

## 600 W Surface Mount Transient Voltage Suppressor

<p><b>DO-214AA (SMB)</b></p> 	<p>Peak Pulse Power Rating At 1 ms. Exp. 600 W</p>	<p>Reverse stand-off Voltage 5.0 ÷ 188 V</p>	
			
	<p><b>FEATURE</b></p> <ul style="list-style-type: none"> <li>• Low profile package</li> <li>• Ideal for automated placement</li> <li>• 600 W peak pulse power capability with a 10/1000 <math>\mu</math>s waveform, repetitive rate (duty cycle): 0.01%</li> <li>• Excellent clamping capability</li> <li>• Very fast response time</li> <li>• Low incremental surge resistance</li> <li>• Available in uni-directional and bi-directional</li> <li>• Solder dip 260 °C, 10s</li> <li>• AEC-Q101 qualified</li> <li>• Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC</li> <li>• Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C</li> </ul>		   
	<p><b>MECHANICAL DATA</b></p> <ul style="list-style-type: none"> <li>• <b>Case:</b> DO-214AA (SMB). Epoxy meets UL 94V-0 flammability rating.</li> <li>• <b>Polarity:</b> No marking on bidirectional types.</li> <li>• <b>Terminals:</b> 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.</li> <li>• <b>HE3 suffix</b> for high reliability grade, meets JESD 201 class 2 whisker test.</li> </ul>		
<p><b>TYPICAL APPLICATIONS</b></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 $\mu$ 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
		$V_{BR} > 43$ V
$T_{STG}$	Storage Temperature Range	- 65 to + 175 °C

Notes: 1. Valid only for Unidirectional.

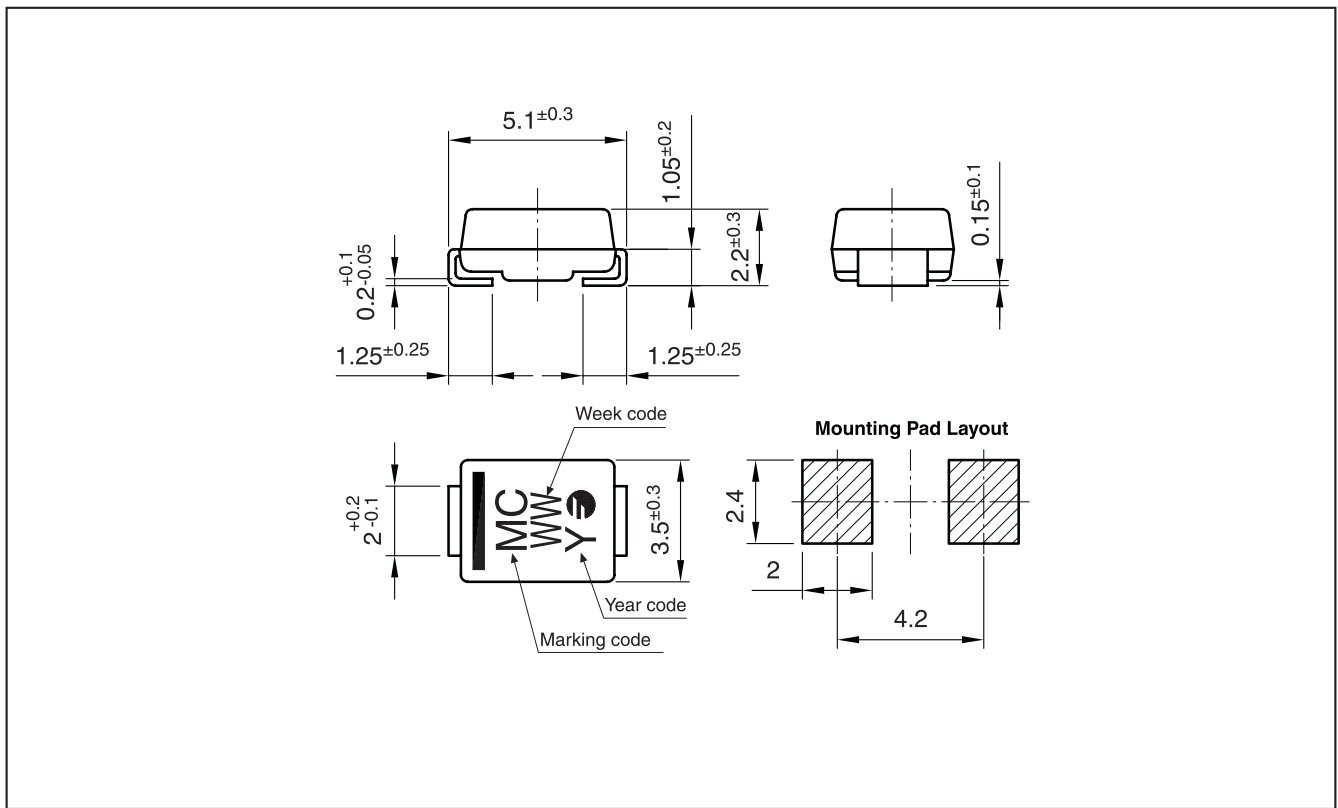
2. Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal

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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 <sup>(2)</sup> $I_{RM}$ at $V_{RM}$		Breakdown Voltage <sup>(1)</sup> $V_{BR(V)}$ $I_R$			Max. Clamping Voltage $V_{CL}$ at $I_{PP}$ 1ms. Expo.	
Unidirectional	Mark	Bidirectional	Mark	( $\mu$ A)	(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
SMBJ7.0A	C1	SMBJ7.0CA	E1	200	7.0	7.78	8.60	10	12	50
SMBJ7.5A	C2	SMBJ7.5CA	E2	100	7.5	8.33	9.21	1	12.9	46.5
SMBJ8.0A	C3	SMBJ8.0CA	E3	50	8.0	8.89	9.83	1	13.6	44.1
SMBJ8.5A	JM	SMBJ8.5CA	ON	20	8.5	9.44	10.4	1	14.4	41.7
SMBJ9.0A	C4	SMBJ9.0CA	E4	5	9.0	10.0	11.1	1	15.4	39.0
SMBJ10A	JN	SMBJ10CA	OO	5	10	11.1	12.3	1	17	35.3
SMBJ11A	C5	SMBJ11CA	E5	5	11	12.2	13.5	1	18.2	33.0
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
SMBJ14A	C6	SMBJ14CA	E6	1	14	15.6	17.2	1	23.2	25.9
SMBJ15A	JR	SMBJ15CA	OS	1	15	16.7	18.5	1	24.4	24.6
SMBJ16A	C7	SMBJ16CA	E7	1	16	17.8	19.7	1	26.0	23.1
SMBJ17A	C8	SMBJ17CA	E8	1	17	18.9	20.9	1	27.6	21.7
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	C9	SMBJ54CA	E9	1	54	60.0	66.3	1	87.1	6.9
SMBJ58A	OC	SMBJ58CA	US	1	58	64.4	71.2	1	93.6	6.4
SMBJ60A	D1	SMBJ60CA	F1	1	60	66.7	73.7	1	96.8	6.2
SMBJ64A	D2	SMBJ64CA	F2	1	64	71.1	78.6	1	103	5.8
SMBJ70A	OD	SMBJ70CA	UT	1	70	77.8	86	1	113	5.3
SMBJ75A	D3	SMBJ75CA	F3	1	75	83.3	92.1	1	121	5.0
SMBJ78A	D4	SMBJ78CA	F4	1	78	86.7	95.8	1	126	4.8
SMBJ85A	OE	SMBJ85CA	UU	1	85	94.4	104	1	137	4.4
SMBJ90A	D5	SMBJ90CA	F5	1	90	100	111	1	146	4.1
SMBJ100A	OF	SMBJ100CA	UV	1	100	111	123	1	162	3.7
SMBJ110A	D6	SMBJ110CA	F6	1	110	122	135	1	177	3.4
SMBJ120A	D7	SMBJ120CA	F7	1	120	133	147	1	193	3.1
SMBJ130A	OG	SMBJ130CA	UW	1	130	144	159	1	209	2.9
SMBJ150A	D8	SMBJ150CA	F8	1	150	167	185	1	243	2.5
SMBJ154A	OH	SMBJ154CA	UX	1	154	171	189	1	246	2.4
SMBJ160A	D9	SMBJ160CA	F9	1	160	178	197	1	259	2.3
SMBJ170A	OI	SMBJ170CA	UY	1	170	189	209	1	275	2.2
SMBJ188A	OJ	SMBJ188CA	UZ	1	188	209	231	1	328	2.0

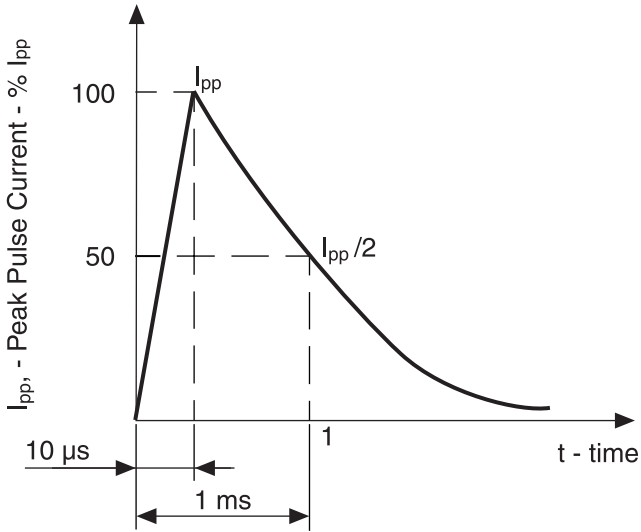
(1) Tested with pulses.

Pulse test:  $t_p$  :50 ms;  $\delta$  < 2%

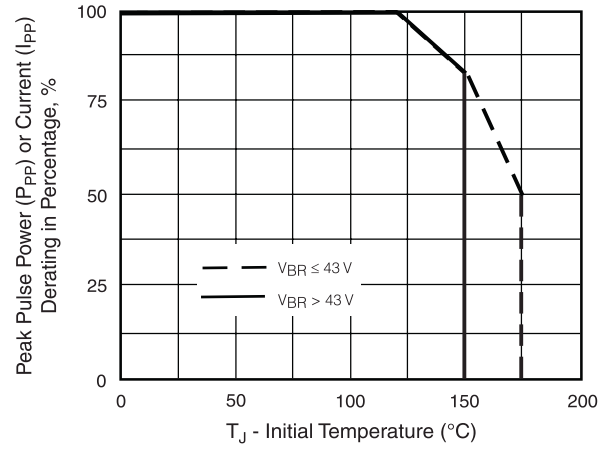
(2) For bidirectional types having  $V_{BR}$  of 10V and less, the  $I_{RM}$  limit is doubled

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

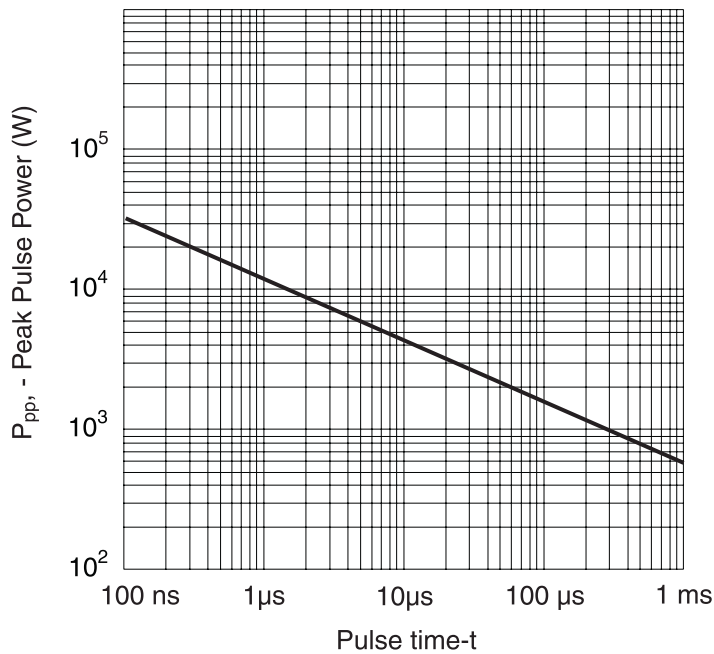


Pulse wave form 10/1000



Pulse Power or Current vs. Initial Junction Temperature

**PEAK PULSE POWER RATING CURVE**



## 600 W Surface Mount Transient Voltage Suppressor

### 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
21-Mar-2023	6	Add SMBJ64A/CA References
28-Abr-2023	7	Update SMBJ family

### Disclaimer

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