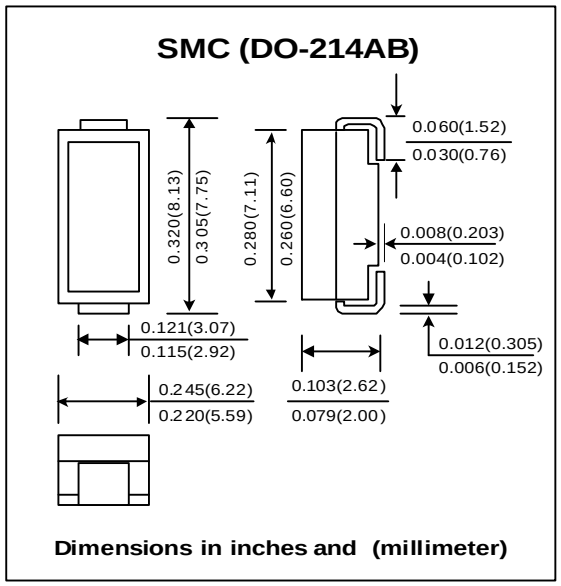
Certificate Number: Q10561

Certificate Number: E17276

STBN06I - STBN5D0

SURFACE MOUNT BIDIRECTIONAL TRANSIENT VOLTAGE SUPPRESSOR

V_{BR} : 6.8 - 200 Volts
P_{PK} : 1500 Watts



FEATURES :

* 1500W surge capability at 1ms
* Excellent clamping capability
* Low zener impedance
* Fast response time : typically less then 1.0 ps from 0 volt to $V_{BR(min.)}$
* Typical I_R less then 1μA above 10V
* Pb / RoHS Free

MECHANICAL DATA

* Case : SMC Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Lead Formed for Surface Mount
* Polarity : Color band denotes cathode end except Bipolar.
* Mounting position : Any
* Weight : 0.21 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 1500	W
Steady State Power Dissipation at T_L = 75 °C (Note 2)	P_D	5.0	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
(2) Mounted on copper Lead area at 5.0 mm^2 (0.013 mm thick).

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_{RWM}	Maximum Reverse Current	Maximum Clamping Voltage @ I_{RSM}	Maximum Temperature Co-efficient of V_{BR}
	V_{BR} (V)		It	V_{RWM}	I_R	I_{RSM}	V_{RSM}	
	Min.	Max.	(mA)	(V)	(µA)	(A)	(V)	(% / °C)
STBN06I	6.12	7.48	10	5.50	2000	139	10.8	0.057
STBN56I	6.45	7.14	10	5.80	2000	143	10.5	0.057
STBN07F	6.75	8.25	10	6.05	1000	128	11.7	0.061
STBN57F	7.13	7.88	10	6.40	1000	132	11.3	0.061
STBN08C	7.38	9.02	10	6.63	400	120	12.5	0.065
STBN58C	7.79	8.61	10	7.02	400	124	12.1	0.065
STBN09B	8.19	10.0	1.0	7.37	100	109	13.8	0.068
STBN59B	8.65	9.55	1.0	7.78	100	112	13.4	0.068
STBN010	9.00	11.0	1.0	8.10	10	100	15.0	0.073
STBN510	9.50	10.5	1.0	8.55	10	103	14.5	0.073
STBN011	9.90	12.1	1.0	8.92	10	93.0	16.2	0.075
STBN511	10.5	11.6	1.0	9.40	10	96.0	15.6	0.075
STBN012	10.8	13.2	1.0	9.72	5.0	87.0	17.3	0.078
STBN512	11.4	12.6	1.0	10.2	5.0	90.0	16.7	0.078
STBN013	11.7	14.3	1.0	10.5	5.0	79.0	19.0	0.081
STBN513	12.4	13.7	1.0	11.1	5.0	82.0	18.2	0.081
STBN015	13.5	16.5	1.0	12.1	5.0	68.0	22.0	0.084
STBN515	14.3	15.8	1.0	12.8	5.0	71.0	21.2	0.084
STBN016	14.4	17.6	1.0	12.9	5.0	64.0	23.5	0.086
STBN516	15.2	16.8	1.0	13.6	5.0	67.0	22.5	0.086
STBN018	16.2	19.8	1.0	14.5	5.0	56.5	26.5	0.088
STBN518	17.1	18.9	1.0	15.3	5.0	59.5	25.2	0.088
STBN020	18.0	22.0	1.0	16.2	5.0	51.5	29.1	0.090
STBN520	19.0	21.0	1.0	17.1	5.0	54.0	27.7	0.090
STBN022	19.8	24.2	1.0	17.8	5.0	47.0	31.9	0.092
STBN522	20.9	23.1	1.0	18.8	5.0	49.0	30.6	0.092
STBN024	21.6	26.4	1.0	19.4	5.0	43.0	34.7	0.094
STBN524	22.8	25.2	1.0	20.5	5.0	45.0	33.2	0.094
STBN027	24.3	29.7	1.0	21.8	5.0	38.5	39.1	0.096
STBN527	25.7	28.4	1.0	23.1	5.0	40.0	37.5	0.096
STBN030	27.0	33.0	1.0	24.3	5.0	34.5	43.5	0.097
STBN530	28.5	31.5	1.0	25.6	5.0	36.0	41.4	0.097
STBN033	29.7	36.3	1.0	26.8	5.0	31.5	47.7	0.098
STBN533	31.4	34.7	1.0	28.2	5.0	33.0	45.7	0.098
STBN036	32.4	39.6	1.0	29.1	5.0	29.0	52.0	0.099
STBN536	34.2	37.8	1.0	30.8	5.0	30.0	49.9	0.099
STBN039	35.1	42.9	1.0	31.6	5.0	26.5	56.4	0.100
STBN539	37.1	41.0	1.0	33.3	5.0	28.0	53.9	0.100
STBN043	38.7	47.3	1.0	34.8	5.0	24.0	61.9	0.101
STBN543	40.9	45.2	1.0	36.8	5.0	25.3	59.3	0.101
STBN047	42.3	51.7	1.0	38.1	5.0	22.2	67.8	0.101
STBN547	44.7	49.4	1.0	40.2	5.0	23.2	64.8	0.101
STBN051	45.9	56.1	1.0	41.3	5.0	20.4	73.5	0.102
STBN551	48.5	53.6	1.0	43.6	5.0	21.4	70.1	0.102
STBN056	50.4	61.6	1.0	45.4	5.0	18.6	80.5	0.103
STBN556	53.2	58.8	1.0	47.8	5.0	19.5	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 @ V_{RWM}	Maximum Reverse Current	Maximum Clamping Voltage @ I_{RSM}	Maximum Temperature Co-efficient of V_{BR}
	V_{BR} (V)		It	V_{RWM}	I_R	I_{RSM}	V_{RSM}	
	Min.	Max.	(mA)	(V)	(μA)	(A)	(V)	(% / °C)
STBN062	55.8	68.2	1.0	50.2	5.0	16.9	89.0	0.104
STBN562	58.9	65.1	1.0	53.0	5.0	17.7	85.0	0.104
STBN068	61.2	74.8	1.0	55.1	5.0	15.3	98.0	0.104
STBN568	64.6	71.4	1.0	58.1	5.0	16.3	92.0	0.104
STBN075	67.5	82.5	1.0	60.7	5.0	13.9	108	0.105
STBN575	71.3	78.8	1.0	64.1	5.0	14.6	103	0.105
STBN082	73.8	90.2	1.0	66.4	5.0	12.7	118	0.105
STBN582	77.9	86.1	1.0	70.1	5.0	13.3	113	0.105
STBN091	81.9	100	1.0	73.7	5.0	11.4	131	0.106
STBN591	86.5	95.5	1.0	77.8	5.0	12.0	125	0.106
STBN0B0	90.0	110	1.0	81.0	5.0	10.4	144	0.106
STBN5B0	95.0	105	1.0	85.5	5.0	11.0	137	0.106
STBN0B1	99.0	121	1.0	89.2	5.0	9.5	158	0.107
STBN5B1	105	116	1.0	94.0	5.0	9.9	152	0.107
STBN0B2	108	132	1.0	97.2	5.0	8.7	173	0.107
STBN5B2	114	126	1.0	102	5.0	9.1	165	0.107
STBN0B3	117	143	1.0	105	5.0	8.0	187	0.107
STBN5B3	124	137	1.0	111	5.0	8.4	179	0.107
STBN0B5	135	165	1.0	121	5.0	7.0	215	0.108
STBN5B5	143	158	1.0	128	5.0	7.2	207	0.108
STBN0B6	144	176	1.0	130	5.0	6.5	230	0.108
STBN5B6	152	168	1.0	136	5.0	6.8	219	0.108
STBN0B7	153	187	1.0	138	5.0	6.2	244	0.108
STBN5B7	162	179	1.0	145	5.0	6.4	234	0.108
STBN0B8	162	198	1.0	146	5.0	5.8	258	0.108
STBN5B8	171	189	1.0	154	5.0	6.1	246	0.108
STBN0D0	180	220	1.0	162	5.0	5.2	287	0.108
STBN5D0	190	210	1.0	171	5.0	5.5	274	0.108

Note:

(1) V_{BR} measured after It applied for 300 μs., It = square wave pulse or equivalent.

(2) "STB" will be omitted in marking on the diode.

RATING AND CHARACTERISTIC CURVES (STBN06I - STBN5D0)

FIG.1 - PULSE DERATING CURVE

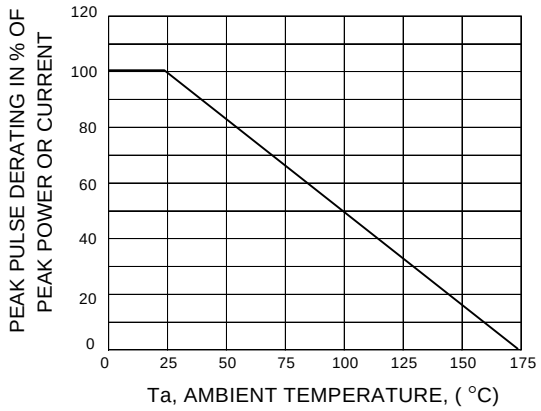


FIG.2 - PULSE WAVEFORM

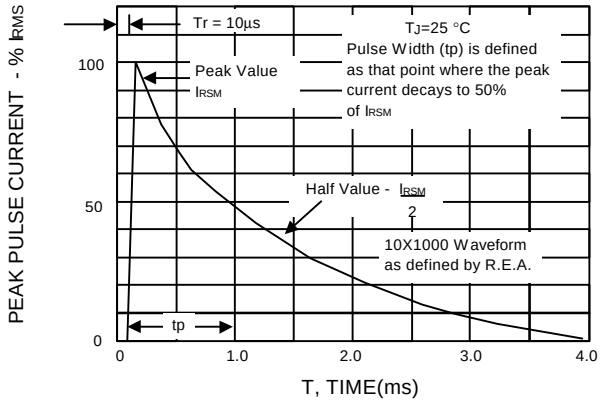


FIG.3 - STEADY STATE POWER DERATING

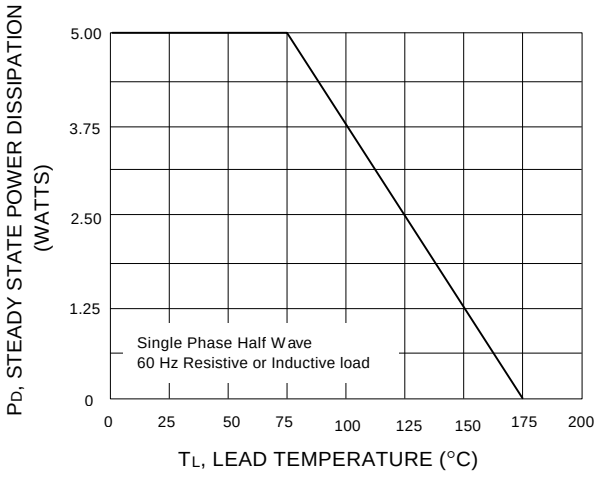
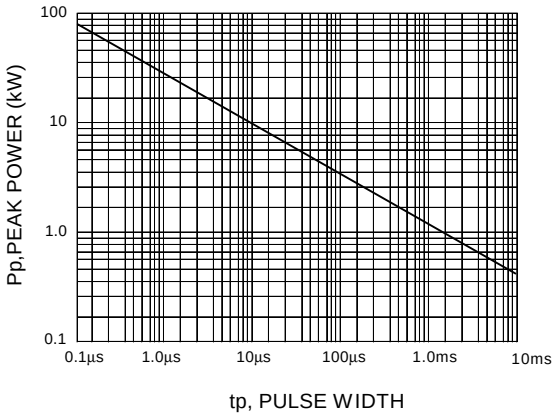



FIG.4 - PULSE RATING CURVE