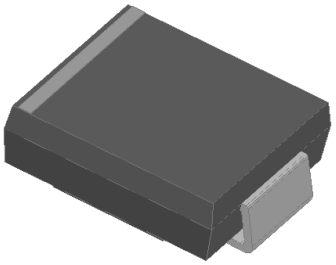
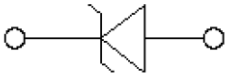
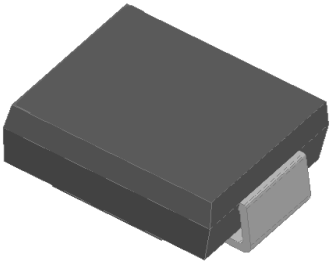
Surface Mount Transient Voltage Suppressor Diodes

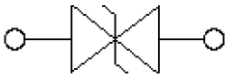
Uni-directional





Bi-directional





Features

- 6600 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, Power port, 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	6600
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
Electrostatic Discharge（IEC61000-4-2 air discharge）	ESD	KV	±30
Electrostatic Discharge（IEC61000-4-2 contact discharge）			

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

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage at 100A for unidirectional only(4)	V_{FM}	V	3.5/5.0

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

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal Resistance(Typical)	$R_{\theta J-A}$(5)	℃/W	junction to ambient	75
	$R_{\theta J-L}$(5)	℃/W	junction to lead	15
	$R_{\theta J-C}$(5)	℃/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) V_F=3.5V Max for devices of V_{BR}≤85V，and V_F=5.0V Max for devices of V_{BR}＞85V.

(5) 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)				
6.6SMDJ11A	6.6SMDJ11CA	12.2	13.5	1.0	800.0	11.0	362.6	18.2
6.6SMDJ12A	6.6SMDJ12CA	13.3	14.7	1.0	800.0	12.0	331.7	19.9
6.6SMDJ13A	6.6SMDJ13CA	14.4	15.9	1.0	500.0	13.0	307.0	21.5
6.6SMDJ14A	6.6SMDJ14CA	15.6	17.2	1.0	200.0	14.0	284.5	23.2
6.6SMDJ15A	6.6SMDJ15CA	16.7	18.5	1.0	100.0	15.0	270.5	24.4
6.6SMDJ16A	6.6SMDJ16CA	17.8	19.7	1.0	50.0	16.0	253.8	26
6.6SMDJ17A	6.6SMDJ17CA	18.9	20.9	1.0	20.0	17.0	239.1	27.6
6.6SMDJ18A	6.6SMDJ18CA	20.0	22.1	1.0	10.0	18.0	226.0	29.2
6.6SMDJ19A	6.6SMDJ19CA	21.1	23.3	1.0	10.0	19.0	214.3	30.8
6.6SMDJ20A	6.6SMDJ20CA	22.2	24.5	1.0	5.0	20.0	203.7	32.4
6.6SMDJ22A	6.6SMDJ22CA	24.4	26.9	1.0	5.0	22.0	185.9	35.5
6.6SMDJ24A	6.6SMDJ24CA	26.7	29.5	1.0	5.0	24.0	169.7	38.9
6.6SMDJ26A	6.6SMDJ26CA	28.9	31.9	1.0	5.0	26.0	156.8	42.1
6.6SMDJ28A	6.6SMDJ28CA	31.1	34.4	1.0	5.0	28.0	145.4	45.4
6.6SMDJ30A	6.6SMDJ30CA	33.3	36.8	1.0	5.0	30.0	136.4	48.4
6.6SMDJ33A	6.6SMDJ33CA	36.7	40.6	1.0	5.0	33.0	123.8	53.3
6.6SMDJ36A	6.6SMDJ36CA	40.0	44.2	1.0	5.0	36.0	113.6	58.1
6.6SMDJ40A	6.6SMDJ40CA	44.4	49.1	1.0	5.0	40.0	102.3	64.5
6.6SMDJ43A	6.6SMDJ43CA	47.8	52.8	1.0	5.0	43.0	95.1	69.4
6.6SMDJ45A	6.6SMDJ45CA	50.0	55.3	1.0	5.0	45.0	90.8	72.7
6.6SMDJ48A	6.6SMDJ48CA	53.3	58.9	1.0	5.0	48.0	85.3	77.4
6.6SMDJ51A	6.6SMDJ51CA	56.7	62.7	1.0	5.0	51.0	80.1	82.4
6.6SMDJ54A	6.6SMDJ54CA	60.0	66.3	1.0	5.0	54.0	75.8	87.1
6.6SMDJ58A	6.6SMDJ58CA	64.4	71.2	1.0	5.0	58.0	70.5	93.6
6.6SMDJ60A	6.6SMDJ60CA	66.7	73.7	1.0	5.0	60.0	68.2	96.8
6.6SMDJ64A	6.6SMDJ64CA	71.1	78.6	1.0	5.0	64.0	64.1	103
6.6SMDJ70A	6.6SMDJ70CA	77.8	86.0	1.0	5.0	70.0	58.4	113
6.6SMDJ75A	6.6SMDJ75CA	83.3	92.1	1.0	5.0	75.0	54.5	121
6.6SMDJ78A	6.6SMDJ78CA	86.7	95.8	1.0	5.0	78.0	52.4	126
6.6SMDJ80A	6.6SMDJ80CA	88.96	97.6	1.0	5.0	80.0	50.9	129.6

■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)				
6.6SMDJ85A	6.6SMDJ85CA	94.4	104.0	1.0	5.0	85.0	48.2	137
6.6SMDJ90A	6.6SMDJ90CA	100.0	111.0	1.0	5.0	90.0	45.2	146
6.6SMDJ100A	6.6SMDJ100CA	111.0	123.0	1.0	5.0	100.0	40.7	162
6.6SMDJ110A	6.6SMDJ110CA	122.0	135.0	1.0	5.0	110.0	37.3	177

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
6.6SMDJ SERIES	F1	Approximate 0.270	3000	/	42000	13” reel

■ Characteristics(Typical)

FIG1:Peak Pulse Power Rating Curve

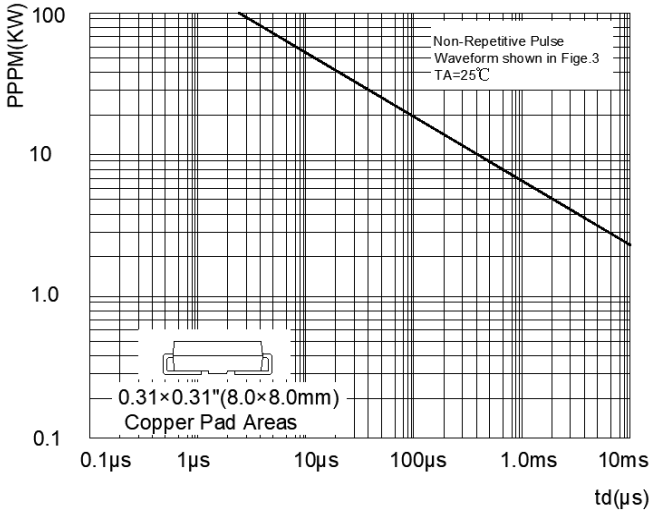


FIG2: Pulse Power or Current vs. Initial Junction Temperature

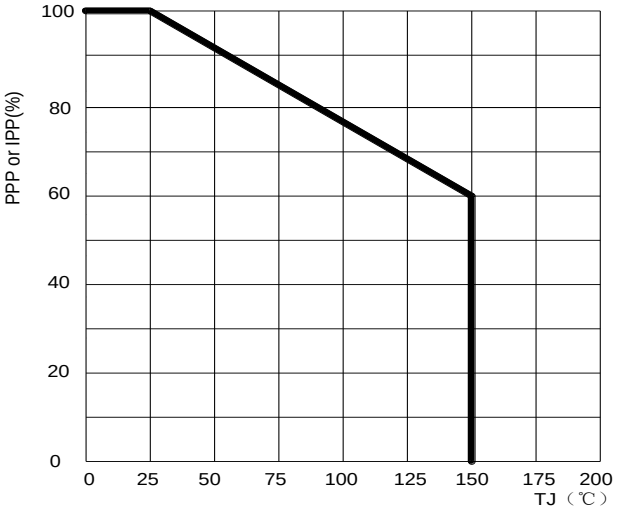


FIG3: Pulse Waveform

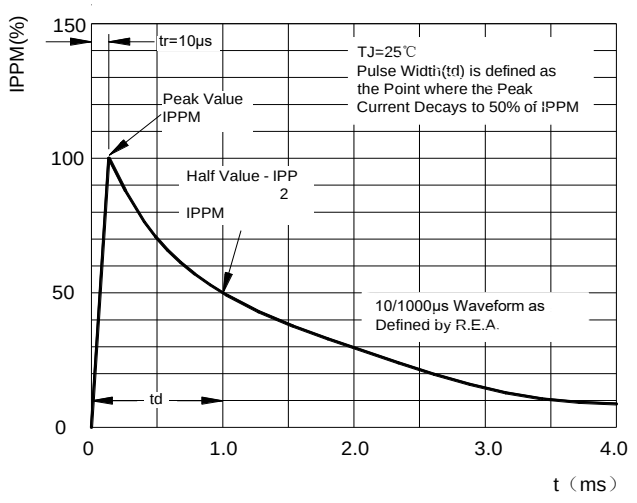


FIG4:Typical Transient Thermal Impedance

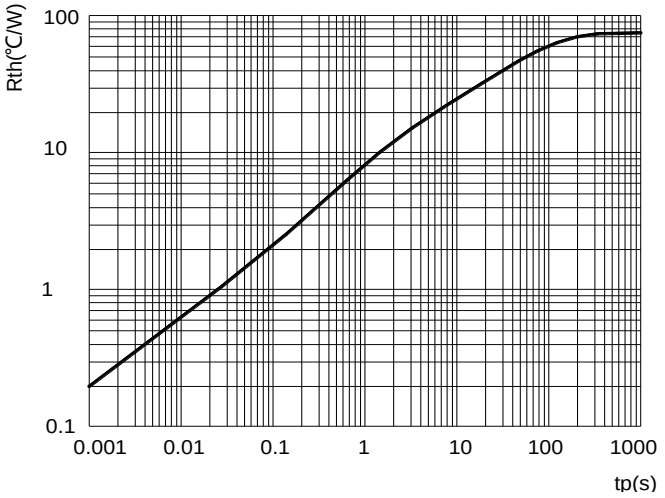


FIG5: Maximum Non-Repetitive Surge Current

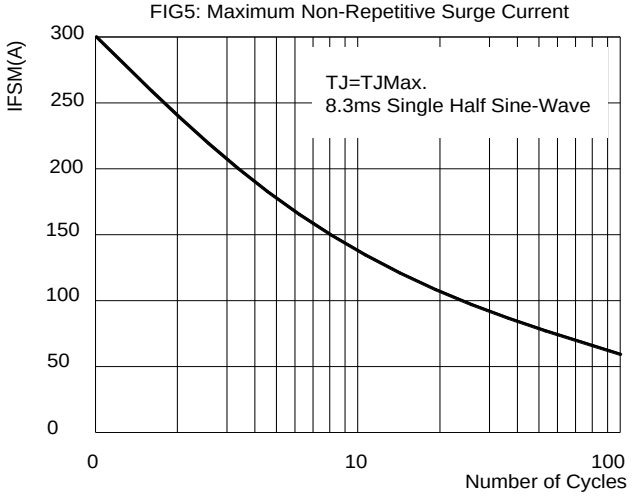
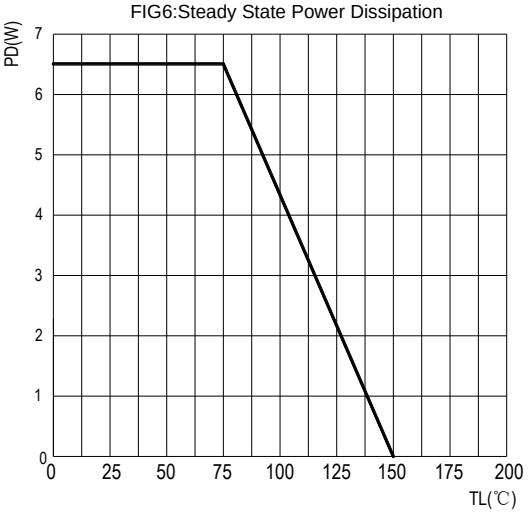
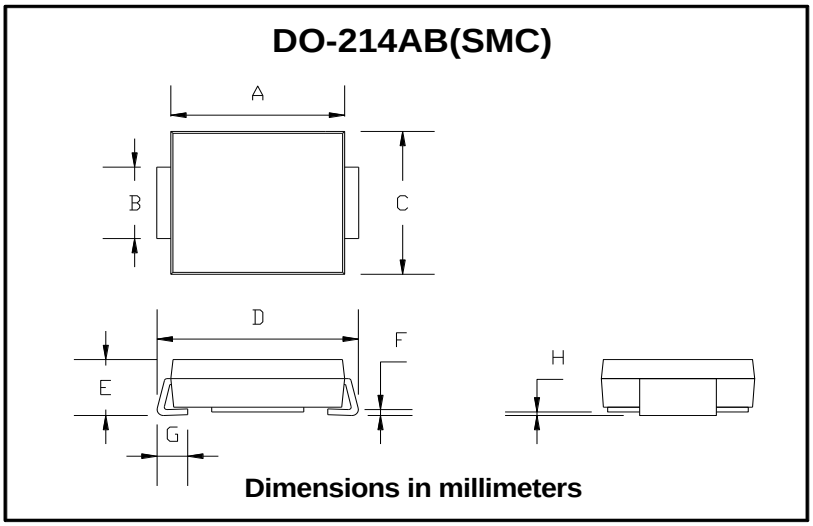


FIG6:Steady State Power Dissipation

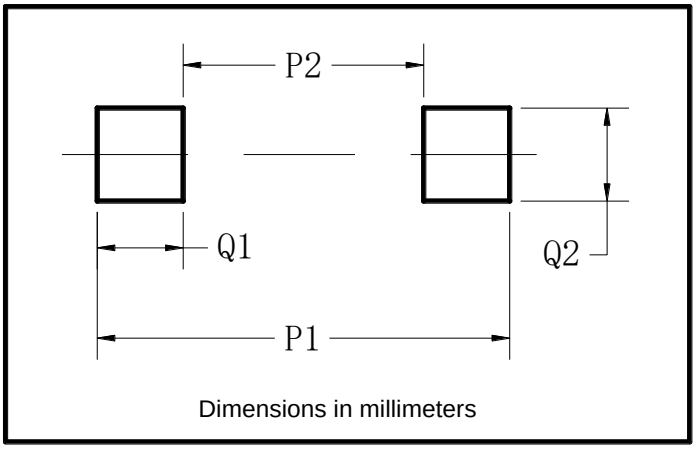


■ Outline Dimensions



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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