEMA	BEMA	16.7	18.5	1	1	15.0	61.48	24.4
SMCJ16A-AM	SMCJ16CA-AM	GEPA	BEPA	17.8	19.7	1	1	16.0	57.69	26.0
SMCJ17A-AM	SMCJ17CA-AM	GERA	BERA	18.9	20.9	1	1	17.0	54.35	27.6
SMCJ18A-AM	SMCJ18CA-AM	GETA	BETA	20.0	22.1	1	1	18.0	51.37	29.2
SMCJ19A-AM	SMCJ19CA-AM	GEBA	BEBA	21.1	23.3	1	1	19.0	48.73	30.8
SMCJ20A-AM	SMCJ20CA-AM	GEVA	BEVA	22.2	24.5	1	1	20.0	46.30	32.4
SMCJ22A-AM	SMCJ22CA-AM	GEXA	BEXA	24.4	26.9	1	1	22.0	42.25	35.5
SMCJ24A-AM	SMCJ24CA-AM	GEZA	BEZA	26.7	29.5	1	1	24.0	38.56	38.9
SMCJ26A-AM	SMCJ26CA-AM	GFEA	BFEA	28.9	31.9	1	1	26.0	35.63	42.1
SMCJ28A-AM	SMCJ28CA-AM	GFGA	BFGA	31.1	34.4	1	1	28.0	33.04	45.4
SMCJ30A-AM	SMCJ30CA-AM	GFKA	BFKA	33.3	36.8	1	1	30.0	30.99	48.4
SMCJ33A-AM	SMCJ33CA-AM	GFMA	BFMA	36.7	40.6	1	1	33.0	28.14	53.3
SMCJ36A-AM	SMCJ36CA-AM	GFPA	BFPA	40.0	44.2	1	1	36.0	25.82	58.1
SMCJ40A-AM	SMCJ40CA-AM	GFRA	BFRA	44.4	49.1	1	1	40.0	23.26	64.5
SMCJ43A-AM	SMCJ43CA-AM	GFTA	BFTA	47.8	52.8	1	1	43.0	21.61	69.4
SMCJ45A-AM	SMCJ45CA-AM	GFVA	BFVA	50.0	55.3	1	1	45.0	20.63	72.7
SMCJ48A-AM	SMCJ48CA-AM	GFXA	BFXA	53.3	58.9	1	1	48.0	19.38	77.4
SMCJ51A-AM	SMCJ51CA-AM	GFZA	BFZA	56.7	62.7	1	1	51.0	18.20	82.4
SMCJ54A-AM	SMCJ54CA-AM	GGEA	BGEA	60.0	66.3	1	1	54.0	17.22	87.1
SMCJ58A-AM	SMCJ58CA-AM	GGGA	BGGA	64.4	71.2	1	1	58.0	16.03	93.6
SMCJ60A-AM	SMCJ60CA-AM	GGKA	BGKA	66.7	73.7	1	1	60.0	15.50	96.8
SMCJ64A-AM	SMCJ64CA-AM	GGMA	BGMA	71.1	78.6	1	1	64.0	14.56	103.0
SMCJ70A-AM	SMCJ70CA-AM	GGPA	BGPA	77.8	86.0	1	1	70.0	13.27	113.0
SMCJ75A-AM	SMCJ75CA-AM	GGRA	BGRA	83.3	92.1	1	1	75.0	12.40	121.0
SMCJ78A-AM	SMCJ78CA-AM	GGTA	BGTA	86.7	95.8	1	1	78.0	11.90	126.0

6. Typical Characteristics

Fig. 1 - Pulse Derating Curve

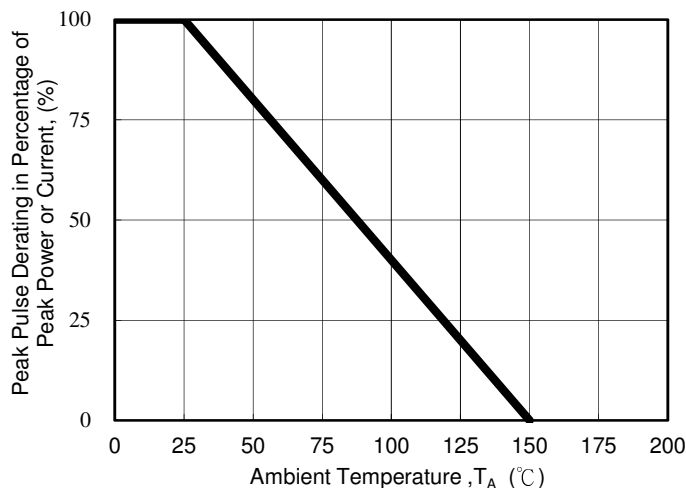


Fig. 2 - Maximum Non-Repetitive Surge Current

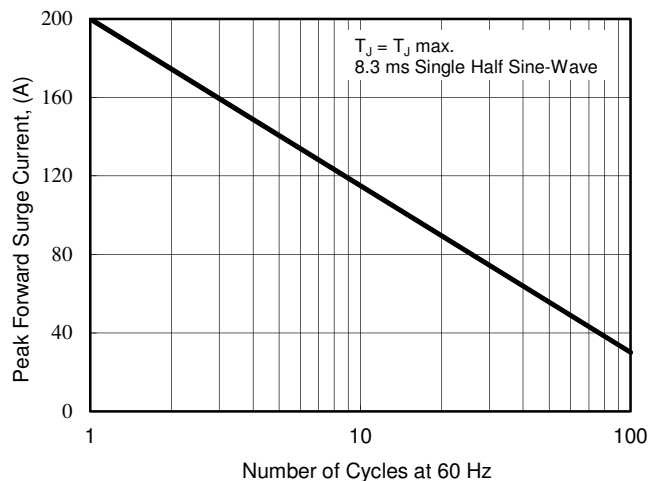


Fig. 3 - Steady State Power Derating Curve

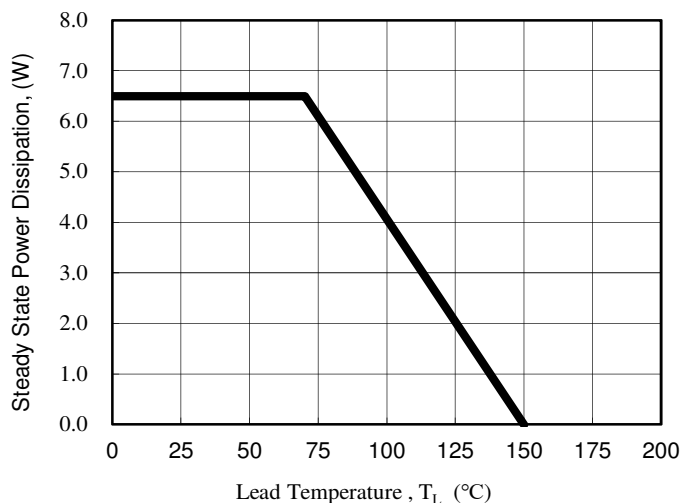


Fig. 4 - Peak Pulse Power Rating Curve

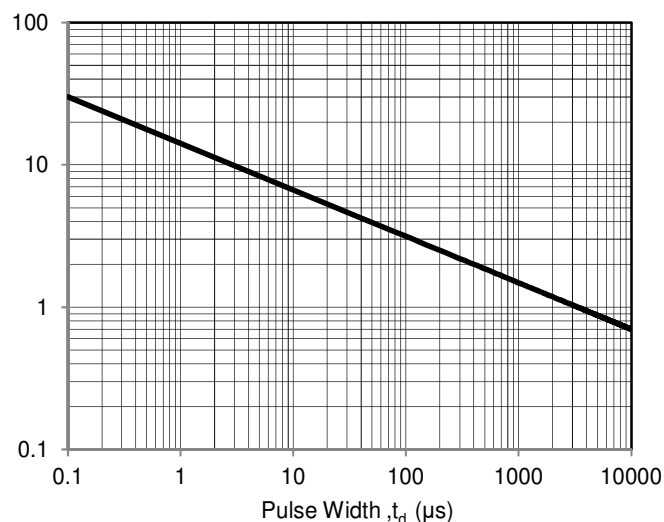


Fig. 5 - Pulse Waveform

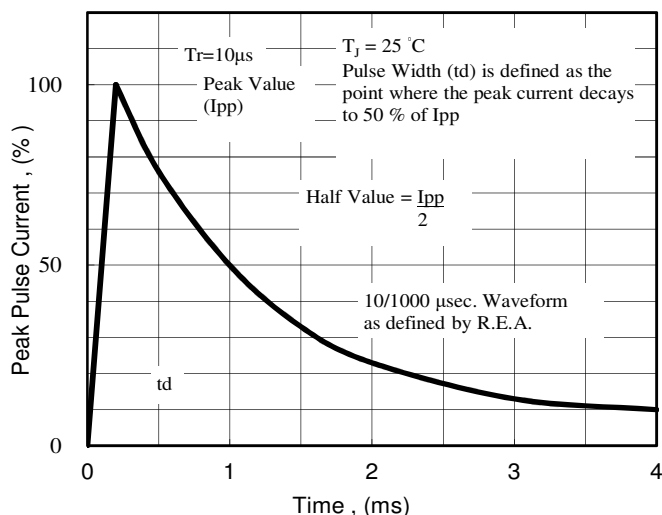
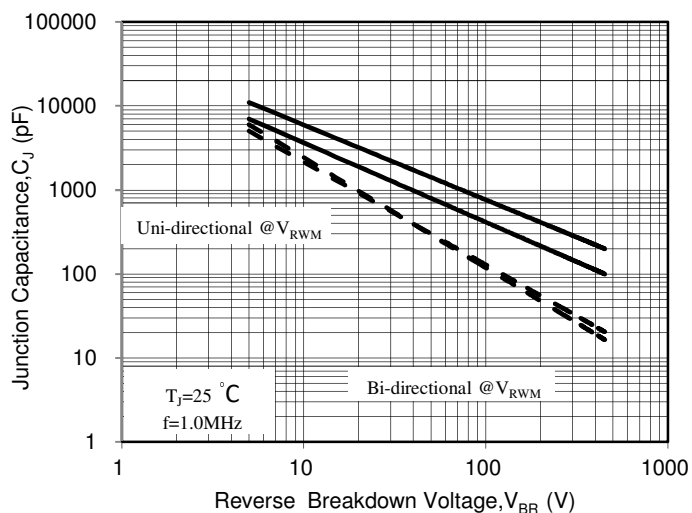
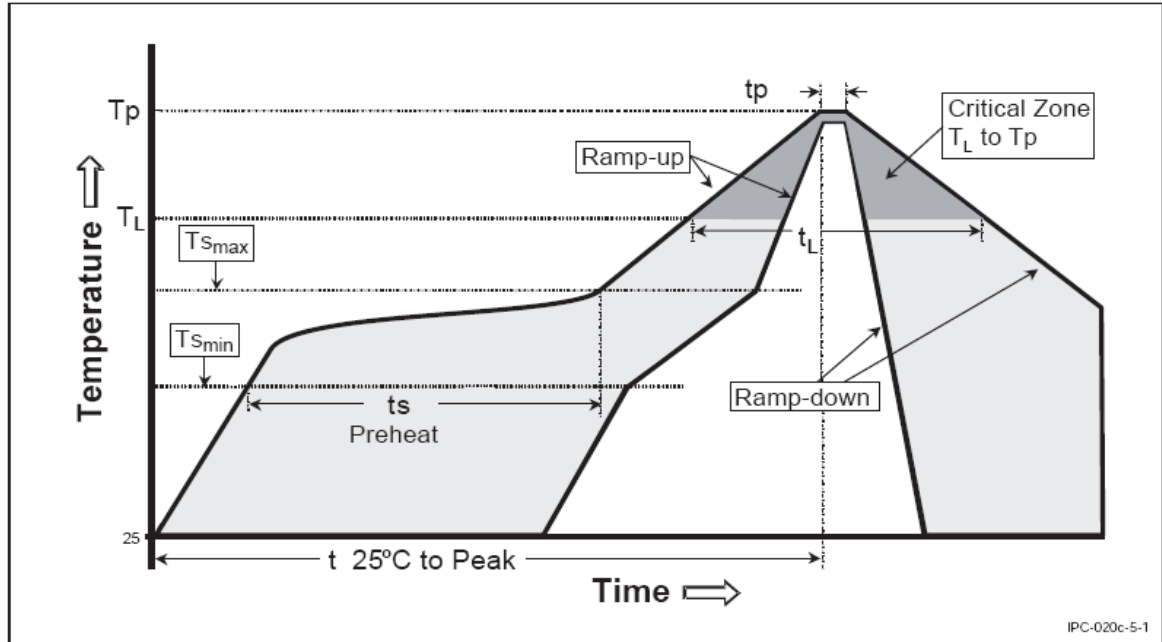


Fig. 6 - Typical Junction Capacitance

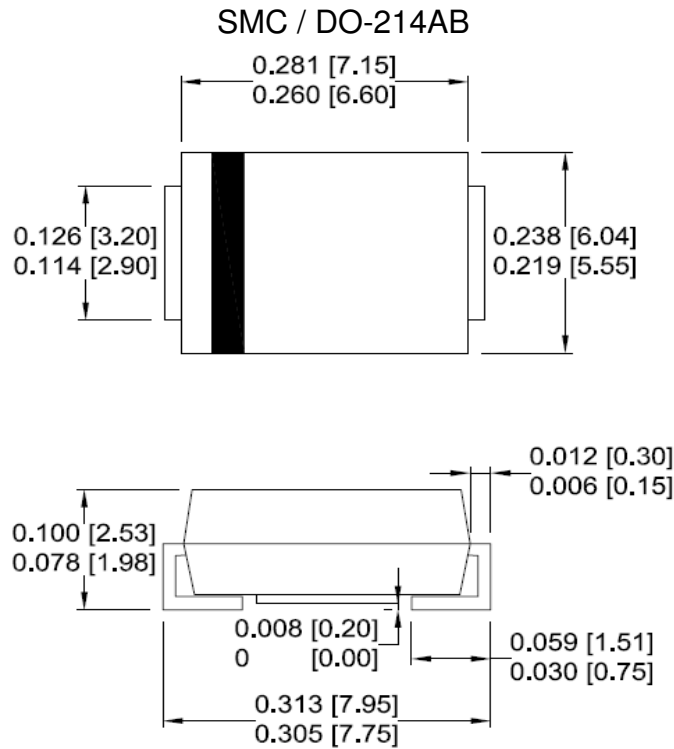


7. Reflow Soldering

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T _{smax} to T _p)	3° C/second max.
Preheat <ul style="list-style-type: none"> – Temperature Min (T_{smin}) – Temperature Max (T_{smax}) – Time (t_{smin} to t_{smax}) 	150 °C 200 °C 60-120 seconds
Time maintained above: <ul style="list-style-type: none"> – Temperature (T_L) – Time (t_L) 	217 °C 60-150 seconds
Peak/Classification Temperature (T _p)	260 °C
Time within 5 °C of actual Peak Temperature (t _p)	30 seconds
Ramp-Down Rate	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max.

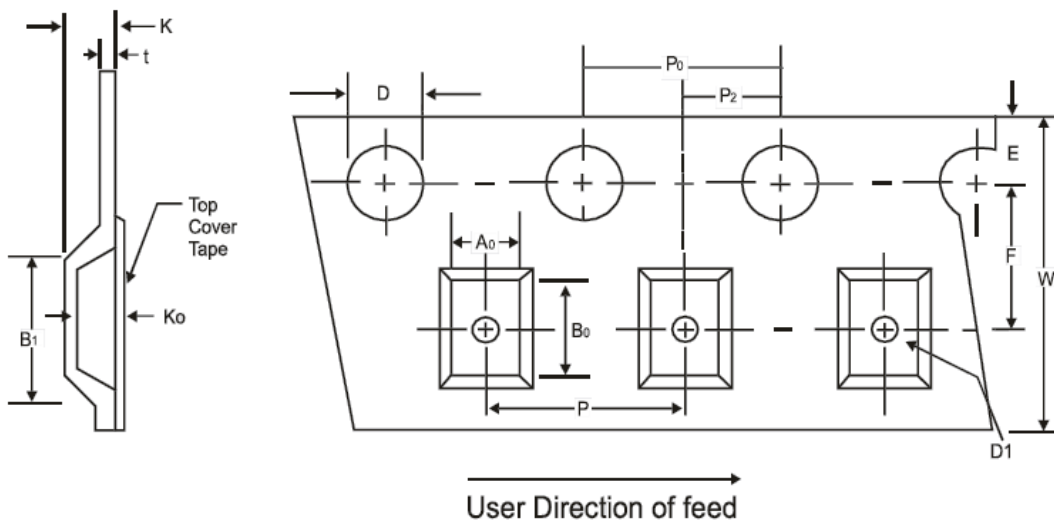


8. Outline Dimensions

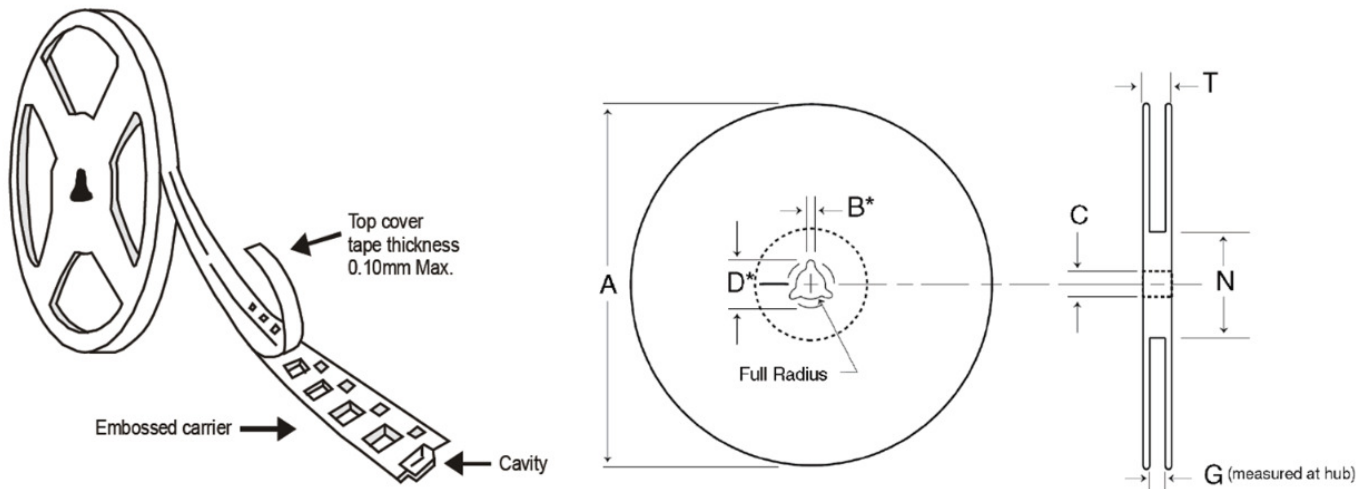


Dimensions: inch[mm]

9. Tape & Reel Information

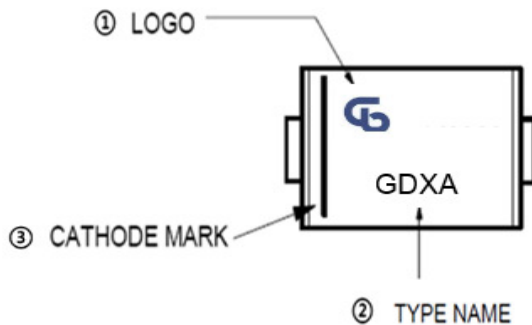


Symbol	W	D	E	P0	t	B1	D1	F	K	P2	P
DO-214AB	16.0±0.1	1.55±0.05	1.75±0.05	4.0±0.1	0.4	12.1	1.5	7.5±0.05	8	2.0±0.05	8.0±0.1
Unit : mm					max	max	min		max		



Symbol	Tape Size	A	B	C	D	N	G	T
DO-214AB Unit : mm	16	330±2.0 (13inch)	1.5 max	13±0.5	20.2 max	50 min	18.4 max	22.4 max

10. Marking Code



1. INPAQ LOGO
2. TYPE NAME (By Device Marking Code)
3. CATHODE MARK (For Uni-direction Products Only)

11. Order Information

Part Number	Quantity	Packaging Option
SMCJ-AM Series	3000 /reel	tape/13"reel

12. MSL Level

LEVEL 1