

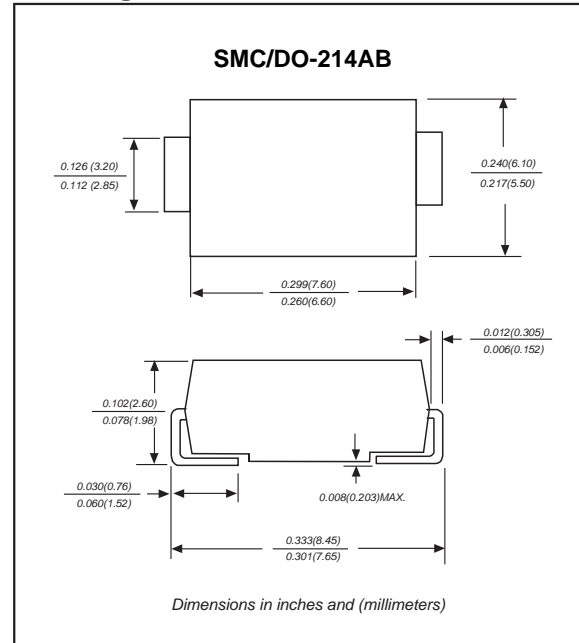
Features

- 8000W peak pulse power capability with a 10/1000 us waveform, repetition rate (duty cycle): 0.01%.
- Excellent clamping capability.
- Low incremental surge resistance.
- Fast response time from 0V to VBR, typically less than 1 ps for uni-directional & 5 ns for bi-directional types.
- Glass passivated chip junction.
- Lead-free parts meet RoHS requirements.
- Compliant to Halogen-free.
- Suffix "-Q1" for AEC-Q101.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AB / SMC
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Package outline



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

PARAMETER	CONDITIONS	Symbol	Value	UNIT
Peak Power Dissipation	with a 10/1000 us waveform, Note 1, 2	P_{PPM}	8000	W
Peak Pulse current	with a 10/1000 us waveform	I_{PPM}	See Table 1	A
Peak Forward Surge Current	8.3ms Single Half Sine-Wave, Note 3	I_{FSM}	300	A
Operating Temperature range		T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature range		T_{STG}	-55 ~ +150	$^\circ\text{C}$

- Note 1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2
 2. Mounted on copper pad area of 0.31"x0.31" (8.0x8.0 mm) per Fig 5
 3. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum
 4. $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 201\text{V}$.

Electrical Specification @ Tamb 25°C

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltage V_{BR} @ I_T			Maximum Reverse Leakage I_R @ V_{RWM} (uA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @ I_{PP} (V)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
8.0SMDJ14A-Q1	8.0SMDJ14CA-Q1	8PEG	8BEG	15.60	17.20	10	200	14.0	348.28	23.2
8.0SMDJ15A-Q1	8.0SMDJ15CA-Q1	8PEK	8BEK	16.70	18.50	1	100	15.0	331.15	24.4
8.0SMDJ16A-Q1	8.0SMDJ16CA-Q1	8PEM	8BEM	17.80	19.70	1	50	16.0	310.77	26.0
8.0SMDJ17A-Q1	8.0SMDJ17CA-Q1	8PEP	8BEP	18.90	20.90	1	20	17.0	292.75	27.6
8.0SMDJ18A-Q1	8.0SMDJ18CA-Q1	8PER	8BER	20.00	22.10	1	10	18.0	276.71	29.2
8.0SMDJ19A-Q1	8.0SMDJ19CA-Q1	8PET	8BET	21.10	23.30	1	10	19.0	262.51	30.8
8.0SMDJ20A-Q1	8.0SMDJ20CA-Q1	8PEV	8BEV	22.20	24.50	1	5	20.0	249.38	32.4
8.0SMDJ22A-Q1	8.0SMDJ22CA-Q1	8PEX	8BEX	24.40	26.90	1	5	22.0	227.61	35.5
8.0SMDJ24A-Q1	8.0SMDJ24CA-Q1	8PEZ	8BEZ	26.70	29.50	1	5	24.0	207.71	38.9
8.0SMDJ26A-Q1	8.0SMDJ26CA-Q1	8PFE	8BFE	28.90	31.90	1	5	26.0	191.92	42.1
8.0SMDJ28A-Q1	8.0SMDJ28CA-Q1	8PFG	8BFG	31.10	34.40	1	5	28.0	177.97	45.4
8.0SMDJ30A-Q1	8.0SMDJ30CA-Q1	8PFK	8BFK	33.30	36.80	1	5	30.0	166.94	48.4
8.0SMDJ33A-Q1	8.0SMDJ33CA-Q1	8PFM	8BFM	36.70	40.60	1	5	33.0	151.59	53.3
8.0SMDJ36A-Q1	8.0SMDJ36CA-Q1	8PFP	8BFP	40.00	44.20	1	5	36.0	139.07	58.1
8.0SMDJ40A-Q1	8.0SMDJ40CA-Q1	8PFR	8BFR	44.40	49.10	1	5	40.0	125.27	64.5
8.0SMDJ43A-Q1	8.0SMDJ43CA-Q1	8PFT	8BFT	47.80	52.80	1	5	43.0	116.43	69.4
8.0SMDJ45A-Q1	8.0SMDJ45CA-Q1	8PFV	8BFV	50.00	55.30	1	5	45.0	111.14	72.7
8.0SMDJ48A-Q1	8.0SMDJ48CA-Q1	8PFX	8BFX	53.30	58.90	1	5	48.0	104.39	77.4

Note:

1. Suffix 'A' denotes 5% tolerance device.
2. Add suffix 'CA' after part number to specify Bi-directional devices

Rating and characteristic curves (8.0SMDJ-Q1 Series)

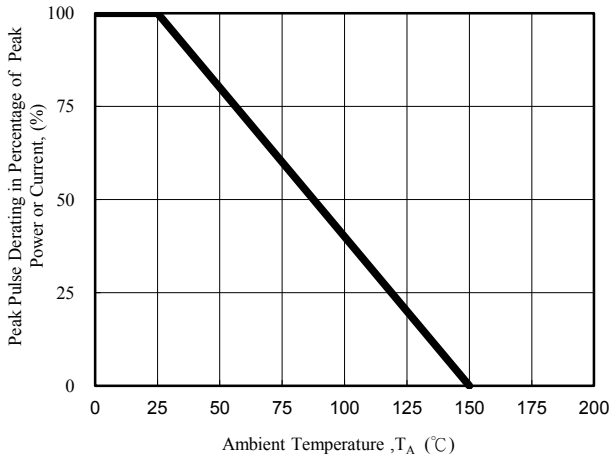


Fig. 1 - Pulse Derating Curve

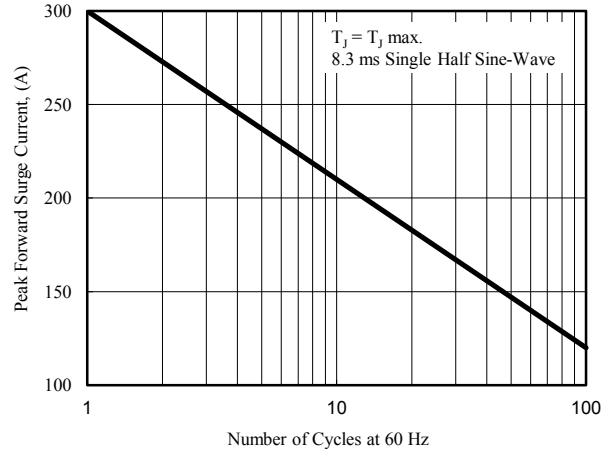


Fig. 2 - Maximum Non-Repetitive Surge Current

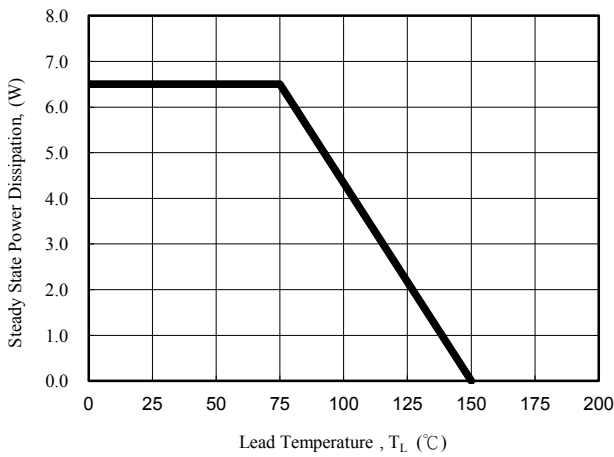


Fig. 3 - Steady State Power Derating Curve

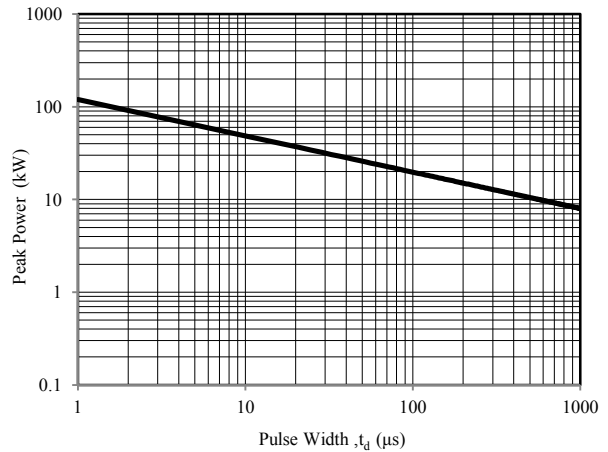


Fig. 4 - Peak Pulse Power Rating Curve

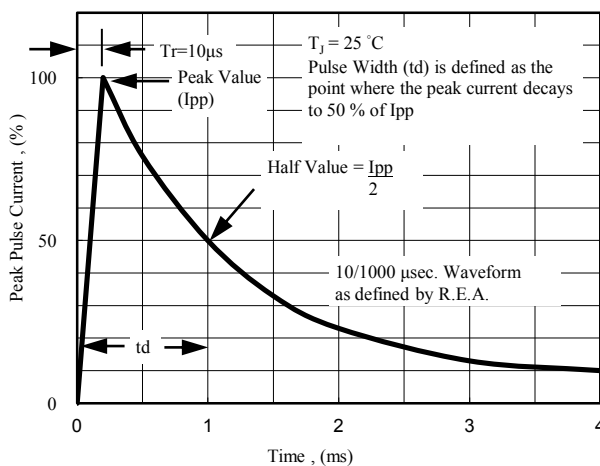
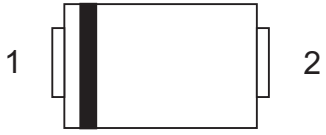

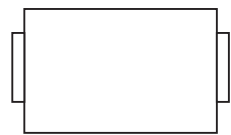

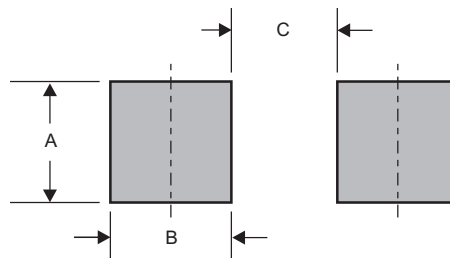


Fig. 5 - Pulse Waveform

Pinning information

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

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMC	0.132 (3.30)	0.100 (2.50)	0.176(4.40)