INTERNATIONAL RECTIFIER IOR

1N3208 SERIES

15 Amp Stud-mounted Silicon Rectifier Diodes

Major Ratings and Characteristics

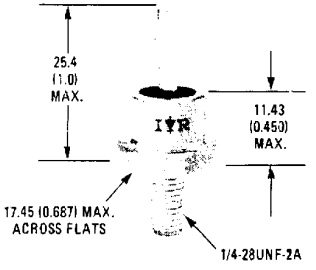
		1N3208	Units
$I_{F(AV)}$		15*	A
@ T_C		150*	°C
I_{FSM}	@ 50 Hz	239	A
	@ 60 Hz	250*	
I^2t	@ 50 Hz	286	A^2s
	@ 60 Hz	260	
$I^2\sqrt{t}$		3870	$A^2\sqrt{s}$
V_{RRM} Range		50-600	V

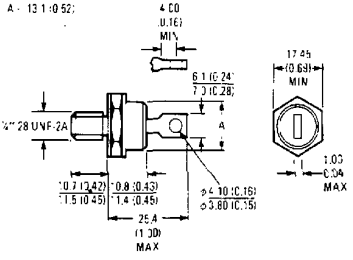
*JEDEC registered values.

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*		Half cycle 60 Hz sine wave or 5 ms rectangular pulse	
		284		Half cycle 50 Hz sine wave or 6 ms rectangular pulse	Following any rated load condition and with V_{RRM} applied following surge = 0.
		297		Half cycle 60 Hz sine wave or 5 ms rectangular pulse	
I^2t	Max. I^2t for fusing	286	A^2s	t = 10 ms	With rated V_{RRM} applied following surge, initial T_J = 150°C.
		260		t = 8.3 ms	
	Max. I^2t for individual device fusing	403		t = 10 ms	With V_{RRM} = 0 following surge, initial T_J = 150°C
		368		t = 8.3 ms	
$I^2\sqrt{t}$	Max. $I^2\sqrt{t}$ for individual device fusing ①	3870	$A^2\sqrt{s}$	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.

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

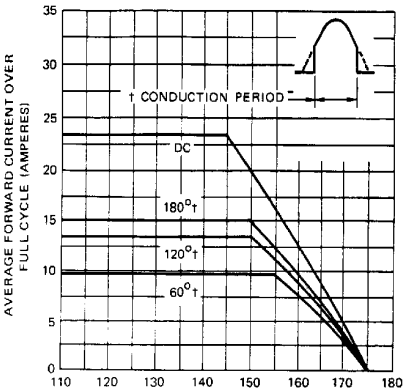


Fig. 1 – Average Forward Current Vs. Maximum Allowable Case Temperature

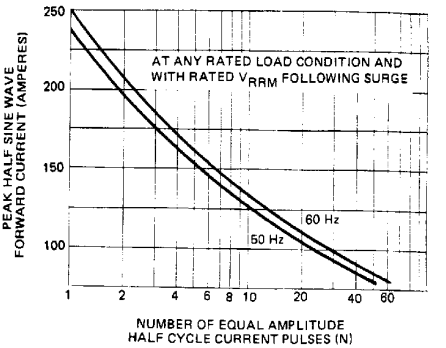


Fig. 2 – Maximum Non-Repetitive Surge Current Vs. Number of Current Pulses

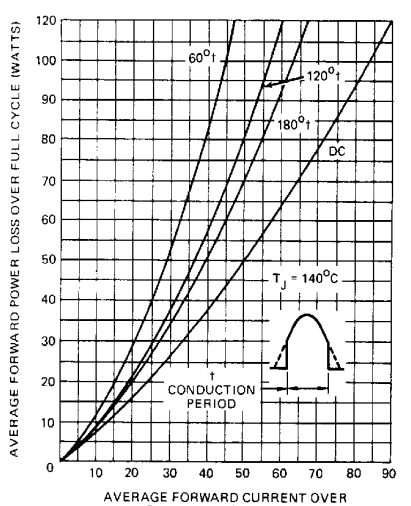


Fig. 3 – Maximum Low Level Forward Power Loss Vs. Average Forward Current

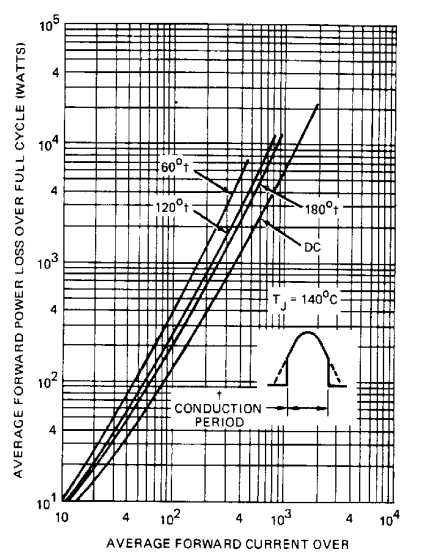


Fig. 4 – Maximum High Level Forward Power Loss Vs. Average Forward Current

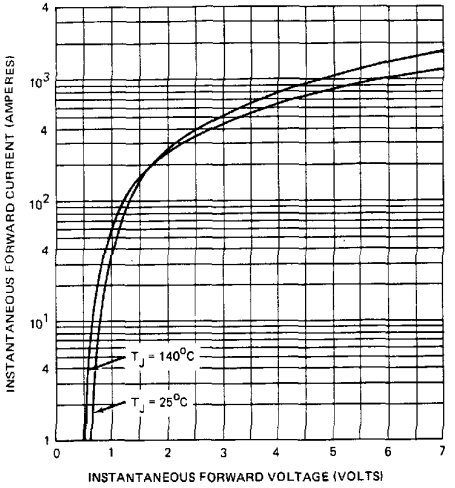


Fig. 5 – Maximum Forward Voltage Vs. Forward Current