

STUN06I - STUN5D0

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

V_{BR} : 6.8 - 200 Volts

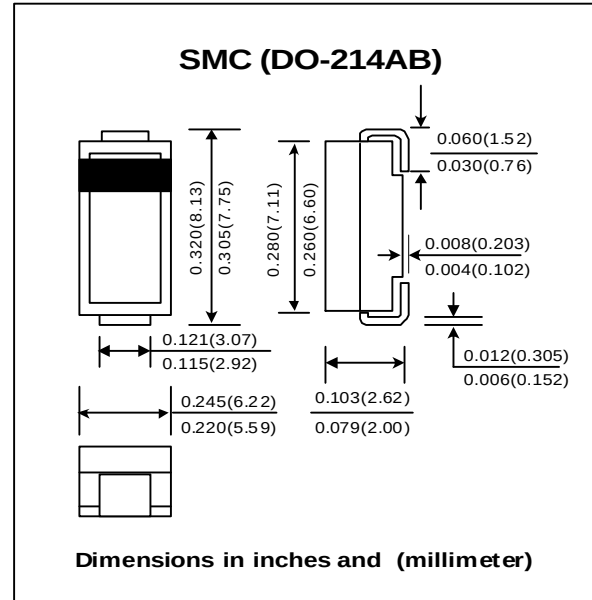
P_{PK} : 1500 Watts

FEATURES :

- * 1500W surge capability at 1ms
- * Excellent clamping capability
- * Low zener impedance
- * Fast response time : typically less 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 : 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 BIPOLAR APPLICATIONS

For bi-directional altered the third letter of type from "U" to be "B".

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
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I _{FSM}	200	A
Operating and Storage Temperature Range	T _J , T _{STG}	- 55 to + 150	°C

Note :

- (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 mm² (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	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				
	VBR (V)		It						VRWM	IR	IRSM	VRSM
	Min.	Max.	(mA)						(V)	(μA)	(A)	(V)
STUN06I	6.12	7.48	10	5.50	1000	139	10.8	0.057				
STUN56I	6.45	7.14	10	5.80	1000	143	10.5	0.057				
STUN07F	6.75	8.25	10	6.05	500	128	11.7	0.061				
STUN57F	7.13	7.88	10	6.40	500	132	11.3	0.061				
STUN08C	7.38	9.02	10	6.63	200	120	12.5	0.065				
STUN58C	7.79	8.61	10	7.02	200	124	12.1	0.065				
STUN09B	8.19	10.0	1.0	7.37	50	109	13.8	0.068				
STUN59B	8.65	9.55	1.0	7.78	50	112	13.4	0.068				
STUN010	9.00	11.0	1.0	8.10	10	100	15.0	0.073				
STUN510	9.50	10.5	1.0	8.55	10	103	14.5	0.073				
STUN011	9.90	12.1	1.0	8.92	5.0	93.0	16.2	0.075				
STUN511	10.5	11.6	1.0	9.40	5.0	96.0	15.6	0.075				
STUN012	10.8	13.2	1.0	9.72	5.0	87.0	17.3	0.078				
STUN512	11.4	12.6	1.0	10.2	5.0	90.0	16.7	0.078				
STUN013	11.7	14.3	1.0	10.5	5.0	79.0	19.0	0.081				
STUN513	12.4	13.7	1.0	11.1	5.0	82.0	18.2	0.081				
STUN015	13.5	16.5	1.0	12.1	5.0	68.0	22.0	0.084				
STUN515	14.3	15.8	1.0	12.8	5.0	71.0	21.2	0.084				
STUN016	14.4	17.6	1.0	12.9	5.0	64.0	23.5	0.086				
STUN516	15.2	16.8	1.0	13.6	5.0	67.0	22.5	0.086				
STUN018	16.2	19.8	1.0	14.5	5.0	56.5	26.5	0.088				
STUN518	17.1	18.9	1.0	15.3	5.0	59.5	25.2	0.088				
STUN020	18.0	22.0	1.0	16.2	5.0	51.5	29.1	0.090				
STUN520	19.0	21.0	1.0	17.1	5.0	54.0	27.7	0.090				
STUN022	19.8	24.2	1.0	17.8	5.0	47.0	31.9	0.092				
STUN522	20.9	23.1	1.0	18.8	5.0	49.0	30.6	0.092				
STUN024	21.6	26.4	1.0	19.4	5.0	43.0	34.7	0.094				
STUN524	22.8	25.2	1.0	20.5	5.0	45.0	33.2	0.094				
STUN027	24.3	29.7	1.0	21.8	5.0	38.5	39.1	0.096				
STUN527	25.7	28.4	1.0	23.1	5.0	40.0	37.5	0.096				
STUN030	27.0	33.0	1.0	24.3	5.0	34.5	43.5	0.097				
STUN530	28.5	31.5	1.0	25.6	5.0	36.0	41.4	0.097				
STUN033	29.7	36.3	1.0	26.8	5.0	31.5	47.7	0.098				
STUN533	31.4	34.7	1.0	28.2	5.0	33.0	45.7	0.098				
STUN036	32.4	39.6	1.0	29.1	5.0	29.0	52.0	0.099				
STUN536	34.2	37.8	1.0	30.8	5.0	30.0	49.9	0.099				
STUN039	35.1	42.9	1.0	31.6	5.0	26.5	56.4	0.100				
STUN539	37.1	41.0	1.0	33.3	5.0	28.0	53.9	0.100				
STUN043	38.7	47.3	1.0	34.8	5.0	24.0	61.9	0.101				
STUN543	40.9	45.2	1.0	36.8	5.0	25.3	59.3	0.101				
STUN047	42.3	51.7	1.0	38.1	5.0	22.2	67.8	0.101				
STUN547	44.7	49.4	1.0	40.2	5.0	23.2	64.8	0.101				
STUN051	45.9	56.1	1.0	41.3	5.0	20.4	73.5	0.102				
STUN551	48.5	53.6	1.0	43.6	5.0	21.4	70.1	0.102				
STUN056	50.4	61.6	1.0	45.4	5.0	18.6	80.5	0.103				
STUN556	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 @ VRWM	Maximum Reverse Current	Maximum Clamping Voltage @ IRSM	Maximum Temperature Co-efficient of VBR
	VBR (V)		It	VRWM	IR	IRSM	VRSM	of VBR (% / °C)
	Min.	Max.	(mA)	(V)	(μA)	(A)	(V)	
STUN062	55.8	68.2	1.0	50.2	5.0	16.9	89.0	0.104
STUN562	58.9	65.1	1.0	53.0	5.0	17.7	85.0	0.104
STUN068	61.2	74.8	1.0	55.1	5.0	15.3	98.0	0.104
STUN568	64.6	71.4	1.0	58.1	5.0	16.3	92.0	0.104
STUN075	67.5	82.5	1.0	60.7	5.0	13.9	108	0.105
STUN575	71.3	78.8	1.0	64.1	5.0	14.6	103	0.105
STUN082	73.8	90.2	1.0	66.4	5.0	12.7	118	0.105
STUN582	77.9	86.1	1.0	70.1	5.0	13.3	113	0.105
STUN091	81.9	100	1.0	73.7	5.0	11.4	131	0.106
STUN591	86.5	95.5	1.0	77.8	5.0	12.0	125	0.106
STUN0B0	90.0	110	1.0	81.0	5.0	10.4	144	0.106
STUN5B0	95.0	105	1.0	85.5	5.0	11.0	137	0.106
STUN0B1	99.0	121	1.0	89.2	5.0	9.5	158	0.107
STUN5B1	105	116	1.0	94.0	5.0	9.9	152	0.107
STUN0B2	108	132	1.0	97.2	5.0	8.7	173	0.107
STUN5B2	114	126	1.0	102	5.0	9.1	165	0.107
STUN0B3	117	143	1.0	105	5.0	8.0	187	0.107
STUN5B3	124	137	1.0	111	5.0	8.4	179	0.107
STUN0B5	135	165	1.0	121	5.0	7.0	215	0.108
STUN5B5	143	158	1.0	128	5.0	7.2	207	0.108
STUN0B6	144	176	1.0	130	5.0	6.5	230	0.108
STUN5B6	152	168	1.0	136	5.0	6.8	219	0.108
STUN0B7	153	187	1.0	138	5.0	6.2	244	0.108
STUN5B7	162	179	1.0	145	5.0	6.4	234	0.108
STUN0B8	162	198	1.0	146	5.0	5.8	258	0.108
STUN5B8	171	189	1.0	154	5.0	6.1	246	0.108
STUN0D0	180	220	1.0	162	5.0	5.2	287	0.108
STUN5D0	190	210	1.0	171	5.0	5.5	274	0.108

Note:

- (1) V_{BR} measured after I_t applied for 300 μ s., I_t = square wave pulse or equivalent.
- (2) V_F = 3.5 $V_{max.}$, I_F = 100 Amps. (6.8 Volts thru 91 Volts)
 V_F = 5.0 $V_{max.}$, I_F = 100 Amps. (100 Volts thru 200 Volts) per 1/2 square or equivalent sine wave.
PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.
- (3) "STU" or "STB" will be omitted in marking on the diode.

RATING AND CHARACTERISTIC CURVES (STUN06I - STUN5D0)

FIG.1 - PULSE DERATING CURVE

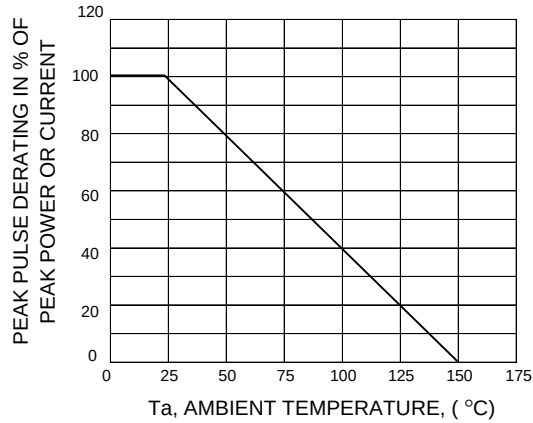


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

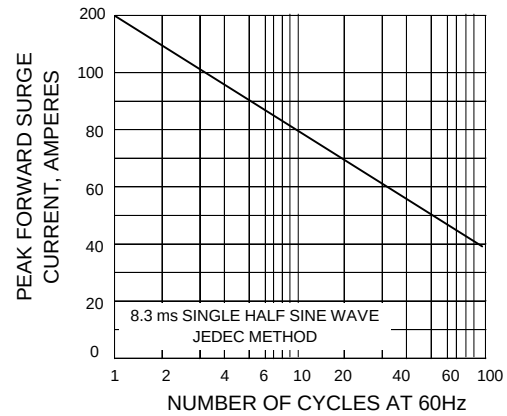


FIG.3 - STEADY STATE POWER DERATING

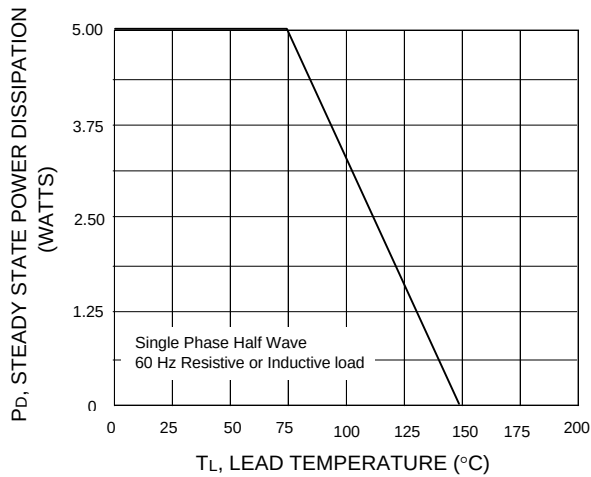


FIG.4 - PULSE RATING CURVE

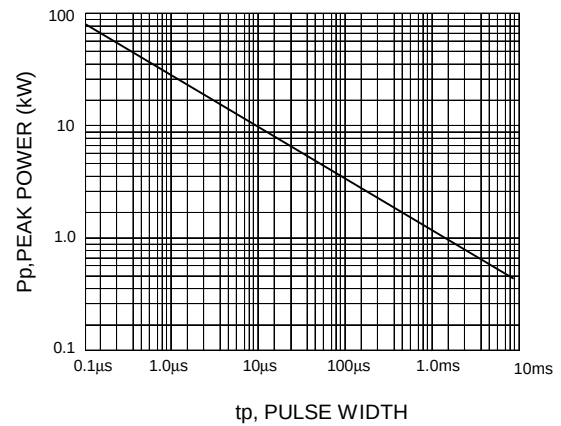


FIG.5 - PULSE WAVEFORM

