

INTERNATIONAL RECTIFIER



1N3208 SERIES

15 Amp Stud-mounted Silicon Rectifier Diodes

Major Ratings and Characteristics

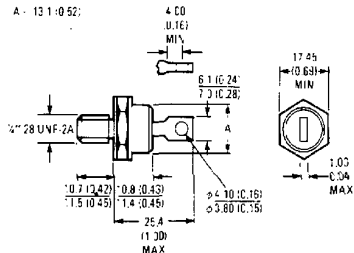
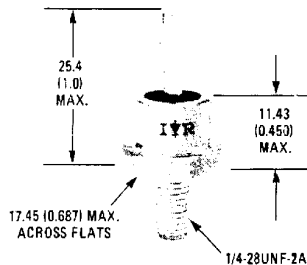
	1N3208	Units
$I_F(AV)$	15*	A
θ_{JC}	150*	$^{\circ}C$
I_{FSM}	@ 50 Hz	239
	@ 60 Hz	250*
I_{2T}	@ 50 Hz	286
	@ 60 Hz	260
$I_{2\sqrt{t}}$	3870	$A^2\sqrt{s}$
V_{RRM} Range	50-600	V

*JEDEC registered values.

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.

CASE STYLE AND DIMENSIONS



Conforms TO JEDEC Outline DO-203AB (DO-5)

All Dimensions in Millimeters and Inches

VOLTAGE RATINGS

Part Number		V _{RRM} - Max. Repetitive Peak Reverse Voltage (V)	V _R - Max. 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*	50*
1N3209	1N3209R	100*	100*
1N3210	1N3210R	200*	200*
1N3211	1N3211R	300*	300*
1N3212	1N3212R	400*	400*
1N3213	1N3213R	500*	500*
1N3214	1N3214R	600*	600*

ELECTRICAL SPECIFICATIONS

		Units	Conditions
I _{F(AV)}	Max. average forward current	15*	A 180° sinusoidal conduction, max. T _C = 150°C*
I _{FSM}	Max. peak one-cycle non-repetitive surge current	239	A Half cycle 50 Hz sine wave or 6 ms rectangular pulse Following any rated load condition and with rated V _{RRM} applied
		250*	
		284	
		297	
I ² t	Max. I ² t for fusing	286	A ² s t = 10 ms With rated V _{RRM} applied following surge, initial T _J = 150°C. t = 8.3 ms t = 10 ms With V _{RRM} = 0 following surge, initial T _J = 150°C. t = 8.3 ms
		260	
	Max. I ² t for individual device fusing	403	
		368	
I ² √t	Max. I ² √t for individual device fusing	3870	A ² √s t = 0.1 to 10 ms, V _{RRM} = 0 following surge.
V _{FM}	Max. peak forward voltage	1.5*	V I _{F(AV)} = 15A (47.1A peak), T _C = 150°C.
I _{R(AV)}	Max. average reverse current	10*	mA Max. rated I _{F(AV)} and T _C = 150°C

THERMAL MECHANICAL SPECIFICATIONS

T _J	Max. operating junction temperature range	-65 to 175*	°C	
T _{stg}	Max. storage temperature range	-65 to 175*	°C	
R _{thJC}	Max. internal thermal resistance, junction-to-case	0.65	deg C/W	DC operation
R _{thCS}	Thermal resistance, case-to-sink	0.25	deg C/W	Mounting surface flat, smooth, and greased
T	Mounting torque	Min. 2.3 (20) Max. 3.5 (30)	N·m (lbf-in)	Non-lubricated threads
wt	Approximate weight	28.5 (1)	g (oz)	
Case style		DO-203AB(DO-5)		JEDEC

* JEDEC registered values.

$$\textcircled{1} I^2t \text{ for time } t_x = I^2 \sqrt{t} \cdot \sqrt{t}_x$$

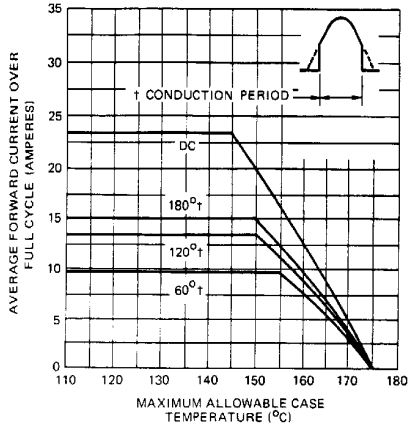


Fig. 1 – Average Forward Current Vs. Maximum Allowable Case Temperature

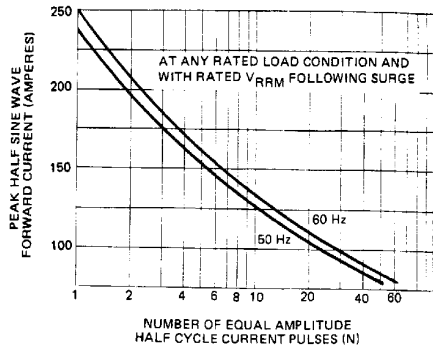


Fig. 2 – Maximum Non-Repetitive Surge Current Vs. Number of Current Pulses

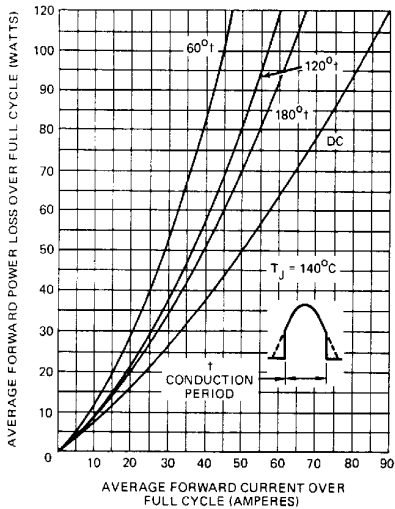


Fig. 3 – Maximum Low Level Forward Power Loss Vs. Average Forward Current

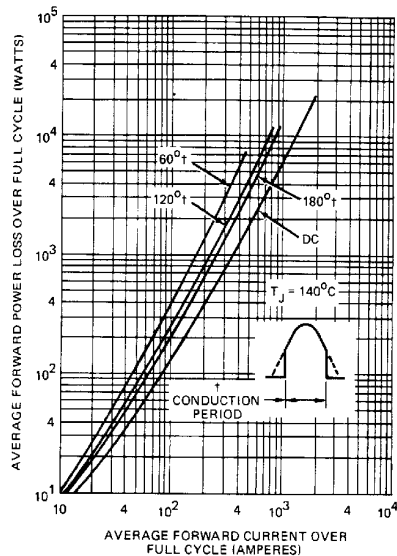


Fig. 4 – Maximum High Level Forward Power Loss Vs. Average Forward Current

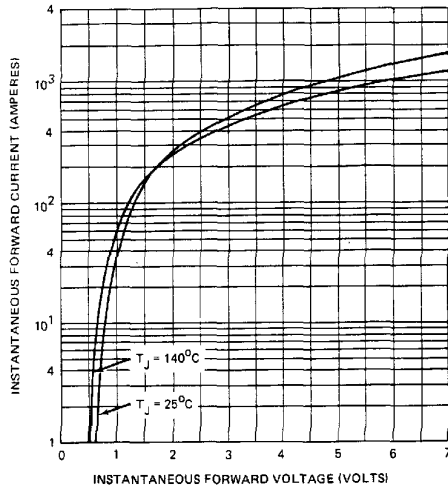


Fig. 5 - Maximum Forward Voltage Vs. Forward Current