

## 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
- RoHS compliant


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

$I_{F(AV)}$	15 A
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**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 V	$V_{RM}$ , MAXIMUM DIRECT REVERSE VOLTAGE V
CATHODE TO CASE	ANODE TO CASE	$T_J = - 65\text{ °C TO }175\text{ °C}$	$T_J = - 65\text{ °C TO }175\text{ °C}$
1N3208	1N3208R	50 <sup>(1)</sup>	50 <sup>(1)</sup>
1N3209	1N3209R	100 <sup>(1)</sup>	100 <sup>(1)</sup>
1N3210	1N3210R	200 <sup>(1)</sup>	200 <sup>(1)</sup>
1N3211	1N3211R	300 <sup>(1)</sup>	300 <sup>(1)</sup>
1N3212	1N3212R	400 <sup>(1)</sup>	400 <sup>(1)</sup>
1N3213	1N3213R	500 <sup>(1)</sup>	500 <sup>(1)</sup>
1N3214	1N3214R	600 <sup>(1)</sup>	600 <sup>(1)</sup>

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

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 $T_J = 150\text{ °C}$	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 $T_J = 150\text{ °C}$	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 to 10 ms, $V_{RRM} = 0$ following surge		3870	A <sup>2</sup> √s
Maximum forward voltage drop	$V_{FM}$	$I_{F(AV)} = 15\text{ A}$ (47.1 A peak), $T_C = 150\text{ °C}$		1.5 <sup>(1)</sup>	V
Maximum average reverse current	$I_{R(AV)}$	Maximum rated $I_{F(AV)}$ and $T_C = 150\text{ °C}$		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	
Mounting torque	minimum	Non-lubricated threads		2.3 (20)	N · m (lbf · in)
	maximum			3.5 (30)	
Weight			28.5		g
			1		oz.
Case style		JEDEC		DO-203AB (DO-5)	

### Note

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

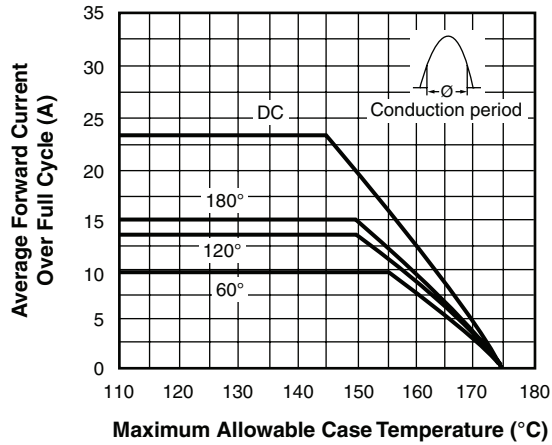


Fig. 1 - Average Forward Current vs. Maximum Allowable Case Temperature

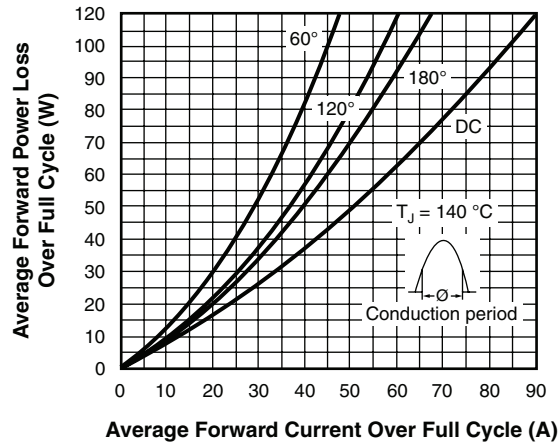


Fig. 3 - Maximum Low Level Forward Power Loss vs. Average Forward Current

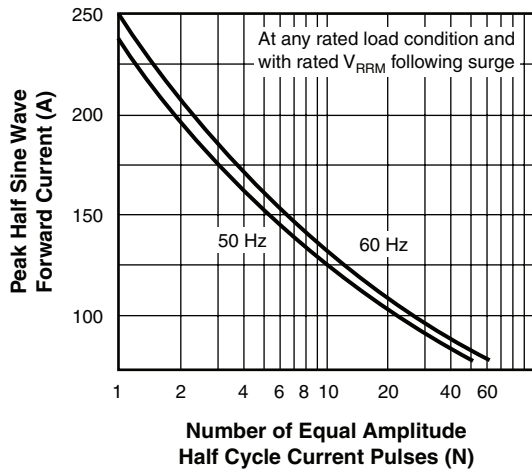


Fig. 2 - Maximum Non-Repetitive Surge Current vs. Number of Current Pulses

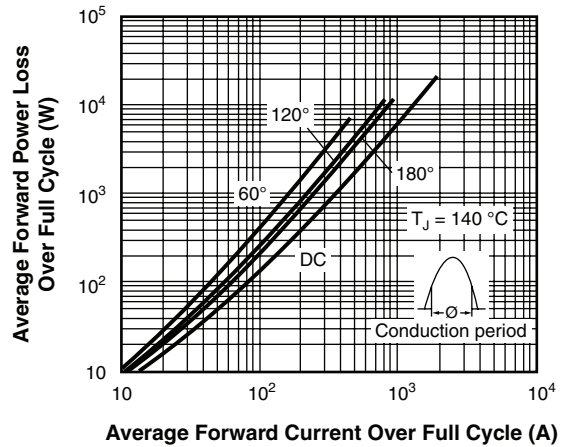


Fig. 4 - Maximum High Level Forward Power Loss vs. Average Forward Current

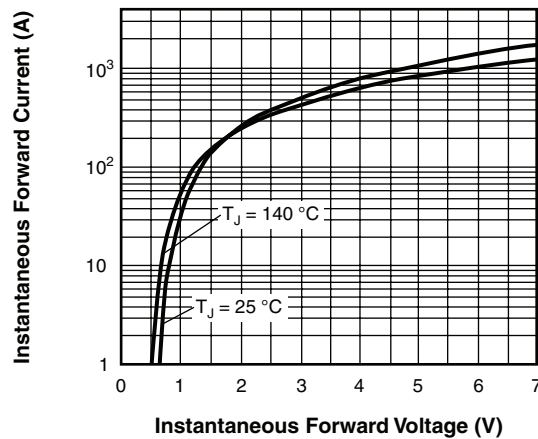


Fig. 5 - Maximum Forward Voltage vs. Forward Current

### LINKS TO RELATED DOCUMENTS

Dimensions

<http://www.vishay.com/doc?95360>



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