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ESD

TVS

TSS

MOV

GDT

PIFD

P6SMBXXXA(CA)(MS)

Product specification





Features

- For surface mounted applications in order to optimize board
- space Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- 600W peak pulse power capability at 10/1000µswaveform,
- repetition rate (duty cycle): 0.01%
- Fast response time
- Typical IR less than 1µA above 12V
- High Temperature soldering: 260 ℃/ 40 seconds at terminals
- Plastic package has underwriters laboratory flammability 94V-0

Mechanical Data

Case: JEDEC DO-214AA/SMB molded plastic body **Terminals**: Solderable per MIL-STD-750,Method

2026

Polarity: Polarity symbol marking on body

Mounting Position: Any

Weight: 0.003 ounce, 0.095 grams

Applications

- I/O interface
- AC/DC power supply
- Industrial and Consumer electronic applications.

Reference News

PACKAGE OUTLINE	PIN CONFIGURATION	Marking Information				
		***A				
Unipolar						
		***C				
	Bipolar					



Maximum Ratings And Electrical Characteristics

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at T _A =25℃ by 10x1000μs waveform (Fig.1) (Note 1), (Note 2)	РРРМ	600	Watts
Power Dissipation on infinite heat sink at T _A =50 ℃	P _{M(AV)}	5.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	IFSM	100	Amps
Maximum Instantaneous Forward Voltage at 50A for Unidirectionalonly (Note 4)	VF	3.5V/5.0	V
Operating Junction and Storage Temperature Range	T _J ,T _{STG}	-65 to +150	℃
Typical Thermal Resistance Junction to Lead	Røjl	20	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	100	°C/W

NOTES:

- 1.Non-repetitive current pulse , per Fig. 3 and derated above TA = 25° C per Fig. 2.
- 2. Mounted on copper pad area of 0.2x0.2" (5.0 x 5.0mm) to each terminal.
- 3.Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only,duty cycle=4 per minute maximum.
- 4.VF < 3.5V for VBR $_ < 200V$ and VF < 5.0V for VBR $_ > 201V$.

Electrical Characteristics (TA=25°C)

Part Nu	mber	Devi Mark Cod	ing	Reverse Stand-Off Voltage	Breakdown Voltage @l _T	Test Current	Maximum Clamping Voltage @IPP	Peak Pulse Current	Reverse Leakage @ V _{RWM}
Unidirectional	Bidirectional	UNI	ВІ	V _{RWM} (V)	V _{BR} (V)	ե(mA)	Vc(V)	IPP(A)	lκ(μA)
P6SMB6.8A (MS)	P6SMB6.8CA (MS)	6V8A	6V8C	5.80	6.45~7.14	10	10.5	58.1	1000
P6SMB7.5A (MS)	P6SMB7.5CA (MS)	7V5A	7V5C	6.40	7.13~7.88	10	11.3	54.0	500
P6SMB8.2A (MS)	P6SMB8.2CA (MS)	8V2A	8V2C	7.02	7.79~8.61	10	12.1	50.4	200
P6SMB9.1A (MS)	P6SMB9.1CA (MS)	9V1A	9V1C	7.78	8.65~9.55	1	13.4	45.5	50
P6SMB10A (MS)	P6SMB10CA (MS)	10A	10C	8.55	9.50~10.50	1	14.5	42.1	10
P6SMB11A (MS)	P6SMB11CA (MS)	11A	11C	9.40	10.50~11.60	1	15.6	39.1	5
P6SMB12A (MS)	P6SMB12CA (MS)	12A	12C	10.20	11.40~12.60	1	16.7	36.5	5
P6SMB13A (MS)	P6SMB13CA (MS)	13A	13C	11.10	12.40~13.70	1	18.2	33.5	1
P6SMB15A (MS)	P6SMB15CA (MS)	15A	15C	12.80	14.30~15.80	1	21.2	28.8	1
P6SMB16A (MS)	P6SMB16CA (MS)	16A	16C	13.60	15.20~16.80	1	22.5	27.1	1
P6SMB18A (MS)	P6SMB18CA (MS)	18A	18C	15.30	17.10~18.90	1	25.2	24.2	1
P6SMB20A (MS)	P6SMB20CA (MS)	20A	20C	17.10	19.00~21.00	1	27.7	22.0	1
P6SMB22A (MS)	P6SMB22CA (MS)	22A	22C	18.80	20.90~23.10	1	30.6	19.9	1
P6SMB24A (MS)	P6SMB24CA (MS)	24A	24C	20.50	22.80~25.20	1	33.2	18.4	1
P6SMB27A (MS)	P6SMB27CA (MS)	27A	27C	23.10	25.70~28.40	1	37.5	16.3	1
P6SMB30A (MS)	P6SMB30CA (MS)	30A	30C	25.60	28.50~31.50	1	41.4	14.7	1
P6SMB33A (MS)	P6SMB33CA (MS)	33A	33C	28.20	31.40~34.70	1	45.7	13.3	1



Electrical Characteristics (TA=25℃)

Part Nur	nber	Ma	vice rking ode	Reverse Stand-Off Voltage	Breakdown Voltage @l _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @ V _{RWM}
Unidirectional	Bidirectional	UNI	ВІ	V _{RWM} (V)	V _{BR} (V)	ե(mA)	Vc(V)	IPP(A)	l _R (μ A)
P6SMB36A (MS)	P6SMB36CA (MS)	36A	36C	30.80	34.20~37.80	1	49.9	12.2	1
P6SMB39A (MS)	P6SMB39CA (MS)	39A	39C	33.30	37.10~41.00	1	53.9	11.3	1
P6SMB43A (MS)	P6SMB43CA (MS)	43A	43C	36.80	40.90~45.20	1	59.3	10.3	1
P6SMB47A (MS)	P6SMB47CA (MS)	47A	47C	40.20	44.70~49.40	1	64.8	9.4	1
P6SMB51A (MS)	P6SMB51CA (MS)	51A	51C	43.60	48.50~53.60	1	70.1	8.7	1
P6SMB56A (MS)	P6SMB56CA (MS)	56A	56C	47.80	53.20~58.80	1	77.0	7.9	1
P6SMB62A (MS)	P6SMB62CA (MS)	62A	62C	53.00	58.90~65.10	1	85.0	7.2	1
P6SMB68A (MS)	P6SMB68CA (MS)	68A	68C	58.10	64.60~71.40	1	92.0	6.6	1
P6SMB75A (MS)	P6SMB75CA (MS)	75A	75C	64.10	71.30~78.80	1	103.0	5.9	1
P6SMB82A (MS)	P6SMB82CA (MS)	82A	82C	70.10	77.90~86.10	1	113.0	5.4	1
P6SMB91A (MS)	P6SMB91CA (MS)	91A	91C	77.80	86.50~95.50	1	125.0	4.9	1
P6SMB100A (MS)	P6SMB100CA (MS)	100A	100C	85.50	95.00~105.00	1	137.0	4.5	1
P6SMB110A (MS)	P6SMB110CA (MS)	110A	110C	94.00	105.00~116.00	1	152.0	4.0	1
P6SMB120A (MS)	P6SMB120CA (MS)	120A	120C	102.00	114.00~126.00	1	165.0	3.7	1
P6SMB130A (MS)	P6SMB130CA (MS)	130A	130C	111.00	124.00~137.00	1	179.0	3.4	1
P6SMB150A (MS)	P6SMB150CA (MS)	150A	150C	128.00	143.00~158.00	1	207.0	2.9	1
P6SMB160A (MS)	P6SMB160CA (MS)	160A	160C	136.00	152.00~168.00	1	219.0	2.8	1
P6SMB170A (MS)	P6SMB170CA (MS)	170A	170C	145.00	162.00~179.00	1	234.0	2.6	1
P6SMB180A (MS)	P6SMB180CA (MS)	180A	180C	154.00	171.00~189.00	1	246.0	2.5	1
P6SMB200A (MS)	P6SMB200CA (MS)	200A	200C	171.00	190.00~210.00	1	274.0	2.2	1
P6SMB220A (MS)	P6SMB220CA (MS)	220A	220C	185.00	209.00~231.00	1	328.0	1.9	1
P6SMB250A (MS)	P6SMB250CA (MS)	250A	250C	214.00	237.00~263.00	1	344.0	1.8	1
P6SMB300A (MS)	P6SMB300CA (MS)	300A	300C	256.00	285.00~315.00	1	414.0	1.5	1
P6SMB350A (MS)	P6SMB350CA (MS)	350A	350C	300.00	332.00~368.00	1	482.0	1.3	1
P6SMB400A (MS)	P6SMB400CA (MS)	400A	400C	342.00	380.00~420.00	1	548.0	1.1	1
P6SMB440A (MS)	P6SMB440CA (MS)	440A	440C	376.00	418.00~462.00	1	602.0	1.0	1
P6SMB480A (MS)	P6SMB480CA (MS)	480A	480C	408.00	456.00~504.00	1	658.0	0.9	1
P6SMB510A (MS)	P6SMB510CA (MS)	510A	510C	434.00	485.00~535.00	1	698.0	0.9	1
P6SMB530A (MS)	P6SMB530CA (MS)	530A	530C	450.00	503.50~556.50	1	725.0	0.8	1
P6SMB540A (MS)	P6SMB540CA (MS)	540A	540C	459.00	513.00~567.00	1	740.0	0.8	1
P6SMB550A (MS)	P6SMB550CA (MS)	550A	550C	467.00	522.50~577.50	1	760.0	0.8	1

Notes: For bidirectional type having V_{RWM} of 10V and less, the I_{R} limit is double.



Ratings and Characteristic Curves (T_A=25 ℃ unless otherwise noted)

Figure 1. Peak Pulse Power Rating Curve

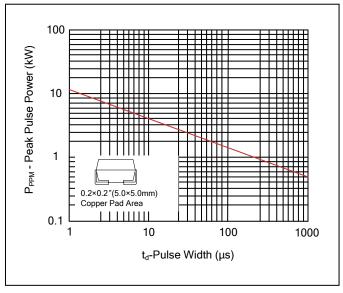


Figure 3. Pulse Waveform

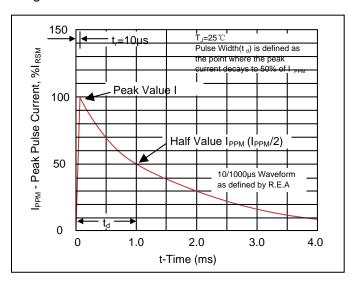


Figure 5. Steady State Power Dissipation Derating Curve

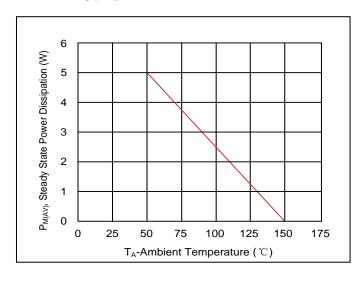


Figure 2. Pulse Derating Curve

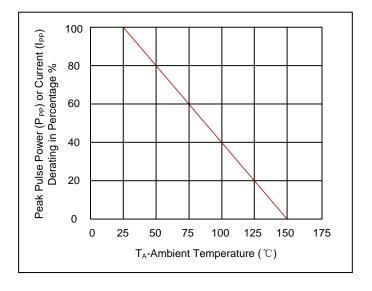


Figure 4. Typical Junction Capacitance

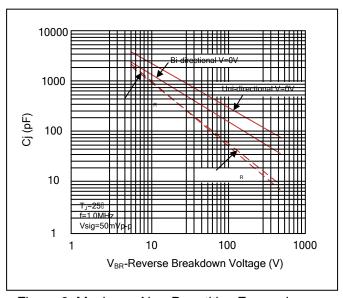
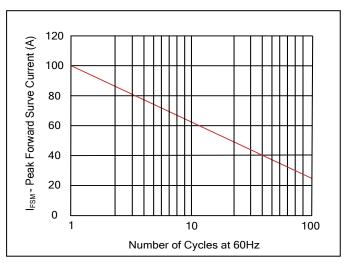
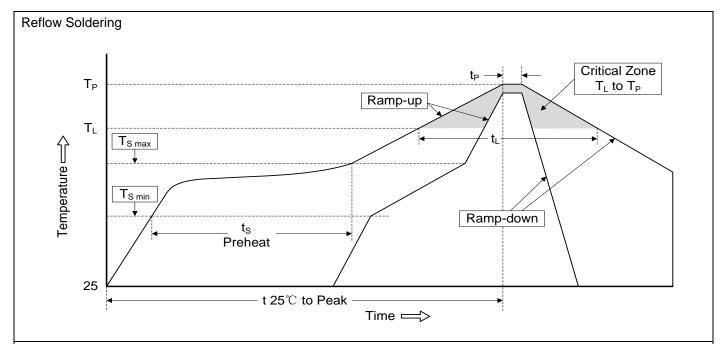


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only





Recommended Soldering Conditions

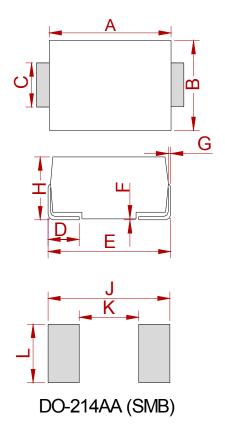


Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T _L to T _P)	3°C/second max.
Preheat -Temperature Min (T _{S min}) -Temperature Max (T _{S max}) -Time (min to max) (t _S)	150℃ 200℃ 60-180 seconds
T _{S max} to T _L -Ramp-up Rate	3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	217℃ 60-150 seconds
Peak Temperature (T _P)	260℃
Time within 5°C of actual Peak Temperature (t _P)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25℃ to Peak Temperature	8 minutes max.



PACKAGE MECHANICAL DATA



	Dimensions				
Ref.	Millir	Millimeters		hes	
	Min.	Max.	Min.	Max.	
Α	4.25	4.75	0.167	0.187	
В	3.30	3.94	0.130	0.155	
С	1.85	2.21	0.073	0.087	
D	0.76	1.52	0.030	0.060	
Е	5.08	5.59	0.200	0.220	
F	0.051	0.203	0.002	0.008	
G	0.15	0.31	0.006	0.012	
Н	2.11	2.44	0.083	0.096	
J	6.80		0.270		
K		2.60		0.100	
L	2.40		0.090		

REEL SPECIFICATION

P/N	PKG	QTY
P6SMBXXXA(CA)(MS)	SMB	3000



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