

## Silicon Rectifier Diodes, (Stud Version) 15 A



DO-5 (DO-203AB)

### FEATURES

- Low thermal impedance
- High case temperature
- Excellent reliability
- Maximum design flexibility
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	15 A
Package	DO-5 (DO-203AB)
Circuit configuration	Single

### 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
VS-1N3208	50 <sup>(1)</sup>	50 <sup>(1)</sup>
VS-1N3209	100 <sup>(1)</sup>	100 <sup>(1)</sup>
VS-1N3210	200 <sup>(1)</sup>	200 <sup>(1)</sup>
VS-1N3211	300 <sup>(1)</sup>	300 <sup>(1)</sup>
VS-1N3212	400 <sup>(1)</sup>	400 <sup>(1)</sup>
VS-1N3213	500 <sup>(1)</sup>	500 <sup>(1)</sup>
VS-1N3214	600 <sup>(1)</sup>	600 <sup>(1)</sup>

#### Notes

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

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



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

**Notes**

(1) JEDEC® registered values

(2)  $I^2t$  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 <sub>J</sub> , T <sub>Stg</sub>		-65 to 175 <sup>(1)</sup>	°C
Maximum internal thermal resistance, junction to case	R <sub>thJC</sub>	DC operation	0.65	°C/W
Thermal resistance, case to sink	R <sub>thCS</sub>	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-5 (DO-203AB)	

**Notes**

(1) JEDEC® registered values

(2) Recommended for pass-through holes

(3) Recommended for holed threaded heatsinks

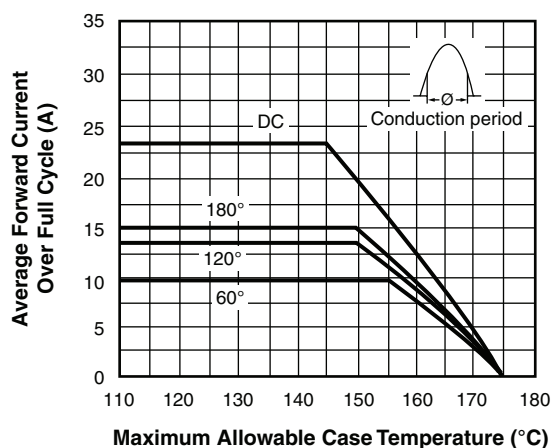


Fig. 1 - Average Forward Current vs. Maximum Allowable Case Temperature

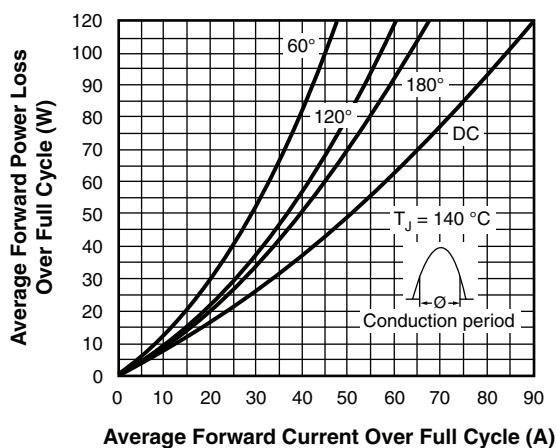


Fig. 3 - Maximum Low Level Forward Power Loss vs. Average Forward Current

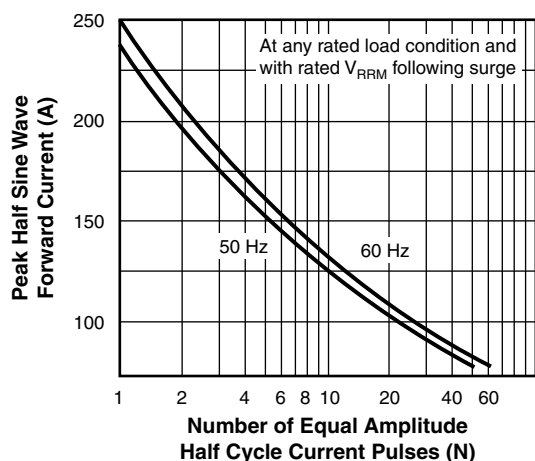


Fig. 2 - Maximum Non-Repetitive Surge Current vs. Number of Current Pulses

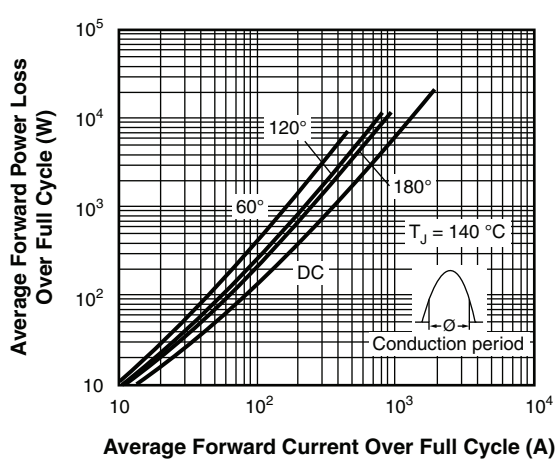


Fig. 4 - Maximum High Level Forward Power Loss vs. Average Forward Current

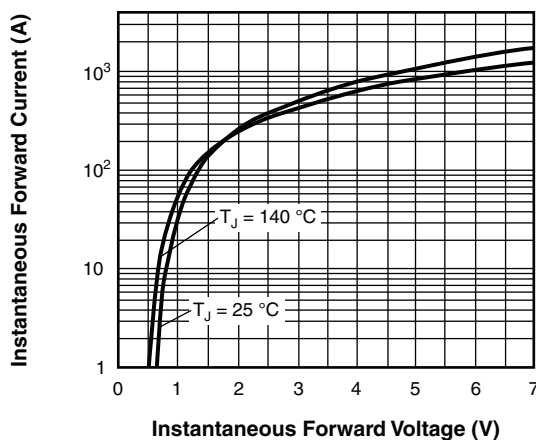


Fig. 5 - Maximum Forward Voltage vs. Forward Current

## LINKS TO RELATED DOCUMENTS

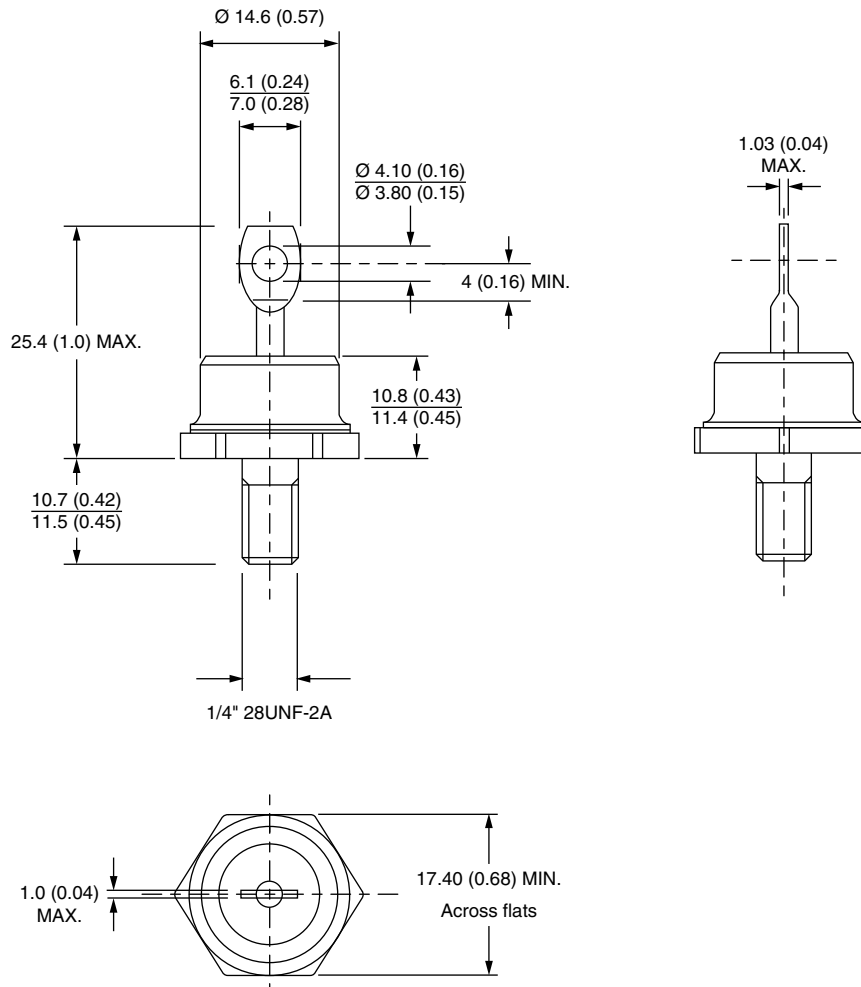
Dimensions

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



## DO-203AB (DO-5) for 1N1183, 1N3765, 1N1183A, 1N2128A, 1N3208 Series

**DIMENSIONS** in millimeters (inches)





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