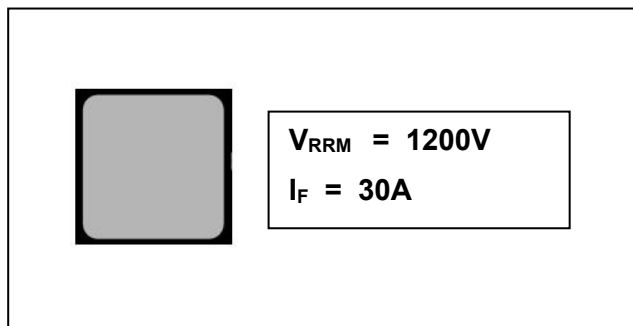


# SD4-1200-S030AB

## SiC Schottky Power Rectifier Chip



### Description

- 1200-Volt Schottky Rectifier
- Zero Reverse Recovery
- Zero Forward Recovery
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching
- Positive Temperature Coefficient on VF

Part Number	Die Size	Anode	Cathode
SD4-1200-S030AB	4.20 × 4.20 mm <sup>2</sup>	Al	Ag

### Maximum Ratings:

Parameter	Symbol	Test Condition	Value	Units
Repetitive Peak Reverse Voltage	$V_{RRM}$		1200	V
Surge Peak Reverse Voltage	$V_{RSM}$		1200	V
DC Peak Blocking Voltage	$V_R$		1200	V
Continuous Forward Current <sup>[1]</sup>	$I_F$	$T_C = 25\text{ }^\circ\text{C}, T_J = 175\text{ }^\circ\text{C}$	94	A
	$I_F$	$T_C = 137\text{ }^\circ\text{C}, T_J = 175\text{ }^\circ\text{C}$	40	A
	$I_F$	$T_C = 155\text{ }^\circ\text{C}, T_J = 175\text{ }^\circ\text{C}$	30	A
Non-Repetitive Forward Surge Current	$I_{FSM}$	$T_C = 25\text{ }^\circ\text{C}, t_p = 10\text{ ms, Half Sine Pulse}$	300	A
Operating Junction and Storage Temperature	$T_J, T_{stg}$		-55 to +175	$^\circ\text{C}$
Maximum Processing Temperature	$T_{Proc}$		325	$^\circ\text{C}$

[1] Assumes  $R_{\theta JC}$  Thermal Resistance of 0.3 $^\circ\text{C}/\text{W}$  or less

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

**Technical Data**  
**Data Sheet D0314, REV.B**

**Electrical Characteristics(T=25°C unless otherwise specified):**

Parameter	Symbol	Condition	Typ.	Max.	Units
DC Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 30A, T <sub>J</sub> =25°C	1.5	1.8	V
		I <sub>F</sub> = 30A, T <sub>J</sub> =175°C	1.9	2.5	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 1200 V, T <sub>J</sub> =25°C	1	20	uA
		V <sub>R</sub> = 1200 V, T <sub>J</sub> =175°C	5	200	uA
Junction Capacitance	C <sub>T</sub>	V <sub>R</sub> =0V, T <sub>J</sub> =25°C, f=1MHz	2581	-	C <sub>T</sub>
Reverse Recovery Charge	Q <sub>c</sub>	I <sub>F</sub> = 30A, di/dt = 200A/μs V <sub>R</sub> = 800 V, T <sub>J</sub> =25°C	152	-	Q <sub>c</sub>
Capacitance Stored Energy	E <sub>c</sub>	V <sub>R</sub> = 800 V, T <sub>J</sub> =25°C	44	-	E <sub>c</sub>

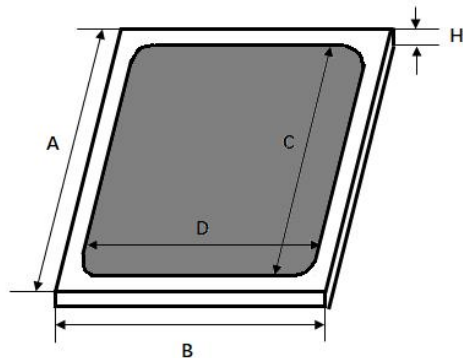
\* Pulse width < 300 μs, duty cycle < 2%

**Mechanical Parameters:**

Parameter	Typ.	Unit
Die Size	4.20×4.20	mm
Anode Pad opening	2.0×2.0	mm
Thickness	350±10%	μm
Wafer Size	150	mm
Anode Metalization (Al)	4	μm
Cathode Metalization (Ag)	0.4	μm
Frontside Passivation	Polyimide	

**Technical Data**  
**Data Sheet D0314, REV.B**

**Dimension**



symbol	Dimension +/- 10%
A	4.20 mm
B	4.20 mm
C	2.00 mm
D	2.00 mm
H	350 um

**DISCLAIMER:**

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC Diode Solutions sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall SMC Diode Solutions be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC Diode Solution assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall SMC Diode Solutions be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC Diode Solutions.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC Diode Solutions.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..