

STBP06I - STBP5G4

SURFACE MOUNT BIDIRECTIONAL TRANSIENT VOLTAGE SUPPRESSOR

V_{BR} : 6.8 - 440 Volts

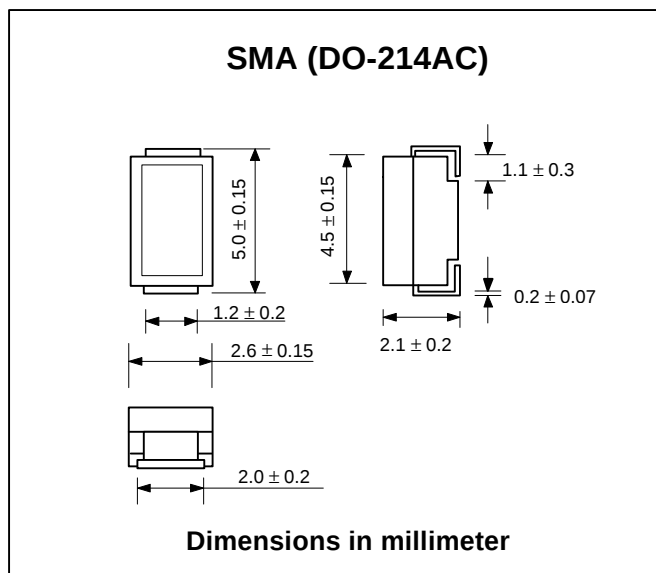
P_{PK} : 400 Watts

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_{BR(min.)}
- * Typical I_R 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)	P _{PK}	Minimum 400	W
Steady State Power Dissipation at T _L = 75 °C	P _D	1.0	W
Operating and Storage Temperature Range	T _J , T _{STG}	- 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 V _{RWM}	Maximum Reverse Leakage @ V _{RWM} I _R	Maximum Reverse Current I _{RS}	Maximum Clamping Voltage @ I _{RS} V _{RS}	Maximum Temperature Co-efficient of V _{BR} (% / °C)
	V _{BR} (V)		I _t (mA)					
	Min.	Max.		(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 @ It (Note 1)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ VRWM	Maximum Reverse Current	Maximum Clamping Voltage @ IRSM	Maximum Temperature Co-efficient of VBR of VBR (% / °C)				
	VBR (V)		It						VRWM	IR	IRSM	VRSM
	Min.	Max.	(mA)						(V)	(μA)	(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 μ 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

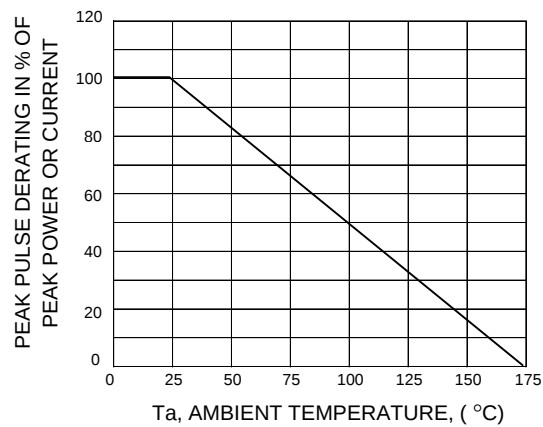


FIG.2 - PULSE WAVEFORM

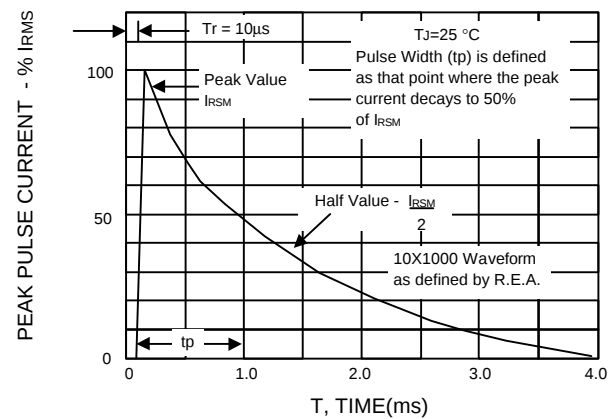


FIG.3 - STEADY STATE POWER DERATING

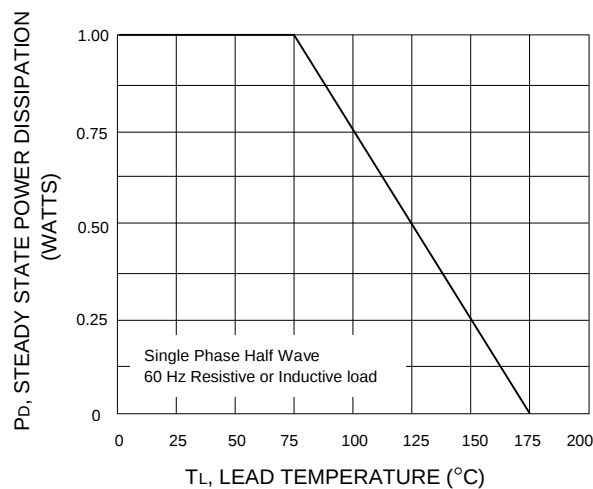


FIG.4 - PULSE RATING CURVE

