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

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

Note
(1) 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 °C TO 175 °C	T_J = - 65 °C TO 175 °C
1N3208	1N3208R	50 (1)	50 (1)
1N3209	1N3209R	100 (1)	100 (1)
1N3210	1N3210R	200 (1)	200 (1)
1N3211	1N3211R	300 (1)	300 (1)
1N3212	1N3212R	400 (1)	400 (1)
1N3213	1N3213R	500 (1)	500 (1)
1N3214	1N3214R	600 (1)	600 (1)

Note
(1) 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 (1)	A
				150 (1)	°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 (1)	
		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^2s
		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	$I^2\sqrt{t}$ (2)	t = 0.1 to 10 ms, V_{RRM} = 0 following surge		3870	$A^2\sqrt{s}$
Maximum forward voltage drop	V_{FM}	$I_{F(AV)}$ = 15 A (47.1 A peak), T_C = 150 °C		1.5 (1)	V
Maximum average reverse current	$I_{R(AV)}$	Maximum rated $I_{F(AV)}$ and T_C = 150 °C		10 (1)	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_J, T_{Stg}		- 65 to 175 (1)	°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
(1) JEDEC registered values

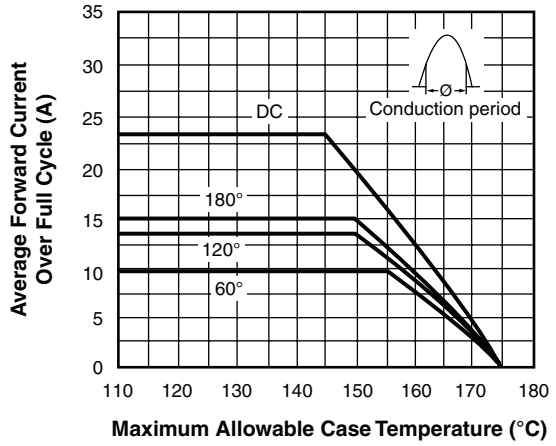

Fig. 1 - Average Forward Current vs. Maximum Allowable Case Temperature

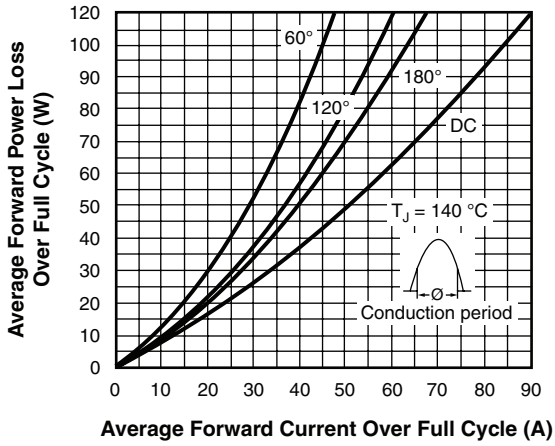

Fig. 3 - Maximum Low Level Forward Power Loss vs. Average Forward Current

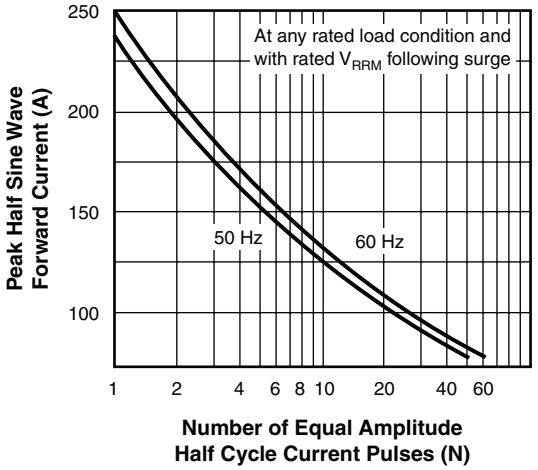

Fig. 2 - Maximum Non-Repetitive Surge Current vs. Number of Current Pulses

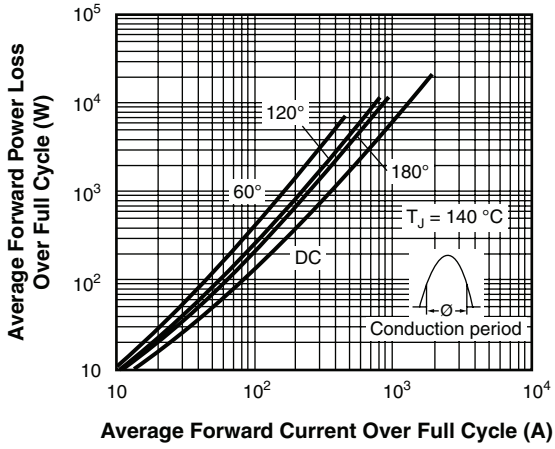

Fig. 4 - Maximum High Level Forward Power Loss vs. Average Forward Current

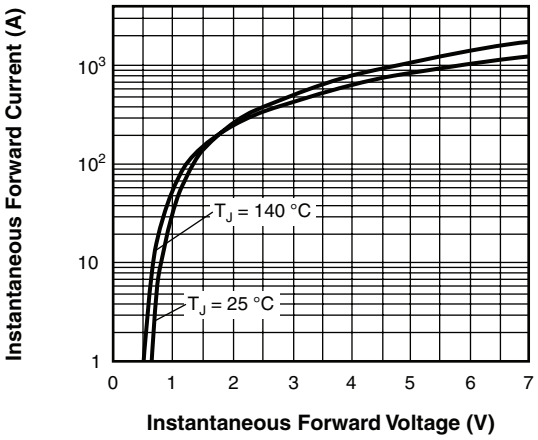

Fig. 5 - Maximum Forward Voltage vs. Forward Current

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95360

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Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9