

## Stud-Mounted Silicon Rectifier Diodes, 15 A



DO-203AB (DO-5)

**DESCRIPTION/FEATURES**

- Low thermal impedance
- High case temperature
- Excellent reliability
- Maximum design flexibility
- Can be made to meet stringent military, aerospace and other high reliability requirements
- Compliant to RoHS directive 2002/95/EC


**RoHS  
COMPLIANT**
**PRODUCT SUMMARY**

$I_{F(AV)}$	15 A
-------------	------

**MAJOR RATINGS AND CHARACTERISTICS**

PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		15 <sup>(1)</sup>	A
	$T_C$	150 <sup>(1)</sup>	°C
$I_{FSM}$	50 Hz	239	A
	60 Hz	250 <sup>(1)</sup>	
$I^2t$	50 Hz	286	A <sup>2</sup> s
	60 Hz	260	
$I^2\sqrt{t}$		3870	A <sup>2</sup> √s
$V_{RRM}$	Range	50 to 600	V
$T_J$		- 65 to 175	°C

**Note**
<sup>(1)</sup> JEDEC registered values

**ELECTRICAL SPECIFICATIONS**
**VOLTAGE RATINGS**

TYPE NUMBER	$V_{RRM}$ , MAXIMUM REPETITIVE PEAK REVERSE VOLTAGE ( $T_J = - 65\text{ °C}$ TO $175\text{ °C}$ ) V	$V_{RM}$ , MAXIMUM DIRECT REVERSE VOLTAGE ( $T_J = - 65\text{ °C}$ TO $175\text{ °C}$ ) V
1N3208	50 <sup>(1)</sup>	50 <sup>(1)</sup>
1N3209	100 <sup>(1)</sup>	100 <sup>(1)</sup>
1N3210	200 <sup>(1)</sup>	200 <sup>(1)</sup>
1N3211	300 <sup>(1)</sup>	300 <sup>(1)</sup>
1N3212	400 <sup>(1)</sup>	400 <sup>(1)</sup>
1N3213	500 <sup>(1)</sup>	500 <sup>(1)</sup>
1N3214	600 <sup>(1)</sup>	600 <sup>(1)</sup>

**Notes**
<sup>(1)</sup> JEDEC registered values

- Basic type number indicates cathode to case. For anode to case, add "R" to part number, e.g. 1N3208R, 1N3209R



FORWARD CONDUCTION					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum average forward current at case temperature	$I_{F(AV)}$	180° sinusoidal conduction		15 <sup>(1)</sup>	A
				150 <sup>(1)</sup>	°C
Maximum peak one cycle non-repetitive surge current	$I_{FSM}$	Half cycle 50 Hz sine wave or 6 ms rectangular pulse	Following any rated load condition and with rated $V_{RRM}$ applied	239	A
		Half cycle 60 Hz sine wave or 5 ms rectangular pulse		250 <sup>(1)</sup>	
		Half cycle 50 Hz sine wave or 6 ms rectangular pulse	Following any rated load condition and with $V_{RRM}$ applied following surge = 0	284	
		Half cycle 60 Hz sine wave or 5 ms rectangular pulse		297	
Maximum $I^2t$ for fusing	$I^2t$	t = 10 ms	With rated $V_{RRM}$ applied following surge, initial $T_J = 150$ °C	286	A <sup>2</sup> s
		t = 8.3 ms		260	
Maximum $I^2t$ for individual device fusing		t = 10 ms	With $V_{RRM} = 0$ following surge, initial $T_J = 150$ °C	403	
		t = 8.3 ms		368	
Maximum $I^2\sqrt{t}$ for individual device fusing	$I^2\sqrt{t}$ <sup>(2)</sup>	t = 0.1 ms to 10 ms, $V_{RRM} = 0$ following surge		3870	A <sup>2</sup> √s
Maximum forward voltage drop	$V_{FM}$	$I_{F(AV)} = 15$ A (47.1 A peak), $T_C = 150$ °C		1.5 <sup>(1)</sup>	V
Maximum average reverse current	$I_{R(AV)}$	Maximum rated $I_{F(AV)}$ and $T_C = 150$ °C		10 <sup>(1)</sup>	mA

### Notes

<sup>(1)</sup> JEDEC registered values

<sup>(2)</sup>  $I^2t$  for time  $t_x = I^2\sqrt{t} \times \sqrt{t_x}$

THERMAL AND MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum junction operating and storage temperature range	$T_J, T_{Stg}$			- 65 to 175 <sup>(1)</sup>	°C
Maximum internal thermal resistance, junction to case	$R_{thJC}$	DC operation		0.65	°C/W
Thermal resistance, case to sink	$R_{thCS}$	Mounting surface, smooth, flat and greased		0.25	
Maximum allowable mounting torque (+ 0 %, - 10 %)		Not lubricated thread, tightening on nut <sup>(2)</sup>		3.4 (30)	
		Lubricated thread, tightening on nut <sup>(2)</sup>		2.3 (20)	
		Not lubricated thread, tightening on hexagon <sup>(3)</sup>		4.2 (37)	
		Lubricated thread, tightening on hexagon <sup>(3)</sup>		3.2 (28)	
Weight				28.5	g
				1	oz.
Case style		JEDEC		DO-203AB (DO-5)	

### Notes

<sup>(1)</sup> JEDEC registered values

<sup>(2)</sup> Recommended for pass-through holes

<sup>(3)</sup> Recommended for holed threaded heatsinks

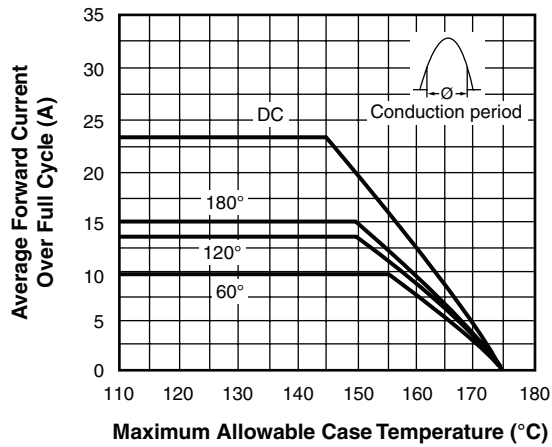


Fig. 1 - Average Forward Current vs. Maximum Allowable Case Temperature

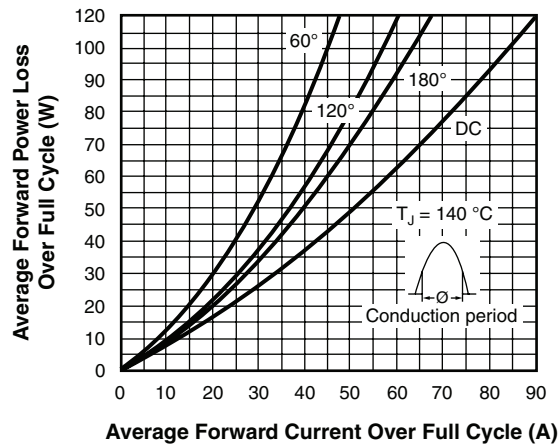


Fig. 3 - Maximum Low Level Forward Power Loss vs. Average Forward Current

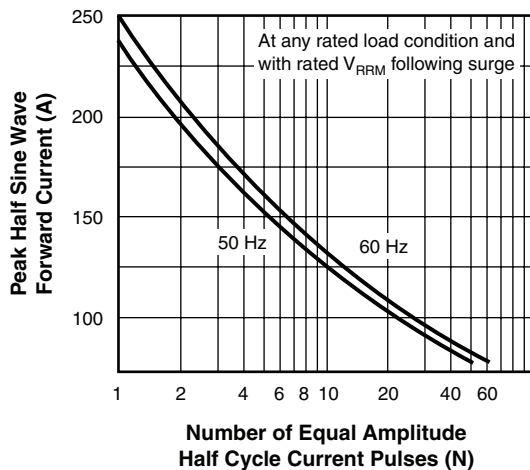


Fig. 2 - Maximum Non-Repetitive Surge Current vs. Number of Current Pulses

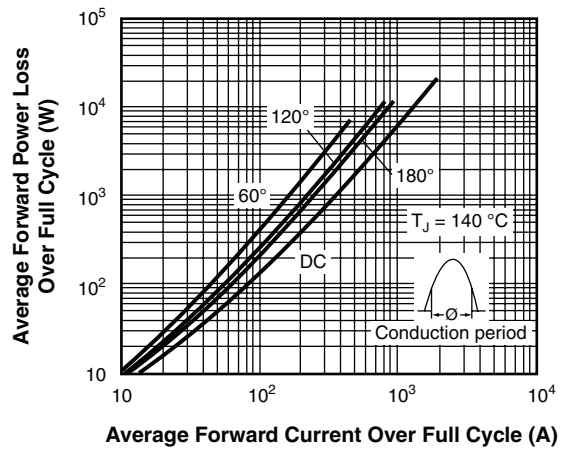


Fig. 4 - Maximum High Level Forward Power Loss vs. Average Forward Current

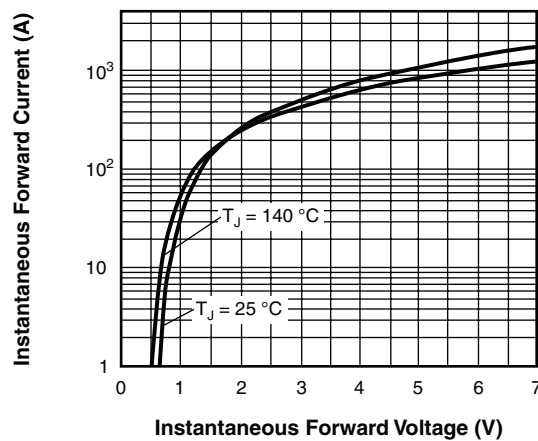


Fig. 5 - Maximum Forward Voltage vs. Forward Current

### LINKS TO RELATED DOCUMENTS

Dimensions

[www.vishay.com/doc?95360](http://www.vishay.com/doc?95360)



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.