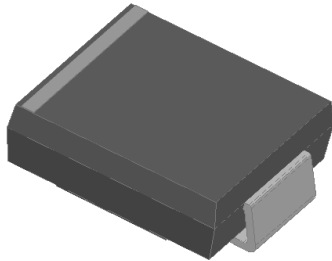


Surface Mount Transient Voltage Suppressor Diodes

Uni-directional



Features

- 4000 W peak pulse power capability with a 10/1000 μ s waveform
- Low leakage
- Only Uni-directional 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

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

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000 μ s waveform ⁽¹⁾ ⁽²⁾	P_{PPM}	W	4000
Peak pulse current, with a 10/1000 μ s waveform ⁽¹⁾	I_{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at $T_L=75^\circ\text{C}$ ⁽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}	$^\circ\text{C}$	-55 to +150
Electrostatic Discharge (IEC61000-4-2 air discharge)	ESD	KV	± 30
Electrostatic Discharge (IEC61000-4-2 contact discharge)			

■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_{FM}	V	3.5



4.0SMDJ SERIES

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

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

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A = 25^\circ\text{C}$ 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.
- (4) Mounted on minimum recommended pad layout.

■ Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number (Uni)	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 V_C @ I_{PP} (V)
	Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
4.0SMDJ10A	11.1	12.3	5	800	10	235.5	17.0
4.0SMDJ11A	12.2	13.5	5	800	11	220.0	18.2
4.0SMDJ12A	13.3	14.7	5	800	12	201.5	19.9
4.0SMDJ13A	14.4	15.9	5	500	13	186.5	21.5
4.0SMDJ14A	15.6	17.2	5	200	14	172.5	23.2
4.0SMDJ15A	16.7	18.5	5	100	15	164.0	24.4
4.0SMDJ18A	20.0	22.1	5	10	18	137.0	29.2
4.0SMDJ20A	22.2	24.5	5	5	20	123.5	32.4
4.0SMDJ24A	26.7	29.5	5	5	24	103.0	38.9

Notes:

- (1) Pulse Test: $t_p \leq 50\text{ms}$ Pulse test: $t_p \leq 50\text{ms}$.
- (2) Surge current waveform per Fig. 3 and derated per Fig.2.

■ Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
4.0SMDJ SERIES	F1	Approximate 0.257	3000	/	42000	13" reel

■ Characteristics(Typical)

FIG1:Peak Pulse Power Rating Curve

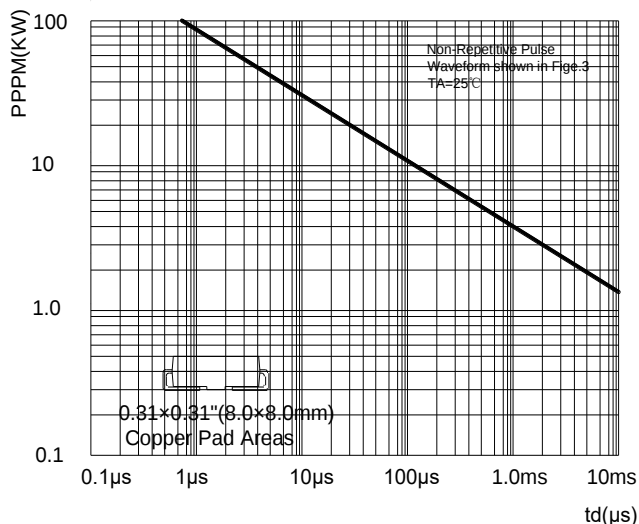
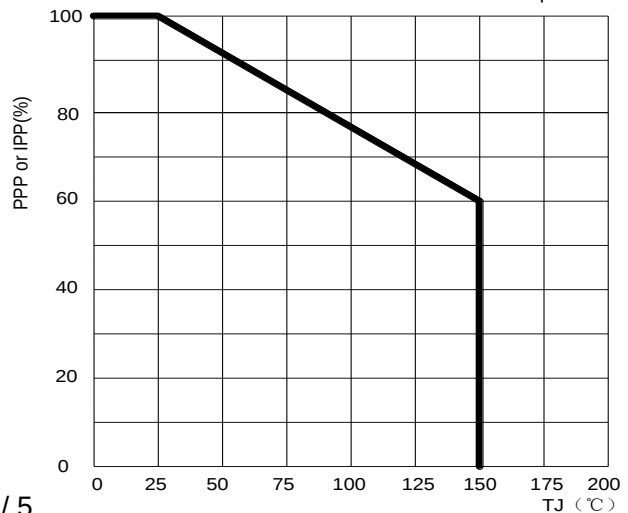


FIG2: Pulse Power or Current vs. Initial Junction Temperature





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FIG3: Pulse Waveform

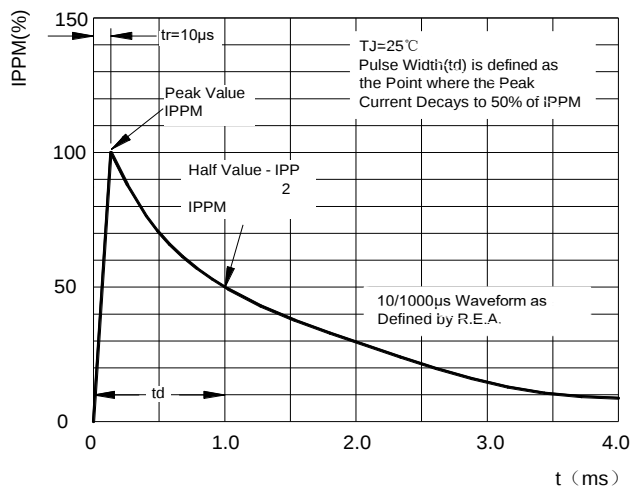


FIG4: Typical Transient Thermal Impedance

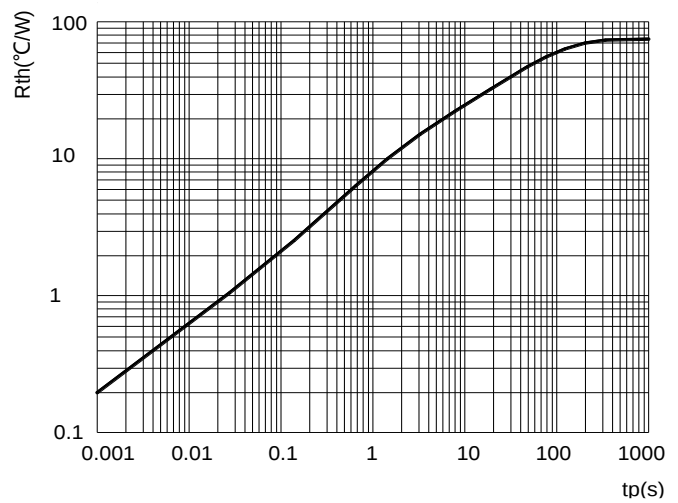


FIG5: Maximum Non-Repetitive Surge Current

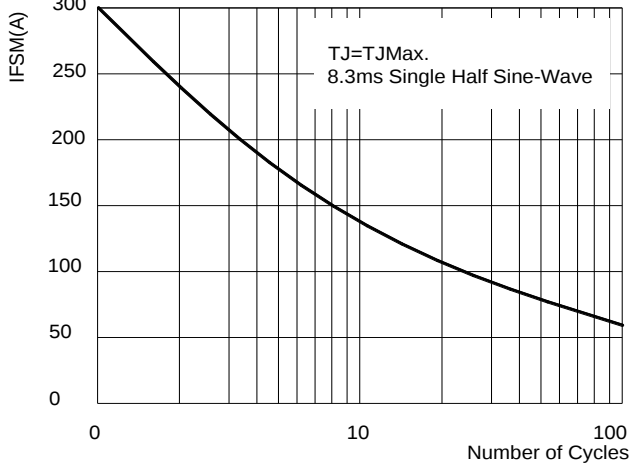
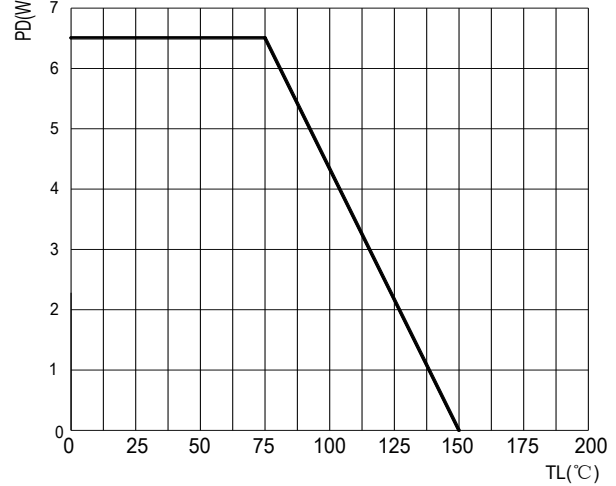
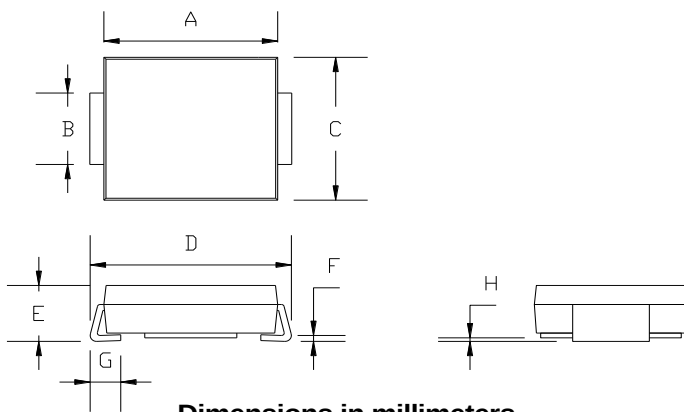


FIG6: Steady State Power Dissipation



■ Outline Dimensions

DO-214AB(SMC)



Dimensions in millimeters

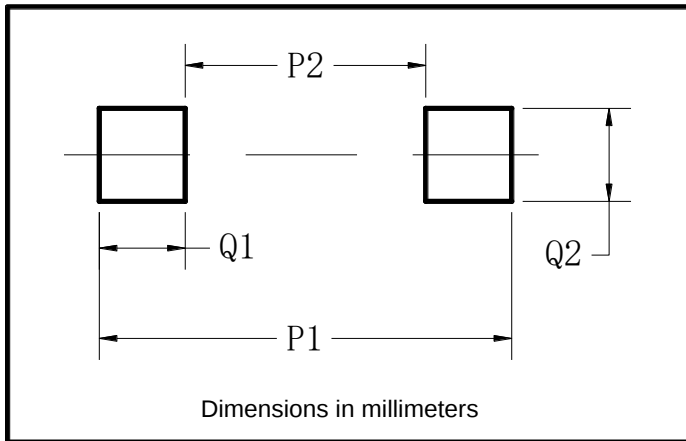
DO-214AB (SMC)

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



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■ Suggested pad layout



Dim	Min
P1	9.9
P2	3.84
Q1	3.03
Q2	3.82



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