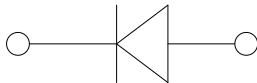
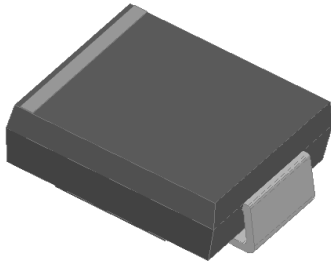


Surface Mount Transient Voltage Suppressor Diodes

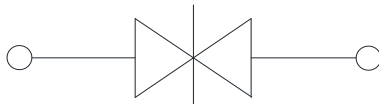
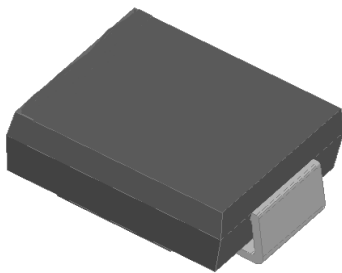
Uni-directional



Features

- Low profile package
- Ideal for automated placement
- Available in Uni-directional and Bi-directional
- 3000W peak pulse power capability with a 10/1000 μ s waveform
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Meets MSL level 1, per J-STD-020C, LF maximum peak of 260 °C
- ESD protection of data lines in accordance with IEC 61000-4-2, 30kV(Air), 30kV (Contact)
- Part no. with suffix "Q" means AEC-Q101 qualified

Bi-directional



Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive, telecommunication.

Mechanical Data

- **Package:** DO-214AB (SMC)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** For uni-directional types the band denotes cathode end, no marking on bi-directional types

■ Maximum Ratings ($T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform (1) (2) (Fig.1)	P_{PPM}	W	3000
Peak pulse current, with a 10/1000us waveform(1)	I_{PPM}	A	See Next Table
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(3)	I_{FSM}	A	300
Operating junction and storage temperature range	T_J, T_{STG}	$^\circ\text{C}$	-55 to +150

■ Electrical Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage @at 100A for unidirectional only	V_F	V	3.5



SMDJ10AQ THRU SMDJ48CAQ

■ Thermal Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal Resistance(Typical)	R _{θJA}	°C/W	junction to ambient	75
	R _{θJL}	°C/W	junction to lead	15

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above Ta= 25°C per Fig.2.
- (2) Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal.
- (3) Measured on 8.3ms single half sine-wave or equivalent square wave,duty cycle=4 pulses per minute maximum.

■ Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMDJ SERIES	F1	Approximate 0.257	3000	6000	42000	13" reel

■ Electrical Characteristics (Ta=25°C Unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V _{BR} @I _T			Maximum Reverse Leakage I _R ⁽⁶⁾ @ V _{RWM} (μA)	Working Peak Reverse Voltage V _{RWM} (V)	Maximum Reverse Surge Current I _{PP} ⁽⁵⁾ (A)	Maximum Clamping Voltage V _c @ I _{PP} (V)
		Min(V)	Max (V)	I _T ⁽⁴⁾ (mA)				
SMDJ10AQ	SMDJ10CAQ	11.10	12.30	1	5	10.0	176.47	17.0
SMDJ11AQ	SMDJ11CAQ	12.20	13.50	1	5	11.0	164.84	18.2
SMDJ12AQ	SMDJ12CAQ	13.30	14.70	1	2	12.0	150.75	19.9
SMDJ13AQ	SMDJ13CAQ	14.40	15.90	1	2	13.0	139.53	21.5
SMDJ14AQ	SMDJ14CAQ	15.60	17.20	1	1	14.0	129.31	23.2
SMDJ15AQ	SMDJ15CAQ	16.70	18.50	1	1	15.0	122.95	24.4
SMDJ16AQ	SMDJ16CAQ	17.80	19.70	1	1	16.0	115.38	26.0
SMDJ17AQ	SMDJ17CAQ	18.90	20.90	1	1	17.0	108.70	27.6
SMDJ18AQ	SMDJ18CAQ	20.00	22.10	1	1	18.0	102.74	29.2
SMDJ19AQ	SMDJ19CAQ	21.10	23.30	1	1	19.0	97.47	30.8
SMDJ20AQ	SMDJ20CAQ	22.20	24.50	1	1	20.0	92.59	32.4
SMDJ22AQ	SMDJ22CAQ	24.40	26.90	1	1	22.0	84.51	35.5
SMDJ24AQ	SMDJ24CAQ	26.70	29.50	1	1	24.0	77.12	38.9
SMDJ26AQ	SMDJ26CAQ	28.90	31.90	1	1	26.0	71.26	42.1
SMDJ28AQ	SMDJ28CAQ	31.10	34.40	1	1	28.0	66.08	45.4
SMDJ30AQ	SMDJ30CAQ	33.30	36.80	1	1	30.0	61.98	48.4
SMDJ33AQ	SMDJ33CAQ	36.70	40.60	1	1	33.0	56.29	53.3
SMDJ36AQ	SMDJ36CAQ	40.00	44.20	1	1	36.0	51.64	58.1
SMDJ40AQ	SMDJ40CAQ	44.40	49.10	1	1	40.0	46.51	64.5
SMDJ43AQ	SMDJ43CAQ	47.80	52.80	1	1	43.0	43.23	69.4
SMDJ45AQ	SMDJ45CAQ	50.00	55.30	1	1	45.0	41.27	72.7
SMDJ48AQ	SMDJ48CAQ	53.30	58.90	1	1	48.0	38.76	77.4

Notes:

- (4) Pulse Test: t_p≤50ms
- (5) Surge current waveform per Fig. 3 and derated per Fig.2.
- (6) For bi-directional types having V_{RWM} of 10 V and less, the I_R limit is doubled.



SMDJ10AQ THRU SMDJ48CAQ

■ Characteristics(Typical)

FIG1: Peak Pulse Power Rating Curve

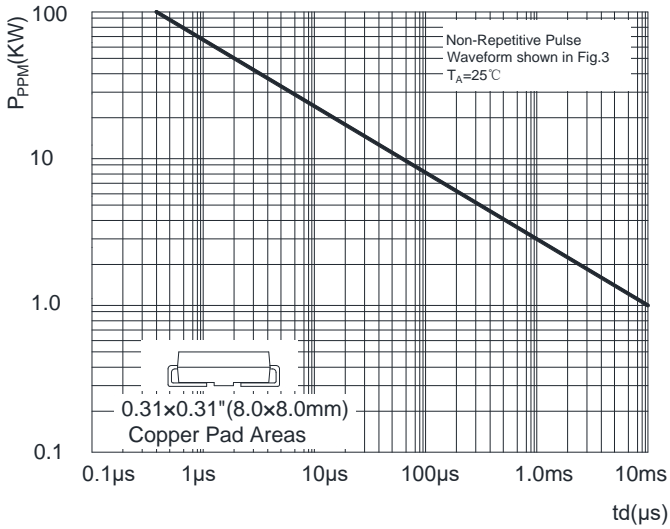


FIG2: Pulse Power or Current vs. Initial Junction Temperature

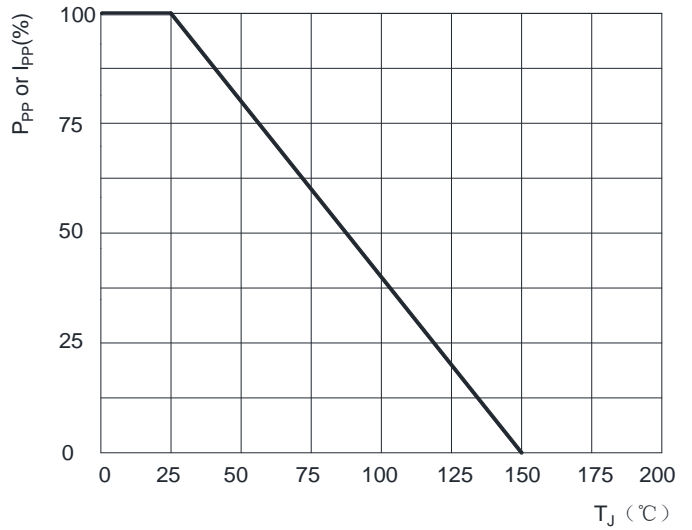


FIG3: Pulse Waveform

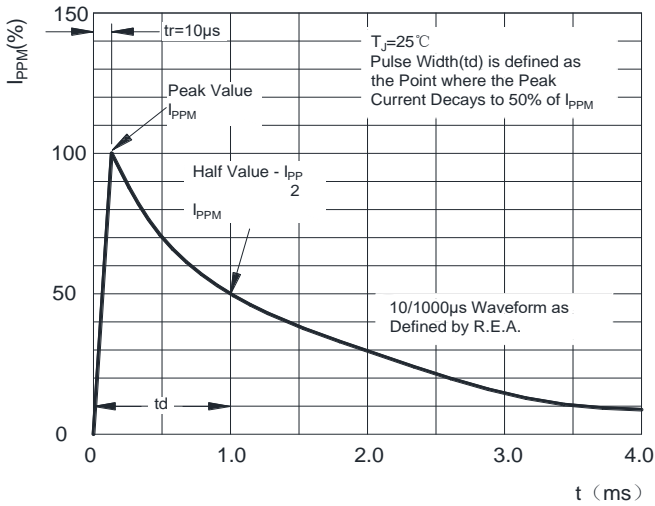


FIG4: Typical Transient Thermal Impedance

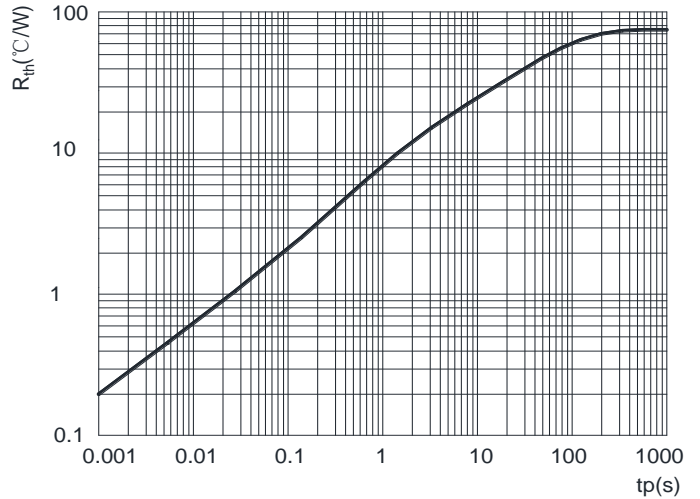
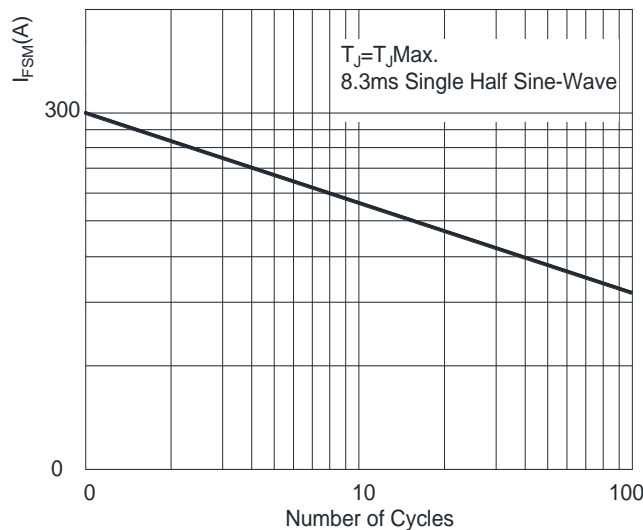


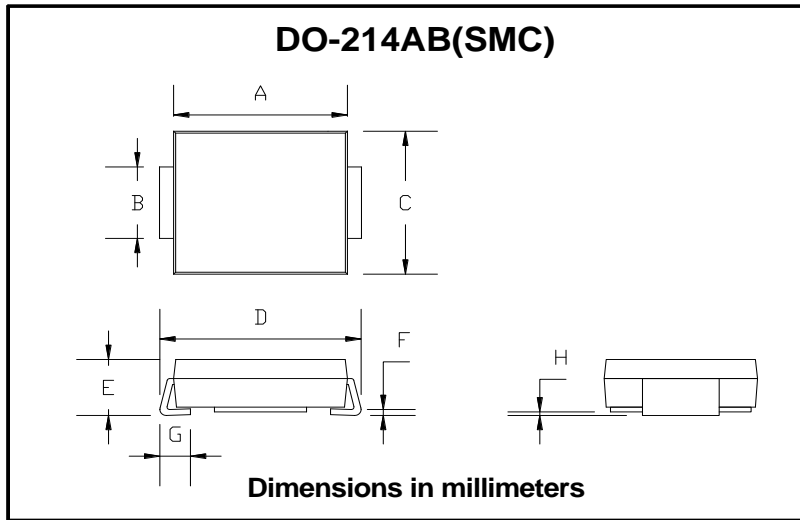
FIG5: Maximum Non-Repetitive Surge Current





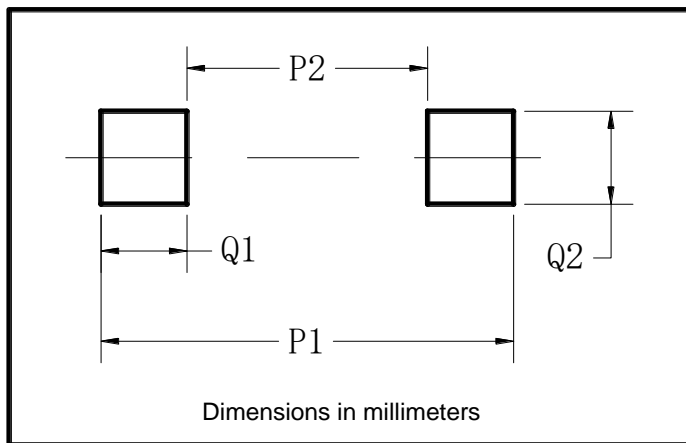
SMDJ10AQ THRU SMDJ48CAQ

■ Outline Dimensions



DO-214AB (SMC)		
Dim	Min	Max
A	6.60	7.11
B	2.85	3.27
C	5.59	6.22
D	7.75	8.13
E	1.99	2.61
F	0.15	0.31
G	0.76	1.52
H	0.10	0.20

■ Suggested pad layout



Dim	Typ
P1	9.9
P2	3.84
Q1	3.03
Q2	3.82



SMDJ10AQ THRU SMDJ48CAQ

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with automotive electronics, are not designed for use in medical, lifesaving, lifesustaining, or military, Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.