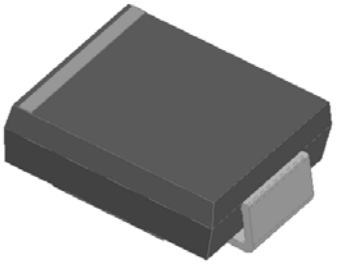
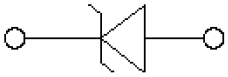
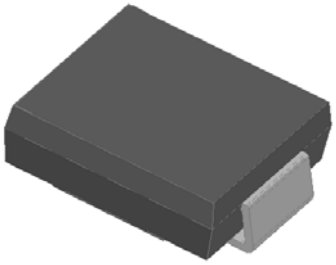
Surface Mount Transient Voltage Suppressor Diodes

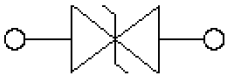
Uni-directional





Bi-directional





Features

- UL recognition, file # E517074
- 5000 W peak pulse power capability with a 10/1000 μs waveform
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- Meets MSL level 1

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, telecommunication.

Mechanical Data

- **Package**: DO-214AB (SMC)
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals**: 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 (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000μs waveform (1) (2)	P_{PPM}	W	5000
Peak pulse current, with a 10/1000μs waveform (1)	I_{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at T_L=75℃ (2)	P_D	W	6.5
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}	℃	-55 to +150

■Electrical Characteristics (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage at 100A for unidirectional only	V_{FM}	V	5.0

■Thermal Characteristics （Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal Resistance(Typical)	$R_{\theta J-A}$(4)	℃/W	junction to ambient	75
	$R_{\theta J-L}$(4)	℃/W	junction to lead	15
	$R_{\theta J-C}$(4)	℃/W	junction to case	13

Notes:
(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25℃ 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.
(4) Mounted on minimum recommended pad layout.

■Electrical Characteristics (TA=25℃ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	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}(2) (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
		Min(V)	Max (V)	I_T(1)(mA)				
5.0SMDJ11AH	5.0SMDJ11CAH	12.2	13.5	1.0	800.0	11.0	274.7	18.2
5.0SMDJ12AH	5.0SMDJ12CAH	13.3	14.7	1.0	800.0	12.0	251.3	19.9
5.0SMDJ13AH	5.0SMDJ13CAH	14.4	15.9	1.0	500.0	13.0	232.6	21.5
5.0SMDJ14AH	5.0SMDJ14CAH	15.6	17.2	1.0	200.0	14.0	215.5	23.2
5.0SMDJ15AH	5.0SMDJ15CAH	16.7	18.5	1.0	100.0	15.0	204.9	24.4
5.0SMDJ16AH	5.0SMDJ16CAH	17.8	19.7	1.0	50.0	16.0	192.3	26
5.0SMDJ17AH	5.0SMDJ17CAH	18.9	20.9	1.0	20.0	17.0	181.2	27.6
5.0SMDJ18AH	5.0SMDJ18CAH	20.0	22.1	1.0	10.0	18.0	171.2	29.2
5.0SMDJ19AH	5.0SMDJ19CAH	21.1	23.3	1.0	10.0	19.0	162.3	30.8
5.0SMDJ20AH	5.0SMDJ20CAH	22.2	24.5	1.0	5.0	20.0	154.3	32.4
5.0SMDJ22AH	5.0SMDJ22CAH	24.4	26.9	1.0	5.0	22.0	140.8	35.5
5.0SMDJ24AH	5.0SMDJ24CAH	26.7	29.5	1.0	5.0	24.0	128.5	38.9
5.0SMDJ26AH	5.0SMDJ26CAH	28.9	31.9	1.0	5.0	26.0	118.8	42.1
5.0SMDJ28AH	5.0SMDJ28CAH	31.1	34.4	1.0	5.0	28.0	110.1	45.4
5.0SMDJ30AH	5.0SMDJ30CAH	33.3	36.8	1.0	5.0	30.0	103.3	48.4
5.0SMDJ33AH	5.0SMDJ33CAH	36.7	40.6	1.0	5.0	33.0	93.8	53.3
5.0SMDJ36AH	5.0SMDJ36CAH	40.0	44.2	1.0	5.0	36.0	86.1	58.1
5.0SMDJ40AH	5.0SMDJ40CAH	44.4	49.1	1.0	5.0	40.0	77.5	64.5
5.0SMDJ43AH	5.0SMDJ43CAH	47.8	52.8	1.0	5.0	43.0	72.0	69.4
5.0SMDJ45AH	5.0SMDJ45CAH	50.0	55.3	1.0	5.0	45.0	68.8	72.7
5.0SMDJ48AH	5.0SMDJ48CAH	53.3	58.9	1.0	5.0	48.0	64.6	77.4
5.0SMDJ51AH	5.0SMDJ51CAH	56.7	62.7	1.0	5.0	51.0	60.7	82.4
5.0SMDJ54AH	5.0SMDJ54CAH	60.0	66.3	1.0	5.0	54.0	57.4	87.1
5.0SMDJ58AH	5.0SMDJ58CAH	64.4	71.2	1.0	5.0	58.0	53.4	93.6
5.0SMDJ60AH	5.0SMDJ60CAH	66.7	73.7	1.0	5.0	60.0	51.7	96.8
5.0SMDJ64AH	5.0SMDJ64CAH	71.1	78.6	1.0	5.0	64.0	48.5	103
5.0SMDJ70AH	5.0SMDJ70CAH	77.8	86.0	1.0	5.0	70.0	44.2	113
5.0SMDJ75AH	5.0SMDJ75CAH	83.3	92.1	1.0	5.0	75.0	41.3	121
5.0SMDJ78AH	5.0SMDJ78CAH	86.7	95.8	1.0	5.0	78.0	39.7	126
5.0SMDJ80AH	5.0SMDJ80CAH	88.96	97.6	1.0	5.0	80.0	38.6	129.6
5.0SMDJ85AH	5.0SMDJ85CAH	94.4	104.0	1.0	5.0	85.0	36.5	137

Notes:
(1) Pulse Test：tp≤50ms Pulse test: tp≤50ms.
(2) Surge current waveform per Fig. 3 and derated per Fig.2.

■Ordering Information (Example)

PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
5.0SMDJ SERIES	F1	Approximate 0.270	3000	/	42000	13” reel

■ Characteristics(Typical)

FIG1:Peak Pulse Power Rating Curve

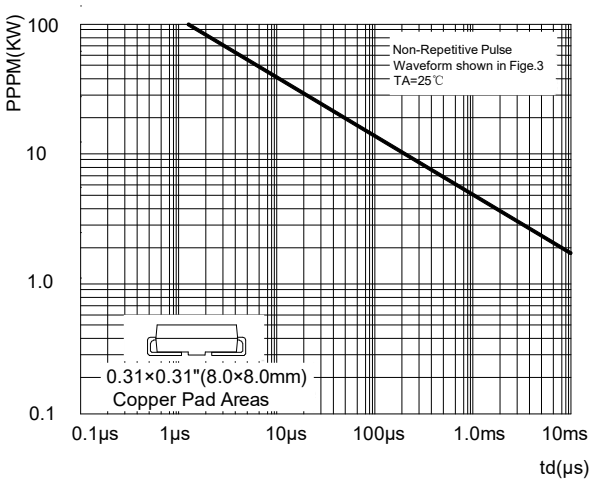


FIG2: Pulse Power or Current vs. Initial Junction Temperature

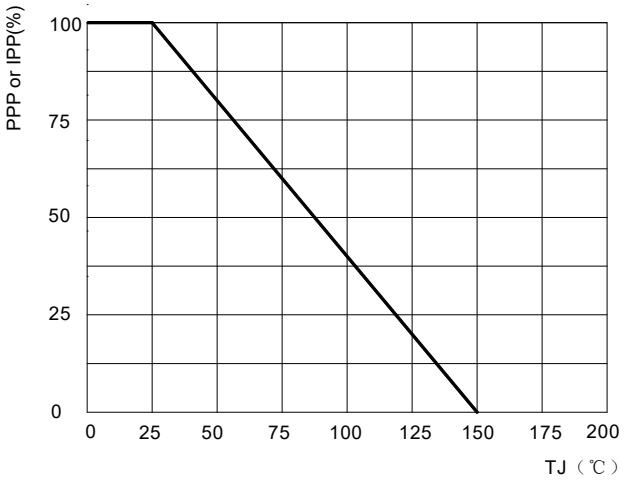


FIG3: Pulse Waveform

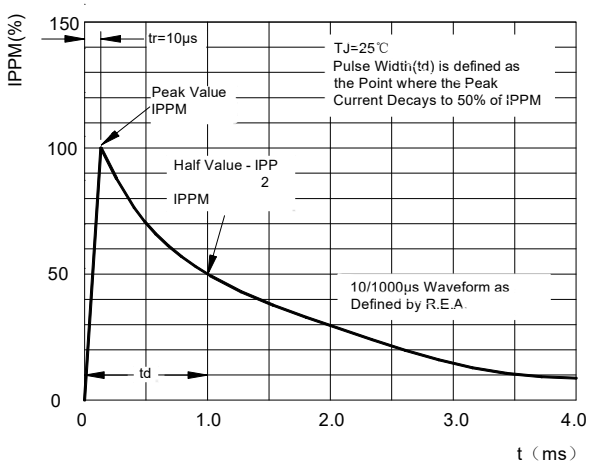


FIG4:Typical Transient Thermal Impedance

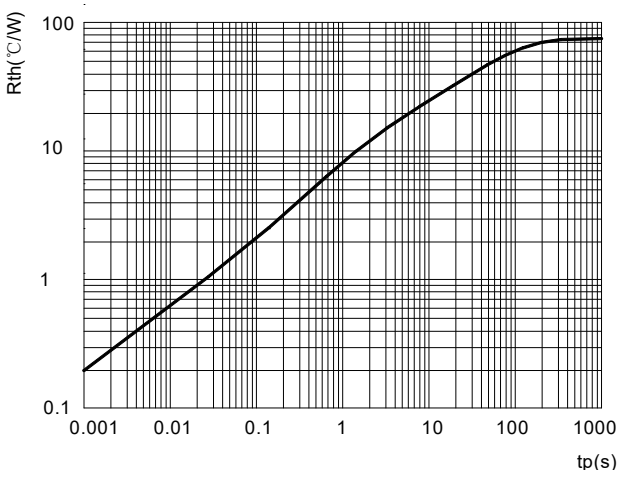


FIG5: Maximum Non-Repetitive Surge Current

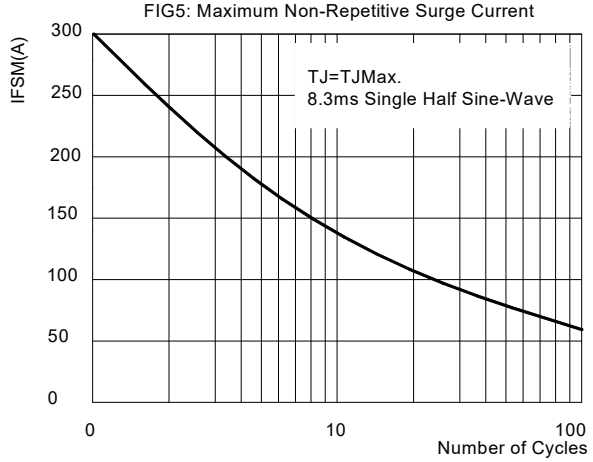
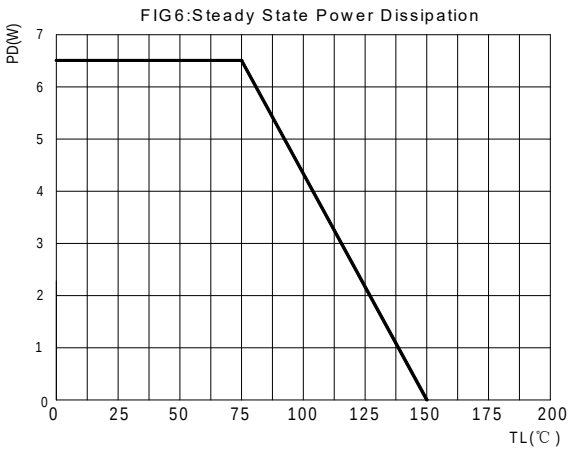
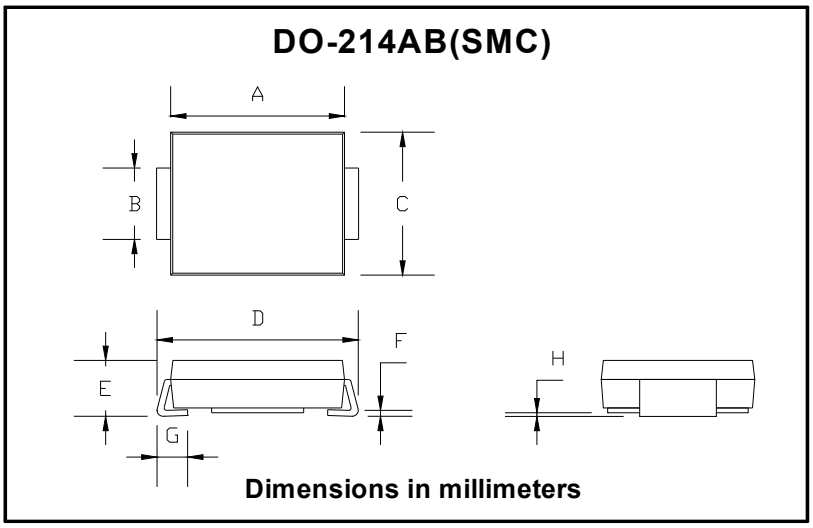


FIG6:Steady State Power Dissipation

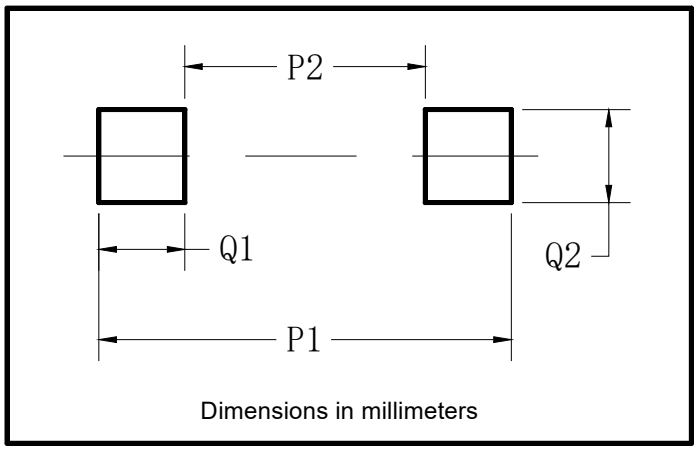


■ Outline Dimensions



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	0.05	0.20

■ Suggested pad layout



Dim	Min
P1	9.9
P2	3.84
Q1	3.03
Q2	3.82

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