

## P6SMB\_A

VBR : 6.8 - 440 Volts

PPK : 600 Watts

### Features

- 600W surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time : typically less than 1.0 ps from 0 volt to VBR(min.)
- Typical IR less than 1µA above 10V
- RoHS compliant package

### Applications

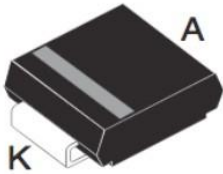
- For Bi-directional use CA Suffix
- Electrical characteristics apply in both directions

### Mechanical Data

- Case : SMB Molded plastic
- Epoxy : UL94V-0 rate flame retardant
- Lead : Lead Formed for Surface Mount
- Polarity : Color band denotes cathode end
- Mounting position : Any
- Weight : 0.93 gram

### Packing & Order Information

3,000/Reel



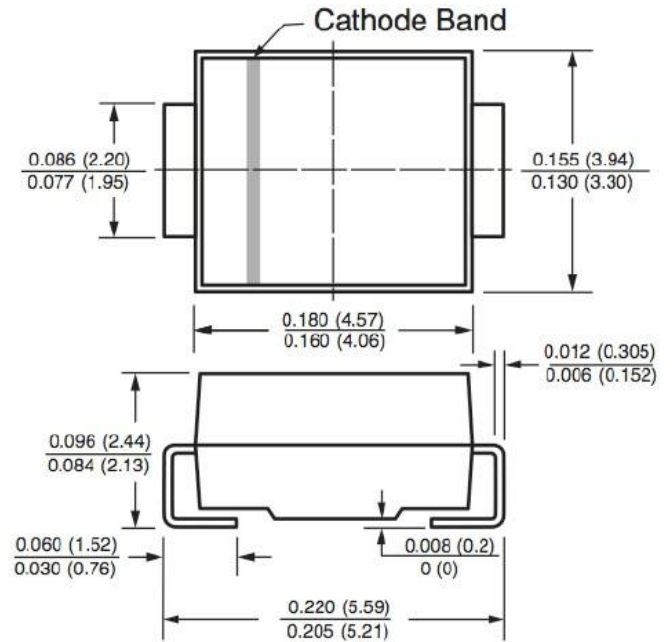
**RoHS**  
COMPLIANT

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

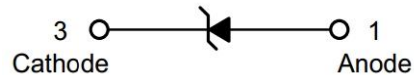
Rating at 25 °C ambient temperature unless otherwise specified.

Symbol	Parameter	Value	Unit
PPK	Peak Power Dissipation at Ta = 25°C, Tp=1ms (Note1)	Minimum 600	W
PD	Steady State Power Dissipation at TL = 75 °C	5	W
IFSM	Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3) IFSM 100 Amps.	100	A
TJ, TSTG	Operating and Storage Temperature Range	55 to + 150	°C

### DO-214AA (SMB)



### Graphic symbol



## P6SMB\_A

VBR : 6.8 - 440 Volts

PPK : 600 Watts

### Notes:

- (1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1
- (2) Mounted on copper Lead area at 5.0 mm<sup>2</sup> ( 0.013 mm thick ).
- (3) 8.3 ms single half sine-wave, duty cycle = 4 pulses per Minutes maximum.

### ELECTRICAL CHARACTERISTICS (Rating at 25°C ambient temperature unless otherwise specified)

Type No.	Breakdown Voltage @ It ( Note 1 )		Working Peak Reverse Voltage VRWM	Maximum Reverse Leakage @ VRWM IR	Maximum Reverse Current IRSM	Maximum Clamping Voltage @ IRSM VRSM	Maximum Temperature Co-efficient of VBR (% / °C)	
	VBR (V)							It (mA)
	Min	Max	(V)	(μA)	(A)	(V)	(% / °C)	
P6SMB6.8A	6.45	7.14	10	5.80	1000	57.0	10.5	0.057
P6SMB7.5A	7.13	7.88	10	6.40	500	53.0	11.3	0.061
P6SMB8.2A	7.79	8.61	10	7.02	200	50.0	12.1	0.065
P6SMB9.1A	8.65	9.55	1.0	7.78	50	45.0	13.4	0.068
P6SMB10A	9.50	10.5	1.0	8.55	10	41.0	14.5	0.073
P6SMB11A	10.5	11.6	1.0	9.40	5.0	38.0	15.6	0.075
P6SMB12A	11.4	12.6	1.0	10.2	5.0	36.0	16.7	0.078
P6SMB13A	12.4	13.7	1.0	11.1	5.0	33.0	18.2	0.081
P6SMB15A	14.3	15.8	1.0	12.8	5.0	28.0	21.2	0.084
P6SMB16A	15.2	16.8	1.0	13.6	5.0	27.0	22.5	0.086
P6SMB18A	17.1	18.9	1.0	15.3	5.0	24.0	25.2	0.088
P6SMB20A	19.0	21.0	1.0	17.1	5.0	22.0	27.7	0.090
P6SMB22A	20.9	23.1	1.0	18.8	5.0	20.0	30.6	0.092
P6SMB24A	22.8	25.2	1.0	20.5	5.0	18.0	33.2	0.094
P6SMB27A	25.7	28.4	1.0	23.1	5.0	16.0	37.5	0.096
P6SMB30A	28.5	31.5	1.0	25.6	5.0	14.4	41.4	0.097
P6SMB33A	31.4	34.7	1.0	28.2	5.0	13.2	45.7	0.098
P6SMB36A	34.2	37.8	1.0	30.8	5.0	12.0	49.9	0.099
P6SMB39A	37.1	41.0	1.0	33.3	5.0	11.2	53.9	0.100
P6SMB43A	40.9	45.2	1.0	36.8	5.0	10.1	59.3	0.101
P6SMB47A	44.7	49.4	1.0	40.2	5.0	9.3	64.8	0.101
P6SMB51A	48.5	53.6	1.0	43.6	5.0	8.6	70.1	0.102
P6SMB56A	53.2	58.8	1.0	47.8	5.0	7.8	77.0	0.103
P6SMB62A	58.9	65.1	1.0	53.0	5.0	7.1	85.0	0.104
P6SMB68A	64.6	71.4	1.0	58.1	5.0	6.5	92.0	0.104
P6SMB75A	71.3	78.8	1.0	64.1	5.0	5.8	103	0.105

## P6SMB\_A

VBR : 6.8 - 440 Volts

PPK : 600 Watts

### ELECTRICAL CHARACTERISTICS (Rating at 25°C ambient temperature unless otherwise specified)

Type No.	Breakdown Voltage @ It ( Note 1 )		Working Peak Reverse Voltage	Maximum Reverse Leakage @ VRWM	Maximum Reverse Current	Maximum Clamping Voltage @ IRSM	Maximum Temperature Co-efficient of VBR	
	VBR (V)							VRWM
	Min	Max	It (mA)	(V)	( $\mu$ A)	(A)	(V)	(% / °C)
P6SMB82A	77.9	86.1	1.0	70.1	5.0	5.3	113	0.105
P6SMB91A	86.5	95.5	1.0	77.8	5.0	4.8	125	0.106
P6SMB100A	95.0	105	1.0	85.5	5.0	4.4	137	0.106
P6SMB110A	105	116	1.0	94.0	5.0	4.0	152	0.107
P6SMB120A	114	126	1.0	102	5.0	3.6	165	0.107
P6SMB130A	124	137	1.0	111	5.0	3.3	179	0.107
P6SMB150A	143	158	1.0	128	5.0	2.9	207	0.108
P6SMB160A	152	168	1.0	136	5.0	2.7	219	0.108
P6SMB170A	162	179	1.0	145	5.0	2.6	234	0.108
P6SMB180A	171	189	1.0	154	5.0	2.4	246	0.108
P6SMB200A	190	210	1.0	171	5.0	2.2	274	0.108
P6SMB220A	209	231	1.0	185	5.0	1.83	328	0.108
P6SMB250A	237	263	1.0	214	5.0	1.75	344	0.110
P6SMB300A	285	315	1.0	256	5.0	1.45	414	0.110
P6SMB350A	332	368	1.0	300	5.0	1.25	482	0.110
P6SMB400A	380	420	1.0	342	5.0	1.10	548	0.110
P6SMB440A	418	462	1.0	376	5.0	1.00	602	0.110

#### Notes:

( 1 ) VBR measured after It applied for 300  $\mu$ s., It = square wave pulse or equivalent.

( 2 ) VF = 3.5 Vmax., IF = 50 Amps. ( 6.8 Volts thru 91 Volts )

VF = 5.0 Vmax., IF = 50 Amps. ( 100 Volts thru 440 Volts ) per 1/2 square or equivalent sine wave.

PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.

( 3 ) For Bipolar types moving VR of 10 Volts and under, the IR limit is doubled.

( 4 ) "P6SMB" will be omitted in marking on the diode.

## P6SMB\_A

VBR : 6.8 - 440 Volts

PPK : 600 Watts

### ■ RATING AND CHARACTERISTIC CURVES ( P6SMB SERIES )

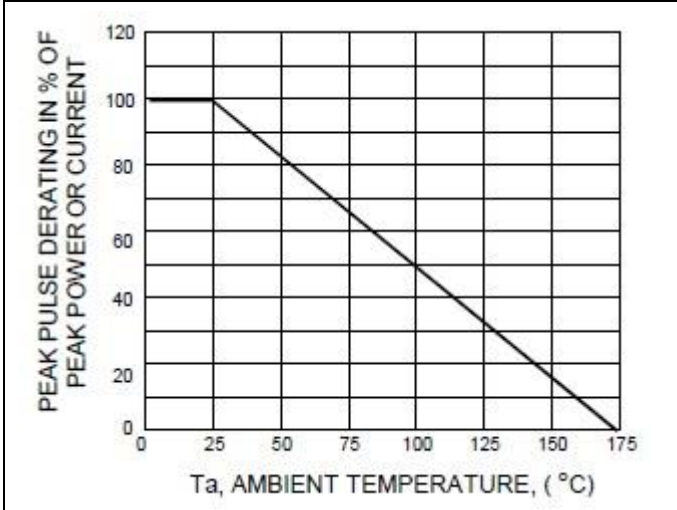


FIG.1 - PULSE DERATING CURVE

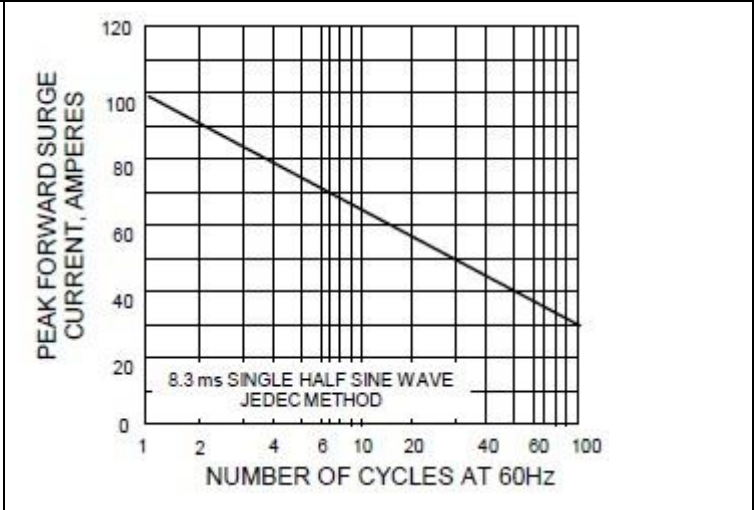


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

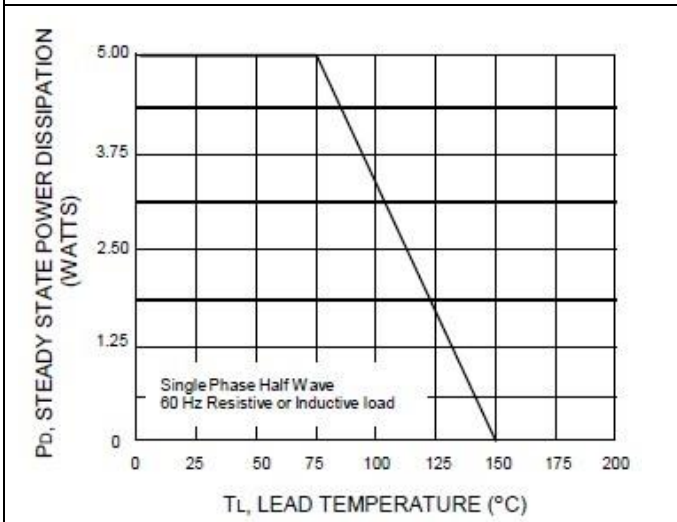


FIG.3 - STEADY STATE POWER DERATING

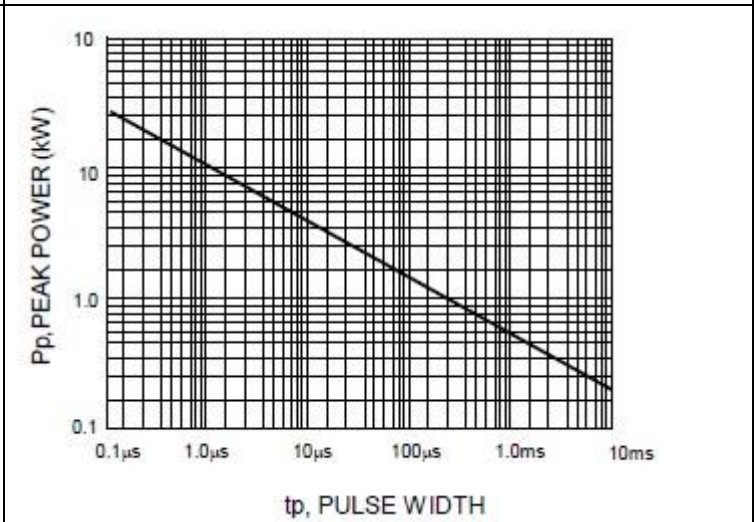


FIG.4 - PULSE RATING CURVE

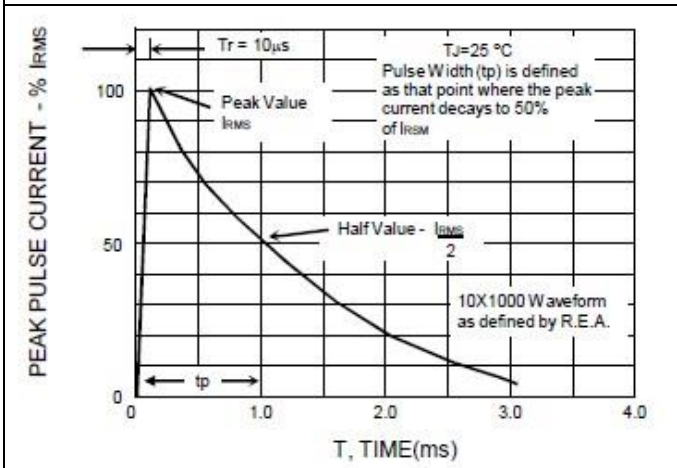


FIG.5 - PULSE WAVEFORM

## P6SMB\_A

VBR : 6.8 - 440 Volts

PPK : 600 Watts

### Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Bruckewell Technology Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Bruckewell"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product. Bruckewell makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Bruckewell disclaims

- (i) Any and all liability arising out of the application or use of any product.
- (ii) Any and all liability, including without limitation special, consequential or incidental damages.
- (iii) Any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Bruckewell's knowledge of typical requirements that are often placed on Bruckewell products in generic applications.

Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time.

Product specifications do not expand or otherwise modify Bruckewell's terms and conditions of purchase, including but not limited to the warranty expressed therein.