

Vishay High Power Products

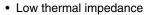
Stud-Mounted

Silicon Rectifier Diodes, 15 A



DO-203AB (DO-5)

DESCRIPTION/FEATURES





- High case temperature
- · Excellent reliability
- · Maximum design flexibility
- · Can be made to meet stringent military, aerospace and other high reliability requirements
- · RoHS compliant

PRODUCT SUMMARY		
I _{F(AV)}	15 A	
MAJOR RATINGS AND CHARACTERISTICS		

MAJOR RATINGS AND CHARACTERISTICS				
PARAMETER	TEST CONDITIONS	VALUES	UNITS	
		15 ⁽¹⁾	А	
I _{F(AV)}	T _C	150 ⁽¹⁾	°C	
I _{FSM}	50 Hz	239	^	
	60 Hz	250 ⁽¹⁾	A	
l ² t	50 Hz	286	A ² s	
	60 Hz	260	A-s	
I ² √t		3870	A²√s	
V _{RRM}	Range	50 to 600	V	
TJ		- 65 to 175	°C	

Note

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⁾	

⁽¹⁾ JEDEC registered values

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1N3208 Series

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PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum average forward current at case temperature	I _{F(AV)}	180° sinusoidal conduction		15 ⁽¹⁾	A °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	
12.6	– I ² t	t = 10 ms	With rated V_{RRM} applied following surge, initial $T_J = 150 ^{\circ}\text{C}$	286	- A ² s
Maximum I ² t for fusing		t = 8.3 ms		260	
Maximum I ² t 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 l²√t for individual device fusing	I ² √t ⁽²⁾	t = 0.1 to 10 ms, V _{RRM} = 0 following surge		3870	A ² √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

THERMAL AND MECHANICAL SPECIFICATIONS						
PARAMETER		SYMBOL	TEST CONDITIONS	VALUES	UNITS	
Maximum junction opera storage temperature ran	J	T _J , T _{Stg}		- 65 to 175 ⁽¹⁾	°C	
Maximum internal therm resistance, junction to ca		R _{thJC}	DC operation	0.65	°C/W	
Thermal resistance, case to sink		R _{thCS}	Mounting surface, smooth, flat and greased	0.25	C/VV	
Mounting torque —	minimum		Non-lubricated threads	2.3 (20)	N · m	
	maximum			3.5 (30)	(lbf · in)	
Weight				28.5	g	
				1	OZ.	
Case style			JEDEC	DO-203AB (DO-5)		

Note

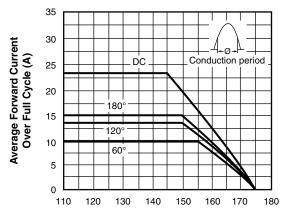
(1) JEDEC registered values

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⁽¹⁾ JEDEC registered values (2) I^2t for time $t_x = I^2\sqrt{t} \times \sqrt{t_x}$

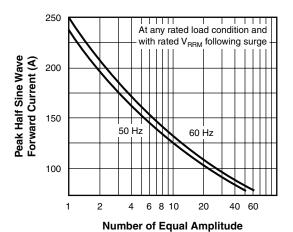


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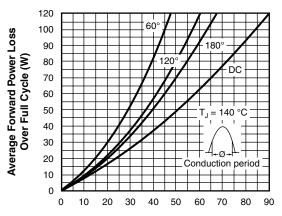


Maximum Allowable Case Temperature (°C)

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

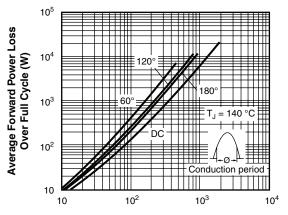


Half Cycle Current Pulses (N)
Fig. 2 - Maximum Non-Repetitive Surge Current vs.
Number of Current Pulses



Average Forward Current Over Full Cycle (A)

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



Average Forward Current Over Full Cycle (A)

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

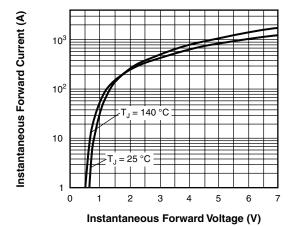


Fig. 5 - Maximum Forward Voltage vs. Forward Current

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



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