P6SMB6.8CA Thru P6SMB440CA

600W Transient Voltage Suppressors

TVS Diodes - 600W > P6SMB Series

Description

The P6SMB series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Features

- **For surface mounted applications in order to optimize board space**
- **Reliable low cost construction utilizing molded plastic technique**
- **Plastic material has UL flammability classification 94V-O**
- **Typical IR less than 1uA above 10V**
- **Fast response time: typically less than 1.0ps from 0 Volts to VBR min**
- **Glass passivated junction**
- **Low inductance**
- **•Agency recognition:**

Package: DO-214AA / SMB

Applications

• I/O interface • AC/DC power supply

• Low frequency signal transmission line (RS232, RS485, etc.)

Electrical Characteristics

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25℃ by 10x1000μs waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	600	W
Power Dissipation on infinite heat sink at TA=50℃	$P_{M(AV)}$	5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I_{FSM}	100	A
Maximum Instantaneous Forward Voltage at 25A for Unidirectional only (Note 4)	V_F	3.5V/5	V
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-65 to 150	℃

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above TA=25℃ per Fig. 2.
2. Mounted on 5.0x5.0mm copper pad to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only.

Electrical Characteristics (TA=25℃)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage $V_{BR(Volts)}$@I_T		Test Current	Maximum Clamping Voltage@I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}	Safety Certification	Delivery Time
Uni-Polar	Bi-polar	V_{RWM}(V)	Min	Max	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)	UL	days
P6SMB6.8A	P6SMB6.8CA	5.80	6.45	7.14	10	10.5	58.1	1000	√	12days
P6SMB7.5A	P6SMB7.5CA	6.40	7.13	7.88	10	11.3	54.0	500	√	12days
P6SMB8.2A	P6SMB8.2CA	7.02	7.79	8.61	10	12.1	50.4	200	√	12days
P6SMB9.1A	P6SMB9.1CA	7.78	8.65	9.55	1	13.4	45.5	50	√	12days
P6SMB10A	P6SMB10CA	8.55	9.50	10.5	1	14.5	42.1	10	√	12days
P6SMB11A	P6SMB11CA	9.40	10.5	11.6	1	15.6	39.1	5	√	12days
P6SMB12A	P6SMB12CA	10.2	11.4	12.6	1	16.7	36.5	5	√	12days
P6SMB13A	P6SMB13CA	11.1	12.4	13.7	1	18.2	33.5	1	√	12days
P6SMB15A	P6SMB15CA	12.8	14.3	15.8	1	21.2	28.8	1	√	12days
P6SMB16A	P6SMB16CA	13.6	15.2	16.8	1	22.5	27.1	1	√	12days
P6SMB18A	P6SMB18CA	15.3	17.1	18.9	1	25.2	24.2	1	√	12days
P6SMB20A	P6SMB20CA	17.1	19.0	21.0	1	27.7	22.0	1	√	12days
P6SMB22A	P6SMB22CA	18.8	20.9	23.1	1	30.6	19.9	1	√	12days
P6SMB24A	P6SMB24CA	20.5	22.8	25.2	1	33.2	18.4	1	√	12days
P6SMB27A	P6SMB27CA	23.1	25.7	28.4	1	37.5	16.3	1	√	12days
P6SMB30A	P6SMB30CA	25.6	28.5	31.5	1	41.4	14.7	1	√	12days
P6SMB33A	P6SMB33CA	28.2	31.4	34.7	1	45.7	13.3	1	√	12days
P6SMB36A	P6SMB36CA	30.8	34.2	37.8	1	49.9	12.2	1	√	12days
P6SMB39A	P6SMB39CA	33.3	37.1	41.0	1	53.9	11.3	1	√	12days
P6SMB43A	P6SMB43CA	36.8	40.9	45.2	1	59.3	10.3	1	√	12days
P6SMB47A	P6SMB47CA	40.2	44.7	49.4	1	64.8	9.4	1	√	12days
P6SMB51A	P6SMB51CA	43.6	48.5	53.6	1	70.1	8.7	1	√	12days
P6SMB56A	P6SMB56CA	47.8	53.2	58.8	1	77.0	7.9	1	√	12days
P6SMB62A	P6SMB62CA	53.0	58.9	65.1	1	85.0	7.2	1	√	12days

Electrical Characteristics (TA=25℃)continued

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR}(Volts)@I_T		Test Current	Maximum Clamping Voltage@I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}	Safety Certification	Delivery Time
Uni-Polar	Bi-polar	V_{RWM}(V)	Min	Max	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)	UL	days
P6SMB68A	P6SMB68CA	58.1	64.6	71.4	1	92.0	6.6	1	√	12days
P6SMB75A	P6SMB75CA	64.1	71.3	78.8	1	103.0	5.9	1	√	12days
P6SMB82A	P6SMB82CA	70.1	77.9	86.1	1	113.0	5.4	1	√	12days
P6SMB91A	P6SMB91CA	77.8	86.5	95.5	1	125.0	4.9	1	√	12days
P6SMB100A	P6SMB100CA	85.5	95.0	105	1	137.0	4.5	1	√	12days
P6SMB110A	P6SMB110CA	94.0	105.0	116	1	152.0	4.0	1	√	12days
P6SMB120A	P6SMB120CA	102.0	114.0	126	1	165.0	3.7	1	√	12days
P6SMB130A	P6SMB130CA	111.0	124.0	137	1	179.0	3.4	1	√	12days
P6SMB150A	P6SMB150CA	128.0	143.0	158	1	207.0	2.9	1	√	12days
P6SMB160A	P6SMB160CA	136.0	152.0	168	1	219.0	2.8	1	√	12days
P6SMB170A	P6SMB170CA	145.0	162.0	179	1	234.0	2.6	1	√	12days
P6SMB180A	P6SMB180CA	154.0	171.0	189	1	246.0	2.5	1	√	12days
P6SMB200A	P6SMB200CA	171.0	190.0	210	1	274.0	2.2	1	√	12days
P6SMB220A	P6SMB220CA	185.0	209.0	231	1	328.0	1.9	1	√	12days
P6SMB250A	P6SMB250CA	214.0	237.0	263	1	344.0	1.8	1	√	12days
P6SMB300A	P6SMB300CA	256.0	285.0	315	1	414.0	1.5	1	√	12days
P6SMB350A	P6SMB350CA	300.0	332.0	368	1	482.0	1.3	1	√	12days
P6SMB400A	P6SMB400CA	342.0	380.0	420	1	548.0	1.1	1	√	12days
P6SMB440A	P6SMB440CA	376.0	418.0	462	1	602.0	1.0	1	√	12days

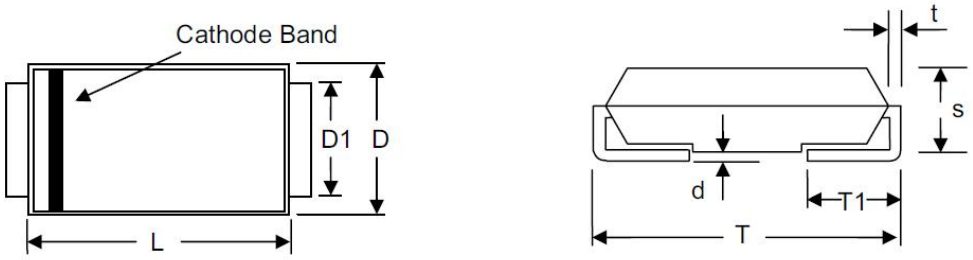
Description of Part Number

P6SMB XXX C A

- A → 5% V_{BR} Voltage Tolerance
- C → Bidirectional
- XXX → V_{RWM} Voltage
- P6SMB → Series Code

Packing Options

Package Type	Description	Packing Quantity	Industry Standard
 DO-214AA	Embossed Carrier Reel Pack	3000PCS	EIA-481-1



SMB/DO-214AA

Item	Millimeters		Inches	
	Min.	Max.	Min.	Max.
L	4.06	4.57	0.160	0.180
D	3.30	3.94	0.130	0.155
D1	1.95	2.20	0.077	0.086
T	5.21	5.59	0.205	0.220
T1	0.76	1.52	0.030	0.060
d	-	0.203	-	0.008
s	2.13	2.47	0.084	0.097
t	0.152	0.305	0.006	0.012

Ratings and Characteristics Curve

Figure 1. Peak Pulse Power Rating Curve

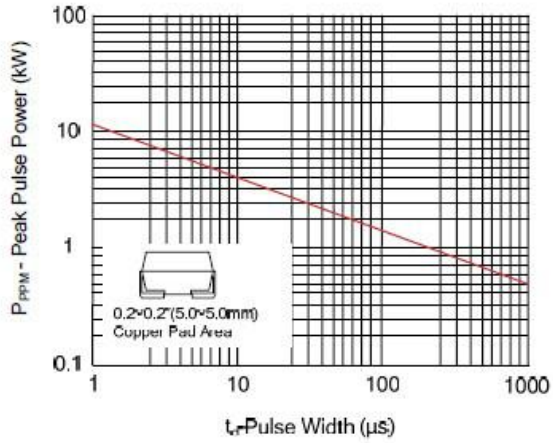


Figure 2. Pulse Derating Curve

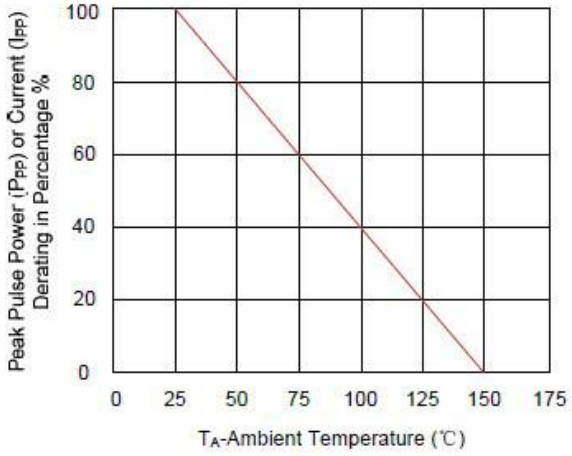


Figure 3. Pulse Waveform

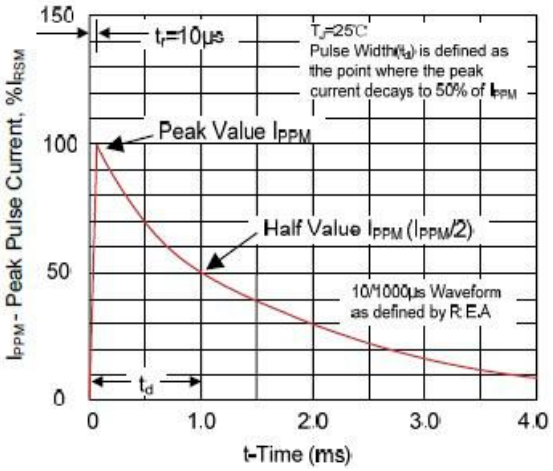


Figure 4. Typical Junction Capacitance

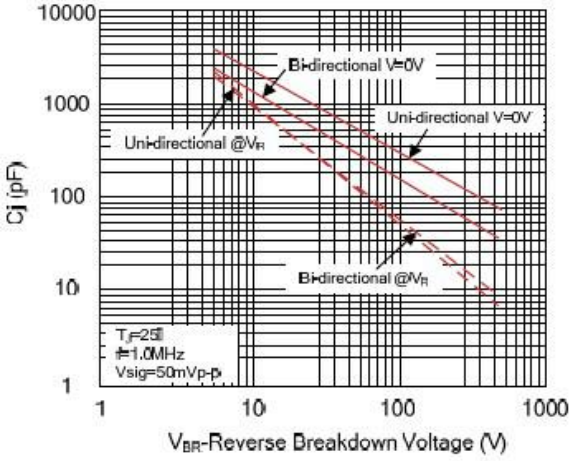


Figure 5. Steady State Power Dissipation Derating Curve

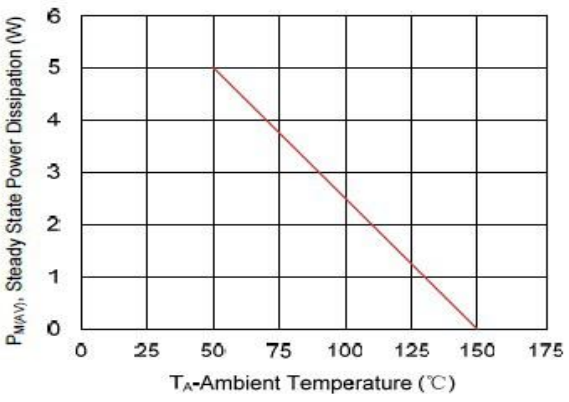


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only