

TPSMA6.8 ~ TPSMA43A

AUTOMOTIVE SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

V_{BR} : 6.8 - 43 Volts

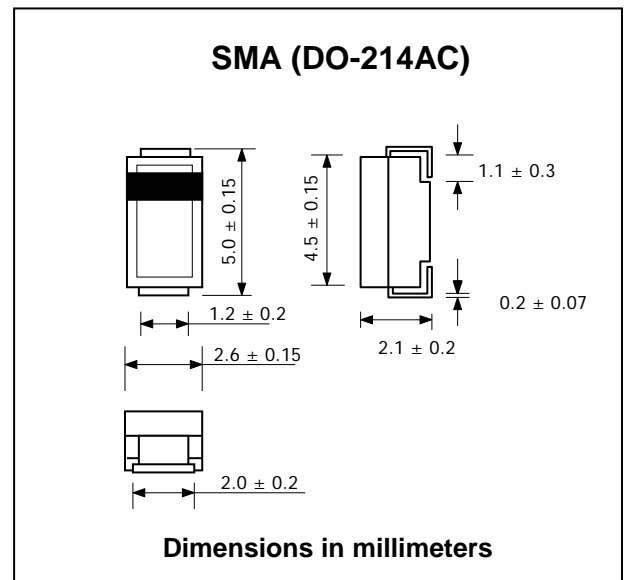
P_{PK} : 400 Watts

FEATURES :

- * 400W peak pulse power capability with a 10/1000ms waveform, repetition rate (duty cycle): 0.01%
- * Excellent clamping capability
- * Low incremental surge resistance
- * Very fast response time
- * For devices with V_(BR) ≥ 10V I_D are typically less than 1.0mA at T_a = 150°C
- * **Pb / RoHS Free**

MECHANICAL DATA

- * Case : SMA Molded plastic
- * Epoxy : UL94V-0 rate flame retardant
- * Lead : Lead Formed for Surface Mount
- * Polarity : Color band denotes cathode end except Bipolar.
- * Mounting position : Any
- * Weight : 0.064 grams



Maximum Ratings and Thermal Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000 μs waveform (1)(2) Fig.2	P _{PPM}	Minimum 400	W
Peak power pulse current with a 10/1000μs waveform (1) Fig.2	I _{PPM}	See Next Table	A
Operating and Storage Temperature Range	T _J , T _{STG}	- 65 to + 185	°C

Notes :

- (1) Non-repetitive Current pulse, per Fig. 2 and derated above T_a = 25 °C per Fig. 1
- (2) Mounted on 0.31 x 0.31" (8.0 x 8.0mm) copper pads to each terminal



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 Leakage @ VRWM	Maximum Reverse Leakage @ VRWM, Tj=150°C	Maximum Peak Pulse Surge Current	Maximum Clamping Voltage @ IPPM
	VBR (V)							
	Min.	Max.	It (mA)					
TPSMA6.8	6.12	7.48	10	5.50	300	1000	37	10.8
TPSMA6.8A	6.45	7.14	10	5.80	300	1000	38.1	10.5
TPSMA7.5	6.75	8.25	10	6.05	150	500	34.2	11.7
TPSMA7.5A	7.13	7.88	10	6.40	150	500	35.4	11.3
TPSMA8.2	7.38	9.02	10	6.63	50	200	32	12.5
TPSMA8.2A	7.79	8.61	10	7.02	50	200	33.1	12.1
TPSMA9.1	8.19	10.0	1.0	7.37	10	50	29	13.8
TPSMA9.1A	8.65	9.55	1.0	7.78	10	50	29.9	13.4
TPSMA10	9.00	11.0	1.0	8.10	5.0	20	26.7	15.0
TPSMA10A	9.50	10.5	1.0	8.55	5.0	20	27.6	14.5
TPSMA11	9.90	12.1	1.0	8.92	1.0	5.0	24.7	16.2
TPSMA11A	10.5	11.6	1.0	9.40	1.0	5.0	25.6	15.6
TPSMA12	10.8	13.2	1.0	9.72	1.0	5.0	23.1	17.3
TPSMA12A	11.4	12.6	1.0	10.2	1.0	5.0	24.0	16.7
TPSMA13	11.7	14.3	1.0	10.5	1.0	5.0	21.1	19.0
TPSMA13A	12.4	13.7	1.0	11.1	1.0	5.0	22.0	18.2
TPSMA15	13.5	16.5	1.0	12.1	1.0	5.0	18.2	22.0
TPSMA15A	14.3	15.8	1.0	12.8	1.0	5.0	18.9	21.2
TPSMA16	14.4	17.6	1.0	12.9	1.0	5.0	17.0	23.5
TPSMA16A	15.2	16.8	1.0	13.6	1.0	5.0	17.8	22.5
TPSMA18	16.2	19.8	1.0	14.5	1.0	5.0	15.1	26.5
TPSMA18A	17.1	18.9	1.0	15.3	1.0	5.0	15.9	25.2
TPSMA20	18.0	22.0	1.0	16.2	1.0	5.0	13.7	29.1
TPSMA20A	19.0	21.0	1.0	17.1	1.0	5.0	14.4	27.7
TPSMA22	19.8	24.2	1.0	17.8	1.0	5.0	12.5	31.9
TPSMA22A	20.9	23.1	1.0	18.8	1.0	5.0	13.1	30.6
TPSMA24	21.6	26.4	1.0	19.4	1.0	5.0	11.5	34.7
TPSMA24A	22.8	25.2	1.0	20.5	1.0	5.0	12.0	33.2
TPSMA27	24.3	29.7	1.0	21.8	1.0	5.0	10.2	39.1
TPSMA27A	25.7	28.4	1.0	23.1	1.0	5.0	10.7	37.5
TPSMA30	27.0	33.0	1.0	24.3	1.0	5.0	9.2	43.5
TPSMA30A	28.5	31.5	1.0	25.6	1.0	5.0	9.7	41.4
TPSMA33	29.7	36.3	1.0	26.8	1.0	5.0	8.4	47.7
TPSMA33A	31.4	34.7	1.0	28.2	1.0	5.0	8.8	45.7
TPSMA36	32.4	39.6	1.0	29.1	1.0	5.0	7.7	52.0
TPSMA36A	34.2	37.8	1.0	30.8	1.0	5.0	8.0	49.9
TPSMA39	35.1	42.9	1.0	31.6	1.0	5.0	7.1	56.4
TPSMA39A	37.1	41.0	1.0	33.3	1.0	5.0	7.4	53.9
TPSMA43	38.7	47.3	1.0	34.8	1.0	5.0	6.5	61.9
TPSMA43A	40.9	45.2	1.0	36.8	1.0	5.0	6.7	59.3

Notes :

- (1) VBR measured after It applied for 300 µs., It = square wave pulse or equivalent.
- (2) Surge current waveform per Fig. 2 and derate per Fig. 1
- (3) "PSMA" will be omitted in marking on the diode.

RATING AND CHARACTERISTIC CURVES (TPSMA6.8 ~ TPSMA43A)

FIG.1 - PULSE DERATING CURVE

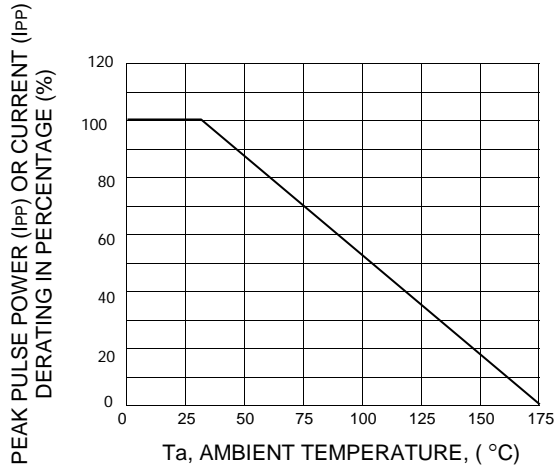


FIG.2 - PULSE WAVEFORM

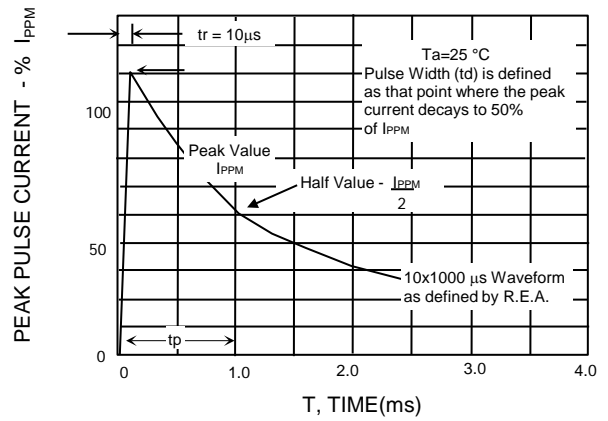


FIG.3 - TYPICAL JUNCTION CAPACITANCE

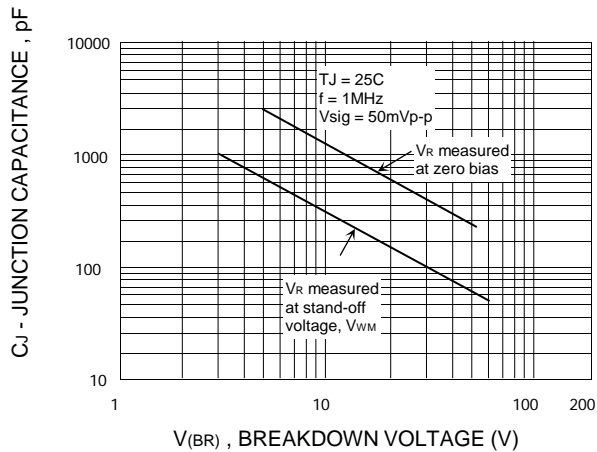


FIG.4 - PULSE RATING CURVE

