

INTERNATIONAL RECTIFIER



1N3288, 1N3288A SERIES

100 Amp Avg Silicon Rectifier Diodes

Major Ratings and Characteristics

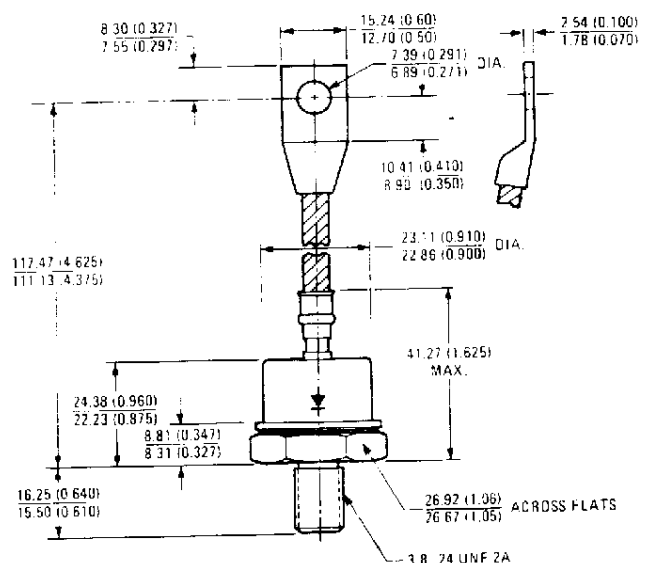
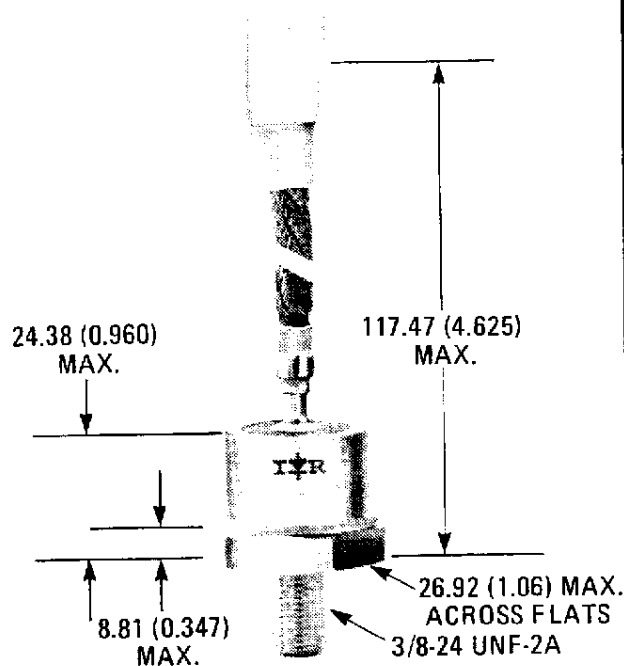
	1N3288	1N3288A	Units
$I_F(AV)$	100*	100*	A
@ Max. T_C	130	130	$^{\circ}C$
I_{FSM} @ 50 Hz	1550	2200	A
@ 60 Hz	1600*	2300*	
I_2^t @ 50 Hz	11,500	24,000	A^2s
@ 60 Hz	10,500	22,000	
$I_2^2 \sqrt{t}$	165,000	340,000	$A^2 \sqrt{s}$
VRRM Range	100 -1200	100 -1200	V

*JEDEC registered values.

Description and Features

- Reverse voltage ratings up to 1200 volts
- High surge rating series (2,300A)
- DO-8 hermetically sealed package
- Superior reliability under extreme conditions
- Can be supplied to meet stringent military, aerospace and other high-reliability requirements

CASE STYLE AND DIMENSIONS



Conforms to JEDEC outline DO-205AA (DO-8) (IR B-15)

All Dimensions in Millimeters and (Inches)

VOLTAGE RATINGS

	V_{RRM} – Max. Repetitive Peak Reverse Voltage (V)	V_{RSM} – Max. Non-repetitive Peak Reverse Voltage (V)	V_R – Max. Direct Reverse Voltage (V)	I_{RRM} – Max. Peak Reverse Current Max. Rated $I_F(AV)$ and V_{RRM} 1 Phase Operation (mA)
Part Number ①	$T_C = -40^{\circ}\text{C}$ to 200°C ②	$T_C = 25^{\circ}\text{C}$ to 200°C	$T_C = -40^{\circ}\text{C}$ to 200°C ②	$T_C = 130^{\circ}\text{C}$
1N3288 1N3288A	100*	200*	100*	24*
1N3289 1N3289A	200*	300*	200*	24*
1N3290 1N3290A	300*	400*	300*	24*
1N3291 1N3291A	400*	525*	400*	24*
1N3292 1N3292B	500*	650*	500*	21*
1N3293 1N3293A	600*	800*	600*	17*
1N3294 1N3294A	800*	1050*	800*	13*
1N3295 1N3295A	1000*	1300*	1000*	11*
1N3296 1N3296A	1200*	1600*	1200*	9*

① Basic number indicates cathode-to-case. For anode-to-case, add "R" to part number, e.g., 1N3291RA

ELECTRICAL SPECIFICATIONS

	1N3288	1N3288A ③	Units	Conditions
$I_F(AV)$ Max. average forward current	100*	100*	A	180° sinusoidal conduction. Max. $T_C = 130^{\circ}\text{C}$ *
I_{FSM} Max. peak one-cycle non-repetitive surge current	1550	2200	A	Half cycle 50 Hz sine wave or 6 ms rectangular pulse Following any rated load condition and with rated V_{RRM} applied.
	1600	2300		Half cycle 60 Hz sine wave or 5 ms rectangular pulse
	1800	2600		Half cycle 50 Hz sine wave or 6 ms rectangular pulse Following any rated load condition and with V_{RRM} applied following surge = 0.
	1900	2750		Half cycle 60 Hz sine wave or 5 ms rectangular pulse
I^2t Max. I^2t for fusing	11,500	24,000	A^2s	$t = 10$ ms With rated V_{RRM} applied following surge, initial $T_J = 200^{\circ}\text{C}$
	10,500	22,000		$t = 8.3$ ms
	16,500	34,000		$t = 10$ ms With $V_{RRM} = 0$ following surge, initial $T_J = 200^{\circ}\text{C}$
	15,000	31,000		$t = 8.3$ ms
$I^2\sqrt{t}$ Max. $I^2\sqrt{t}$ for individual device fusing ④	165,000	340,000	$\text{A}^2\sqrt{\text{s}}$	$t = 0.1$ to 10 ms, $V_{RRM} = 0$ following surge.
V_{FM} Max. peak forward voltage	1.5*	1.5*	V	$I_F(AV) = 100\text{A}$ (314A peak), $T_C = 130^{\circ}\text{C}$

THERMAL-MECHANICAL SPECIFICATIONS

T_C Max. operating case temperature range	-40° to 200° ②	$^{\circ}\text{C}$	1N3292B: -65° to 200°C
T_{stg} Max. storage temperature range	-40° to 200° ①	$^{\circ}\text{C}$	1N3292B: -65° to 200°C
R_{thJC} Max. internal thermal resistance, junction-to-case	0.4*	deg C/W	DC operation.
R_{thCS} Thermal resistance, case-to-sink	0.1	deg C/W	Mounting surface flat, smooth, and greased.
T Mounting torque	11.3–14.1 (100–125)	N · m (lbf-in)	Non-lubricated threads
wt Approximate weight	71 (2.5)	g (oz)	
Case style	DO-205AA (DO-8) (IR B-15)		JEDEC

*JEDEC registered values.

② Min. $T_C = -65^{\circ}\text{C}$ for 1N3292B only.

④ I^2t for time $t_x = I^2\sqrt{t} \cdot \sqrt{t_x}$.

③ Applies to 1N3292B.

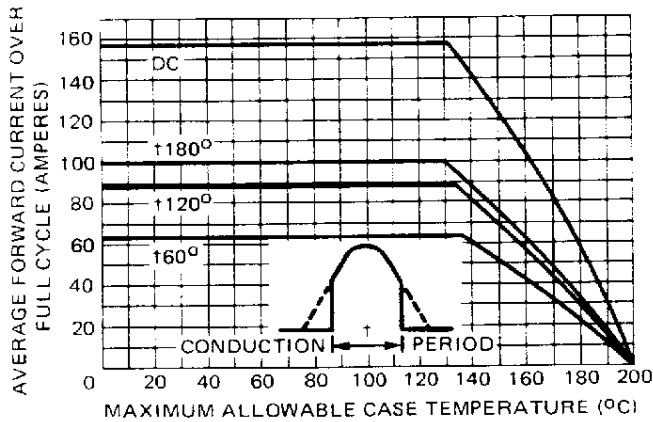


Fig. 1 - Average Forward Current Vs Case Temperature (Sinusoidal Current Waveform)

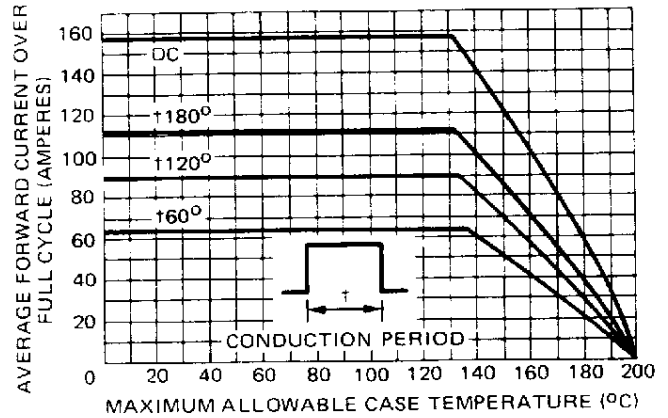


Fig. 2 - Average Forward Current Vs Case Temperature (Rectangular Current Waveform)

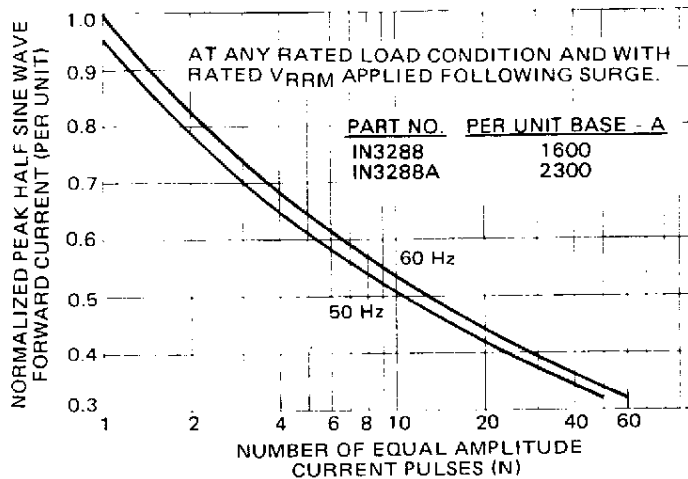


Fig. 3 - Maximum Non-Repetitive Normalized Surge Current Vs. Number of Current Pulses

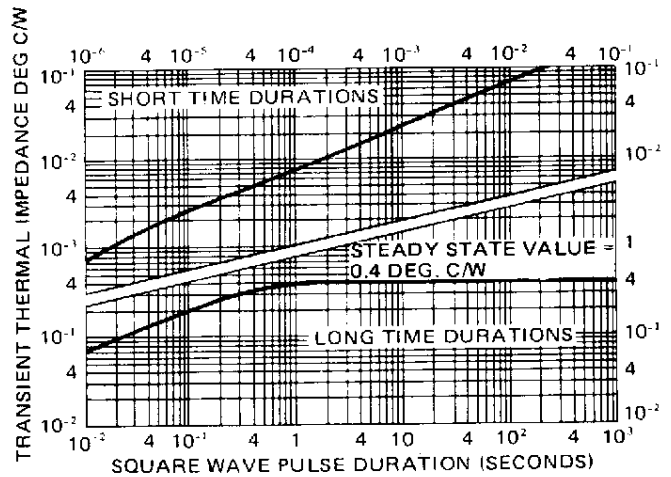


Fig. 4 - Maximum Transient Thermal Impedance, Junction-to-Case, Vs. Pulse Duration

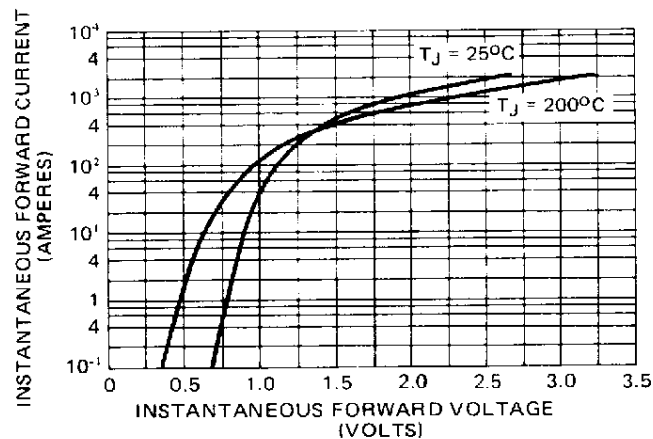


Fig. 5 - Maximum Forward Voltage Vs Forward Current

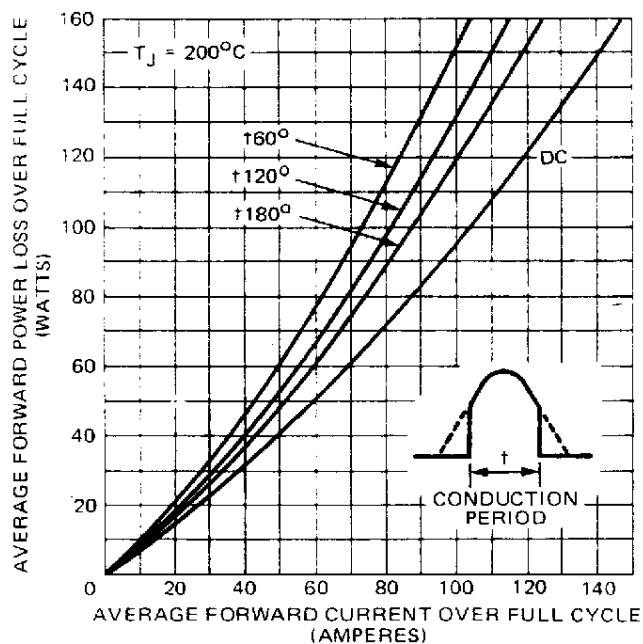


Fig. 6 — Maximum Forward Power Loss Vs Low Level Forward Current (Sinusoidal Current Waveform)

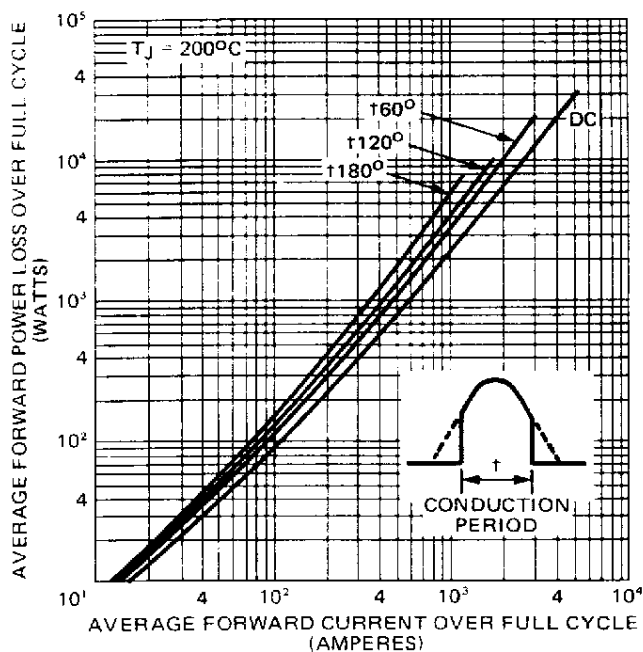


Fig. 7 — Maximum Forward Power Loss Vs High Level Forward Current (Sinusoidal Current Waveform)

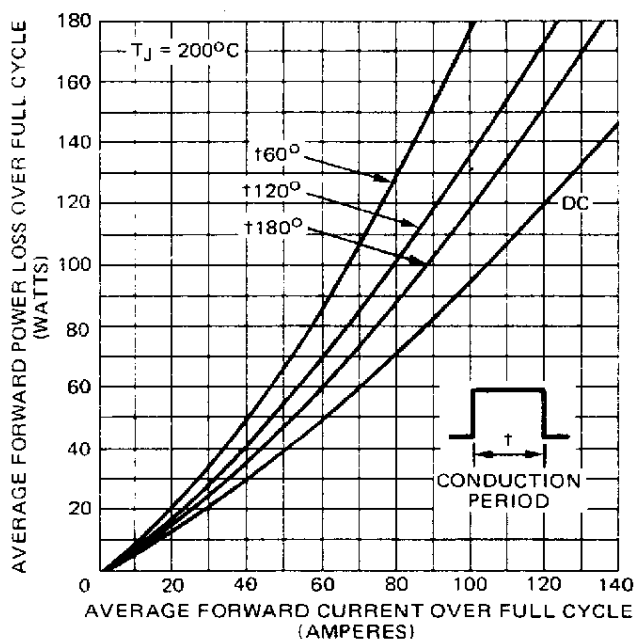


Fig. 8 — Maximum Forward Power Loss Vs High Level Forward Current (Rectangular Current Waveform)

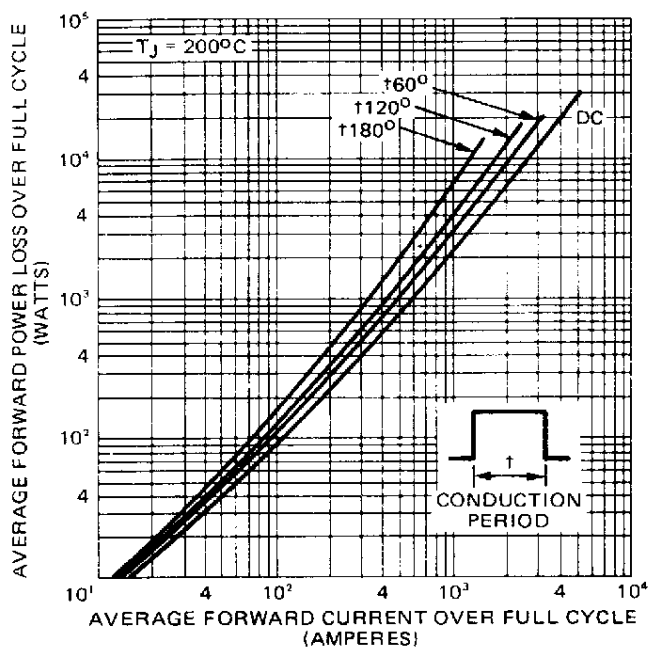


Fig. 9 — Maximum Forward Power Loss Vs High Level Forward Current (Rectangular Current Waveform)



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WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, Tel: (310) 322-3331, Twx: 4720403
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AMEYA360

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Authorized Distribution Brand :



Website :

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Contact Us :

➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
Minhang District, Shanghai , China

➤ Sales :

Direct +86 (21) 6401-6692

Email amall@ameya360.com

QQ 800077892

Skype ameyasales1 ameyasales2

➤ Customer Service :

Email service@ameya360.com

➤ Partnership :

Tel +86 (21) 64016692-8333

Email mkt@ameya360.com