

600 W Surface Mount Transient Voltage Suppressor

<p>DO-214AA (SMB)</p> 	<p>Peak Pulse Power Rating At 1 ms. Exp. 600 W</p>	<p>Reverse stand-off Voltage 5.0 ÷ 188 V</p>	
			
	<p>FEATURE</p> <ul style="list-style-type: none"> • Low profile package • Ideal for automated placement • 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 260 °C, 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 260 °C 		<p>AUTOMOTIVE GRADE Available</p>   <p>RoHS COMPLIANT</p>
	<p>MECHANICAL DATA</p> <ul style="list-style-type: none"> • Case: DO-214AA (SMB). Epoxy meets UL 94V-0 flammability rating. • Polarity: 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. 		
<p>TYPICAL APPLICATIONS</p> <p>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.</p>			

Maximun Ratings and Electrical Characteristics at 25 °C

P_{PPM}	Peak Pulse Power Dissipation with 10/1000 μ s exponential pulse	600 W
I_{FSM}	Peak Forward Surge Current 8.3 ms. <small>(Note 1)</small> (Jedec Method) <small>(Note 2)</small>	100 A
V_F	Max. forward voltage drop at $I_F = 50$ A <small>(Note 1)</small>	3.5 V
T_J	Operating Junction Temperature Range	$V_{BR} \leq 43$ V - 65 to + 175 °C
		$V_{BR} > 43$ V - 65 to + 150 °C
T_{STG}	Storage Temperature Range	- 65 to + 175 °C

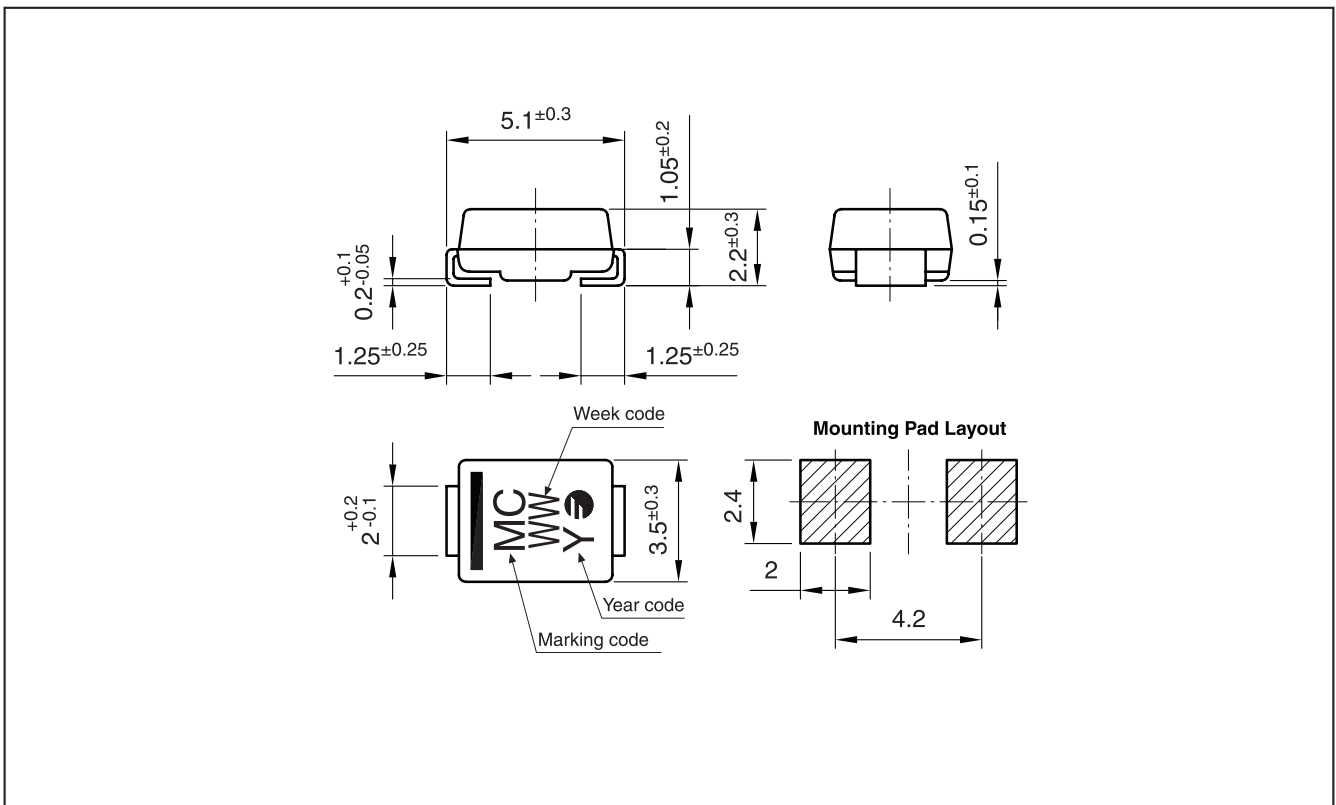
Notes: 1. Valid only for Unidirectional.
2. Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal

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Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
SMBJ33A TRTB	TRTB	13" diameter tape and reel	3,200	0.082
SMBJ33A HE3 TRTB	TRTB	13" diameter tape and reel	3,200	0.082

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



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Types				Maximum Reverse Leakage Current ⁽²⁾ I_{RM} at V_{RM}		Breakdown Voltage ⁽¹⁾ V_{BR} (V) I_R			Max. Clamping Voltage V_{CL} at I_{pp} 1ms. Expo.	
Unidirectional	Mark	Bidirectional	Mark	(μA)	(V)	Min.	Max.	(mA)	(V)	(A)
SMBJ5.0A	JF	SMBJ5.0CA	OK	800	5.0	6.40	7.07	10	9.2	65.2
SMBJ6.0A	JK	SMBJ6.0CA	OL	800	6.0	6.67	7.37	10	10.3	58.3
SMBJ6.5A	JL	SMBJ6.5CA	OM	500	6.5	7.22	7.98	10	11.2	53.6
SMBJ8.5A	JM	SMBJ8.5CA	ON	20	8.5	9.44	10.4	1	14.4	41.7
SMBJ10A	JN	SMBJ10CA	OO	5	10	11.1	12.3	1	17	35.3
SMBJ12A	JO	SMBJ12CA	OP	5	12	13.3	14.7	1	19.9	30.2
SMBJ13A	JP	SMBJ13CA	OR	1	13	14.4	15.9	1	21.5	27.9
SMBJ15A	JR	SMBJ15CA	OS	1	15	16.7	18.5	1	24.4	24.6
SMBJ16A	LA	SMBJ16CA	LB	1	16	17.8	20.5	1	26	23.1
SMBJ18A	JS	SMBJ18CA	OT	1	18	20	22.1	1	29.2	20.5
SMBJ20A	JT	SMBJ20CA	OU	1	20	22.2	24.5	1	32.4	18.5
SMBJ22A	JU	SMBJ22CA	OV	1	22	24.4	26.9	1	35.5	16.9
SMBJ24A	JV	SMBJ24CA	OW	1	24	26.7	29.5	1	38.9	15.4
SMBJ26A	JW	SMBJ26CA	OX	1	26	28.9	31.9	1	42.1	14.3
SMBJ28A	JX	SMBJ28CA	OY	1	28	31.1	34.4	1	45.4	13.2
SMBJ30A	JY	SMBJ30CA	OZ	1	30	33.3	36.8	1	48.4	12.4
SMBJ33A	JZ	SMBJ33CA	UL	1	33	36.7	40.6	1	53.3	11.3
SMBJ36A	KA	SMBJ36CA	UM	1	36	40	44.2	1	58.1	10.3
SMBJ40A	KB	SMBJ40CA	UN	1	40	44.4	49.1	1	64.5	9.3
SMBJ43A	KC	SMBJ43CA	UO	1	43	47.8	52.8	1	69.4	8.6
SMBJ48A	OA	SMBJ48CA	UP	1	48	53.3	58.9	1	77.4	7.8
SMBJ51A	OB	SMBJ51CA	UR	1	51	56.7	62.7	1	82.4	7.3
SMBJ54A	NA	SMBJ54CA	NB	1	54	60	66.3	1	87.1	6.8
SMBJ58A	OC	SMBJ58CA	US	1	58	64.4	71.2	1	93.6	6.4
SMBJ60A	ABB	SMBJ60CA	ABA	1	60	66.7	73.7	1	96.8	6.2
SMBJ70A	OD	SMBJ70CA	UT	1	70	77.8	86	1	113	5.3
SMBJ85A	OE	SMBJ85CA	UU	1	85	94.4	104	1	137	4.4
SMBJ100A	OF	SMBJ100CA	UV	1	100	111	123	1	162	3.7
SMBJ130A	OG	SMBJ130CA	UW	1	130	144	159	1	209	2.9
SMBJ154A	OH	SMBJ154CA	UX	1	154	171	189	1	246	2.4
SMBJ170A	OI	SMBJ170CA	UY	1	170	189	209	1	275	2.2
SMBJ188A	OJ	SMBJ188CA	UZ	1	188	209	231	1	328	2.0

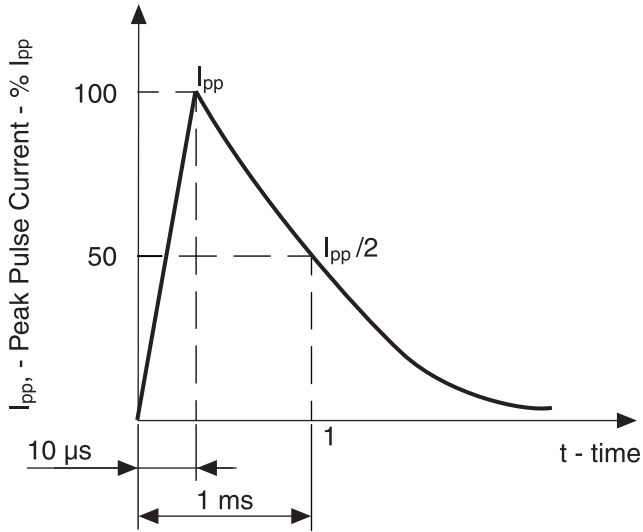
(1) Tested with pulses.

Pulse test: t_p :: 50 ms; 8 < 2%

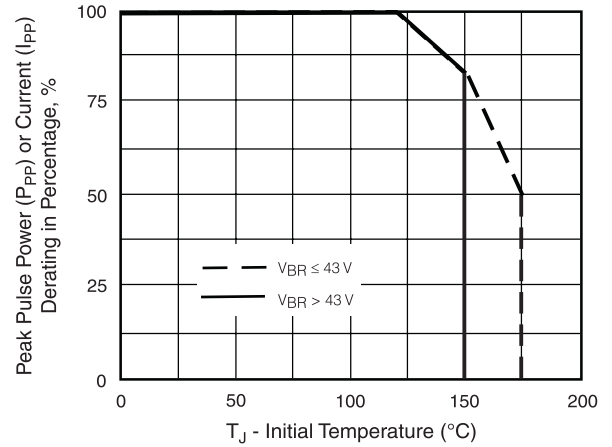
(2) For bidirectional types having V_{RM} of 10V and less, the I_{RM} limit is doubled

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Rating and Characteristics (Ta 25 °C unless otherwise noted)

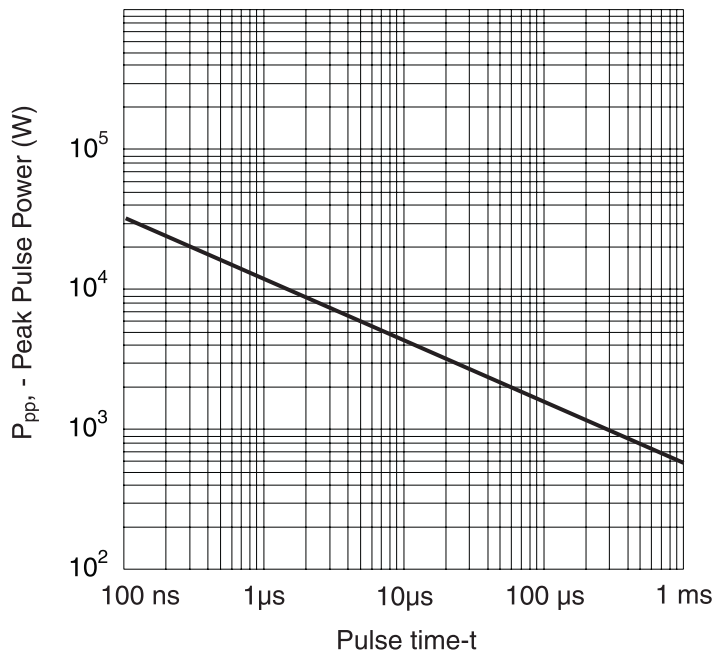


Pulse wave form 10/1000



Pulse Power or Current vs. Initial Junction Temperature

PEAK PULSE POWER RATING CURVE



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Revision History

DATE	REVISION	DESCRIPTION OF CHANGES
15-Apr-2013	0	Original Data Sheet
20-Jun-2013	1	Included Max. Breakdown Voltage
30-Jun-2013	2	Update Peak Pulse Power Derating Curve and Tj range
05-Dec-2018	3	Add SMBJ60A/CA References
15-Oct-2019	4	Add SMBJ16A/CA References
14-Feb-2020	5	Add SMBJ54A/CA References

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