Certificate Number: Q10561

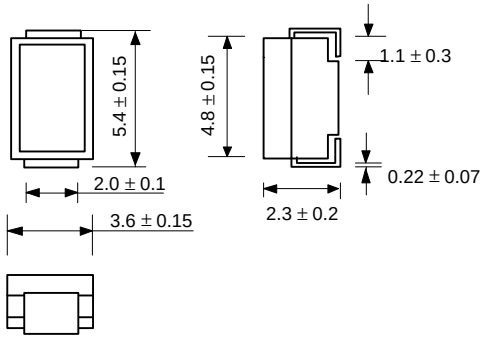
Certificate Number: E17276

STB606I - STB65G4

SURFACE MOUNT BIDIRECTIONAL TRANSIENT VOLTAGE SUPPRESSOR

VBR : 6.8 - 440 Volts
PPK : 600 Watts

SMB (DO-214AA)



Dimensions in millimeter

FEATURES :

* 600W 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 : SMB Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Lead Formed for Surface Mount
* Mounting position : Any
* Weight : 0.093 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 600	W
Steady State Power Dissipation at TL = 75 °C	PD	5.0	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_{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)
STB606I	6.12	7.48	10	5.50	2000	55.5	10.8	0.057
STB656I	6.45	7.14	10	5.80	2000	57.0	10.5	0.057
STB607F	6.75	8.25	10	6.05	1000	51.0	11.7	0.061
STB657F	7.13	7.88	10	6.40	1000	53.0	11.3	0.061
STB608C	7.38	9.02	10	6.63	400	48.0	12.5	0.065
STB658C	7.79	8.61	10	7.02	400	50.0	12.1	0.065
STB609B	8.19	10.0	1.0	7.37	100	44.0	13.8	0.068
STB659B	8.65	9.55	1.0	7.78	100	45.0	13.4	0.068
STB6010	9.00	11.0	1.0	8.10	20	40.0	15.0	0.073
STB6510	9.50	10.5	1.0	8.55	20	41.0	14.5	0.073
STB6011	9.90	12.1	1.0	8.92	10	37.0	16.2	0.075
STB6511	10.5	11.6	1.0	9.40	10	38.0	15.6	0.075
STB6012	10.8	13.2	1.0	9.72	5.0	35.0	17.3	0.078
STB6512	11.4	12.6	1.0	10.2	5.0	36.0	16.7	0.078
STB6013	11.7	14.3	1.0	10.5	5.0	32.0	19.0	0.081
STB6513	12.4	13.7	1.0	11.1	5.0	33.0	18.2	0.081
STB6015	13.5	16.5	1.0	12.1	5.0	27.0	22.0	0.084
STB6515	14.3	15.8	1.0	12.8	5.0	28.0	21.2	0.084
STB6016	14.4	17.6	1.0	12.9	5.0	26.0	23.5	0.086
STB6516	15.2	16.8	1.0	13.6	5.0	27.0	22.5	0.086
STB6018	16.2	19.8	1.0	14.5	5.0	23.0	26.5	0.088
STB6518	17.1	18.9	1.0	15.3	5.0	24.0	25.2	0.088
STB6020	18.0	22.0	1.0	16.2	5.0	21.0	29.1	0.090
STB6520	19.0	21.0	1.0	17.1	5.0	22.0	27.7	0.090
STB6022	19.8	24.2	1.0	17.8	5.0	19.0	31.9	0.092
STB6522	20.9	23.1	1.0	18.8	5.0	20.0	30.6	0.092
STB6024	21.6	26.4	1.0	19.4	5.0	17.0	34.7	0.094
STB6524	22.8	25.2	1.0	20.5	5.0	18.0	33.2	0.094
STB6027	24.3	29.7	1.0	21.8	5.0	15.0	39.1	0.096
STB6527	25.7	28.4	1.0	23.1	5.0	16.0	37.5	0.096
STB6030	27.0	33.0	1.0	24.3	5.0	14.0	43.5	0.097
STB6530	28.5	31.5	1.0	25.6	5.0	14.4	41.4	0.097
STB6033	29.7	36.3	1.0	26.8	5.0	12.6	47.7	0.098
STB6533	31.4	34.7	1.0	28.2	5.0	13.2	45.7	0.098
STB6036	32.4	39.6	1.0	29.1	5.0	11.6	52.0	0.099
STB6536	34.2	37.8	1.0	30.8	5.0	12.0	49.9	0.099
STB6039	35.1	42.9	1.0	31.6	5.0	10.6	56.4	0.100
STB6539	37.1	41.0	1.0	33.3	5.0	11.2	53.9	0.100
STB6043	38.7	47.3	1.0	34.8	5.0	9.6	61.9	0.101
STB6543	40.9	45.2	1.0	36.8	5.0	10.1	59.3	0.101
STB6047	42.3	51.7	1.0	38.1	5.0	8.9	67.8	0.101
STB6547	44.7	49.4	1.0	40.2	5.0	9.3	64.8	0.101
STB6051	45.9	56.1	1.0	41.3	5.0	8.2	73.5	0.102
STB6551	48.5	53.6	1.0	43.6	5.0	8.6	70.1	0.102
STB6056	50.4	61.6	1.0	45.4	5.0	7.4	80.5	0.103
STB6556	53.2	58.8	1.0	47.8	5.0	7.8	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)
STB6062	55.8	68.2	1.0	50.2	5.0	6.8	89.0	0.104
STB6562	58.9	65.1	1.0	53.0	5.0	7.1	85.0	0.104
STB6068	61.2	74.8	1.0	55.1	5.0	6.1	98.0	0.104
STB6568	64.6	71.4	1.0	58.1	5.0	6.5	92.0	0.104
STB6075	67.5	82.5	1.0	60.7	5.0	5.5	108	0.105
STB6575	71.3	78.8	1.0	64.1	5.0	5.8	103	0.105
STB6082	73.8	90.2	1.0	66.4	5.0	5.1	118	0.105
STB6582	77.9	86.1	1.0	70.1	5.0	5.3	113	0.105
STB6091	81.9	100	1.0	73.7	5.0	4.5	131	0.106
STB6591	86.5	95.5	1.0	77.8	5.0	4.8	125	0.106
STB60B0	90.0	110	1.0	81.0	5.0	4.2	144	0.106
STB65B0	95.0	105	1.0	85.5	5.0	4.4	137	0.106
STB60B1	99.0	121	1.0	89.2	5.0	3.8	158	0.107
STB65B1	105	116	1.0	94.0	5.0	4.0	152	0.107
STB60B2	108	132	1.0	97.2	5.0	3.5	173	0.107
STB65B2	114	126	1.0	102	5.0	3.6	165	0.107
STB60B3	117	143	1.0	106	5.0	3.2	187	0.107
STB65B3	124	137	1.0	111	5.0	3.3	179	0.107
STB60B5	135	165	1.0	121	5.0	2.8	215	0.108
STB65B5	143	158	1.0	128	5.0	2.9	207	0.108
STB60B6	144	176	1.0	130	5.0	2.6	230	0.108
STB65B6	152	168	1.0	136	5.0	2.7	219	0.108
STB60B7	153	187	1.0	138	5.0	2.5	244	0.108
STB65B7	162	179	1.0	145	5.0	2.6	234	0.108
STB60B8	162	198	1.0	146	5.0	2.3	258	0.108
STB65B8	171	189	1.0	154	5.0	2.4	246	0.108
STB60D0	180	220	1.0	162	5.0	2.1	287	0.108
STB65D0	190	210	1.0	171	5.0	2.2	274	0.108
STB60D2	198	242	1.0	175	5.0	1.75	344	0.108
STB65D2	209	231	1.0	185	5.0	1.83	328	0.108
STB60D5	225	275	1.0	202	5.0	1.67	360	0.110
STB65D5	237	263	1.0	214	5.0	1.75	344	0.110
STB60E0	270	330	1.0	243	5.0	1.40	430	0.110
STB65E0	285	315	1.0	256	5.0	1.45	414	0.110
STB60E5	315	385	1.0	284	5.0	1.20	504	0.110
STB65E5	332	368	1.0	300	5.0	1.25	482	0.110
STB60G0	360	440	1.0	324	5.0	1.05	574	0.110
STB65G0	380	420	1.0	342	5.0	1.10	548	0.110
STB60G4	396	484	1.0	356	5.0	0.95	631	0.110
STB65G4	418	462	1.0	376	5.0	1.00	602	0.110

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 (STB606I - STB65G4)

FIG.1 - PULSE DERATING CURVE

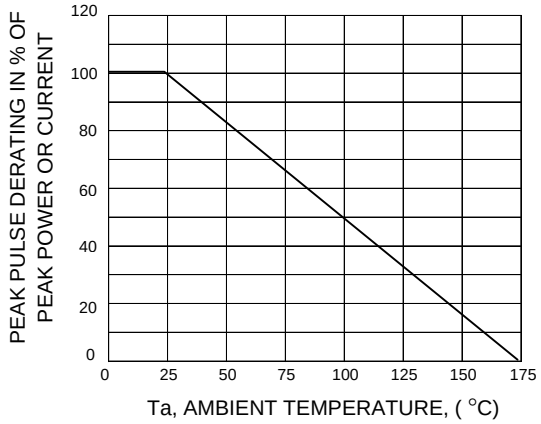


FIG.2 - PULSE WAVEFORM

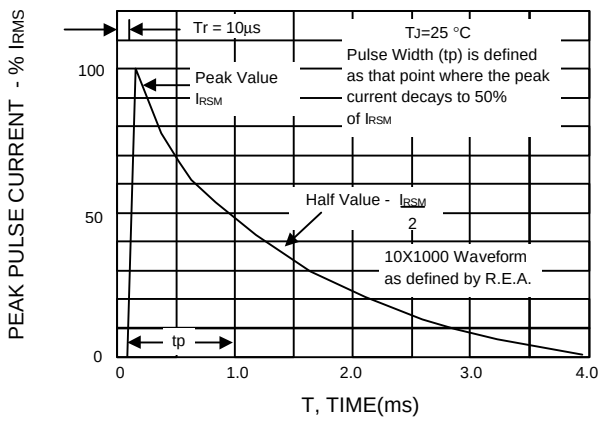


FIG.3 - STEADY STATE POWER DERATING

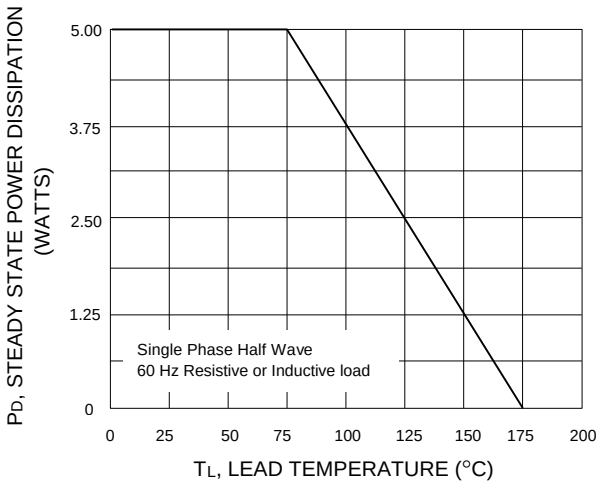


FIG.4 - PULSE RATING CURVE

