

Product Summary

PPK	V _{RWM}	PM _(AV)
3000W	5V to 170V	5W

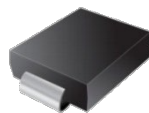
Features and Benefits

- 3000W Peak Pulse Power Dissipation
- 5V to 170V Standoff Voltages
- Unidirectional and Bidirectional
- Glass Passivated Die Construction
- Excellent Clamping Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Case: SMC
- Case Material: Molded Plastic.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads.
Solderable per MIL-STD-202, Method 208 ⁽³⁾
- Unidirectional Devices Have A Cathode Band. Bidirectional Devices Have No Polarity Indicator
- Weight: 0.21 grams (Approximate)

SMC



Top View



Bottom View

Ordering Information (Note 4)

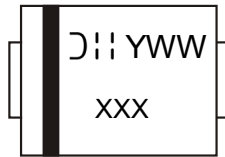
Part Number	Qualification	Case	Packaging
3.0SMCJX.XA-13*	Commercial	SMC	3000/Tape & Reel
3.0SMCJXX(C)A-13*	Commercial	SMC	3000/Tape & Reel
3.0SMCJXXX(C)A-13*	Commercial	SMC	3000/Tape & Reel

*X = Device Voltage, e.g., 3.0SMCJ14CA-13.

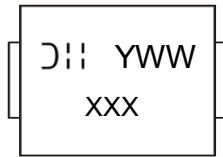
- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information

Cathode Band for Unidirectional Device



Bidirectional Device



XXX = Product Type Marking Code
 (See Electrical Characteristics Table)
 D:: = Manufacturers' Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 1 for 2021)
 WW = Week Code (01 to 53)

Maximum Ratings (@ T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
 For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Note 5)	P _{PK}	3000	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (Notes 6, 7, 8)	I _{FSM}	300	A

Note: 5. Non-repetitive current pulse per Figure 4 and derated above T_A = +25°C per Figure 1.
 6. Mounted on 8.00mm² (0.013mm thick) land areas.
 7. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
 8. Unidirectional units only.

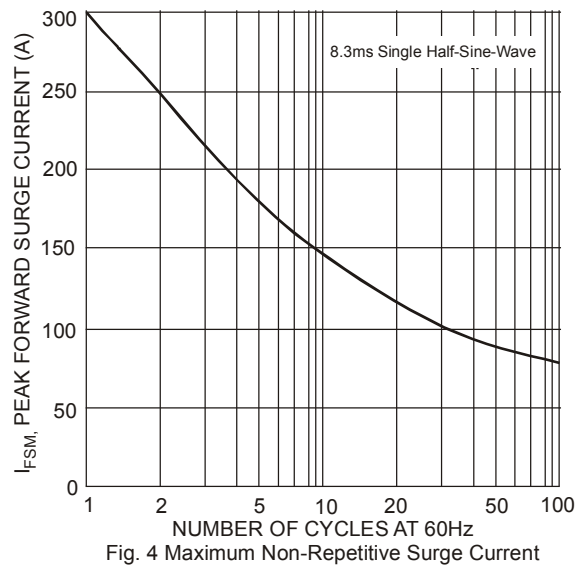
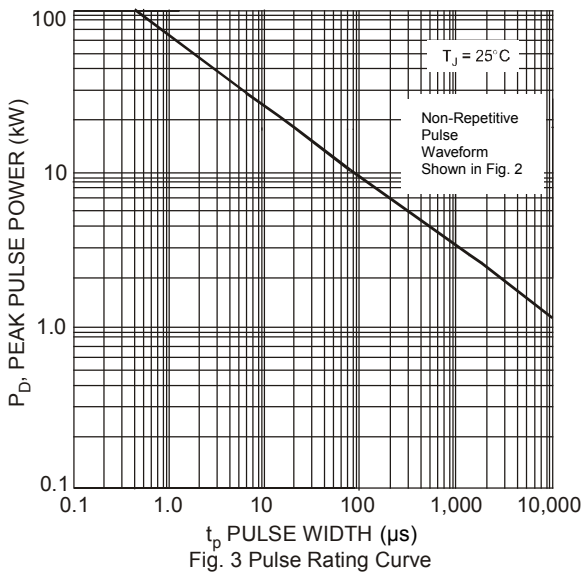
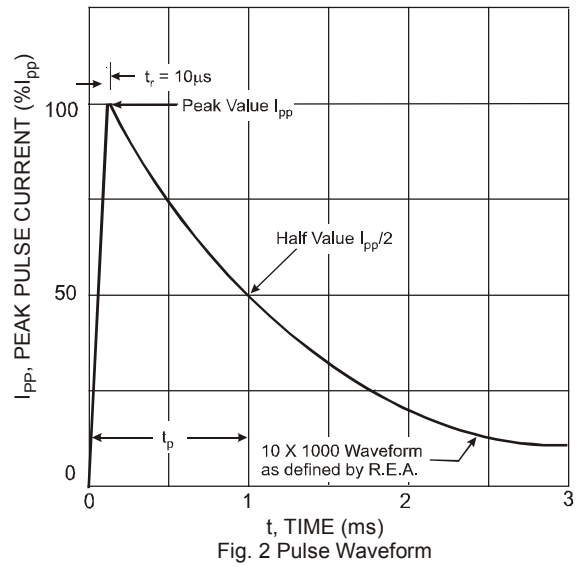
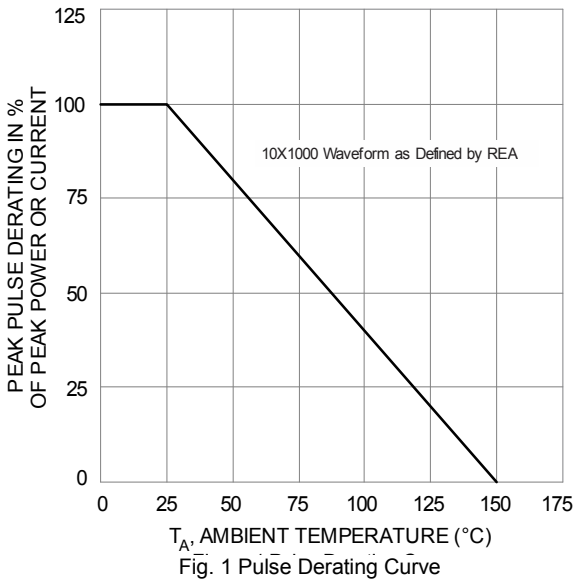
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Operating Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

Electrical Characteristics (@ T_A = +25°C unless otherwise specified.)

Part Number	Reverse Standoff Voltage	Breakdown Voltage V _{BR} @ I _T (Note 11)		Test Current	Max. Reverse Leakage @ V _{RWM}	Max. Clamping Voltage @ I _{pp} (Note 10)	Max. Peak Pulse Current	Marking Code	
	V _{RWM} (V)	Min (V)	Max (V)	I _T (mA)	I _R (μA)	V _C (V)	I _{pp} (A)	Un-	Bi-
3.0SMCJ5.0A	5.0	6.40	7.07	10	1000	9.2	326.1	HDE	--
3.0SMCJ10(C)A	10.0	11.10	12.27	1.0	5.0	17.0	176.5	HDX	DDX
3.0SMCJ11(C)A	11.0	12.20	13.5	1.0	5.0	18.2	164.8	HDZ	DDZ
3.0SMCJ12(C)A	12.0	13.30	14.7	1.0	5.0	19.9	150.8	HEE	DEE
3.0SMCJ13(C)A	13.0	14.40	15.9	1.0	5.0	21.5	139.5	HEG	DED
3.0SMCJ14(C)A	14.0	15.60	17.2	1.0	5.0	23.2	129.3	HDE	DEK
3.0SMCJ15(C)A	15.0	16.70	18.5	1.0	5.0	24.2	124.0	HEM	DEM
3.0SMCJ16(C)A	16.0	17.80	19.7	1.0	5.0	26.0	115.4	HEP	DEP
3.0SMCJ17(C)A	17.0	18.90	20.9	1.0	5.0	27.6	108.7	HER	DER
3.0SMCJ18(C)A	18.0	20.00	22.1	1.0	5.0	29.2	102.7	HET	DET
3.0SMCJ20(C)A	20.0	22.20	24.5	1.0	5.0	32.4	92.6	HEV	DEV
3.0SMCJ22(C)A	22.0	24.40	27.0	1.0	5.0	35.5	84.5	HEX	DEX
3.0SMCJ24(C)A	24.0	26.70	29.5	1.0	5.0	38.9	77.1	HEZ	DEZ
3.0SMCJ26(C)A	26.0	28.90	31.9	1.0	5.0	42.1	71.3	HFE	DFE
3.0SMCJ28(C)A	28.0	31.10	34.4	1.0	5.0	45.4	66.1	HFG	DFD
3.0SMCJ30(C)A	30.0	33.30	36.8	1.0	5.0	48.4	62.0	HFK	DFK
3.0SMCJ33(C)A	33.0	36.70	40.6	1.0	5.0	53.3	56.3	HFM	DFM
3.0SMCJ36(C)A	36.0	40.00	44.2	1.0	5.0	58.1	51.6	HFP	DFP
3.0SMCJ40(C)A	40.0	44.40	49.1	1.0	5.0	64.5	46.5	HFR	DFR
3.0SMCJ43(C)A	43.0	47.80	52.8	1.0	5.0	69.4	43.2	HFT	DFT
3.0SMCJ45(C)A	45.0	50.00	55.3	1.0	5.0	72.7	41.3	HFV	DFV
3.0SMCJ48(C)A	48.0	53.30	58.9	1.0	5.0	77.4	38.8	HFX	DFX
3.0SMCJ51(C)A	51.0	56.70	62.7	1.0	5.0	82.4	36.4	HFZ	DFZ
3.0SMCJ54(C)A	54.0	60.00	66.3	1.0	5.0	87.1	34.4	HGE	DDE
3.0SMCJ58(C)A	58.0	64.40	71.2	1.0	5.0	93.6	32.1	HGG	DDD
3.0SMCJ60(C)A	60.0	66.70	73.7	1.0	5.0	96.8	31.0	HGK	DDK
3.0SMCJ64(C)A	64.0	71.10	78.6	1.0	5.0	103.0	29.1	HGM	DDM
3.0SMCJ70(C)A	70.0	77.80	86.0	1.0	5.0	113.0	26.5	HGP	DGP
3.0SMCJ75(C)A	75.0	83.30	92.1	1.0	5.0	121.0	24.8	HGR	DGR
3.0SMCJ78(C)A	78.0	86.70	95.8	1.0	5.0	126.0	23.8	HGT	DGT
3.0SMCJ85(C)A	85.0	94.40	104.3	1.0	5.0	137.0	21.9	HGV	DGV
3.0SMCJ90(C)A	90.0	100.00	110.5	1.0	5.0	146.0	20.5	HGX	DGX
3.0SMCJ100(C)A	100.0	111.00	122.7	1.0	5.0	162.0	18.5	HGZ	DGZ
3.0SMCJ110(C)A	110.0	122.00	134.8	1.0	5.0	177.0	16.9	HHE	DHE
3.0SMCJ120(C)A	120.0	133.00	147.0	1.0	5.0	193.0	15.5	HHG	DHG
3.0SMCJ130(C)A	130.0	144.00	159.2	1.0	5.0	209.0	14.4	HHK	DHK
3.0SMCJ150(C)A	150.0	167.00	184.6	1.0	5.0	243.0	12.3	HHM	DGM
3.0SMCJ160(C)A	160.0	178.00	196.7	1.0	5.0	259.0	11.6	HHP	DHP
3.0SMCJ170(C)A	170.0	189.00	208.9	1.0	5.0	275.0	10.9	HHR	DHR

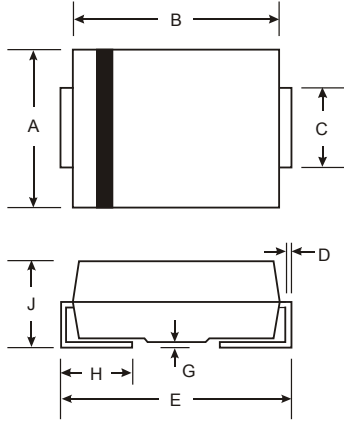
- Notes:
9. V_R = 0V, f = 1MHz
 10. Per 10 × 1000μs waveform. See Figure 2.
 11. V_{BR} measured with I_T current pulse = 10ms to 15ms.



Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

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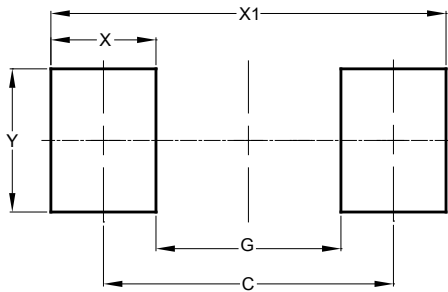


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Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

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Dimensions	Value (in mm)
C	6.90
G	4.40
X	2.50
X1	9.40
Y	3.30

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