

# STBP06I - STBP5G4

## SURFACE MOUNT BIDIRECTIONAL TRANSIENT VOLTAGE SUPPRESSOR

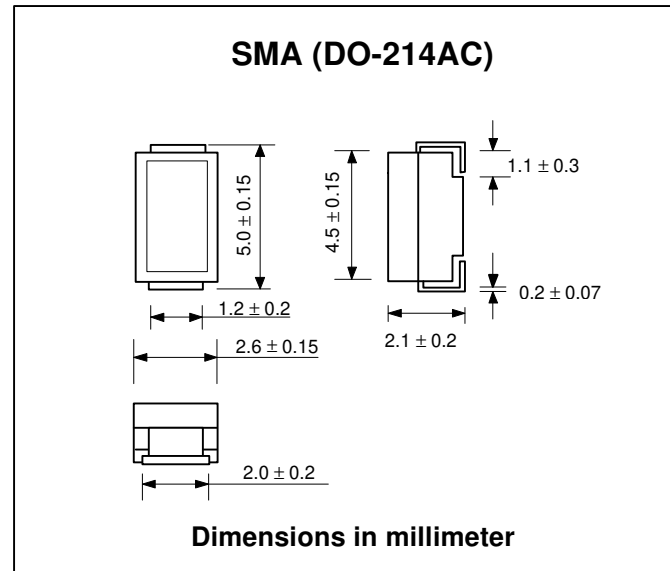
**V<sub>BR</sub> : 6.8 - 440 Volts**  
**PPK : 400 Watts**

### FEATURES :

- \* 400W surge capability at 1ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time : typically less than 1.0 ps from 0 volt to V<sub>BR(min.)</sub>
- \* Typical I<sub>R</sub> less than 1μA above 10V
- \* **Pb / RoHS Free**

### MECHANICAL DATA

- \* Case : SMA Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Lead Formed for Surface Mount
- \* Mounting position : Any
- \* Weight : 0.064 grams



### DEVICES FOR UNIPOLAR APPLICATIONS

For Uni-directional altered the third letter of type from "B" to be "U".  
Electrical characteristics apply in both directions

### MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Power Dissipation at Ta = 25 °C, Tp=1ms (Note1)	PPK	Minimum 400	W
Steady State Power Dissipation at TL = 75 °C	Pd	1.0	W
Operating and Storage Temperature Range	TJ, TSTG	- 55 to + 150	°C

### Note :

(1) Non-repetitive Current pulse, per Fig. 2 and derated above Ta = 25 °C per Fig. 1

## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

TYPE	Breakdown Voltage @ It ( Note 1 )		Working Peak Reverse Voltage	Maximum Reverse Leakage @ V <sub>RWM</sub>	Maximum Reverse Current	Maximum Clamping Voltage @ I <sub>RSM</sub>	Maximum Temperature Co-efficient of V <sub>BR</sub> (% / °C)	
	V <sub>BR</sub> (V)							V <sub>RWM</sub>
	Min.	Max.	(mA)	(V)	(µA)	(A)	(V)	
STBP06I	6.12	7.48	10	5.50	2000	38.0	10.8	0.057
STBP56I	6.45	7.14	10	5.80	2000	40.0	10.5	0.057
STBP07F	6.75	8.25	10	6.05	1000	36.0	11.7	0.061
STBP57F	7.13	7.88	10	6.40	1000	37.0	11.3	0.061
STBP08C	7.38	9.02	10	6.63	400	33.0	12.5	0.065
STBP58C	7.79	8.61	10	7.02	400	35.0	12.1	0.065
STBP09B	8.19	10.0	1.0	7.37	100	30.0	13.8	0.068
STBP59B	8.65	9.55	1.0	7.78	100	31.0	13.4	0.068
STBP010	9.00	11.0	1.0	8.10	20	28.0	15.0	0.073
STBP510	9.50	10.5	1.0	8.55	20	29.0	14.5	0.073
STBP011	9.90	12.1	1.0	8.92	10	26.0	16.2	0.075
STBP511	10.5	11.6	1.0	9.40	10	27.0	15.6	0.075
STBP012	10.8	13.2	1.0	9.72	5.0	24.0	17.3	0.078
STBP512	11.4	12.6	1.0	10.2	5.0	25.0	16.7	0.078
STBP013	11.7	14.3	1.0	10.5	5.0	22.0	19.0	0.081
STBP513	12.4	13.7	1.0	11.1	5.0	23.0	18.2	0.081
STBP015	13.5	16.5	1.0	12.1	5.0	19.0	22.0	0.084
STBP515	14.3	15.8	1.0	12.8	5.0	20.0	21.2	0.084
STBP016	14.4	17.6	1.0	12.9	5.0	18.0	23.5	0.086
STBP516	15.2	16.8	1.0	13.6	5.0	19.0	22.5	0.086
STBP018	16.2	19.8	1.0	14.5	5.0	16.0	26.5	0.088
STBP518	17.1	18.9	1.0	15.3	5.0	17.0	25.5	0.088
STBP020	18.0	22.0	1.0	16.2	5.0	14.0	29.1	0.090
STBP520	19.0	21.0	1.0	17.1	5.0	15.0	27.7	0.090
STBP022	19.8	24.2	1.0	17.8	5.0	13.0	31.9	0.092
STBP522	20.9	23.1	1.0	18.8	5.0	14.0	30.6	0.092
STBP024	21.6	26.4	1.0	19.4	5.0	12.0	34.7	0.094
STBP524	22.8	25.2	1.0	20.5	5.0	13.0	33.2	0.094
STBP027	24.3	29.7	1.0	21.8	5.0	11.0	39.1	0.096
STBP527	25.7	28.4	1.0	23.1	5.0	11.2	37.5	0.096
STBP030	27.0	33.0	1.0	24.3	5.0	10.0	43.5	0.097
STBP530	28.5	31.5	1.0	25.6	5.0	10.0	41.4	0.097
STBP033	29.7	36.3	1.0	26.8	5.0	9.0	47.7	0.098
STBP533	31.4	34.7	1.0	28.2	5.0	9.0	45.7	0.098
STBP036	32.4	39.6	1.0	29.1	5.0	8.0	52.0	0.099
STBP536	34.2	37.8	1.0	30.8	5.0	8.4	49.9	0.099
STBP039	35.1	42.9	1.0	31.6	5.0	7.4	56.4	0.100
STBP539	37.1	41.0	1.0	33.3	5.0	7.8	53.9	0.100
STBP043	38.7	47.3	1.0	34.8	5.0	6.8	61.9	0.101
STBP543	40.9	45.2	1.0	36.8	5.0	7.1	59.3	0.101
STBP047	42.3	51.7	1.0	38.1	5.0	6.2	67.8	0.101
STBP547	44.7	49.4	1.0	40.2	5.0	6.5	64.8	0.101
STBP051	45.9	56.1	1.0	41.3	5.0	5.7	73.5	0.102
STBP551	48.5	53.6	1.0	43.6	5.0	6.0	70.1	0.102
STBP056	50.4	61.6	1.0	45.4	5.0	5.2	80.5	0.103
STBP556	53.2	58.8	1.0	47.8	5.0	5.5	77.0	0.103

## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

TYPE	Breakdown Voltage @ $I_t$ (Note 1)		Working Peak Reverse Voltage	Maximum Reverse Leakage @ $V_{RWM}$	Maximum Reverse Current	Maximum Clamping Voltage @ $I_{RSM}$	Maximum Temperature Co-efficient of $V_{BR}$ (% / °C)	
	$V_{BR}$ (V)							$V_{RWM}$
	Min.	Max.	(mA)	(V)	( $\mu$ A)	(A)	(V)	
STBP062	55.8	68.2	1.0	50.2	5.0	4.7	89.0	0.104
STBP562	58.9	65.1	1.0	53.0	5.0	5.0	85.0	0.104
STBP068	61.2	74.8	1.0	55.1	5.0	4.3	98.0	0.104
STBP568	64.6	71.4	1.0	58.1	5.0	4.6	92.0	0.104
STBP075	67.5	82.5	1.0	60.7	5.0	3.9	108	0.105
STBP575	71.3	78.8	1.0	64.1	5.0	4.1	103	0.105
STBP082	73.8	90.2	1.0	66.4	5.0	3.6	118	0.105
STBP582	77.9	86.1	1.0	70.1	5.0	3.7	113	0.105
STBP091	81.9	100	1.0	73.7	5.0	3.2	131	0.106
STBP591	86.5	95.5	1.0	77.8	5.0	3.4	125	0.106
STBP0B0	90.0	110	1.0	81.0	5.0	2.9	144	0.106
STBP5B0	95.0	105	1.0	85.5	5.0	3.1	137	0.106
STBP0B1	99.0	121	1.0	89.2	5.0	2.7	158	0.107
STBP5B1	105	116	1.0	94.0	5.0	2.8	152	0.107
STBP0B2	108	132	1.0	97.2	5.0	2.4	173	0.107
STBP5B2	114	126	1.0	102	5.0	2.5	165	0.107
STBP0B3	117	143	1.0	105	5.0	2.2	187	0.107
STBP5B3	124	137	1.0	111	5.0	2.3	179	0.107
STBP0B5	135	165	1.0	121	5.0	2.0	215	0.108
STBP5B5	143	158	1.0	128	5.0	2.0	207	0.108
STBP0B6	144	176	1.0	130	5.0	1.8	230	0.108
STBP5B6	152	168	1.0	136	5.0	1.9	219	0.108
STBP0B7	153	187	1.0	138	5.0	1.7	244	0.108
STBP5B7	162	179	1.0	145	5.0	1.8	234	0.108
STBP0B8	162	198	1.0	146	5.0	1.6	258	0.108
STBP5B8	171	189	1.0	154	5.0	1.7	246	0.108
STBP0D0	180	220	1.0	162	5.0	1.5	287	0.108
STBP5D0	190	210	1.0	171	5.0	1.53	274	0.108
STBP0D2	198	242	1.0	175	5.0	1.16	344	0.108
STBP5D2	209	231	1.0	185	5.0	1.22	328	0.108
STBP0D5	225	275	1.0	202	5.0	1.11	360	0.110
STBP5D5	237	263	1.0	214	5.0	1.16	344	0.110
STBP0E0	270	330	1.0	243	5.0	0.93	430	0.110
STBP5E0	285	315	1.0	256	5.0	0.97	414	0.110
STBP0E5	315	385	1.0	284	5.0	0.79	504	0.110
STBP5E5	332	368	1.0	300	5.0	0.83	482	0.110
STBP0G0	360	440	1.0	324	5.0	0.70	574	0.110
STBP5G0	380	420	1.0	342	5.0	0.73	548	0.110
STBP0G4	396	484	1.0	356	5.0	0.95	631	0.110
STBP5G4	418	462	1.0	376	5.0	1.00	602	0.110

**Note:**

- (1)  $V_{BR}$  measured after  $I_t$  applied for 300  $\mu$ s.,  $I_t$  = square wave pulse or equivalent.
- (2) "STB" will be omitted in marking on the diode.

## RATING AND CHARACTERISTIC CURVES ( STBP06I - STBP5G4 )

FIG.1 - PULSE DERATING CURVE

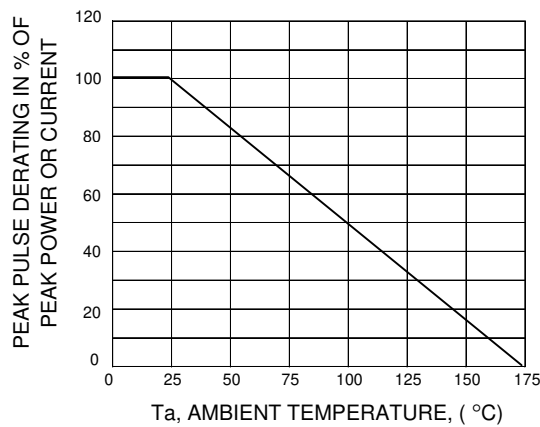


FIG.2 - PULSE WAVEFORM

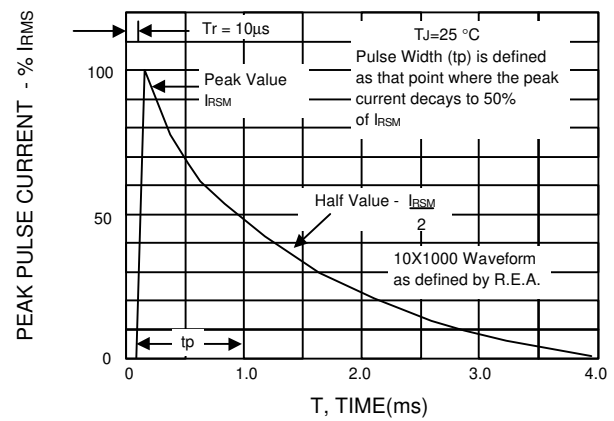


FIG.3 - STEADY STATE POWER DERATING

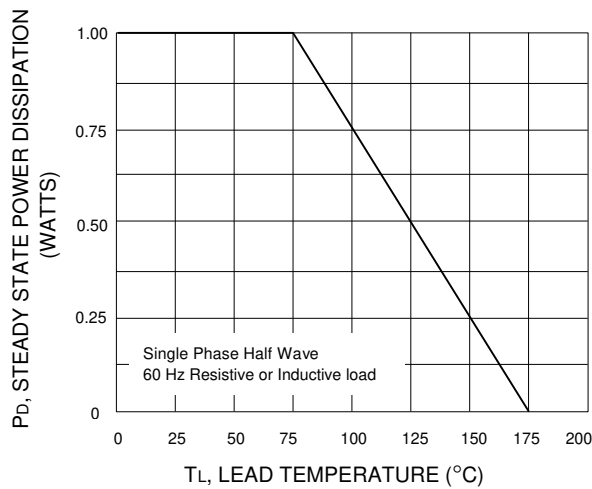


FIG.4 - PULSE RATING CURVE

