Vishay General Semiconductor

Surface Mount TRANSZORB[®] Transient Voltage Suppressors



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SMC (DO-214AB)

PRIMARY CHARACTERISTICS					
V _{BR} uni-directional	6.40 V to 231 V				
V _{BR} bi-directional	6.40 V to 231 V				
V _{WM}	5.0 V to 188 V				
P _{PPM}	1500 W				
PD	6.5 W				
I _{FSM} (uni-directional only)	200 A				
T _J max.	150 °C				
Polarity	Uni-directional, bi-directional				
Package	SMC (DO-214AB)				

DEVICES FOR BI-DIRECTION APPLICATIONS

For bi-directional devices use CA suffix (e.g. SMCJ188CA). Electrical characteristics apply in both directions.

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Available in uni-directional and bi-directional
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
 Automotive ordering code: base P/NHE3 or P/NHM3
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

Use 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.

MECHANICAL DATA

Case: SMC (DO-214AB)

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

Base P/NHE3 - RoHS-compliant and AEC-Q101 qualified Base P/NHM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: for uni-directional types the band denotes cathode end, no marking on bi-directional types

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	VALUE	UNIT			
Peak pulse power dissipation with a 10/1000 μs waveform $^{(1)(2)}$	P _{PPM}	1500	W			
Peak pulse current with a 10/1000 μs waveform $^{(1)}$	I _{PPM}	See next table	А			
Peak forward surge current 8.3 ms single half sine-wave uni-directional only $^{(2)}$	I _{FSM}	200	А			
Power dissipation on infinite heatsink, $T_A = 50 \ ^\circ C$	PD	6.5	W			
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C			

Notes

⁽¹⁾ Non-repetitive current pulse, per fig. 3 and derated above $T_A = 25$ °C per fig. 2.

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

Revision: 14-Jul-17

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For technical questions within your region: <u>DiodesAmericas@vishay.com</u>, <u>DiodesAsia@vishay.com</u>, <u>DiodesEurope@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u>



COMPLIANT HALOGEN

FREE



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DEVICE TYPE DEVICE MARKING VOLTAGE CUBBENT VOLTAGE REVERSE PEAK PULSE CLAMPIN	ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)									
INN BI MIN. MAX. Image: Constraint of the second se	DEVICE TYPE MODIFIED	DEVICE N CO	MARKING DE	BREAK VOLT V _{BR} A ((DOWN FAGE T I _T ⁽¹⁾ V)	TEST CURRENT I _T	STAND-OFF VOLTAGE V _{WM}	MAXIMUM REVERSE LEAKAGE AT V _{WM}	PEAK PULSE SURGE CURRENT	
(*)SMC.66.A GDG GDG 6.67 7.37 10 6.0 1000 145.6 10.3 (*)SMC.67.A GDM GDM CM 7.78 8.60 10 7.0 200 125.0 112.0 (*)SMC.JO.A GDP BDP 8.33 9.21 1.0 7.5 100 116.3 12.0 (*)SMC.JO.A GDP BDR 8.89 9.83 1.0 8.0 50 110.3 13.6 (*)SMC.JO.A GDV BDV 10.0 11.1 1.0 9.0 10 97.4 15.4 (*)SMC.JIA.A GDZ GDZ 12.2 13.5 1.0 11 5.0 88.2 17.0 (*)SMC.JIA.A GEG GEG 14.4 15.9 1.0 13 1.0 69.8 21.5 (*)SMC.JIA.A GEK BEK 15.6 17.2 1.0 14 1.0 64.7 23.2 (*)SMC.JIA.A GEK BEK 1	(.) 0. 10 15 0. (5)	-								
(*)SMCJ6.5A GDK BDK 7.22 7.98 10 6.5 500 133.9 11.2 (*)SMCJ7.5A GDP BDP 8.33 9.21 1.0 7.5 100 116.3 12.9 (*)SMCJ7.5A GDP BDP 8.49 9.43 1.0 8.0 50 110.3 13.6 (*)SMCJ0.A GDR BDT 10.4 1.0 8.5 20 110.4 14.4 (*)SMCJ0.A GDV BDV 10.0 11.1 12.3 1.0 10 97.4 15.4 (*)SMCJ10.A GDZ BDZ 11.2 13.0 10 10 5.0 82.4 18.2 (*)SMCJ13.A GEE BEE 13.3 14.7 1.0 13 1.0 64.7 23.2 (*)SMCJ13.A GEE BEK 15.6 1.0 15 1.0 61.5 24.4 (*)SMCJ13.A GEE BEE 12.0 12.1 1.0 23.2 <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			-							
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(*)SMCJ8.0A GDP B33 9.21 1.0 7.5 100 116.3 12.9 (*)SMCJ8.0A GDR BDR 8.89 9.83 1.0 8.0 50 110.3 13.6 (*)SMCJ8.0A GDV BDV 10.0 11.1 1.0 8.0 50 110.3 13.6 (*)SMCJ0.0A GDV BDV 10.0 11.1 12.3 1.0 10 97.4 15.4 (*)SMCJ0.0A GDV BDX 11.1 12.3 1.0 10 5.0 88.2 17.0 (*)SMCJ13A GEE BEE 13.3 14.7 1.0 13 1.0 69.8 21.5 (*)SMCJ13A GEK BEK 15.6 1.0 15 1.0 61.5 2.2 2.2 2.2 2.2 1.0 16 1.0 5.7.7 26.0 (*SMCJ13A GER BEF 20.0 1.0 16 1.0 5.7.7 26.0 (*SMCJ20.4 2.2										
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(H)SMCJ14A GEK BEK 15.6 17.2 1.0 14 1.0 64.7 23.2 (H)SMCJ16A GEP GEP GEP 18.5 1.0 15 1.0 61.5 24.4 (H)SMCJ17A GER GER 18.9 20.9 1.0 17 1.0 54.3 27.6 (H)SMCJ10A GET BET 20.0 22.1 1.0 18 1.0 51.4 29.2 (H)SMCJ20A GEV BEV 22.2 24.5 1.0 20 1.0 46.3 32.4 (H)SMCJ20A GEZ BEZ 26.7 29.5 1.0 22 1.0 42.3 35.5 (H)SMCJ26A GFE BFE 28.9 1.0 26 1.0 33.0 45.4 (H)SMCJ30A GFM BFK 33.3 36.8 1.0 33 1.0 28.1 53.3 (H)SMCJ33A GFM BFR 40.0 44.2 1.0 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>										
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		GEG	GEG	14.4	15.9	1.0	13	1.0	69.8	21.5
(+)SMCJ16A GEP GEP 17.8 19.7 1.0 16 1.0 57.7 26.0 (+)SMCJ17A GER GER GER 18.9 20.9 1.0 17 1.0 54.3 27.6 (+)SMCJ18A GET BET 20.0 22.1 1.0 18 1.0 51.4 29.2 (+)SMCJ20A GEV BEV 22.2 24.5 1.0 20 1.0 46.3 32.4 (+)SMCJ2AA GEZ BEZ 26.7 29.5 1.0 22 1.0 46.3 33.2 (+)SMCJ2AA GEZ BEZ 26.7 29.5 1.0 22 1.0 38.6 38.9 (+)SMCJ3AA GFE BFE 28.9 31.9 1.0 26 1.0 33.0 45.1 (+)SMCJ3AA GFM BFK 33.3 36.8 1.0 30 1.0 28.1 53.3 (+)SMCJ3AA GFM BFM 36.7 <t< td=""><td>⁽⁺⁾SMCJ14A</td><td></td><td>BEK</td><td>15.6</td><td></td><td>1.0</td><td>14</td><td>1.0</td><td>64.7</td><td>23.2</td></t<>	⁽⁺⁾ SMCJ14A		BEK	15.6		1.0	14	1.0	64.7	23.2
	(+)SMCJ15A	GEM	BEM	16.7	18.5	1.0	15	1.0	61.5	24.4
	⁽⁺⁾ SMCJ16A	GEP	GEP	17.8	19.7	1.0	16	1.0	57.7	26.0
	(+)SMCJ17A	GER	GER	18.9	20.9	1.0	17	1.0	54.3	27.6
(+)SMCJ22A GEX BEX 24.4 26.9 1.0 22 1.0 42.3 35.5 (+)SMCJ24A GEZ BEZ 26.7 29.5 1.0 24 1.0 38.6 38.9 (+)SMCJ26A GFE BFE 28.9 31.9 1.0 26 1.0 35.6 42.1 (+)SMCJ26A GFG BFG 31.1 34.4 1.0 28 1.0 33.0 45.4 (+)SMCJ30A GFK BFK 33.3 36.8 1.0 30 1.0 28.1 53.3 (+)SMCJ40A GFP BFR 40.6 1.0 33 1.0 25.8 58.1 (+)SMCJ40A GFP BFR 44.4 49.1 1.0 40 1.0 23.3 64.5 (+)SMCJ43A GFT BFT 47.8 52.8 1.0 43 1.0 21.6 69.4 (+)SMCJ43A GFZ GFZ 56.7 62.7 1.0 <t< td=""><td>⁽⁺⁾SMCJ18A</td><td>GET</td><td>BET</td><td>20.0</td><td>22.1</td><td>1.0</td><td>18</td><td>1.0</td><td>51.4</td><td>29.2</td></t<>	⁽⁺⁾ SMCJ18A	GET	BET	20.0	22.1	1.0	18	1.0	51.4	29.2
(+)SMCJ24A GEZ BEZ 26.7 29.5 1.0 24 1.0 38.6 38.9 (+)SMCJ26A GFE BFE 28.9 31.9 1.0 26 1.0 35.6 42.1 (+)SMCJ28A GFG BFE 28.9 31.9 1.0 26 1.0 33.0 45.4 (+)SMCJ30A GFK BFK 33.3 36.8 1.0 30 1.0 31.0 48.4 (+)SMCJ33A GFM BFM 36.7 40.6 1.0 33 1.0 28.1 53.3 (+)SMCJ43A GFF BFF 47.8 52.8 1.0 43 1.0 23.3 64.5 (+)SMCJ43A GFT BFT 47.8 52.8 1.0 43 1.0 21.6 69.4 (+)SMCJ48A GFX GFX 53.3 58.9 1.0 48 1.0 19.4 77.4 (+)SMCJ48A GGE GGE 60.0 66.3 <	(+)SMCJ20A	GEV	BEV	22.2	24.5	1.0	20	1.0	46.3	32.4
(+)SMCJ26A GFE BFE 28.9 31.9 1.0 26 1.0 35.6 42.1 (+)SMCJ28A GFG BFG 31.1 34.4 1.0 28 1.0 33.0 45.4 (+)SMCJ30A GFK BFK 33.3 36.8 1.0 30 1.0 31.0 48.4 (+)SMCJ30A GFM BFM 36.7 40.6 1.0 33 1.0 28.1 53.3 (+)SMCJ36A GFP BFP 40.0 44.2 1.0 36 1.0 23.3 64.5 (+)SMCJ45A GFT BFT 47.8 52.8 1.0 43 1.0 20.6 72.7 (+)SMCJ45A GFV GFV 50.0 55.3 1.0 48 1.0 19.4 77.4 (+)SMCJ54A GGE GGE 66.7 73.7 1.0 58 1.0 16.0 93.6 (+)SMCJ54A GGE GGG 66.7 73.7 <	(+)SMCJ22A	GEX	BEX	24.4	26.9	1.0	22	1.0	42.3	35.5
(+)SMCJ28A GFG BFG 31.1 34.4 1.0 28 1.0 33.0 45.4 (+)SMCJ30A GFK BFK 33.3 36.8 1.0 30 1.0 31.0 48.4 (+)SMCJ3A GFM BFM 36.7 40.6 1.0 33 1.0 28.1 53.3 (+)SMCJ3AA GFP BFP 40.0 44.2 1.0 36 1.0 28.1 53.3 (+)SMCJ40A GFR BFR 44.4 49.1 1.0 40 1.0 23.3 64.5 (+)SMCJ43A GFT BFT 47.8 52.8 1.0 43 1.0 21.6 69.4 (+)SMCJ48A GFZ GFZ 56.7 62.7 1.0 51 1.0 18.2 82.4 (+)SMCJ54A GGE GGE 60.0 66.3 1.0 54 1.0 17.2 87.1 (+)SMCJ54A GGG GGG 64.7 73.7 <t< td=""><td>(+)SMCJ24A</td><td>GEZ</td><td>BEZ</td><td>26.7</td><td>29.5</td><td>1.0</td><td>24</td><td>1.0</td><td>38.6</td><td>38.9</td></t<>	(+)SMCJ24A	GEZ	BEZ	26.7	29.5	1.0	24	1.0	38.6	38.9
(+)SMCJ28A GFG BFG 31.1 34.4 1.0 28 1.0 33.0 45.4 (+)SMCJ30A GFK BFK 33.3 36.8 1.0 30 1.0 31.0 48.4 (+)SMCJ33A GFM BFM 36.7 40.6 1.0 33 1.0 28.1 53.3 (+)SMCJ36A GFP BFP 40.0 44.2 1.0 36 1.0 28.1 53.3 (+)SMCJ40A GFR BFR 44.4 49.1 1.0 40 1.0 23.3 64.5 (+)SMCJ43A GFT BFT 47.8 52.8 1.0 43 1.0 21.6 69.4 (+)SMCJ48A GFX GFX 53.3 58.9 1.0 48 1.0 19.4 77.4 (+)SMCJ51A GFZ 56.7 62.7 1.0 51 1.0 18.2 82.4 (+)SMCJ54A GGE GGE 60.0 66.3 1.0 54 1.0 16.0 93.6 (+)SMCJ58A GGG GGG <td< td=""><td>(+)SMCJ26A</td><td>GFE</td><td>BFE</td><td>28.9</td><td>31.9</td><td>1.0</td><td>26</td><td>1.0</td><td>35.6</td><td>42.1</td></td<>	(+)SMCJ26A	GFE	BFE	28.9	31.9	1.0	26	1.0	35.6	42.1
(+)SMCJ33A GFM BFM 36.7 40.6 1.0 33 1.0 28.1 53.3 (+)SMCJ36A GFP BFP 40.0 44.2 1.0 36 1.0 25.8 58.1 (+)SMCJ40A GFR BFR 44.4 49.1 1.0 40 1.0 23.3 64.5 (+)SMCJ43A GFT BFT 47.8 52.8 1.0 43 1.0 21.6 69.4 (+)SMCJ45A GFV GFV 50.0 55.3 1.0 445 1.0 20.6 72.7 (+)SMCJ45A GFZ GFZ 56.7 62.7 1.0 51 1.0 18.2 82.4 (+)SMCJ54A GGE GGE 60.0 66.3 1.0 54 1.0 17.2 87.1 (+)SMCJ60A GGK GGK 66.7 73.7 1.0 60 1.0 15.5 96.8 (+)SMCJ60A GGM GGM 77.8 86.0			BFG	31.1	34.4	1.0	28	1.0	33.0	45.4
(+)SMCJ36A GFP BFP 40.0 44.2 1.0 36 1.0 25.8 58.1 (+)SMCJ40A GFR BFR 44.4 49.1 1.0 40 1.0 23.3 64.5 (+)SMCJ43A GFT BFT 47.8 52.8 1.0 43 1.0 21.6 69.4 (+)SMCJ43A GFV GFV 50.0 55.3 1.0 45 1.0 20.6 72.7 (+)SMCJ48A GFZ GFZ 56.7 62.7 1.0 51 1.0 18.2 82.4 (+)SMCJ54A GGE GGE 60.0 66.3 1.0 54 1.0 17.2 87.1 (+)SMCJ54A GGG GGG 64.4 71.2 1.0 58 1.0 16.0 93.6 (+)SMCJ60A GGK GGK 66.7 73.7 1.0 60 1.0 14.6 103 (+)SMCJ64A GGM GGM 71.1 78.6 <t< td=""><td>(+)SMCJ30A</td><td>GFK</td><td>BFK</td><td>33.3</td><td>36.8</td><td>1.0</td><td>30</td><td>1.0</td><td>31.0</td><td>48.4</td></t<>	(+)SMCJ30A	GFK	BFK	33.3	36.8	1.0	30	1.0	31.0	48.4
(+)SMCJ40A GFR BFR 44.4 49.1 1.0 40 1.0 23.3 64.5 (+)SMCJ43A GFT BFT 47.8 52.8 1.0 43 1.0 21.6 69.4 (+)SMCJ45A GFV GFV 50.0 55.3 1.0 45 1.0 20.6 72.7 (+)SMCJ48A GFZ GFZ 56.7 62.7 1.0 51 1.0 18.2 82.4 (+)SMCJ54A GGE GGE 60.0 66.3 1.0 54 1.0 17.2 87.1 (+)SMCJ54A GGE GGE 64.4 71.2 1.0 58 1.0 16.0 93.6 (+)SMCJ60A GGK GGK 66.7 73.7 1.0 60 1.0 15.5 96.8 (+)SMCJ70A GGP GGP 77.8 86.0 1.0 75 1.0 12.4 121 (+)SMCJ75A GGR GGR 83.3 92.1 <t< td=""><td>(+)SMCJ33A</td><td>GFM</td><td>BFM</td><td>36.7</td><td>40.6</td><td>1.0</td><td>33</td><td>1.0</td><td>28.1</td><td>53.3</td></t<>	(+)SMCJ33A	GFM	BFM	36.7	40.6	1.0	33	1.0	28.1	53.3
(+)SMCJ43A GFT BFT 47.8 52.8 1.0 43 1.0 21.6 69.4 (+)SMCJ45A GFV GFV 50.0 55.3 1.0 45 1.0 20.6 72.7 (+)SMCJ48A GFX GFX 53.3 58.9 1.0 48 1.0 19.4 77.4 (+)SMCJ51A GFZ GFZ 56.7 62.7 1.0 51 1.0 18.2 82.4 (+)SMCJ54A GGE GGE 60.0 66.3 1.0 54 1.0 17.2 87.1 (+)SMCJ58A GGG GGG 64.4 71.2 1.0 58 1.0 16.0 93.6 (+)SMCJ60A GGK GGK 66.7 73.7 1.0 60 1.0 15.5 96.8 (+)SMCJ70A GGP GGP 77.8 86.0 1.0 70 1.0 13.3 113 (+)SMCJ70A GGR GGT 86.7 95.8 <t< td=""><td>(+)SMCJ36A</td><td>GFP</td><td>BFP</td><td>40.0</td><td>44.2</td><td>1.0</td><td>36</td><td>1.0</td><td>25.8</td><td>58.1</td></t<>	(+)SMCJ36A	GFP	BFP	40.0	44.2	1.0	36	1.0	25.8	58.1
(+)SMCJ45A GFV GFV 50.0 55.3 1.0 45 1.0 20.6 72.7 (+)SMCJ48A GFX GFX 53.3 58.9 1.0 48 1.0 19.4 77.4 (+)SMCJ51A GFZ GFZ 56.7 62.7 1.0 51 1.0 18.2 82.4 (+)SMCJ54A GGE GGE 60.0 66.3 1.0 54 1.0 17.2 87.1 (+)SMCJ58A GGG GGK 66.7 73.7 1.0 58 1.0 16.0 93.6 (+)SMCJ60A GGK GGM 71.1 78.6 1.0 64 1.0 14.6 103 (+)SMCJ70A GGP GGR 83.3 92.1 1.0 75 1.0 12.4 121 (+)SMCJ75A GGR GGT 86.7 95.8 1.0 78 1.0 11.9 126 (+)SMCJ8A GGZ GGZ 111 1.0 90<	(+)SMCJ40A	GFR	BFR	44.4	49.1	1.0	40	1.0	23.3	64.5
(+)SMCJ45A GFV GFV 50.0 55.3 1.0 45 1.0 20.6 72.7 (+)SMCJ48A GFX GFX 53.3 58.9 1.0 48 1.0 19.4 77.4 (+)SMCJ51A GFZ GFZ 56.7 62.7 1.0 51 1.0 18.2 82.4 (+)SMCJ54A GGE GGE 60.0 66.3 1.0 54 1.0 17.2 87.1 (+)SMCJ58A GGG GGK 66.7 73.7 1.0 58 1.0 16.0 93.6 (+)SMCJ60A GGK GGK 66.7 73.7 1.0 60 1.0 15.5 96.8 (+)SMCJ70A GGP GGP 77.8 86.0 1.0 70 1.0 13.3 113 (+)SMCJ70A GGT GGT 86.7 95.8 1.0 78 1.0 11.9 12.6 (+)SMCJ85A GGV GGV 94.4 104 <td< td=""><td>(+)SMCJ43A</td><td>GFT</td><td>BFT</td><td>47.8</td><td>52.8</td><td>1.0</td><td>43</td><td>1.0</td><td>21.6</td><td>69.4</td></td<>	(+)SMCJ43A	GFT	BFT	47.8	52.8	1.0	43	1.0	21.6	69.4
(+)SMCJ48A GFX GFX 53.3 58.9 1.0 48 1.0 19.4 77.4 (+)SMCJ51A GFZ GFZ 56.7 62.7 1.0 51 1.0 18.2 82.4 (+)SMCJ54A GGE GGE 60.0 66.3 1.0 54 1.0 17.2 87.1 (+)SMCJ58A GGG GGG 64.4 71.2 1.0 58 1.0 16.0 93.6 (+)SMCJ60A GGK GGK 66.7 73.7 1.0 60 1.0 15.5 96.8 (+)SMCJ60A GGM GGM 71.1 78.6 1.0 64 1.0 14.6 103 (+)SMCJ70A GGP GGP 77.8 86.0 1.0 76 1.0 13.3 113 (+)SMCJ75A GGR GGR 83.3 92.1 1.0 78 1.0 11.9 12.4 121 (+)SMCJ78A GGT GGT 86.7		GFV	GFV	50.0		1.0	45	1.0		72.7
(+)SMCJ51AGFZGFZ56.762.71.0511.018.282.4(+)SMCJ54AGGEGGE60.066.31.0541.017.287.1(+)SMCJ58AGGGGGG64.471.21.0581.016.093.6(+)SMCJ60AGGKGGK66.773.71.0601.015.596.8(+)SMCJ64AGGMGGM71.178.61.0641.014.6103(+)SMCJ70AGGPGGP77.886.01.0701.013.3113(+)SMCJ75AGGRGGT86.795.81.0781.011.9126(+)SMCJ85AGGVGGV94.41041.0851.010.9137(+)SMCJ100AGGZGGZ1111231.01001.09.3162(+)SMCJ120AGHEGHE1221351.01101.08.5177(+)SMCJ130AGHKGHK1441591.01301.07.2209(+)SMCJ150AGHMGHM1671851.01501.06.2243(+)SMCJ160AGHPGHP1781971.01601.05.8259										
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(+)SMCJ75A GGR GGR 83.3 92.1 1.0 75 1.0 12.4 121 (+)SMCJ78A GGT GGT 86.7 95.8 1.0 78 1.0 11.9 126 (+)SMCJ78A GGV GGV 94.4 104 1.0 85 1.0 10.9 137 (+)SMCJ90A GGX GGX 100 111 1.0 90 1.0 10.3 146 (+)SMCJ100A GGZ GGZ 111 123 1.0 100 1.0 9.3 162 (+)SMCJ100A GGZ GGZ 111 123 1.0 100 1.0 9.3 162 (+)SMCJ10A GHE GHE 122 135 1.0 110 1.0 8.5 177 (+)SMCJ120A GHG GHG 133 147 1.0 120 1.0 7.8 193 (+)SMCJ130A GHK GHK 144 159 1.0										
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(+)SMCJ150A GHM GHM 167 185 1.0 150 1.0 6.2 243 (+)SMCJ160A GHP GHP 178 197 1.0 160 1.0 5.8 259										
(+)SMCJ160A GHP GHP 178 197 1.0 160 1.0 5.8 259										
SMCJ188A GHS GHS 209 231 1.0 188 1.0 4.6 328										

Notes

⁽¹⁾ Pulse test: $t_p \le 50 \text{ ms}$

⁽²⁾ Surge current waveform per fig. 3 and derate per fig. 2

 $^{(3)}$ For bi-directional types having V_{WM} of 10 V and less, the I_D limit is doubled

⁽⁴⁾ All terms and symbols are consistent with ANSI/IEEE C62.35

 $^{(5)}\,$ For the bi-directional SMCJ5.0CA, the maximum $V_{BR}\,$ is 7.25 V

 $^{(6)}$ V_F = 3.5 V at I_F = 100 A (uni-directional only)

(+) Underwriters laboratory recognition for the classification of protectors (QVGQ2) under the UL standard for safety 497B and file number E136766 for both uni-directional and bi-directional devices

Revision: 14-Jul-17

2

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Vishay General Semiconductor

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	SYMBOL	VALUE	UNIT				
Typical thermal resistance, junction to ambient air ⁽¹⁾	$R_{ extsf{ heta}JA}$	75	°C/W				
Typical thermal resistance, junction to lead	$R_{ extsf{ heta}JL}$	15	0, W				

Note

⁽¹⁾ Mounted on minimum recommended pad layout

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SMCJ5.0A-E3/57T	0.211	57T	850	7" diameter plastic tape and reel		
SMCJ5.0A-E3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel		
SMCJ5.0AHE3/57T (1)	0.211	57T	850	7" diameter plastic tape and reel		
SMCJ5.0AHE3/9AT (1)	0.211	9AT	3500	13" diameter plastic tape and reel		
SMCJ5.0A-M3/57T	0.211	57T	850	7" diameter plastic tape and reel		
SMCJ5.0A-M3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel		
SMCJ5.0AHM3/H ⁽¹⁾	0.211	Н	850	7" diameter plastic tape and reel		
SMCJ5.0AHM3/I ⁽¹⁾	0.211		3500	13" diameter plastic tape and reel		

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

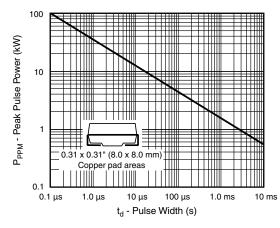


Fig. 1 - Peak Pulse Power Rating Curve

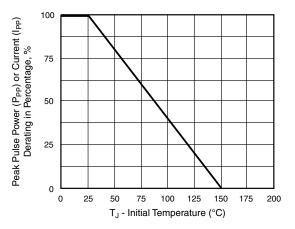


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature



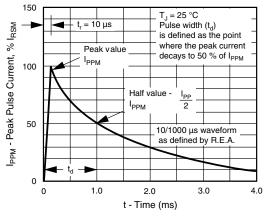


Fig. 3 - Pulse Waveform

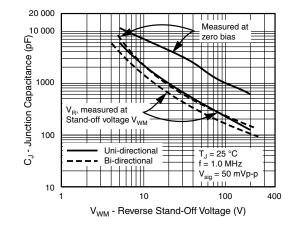


Fig. 4 - Typical Junction Capacitance Uni-Directional

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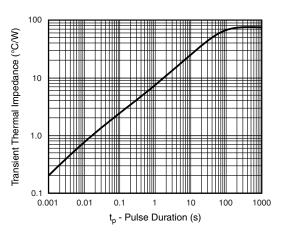
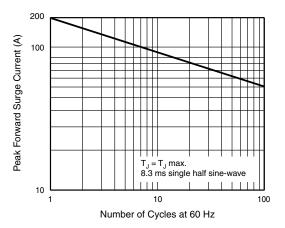
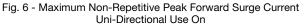
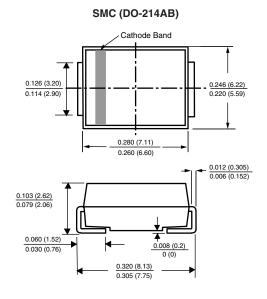


Fig. 5 - Typical Transient Thermal Impedance

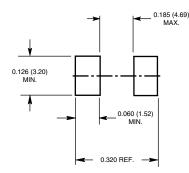




PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Mounting Pad Layout



 Revision: 14-Jul-17
 4
 Document Number: 88394

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