

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



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 ⁽¹⁾	A
	T_C	150 ⁽¹⁾	°C
I_{FSM}	50 Hz	239	A
	60 Hz	250 ⁽¹⁾	
I^2t	50 Hz	286	A ² s
	60 Hz	260	
$I^2\sqrt{t}$		3870	A ² √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 ($T_J = -65\text{ °C TO }175\text{ °C}$) V	V_{RM} , MAXIMUM DIRECT REVERSE VOLTAGE ($T_J = -65\text{ °C TO }175\text{ °C}$) V
VS-1N3208	50 ⁽¹⁾	50 ⁽¹⁾
VS-1N3209	100 ⁽¹⁾	100 ⁽¹⁾
VS-1N3210	200 ⁽¹⁾	200 ⁽¹⁾
VS-1N3211	300 ⁽¹⁾	300 ⁽¹⁾
VS-1N3212	400 ⁽¹⁾	400 ⁽¹⁾
VS-1N3213	500 ⁽¹⁾	500 ⁽¹⁾
VS-1N3214	600 ⁽¹⁾	600 ⁽¹⁾

Notes

- Basic type number indicates cathode to case. For anode to case, add "R" to part number, e.g. 1N3208R, 1N3209R
- ⁽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 ² s
		t = 8.3 ms		260	
Maximum I^2t for individual device fusing	I^2t	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 ms 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

- (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	
Maximum allowable mounting torque (+0 %, -10 %)		Not lubricated thread, tightening on nut ⁽²⁾		3.4 (30)	
		Lubricated thread, tightening on nut ⁽²⁾		2.3 (20)	
		Not lubricated thread, tightening on hexagon ⁽³⁾		4.2 (37)	
		Lubricated thread, tightening on hexagon ⁽³⁾		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

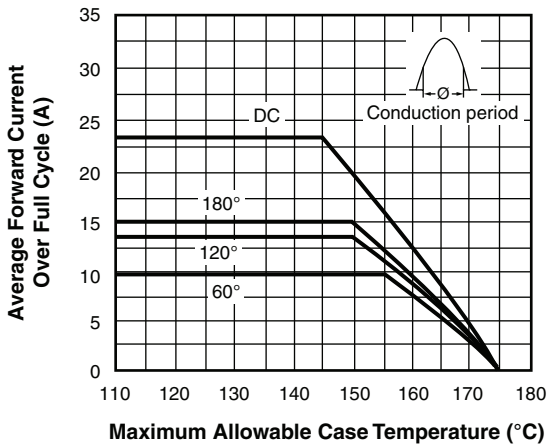


Fig. 1 - Average Forward Current vs. Maximum Allowable Case Temperature

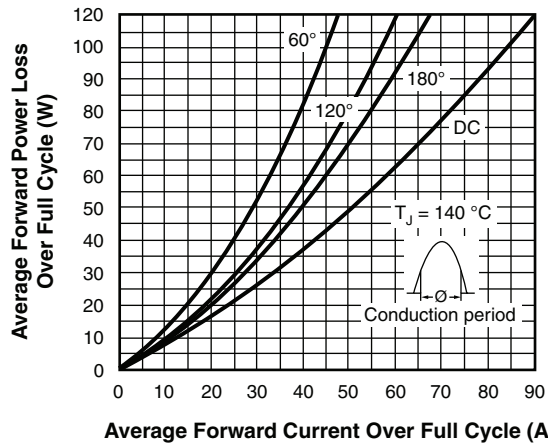


Fig. 3 - Maximum Low Level Forward Power Loss vs. Average Forward Current

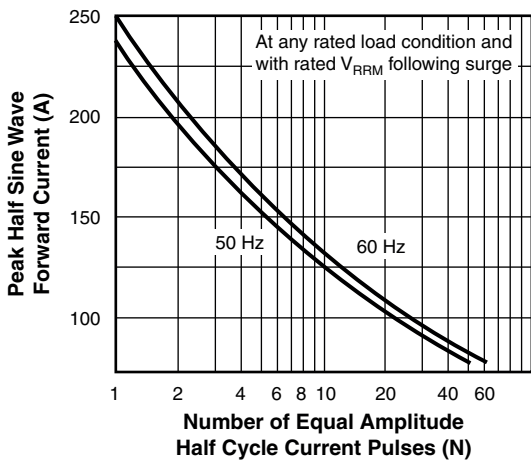


Fig. 2 - Maximum Non-Repetitive Surge Current vs. Number of Current Pulses

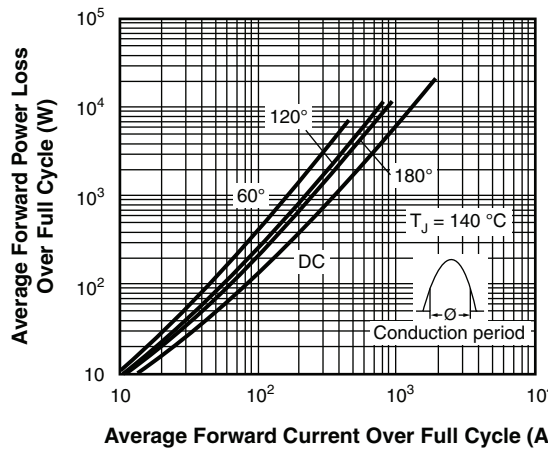


Fig. 4 - Maximum High Level Forward Power Loss vs. Average Forward Current

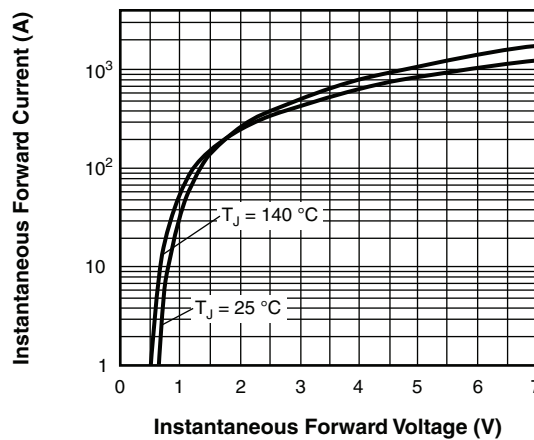
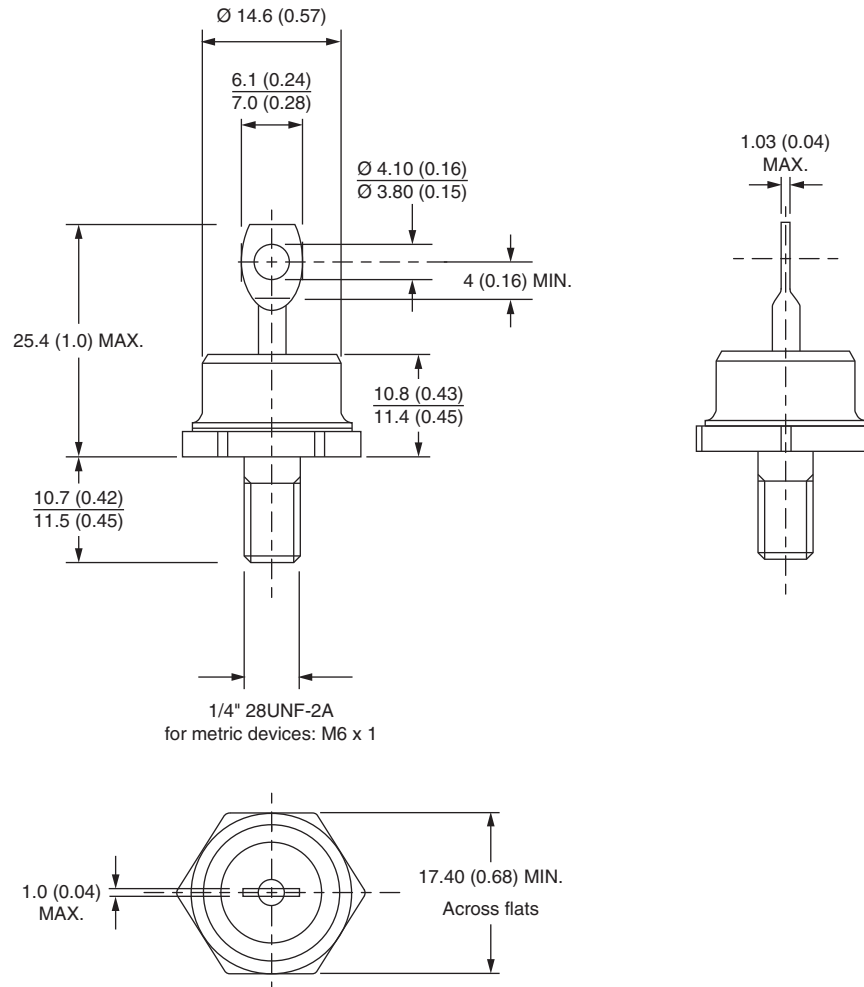


Fig. 5 - Maximum Forward Voltage vs. Forward Current

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

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

DIMENSIONS in millimeters (inches)





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