600 W Surface Mount Transient Voltage Suppressor

DO-214AA (SMB)

Voltage
6.8 V to 43 V (Uni)

Power
600 W /ms

HYPERECTIFIER®

FEATURES

- Low profile package
- Ideal for automated placement
- Top-Glass Technology
- 600 W peak pulse power capability with a 10/1000 µs waveform, repetitive rate (duty cycle): 0.01 %
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Available in uni-directional and bi-directional
- Solder dip 260ºC, 10s
- AEC-Q101 qualified
- Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260º C

AUTOMOTIVE GRADE Available

Pb

e3

RoHS COMPLIANT

MECHANICAL DATA

- **Case:** DO-214AA (SMB). Epoxy meets UL 94V-0 flammability rating.
- **Polarity:** For unidirectional types color band denotes cathode end. No marking on bidirectional types.
- **Terminals:** Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test. HE3 suffix for high reliability grade, meets JESD 201 class 2 whisker test.

TYPICAL APPLICATIONS

Used in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive and telecommunication.

Maximun Ratings and Electrical Characteristics at 25°C

P_{PPM}	Peak Pulse Power Dissipation with 10/1000 µs exponential pulse	600 W
I_{FSM}	Peak Forward Surge Current 8.3 ms. (Jedec Method) (Note 1)	100 A
V_F	Max. forward voltage drop at I_F = 100 A	3.5 V
T_J -T_{STG}	Operating Junction and Storage Temperature Range	- 65 to + 185 ºC

Note: 1. Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal

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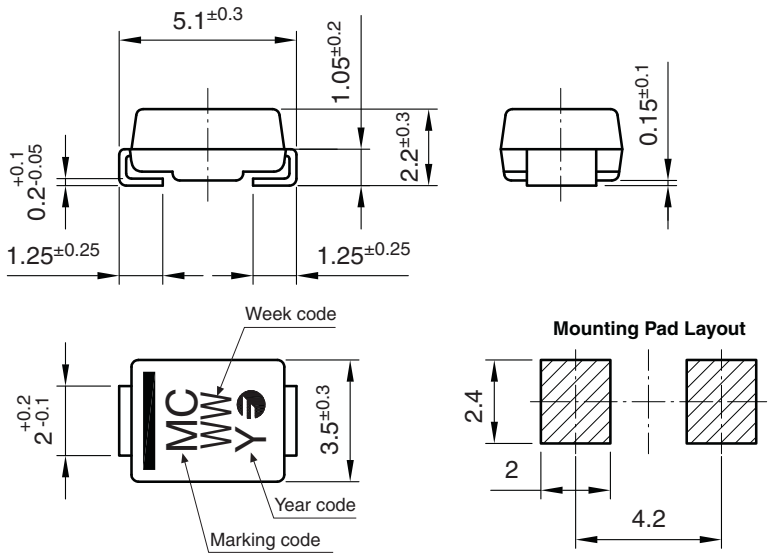
Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
TP6SMB33A TG TRTB	TRTB	13" diameter tape and reel	3,200	0.082
TP6SMB33A TG HE3 TRTB	TRTB	13" diameter tape and reel	3,200	0.082

Package Outline Dimensions: (mm) DO-214AA (SMB)



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Type		Maximum Reverse Leakage Current I_{RM} at V_{RM}		(1) Breakdown Voltage V_{BR} at (V)			I_R	T_j = 150ºC Maximum Reverse Leakage at V_{RM}	Max. Clamping Voltage V_{CL} at I_{pp} max. 1ms. Expo.	
Unidirectional	Marking Code	(µA)	(V)	Min.	Nom.	Max.	(mA)	(µA)	(V)	(A)
TPSMB6V8A TG	JF	500	5.80	6.45	6.8	7.14	10	1000	10.5	57
TPSMB7V5A TG	JG	250	6.40	7.13	7.5	7.88	10	500	11.3	53
TPSMB8V2A TG	JH	100	7.02	7.79	8.2	8.61	10	200	12.1	50
TPSMB9V1A TG	JI	25	7.78	8.65	9.1	9.55	1	50	13.4	45
TPSMB10A TG	JJ	5	8.55	9.50	10	10.5	1	20	14.5	41
TPSMB11A TG	JK	2	9.40	10.5	11	11.6	1	5.0	15.6	38
TPSMB12A TG	JL	2	10.2	11.4	12	12.6	1	5.0	16.7	36
TPSMB13A TG	JM	2	11.1	12.4	13	13.7	1	5.0	18.2	33
TPSMB15A TG	JN	1	12.8	14.3	15	15.8	1	5.0	21.2	28
TPSMB16A TG	JO	1	13.6	15.2	16	16.8	1	5.0	22.5	27
TPSMB18A TG	JP	1	15.3	17.1	18	18.9	1	5.0	25.5	24
TPSMB20A TG	JR	1	17.1	19.0	20	21.0	1	5.0	27.7	22
TPSMB22A TG	JS	1	18.8	20.9	22	23.1	1	5.0	30.6	20
TPSMB24A TG	JT	1	20.5	22.8	24	25.2	1	5.0	33.2	18
TPSMB27A TG	JU	1	23.1	25.7	27	28.4	1	5.0	37.5	16
TPSMB30A TG	JV	1	25.6	28.5	30	31.5	1	5.0	41.4	14.4
TPSMB33A TG	JW	1	28.2	31.4	33	34.7	1	5.0	45.7	13.2
TPSMB36A TG	JX	1	30.8	34.2	36	37.8	1	5.0	49.9	12
TPSMB39A TG	JY	1	33.3	37.1	39	41.0	1	5.0	53.9	11.2
TPSMB43A TG	JZ	1	36.8	40.9	43	45.2	1	5.0	59.3	10.1

(1) Tested with pulses.

Pulse test: tp ≤ 50 ms; δ < 2%

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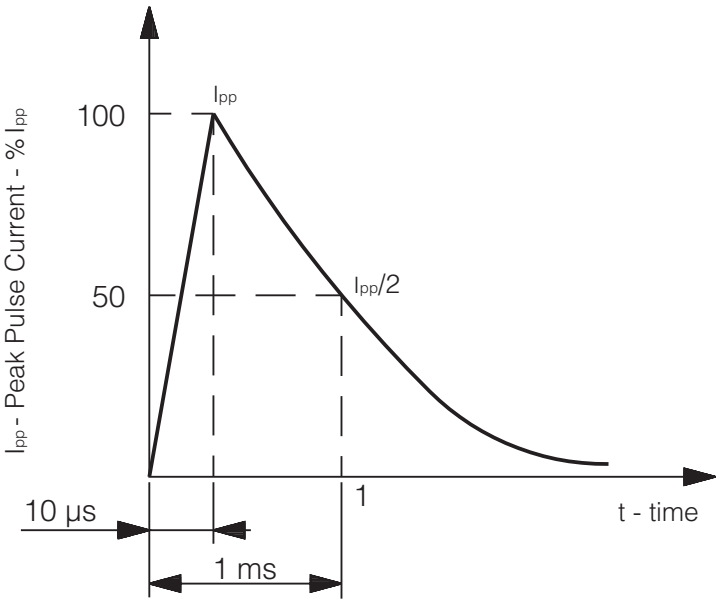
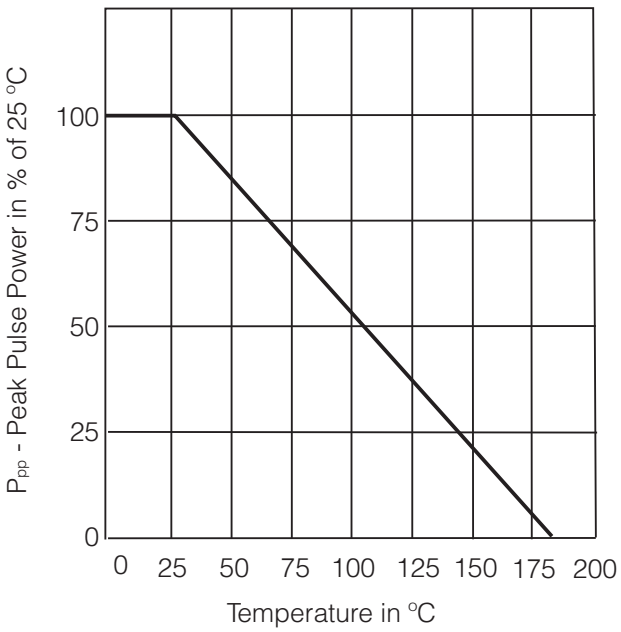
Ratings and Characteristics (Ta 25 ºC unless otherwise noted)

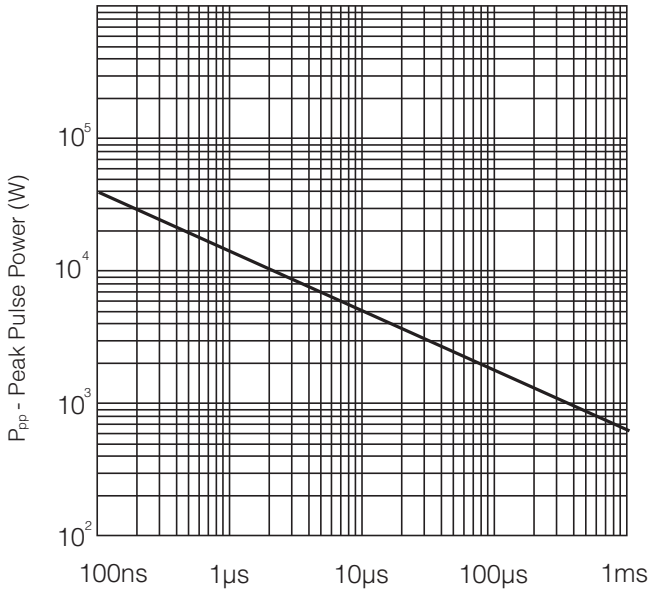


Pulse wave form 10/1000

DERATING CURVE

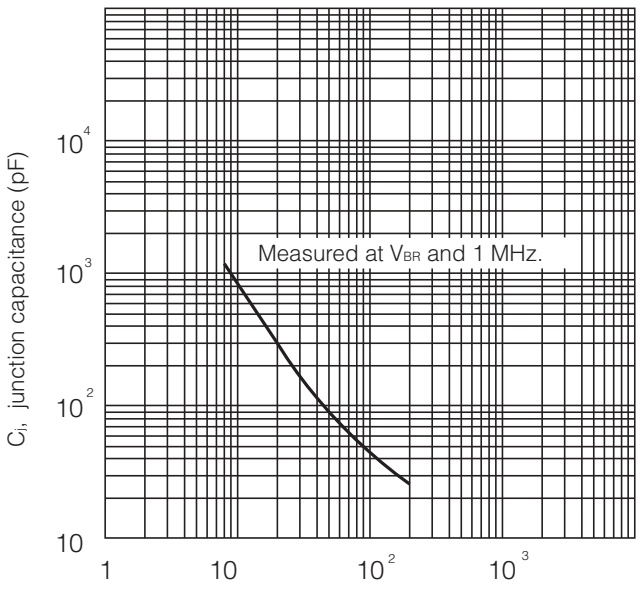


PEAK PULSE POWER RATING CURVE



Pulse time - t

TYPICAL JUNCTION



V_{BR} - Breakdown voltage (V)

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