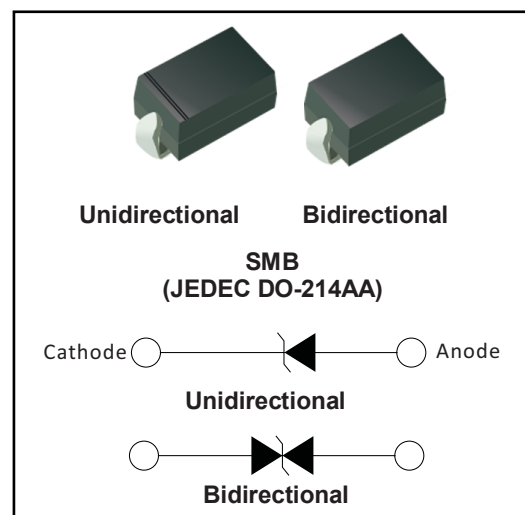


Automotive 600W

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 μ s 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 (Ta=25°C 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°C	P _D	W	5.0
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾	I _{FSM}	A	100
Operating junction and storage temperature range	T _J , T _{STG}	°C	-55 to +150

Notes:

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

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

■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)				
SMB06J5.0UC	SMB06J5.0BC ⁽⁴⁾	6.4	7.07	10	800	5	65.22	9.2
SMB06J6.0UC	SMB06J6.0BC	6.67	7.37	10	800	6	58.25	10.3
SMB06J6.5UC	SMB06J6.5BC	7.22	7.98	10	500	6.5	53.57	11.2
SMB06J7.0UC	SMB06J7.0BC	7.78	8.6	10	200	7	50	12
SMB06J7.5UC	SMB06J7.5BC	8.33	9.21	1	100	7.5	46.51	12.9
SMB06J8.0UC	SMB06J8.0BC	8.89	9.83	1	50	8	44.12	13.6
SMB06J8.5UC	SMB06J8.5BC	9.44	10.4	1	10	8.5	41.67	14.4
SMB06J9.0UC	SMB06J9.0BC	10	11.1	1	5	9	38.96	15.4
SMB06J10UC	SMB06J10BC	11.1	12.3	1	5	10	35.29	17
SMB06J11UC	SMB06J11BC	12.2	13.5	1	5	11	32.97	18.2
SMB06J12UC	SMB06J12BC	13.3	14.7	1	5	12	30.15	19.9
SMB06J13UC	SMB06J13BC	14.4	15.9	1	1	13	27.91	21.5
SMB06J14UC	SMB06J14BC	15.6	17.2	1	1	14	25.86	23.2
SMB06J15UC	SMB06J15BC	16.7	18.5	1	1	15	24.59	24.4
SMB06J16UC	SMB06J16BC	17.8	19.7	1	1	16	23.08	26
SMB06J17UC	SMB06J17BC	18.9	20.9	1	1	17	21.74	27.6
SMB06J18UC	SMB06J18BC	20	22.1	1	1	18	20.55	29.2
SMB06J19UC	SMB06J19BC	21.1	23.3	1	1	19	19.49	30.8
SMB06J20UC	SMB06J20BC	22.2	24.5	1	1	20	18.52	32.4
SMB06J22UC	SMB06J22BC	24.4	26.9	1	1	22	16.9	35.5
SMB06J24UC	SMB06J24BC	26.7	29.5	1	1	24	15.42	38.9
SMB06J26UC	SMB06J26BC	28.9	31.9	1	1	26	14.25	42.1
SMB06J28UC	SMB06J28BC	31.1	34.4	1	1	28	13.22	45.4
SMB06J30UC	SMB06J30BC	33.3	36.8	1	1	30	12.4	48.4
SMB06J33UC	SMB06J33BC	36.7	40.6	1	1	33	11.26	53.3

■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)				
SMB06J36UC	SMB06J36BC	40	44.2	1	1	36	10.33	58.1
SMB06J40UC	SMB06J40BC	44.4	49.1	1	1	40	9.3	64.5
SMB06J43UC	SMB06J43BC	47.8	52.8	1	1	43	8.65	69.4
SMB06J45UC	SMB06J45BC	50	55.3	1	1	45	8.25	72.7
SMB06J48UC	SMB06J48BC	53.3	58.9	1	1	48	7.75	77.4
SMB06J51UC	SMB06J51BC	56.7	62.7	1	1	51	7.28	82.4
SMB06J54UC	SMB06J54BC	60	66.3	1	1	54	6.89	87.1
SMB06J58UC	SMB06J58BC	64.4	71.2	1	1	58	6.41	93.6
SMB06J60UC	SMB06J60BC	66.7	73.7	1	1	60	6.2	96.8
SMB06J64UC	SMB06J64BC	71.1	78.6	1	1	64	5.83	103
SMB06J70UC	SMB06J70BC	77.8	86	1	1	70	5.31	113
SMB06J75UC	SMB06J75BC	83.3	92.1	1	1	75	4.96	121
SMB06J78UC	SMB06J78BC	86.7	95.8	1	1	78	4.76	126
SMB06J80UC	SMB06J80BC	88.8	97.6	1	1	80	4.63	129.6
SMB06J85UC	SMB06J85BC	94.4	104	1	1	85	4.38	137
SMB06J90UC	SMB06J90BC	100	111	1	1	90	4.11	146
SMB06J100UC	SMB06J100BC	111	123	1	1	100	3.7	162
SMB06J110UC	SMB06J110BC	122	135	1	1	110	3.39	177
SMB06J120UC	SMB06J120BC	133	147	1	1	120	3.11	193
SMB06J130UC	SMB06J130BC	144	159	1	1	130	2.87	209
SMB06J140UC	SMB06J140BC	155	171	1	1	140	2.65	226.8
SMB06J150UC	SMB06J150BC	167	185	1	1	150	2.47	243
SMB06J160UC	SMB06J160BC	178	197	1	1	160	2.32	259
SMB06J170UC	SMB06J170BC	189	209	1	1	170	2.18	275
SMB06J180UC	SMB06J180BC	200	220	1	1	180	2.06	291.6
SMB06J190UC	SMB06J190BC	211	232	1	1	190	1.95	307.8
SMB06J200UC	SMB06J200BC	224	247	1	1	200	1.85	324
SMB06J220UC	SMB06J220BC	246	272	1	1	220	1.69	356
SMB06J250UC	SMB06J250BC	279	309	1	1	250	1.48	405
SMB06J300UC	SMB06J300BC	335	371	1	1	300	1.23	486
SMB06J350UC	SMB06J350BC	391	432	1	1	350	1.06	567
SMB06J400UC	SMB06J400BC	447	494	1	1	400	0.93	648
SMB06J440UC	SMB06J440BC	492	543	1	1	440	0.84	713

Notes:

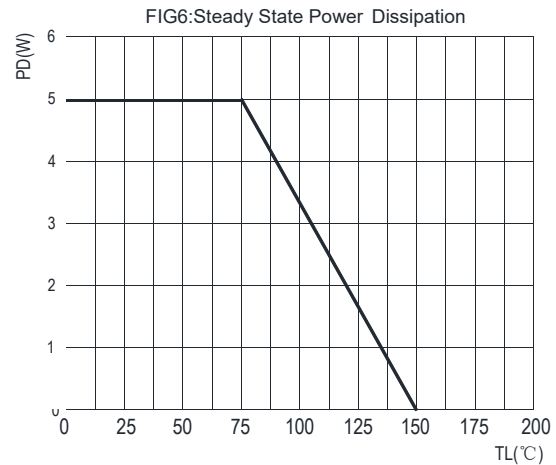
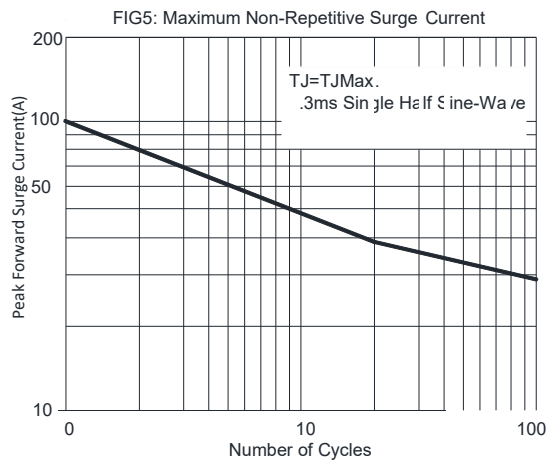
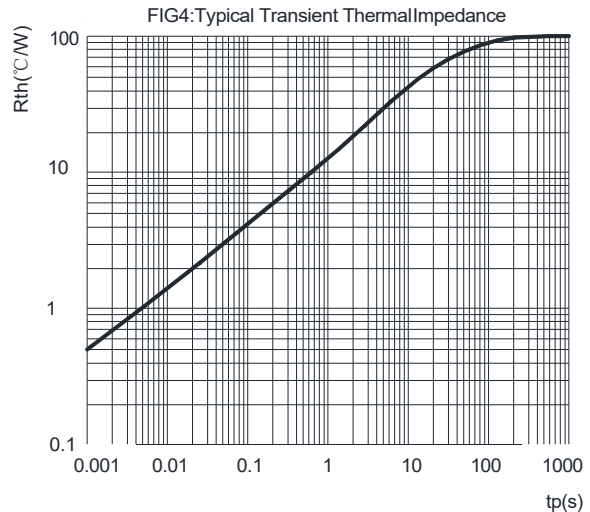
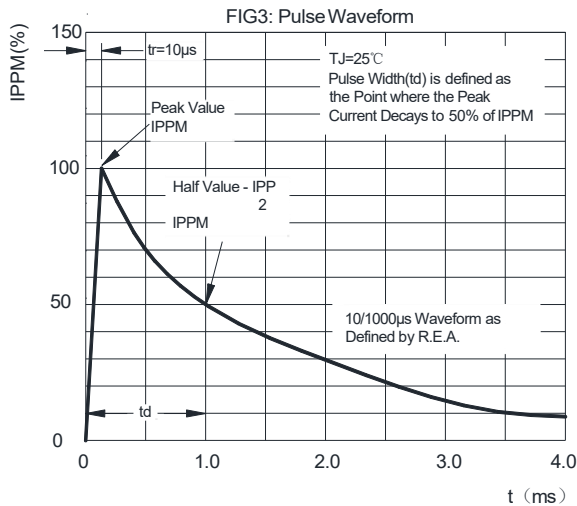
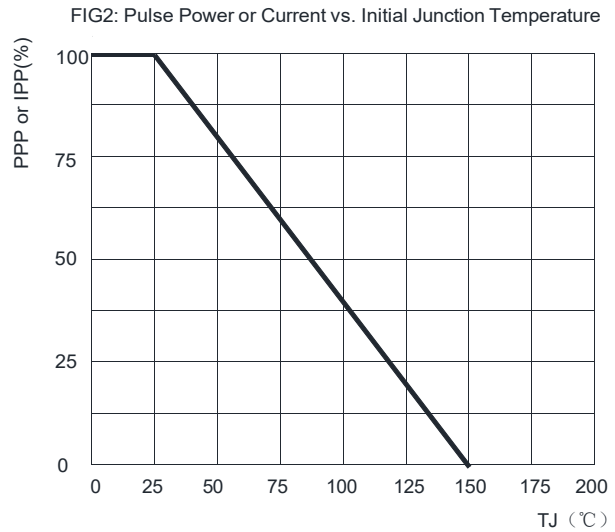
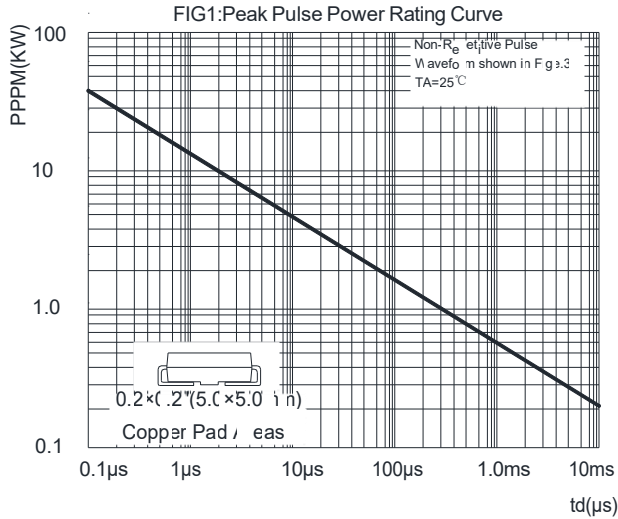
(4) Pulse test: $t_p \leq 50ms$.

(5) Surge current waveform per Fig. 3 and derated per Fig.2.

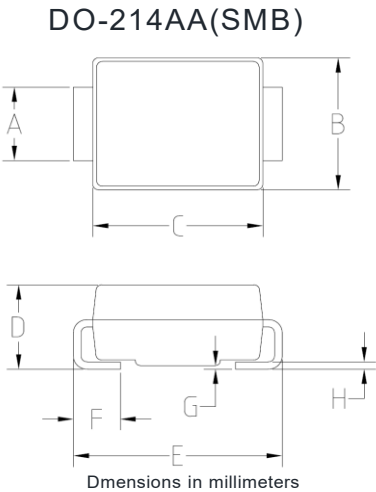
(6) For bi-directional types having V_{RWM} of 10 V and less, the I_R limit is doubled.

(7) For the bi-directional SMB06J5.0BC, the maximum V_{BR} is 7.25 V.

■ Characteristics (Typical)

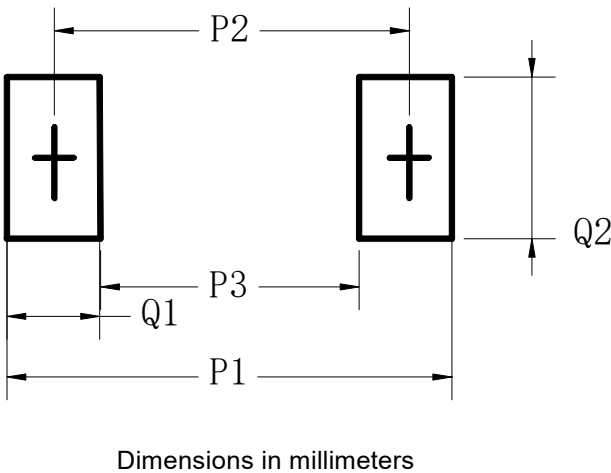


■ Outline Dimensions



DO-214AA(SMB)		
Dim	Min	Max
A	1.85	2.15
B	3.30	3.94
C	4.05	4.75
D	1.99	2.61
E	5.21	5.59
F	0.90	1.41
G	0.00	0.20
H	0.15	0.31

■ Suggested pad layout



DO-214AA(SMB)	
Dim	Millimeters
P1	6.8
P2	4.3
P3	1.8
Q1	2.5
Q2	2.3