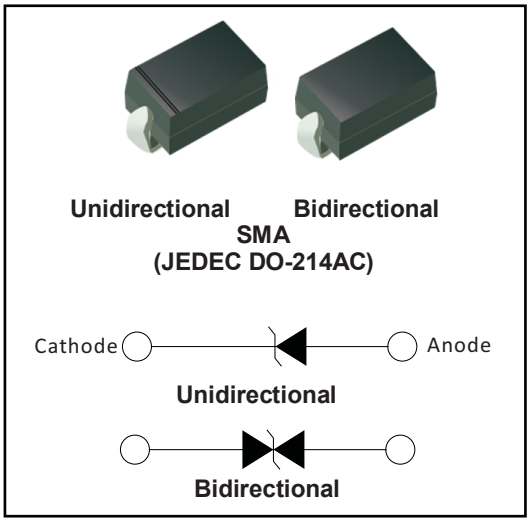
SMA06J

Automotive 600W

Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 600W peak pulse power capability with a 10/1000 μs waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meest MSL level 1
- AEC-Q101



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.

■**Maximum Ratings** (T_a=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform (1) (2) (Fig.1)	P_{PPM}	W	600
Peak pulse current, with a 10/1000us waveform (1)	I_{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at TL=75℃	P_D	W	3.0
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only (2)	I_{FSM}	A	60
Operating junction and storage temperature range	T_J,T_{STG}	℃	-55 to +150

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25℃per Fig.2.

(2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal

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

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}(4) (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
		Min(V)	Max (V)	I_T(3)(mA)				
SMA06J10UC	SMA06J10BC	11.1	12.3	1	5	10	35.3	17
SMA06J11UC	SMA06J11BC	12.2	13.5	1	5	11	33.0	18.2
SMA06J12UC	SMA06J12BC	13.3	14.7	1	5	12	30.2	19.9
SMA06J13UC	SMA06J13BC	14.4	15.9	1	1	13	27.9	21.5
SMA06J14UC	SMA06J14BC	15.6	17.2	1	1	14	25.9	23.2
SMA06J15UC	SMA06J15BC	16.7	18.5	1	1	15	24.6	24.4
SMA06J16UC	SMA06J16BC	17.8	19.7	1	1	16	23.1	26
SMA06J17UC	SMA06J17BC	18.9	20.9	1	1	17	21.7	27.6
SMA06J18UC	SMA06J18BC	20	22.1	1	1	18	20.6	29.2
SMA06J19UC	SMA06J19BC	21.1	23.3	1	1	19	19.5	30.8
SMA06J20UC	SMA06J20BC	22.2	24.5	1	1	20	18.5	32.4
SMA06J22UC	-	24.4	26.9	1	1	22	16.9	35.5
SMA06J24UC	-	26.7	29.5	1	1	24	15.4	38.9
SMA06J26UC	-	28.9	31.9	1	1	26	14.3	42.1
SMA06J28UC	-	31.1	34.4	1	1	28	13.2	45.4
SMA06J30UC	-	33.3	36.8	1	1	30	12.4	48.4
SMA06J33UC	-	36.7	40.6	1	1	33	11.3	53.3
SMA06J36UC	-	40	44.2	1	1	36	10.3	58.1
SMA06J40UC	-	44.4	49.1	1	1	40	9.3	64.5
SMA06J43UC	-	47.8	52.8	1	1	43	8.7	69.4
SMA06J45UC	-	50	55.3	1	1	45	8.3	72.7
SMA06J48UC	-	53.3	58.9	1	1	48	7.8	77.4
SMA06J51UC	-	56.7	62.7	1	1	51	7.3	82.4
SMA06J54UC	-	60	66.3	1	1	54	6.9	87.1
SMA06J58UC	-	64.4	71.2	1	1	58	6.4	93.6
SMA06J60UC	-	66.7	73.7	1	1	60	6.2	96.8
SMA06J64UC	-	71.1	78.6	1	1	64	5.8	103
SMA06J70UC	-	77.8	86	1	1	70	5.3	113
SMA06J75UC	-	83.3	92.1	1	1	75	5.0	121
SMA06J78UC	-	86.7	95.8	1	1	78	4.8	126
SMA06J80UC	-	88.8	97.6	1	1	80	4.6	129.6
SMA06J85UC	-	94.4	104	1	1	85	4.4	137
SMA06J90UC	-	100	111	1	1	90	4.1	146
SMA06J100UC	-	111	123	1	1	100	3.7	162

Notes:
(3) Pulse test: t_p≤50ms.
(4) Surge current waveform per Fig.3 and derated per Fig.2.

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■ **Characteristics** (Typical)

FIG1:Peak Pulse Power Rating Curve

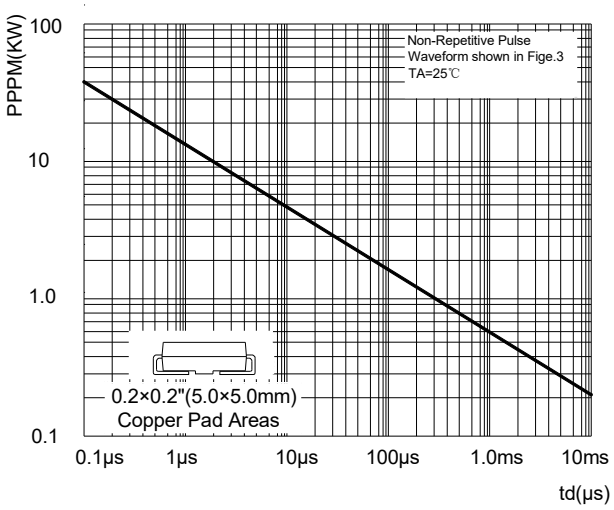


FIG2: Pulse Power or Current vs. Initial Junction Temperature

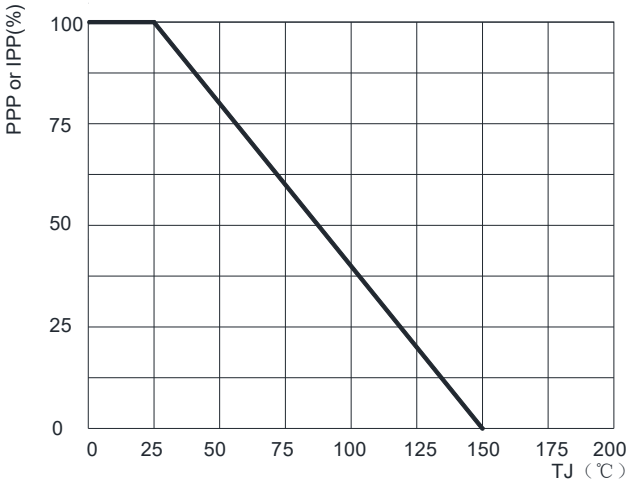


FIG3: Pulse Waveform

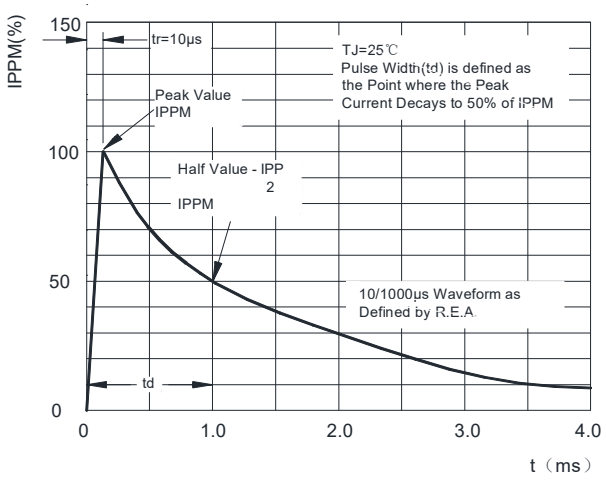


FIG4:Typical Transient Thermal Impedance

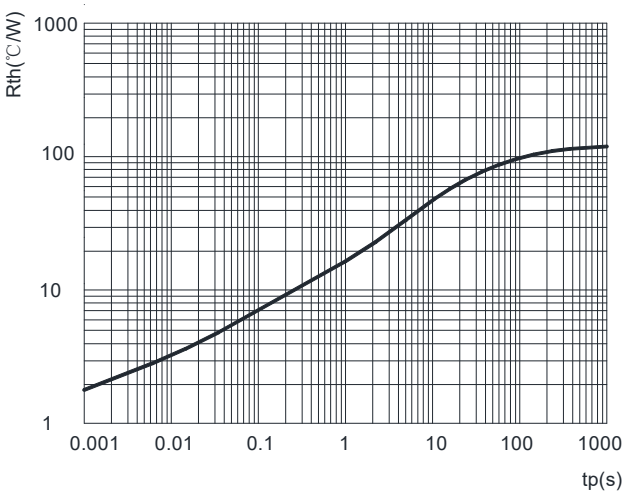


FIG5: Maximum Non-Repetitive Surge Current

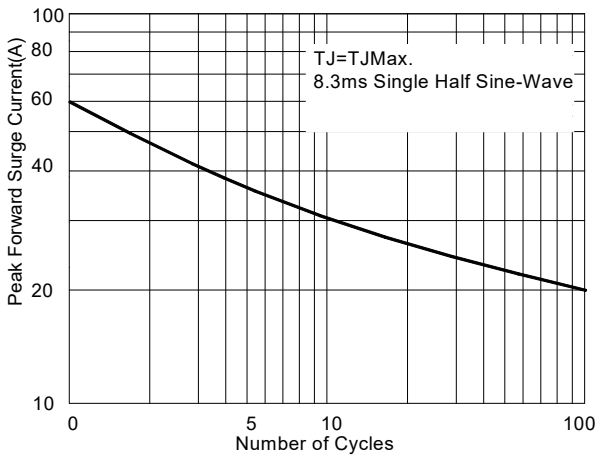
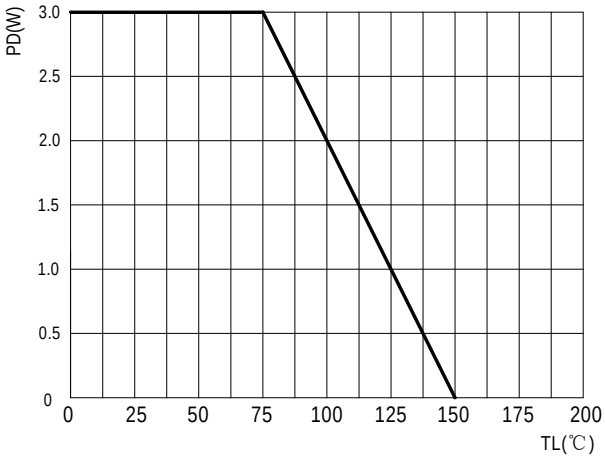
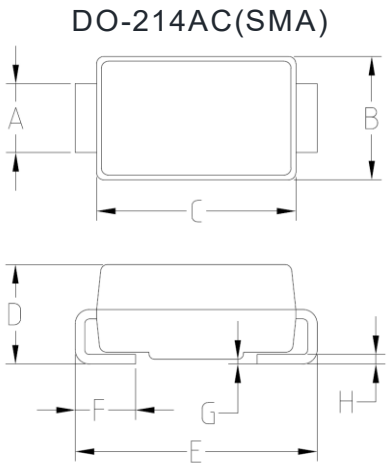


FIG6:Steady State Power Dissipation



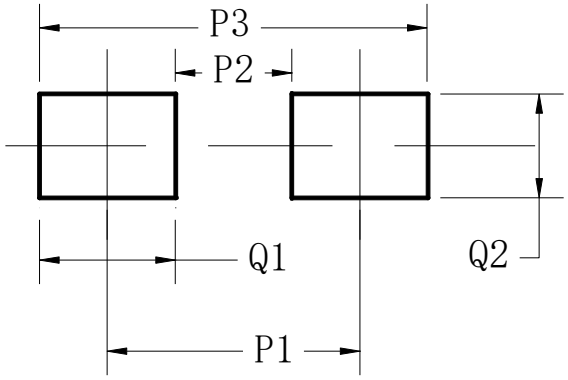
■ Outline Dimensions



Dimensions in millimeters

DO-214AC(SMA)		
Dim	Min	Max
A	1.25	1.58
B	2.40	2.83
C	4.06	4.75
D	1.90	2.30
E	4.93	5.28
F	0.76	1.41
G	0.00	0.20
H	0.15	0.31

■Suggested Pad Layout



Dimensions in millimeters

DO-214AC(SMA)	
Dim	**Millimeters**
P1	4.00
P2	1.50
P3	6.50
Q1	2.50
Q2	1.70