

1N3085, 1N3111, 1N5162 SERIES 150 Amp Avg Silicon Rectifier Diodes

Major Ratings and Characteristics

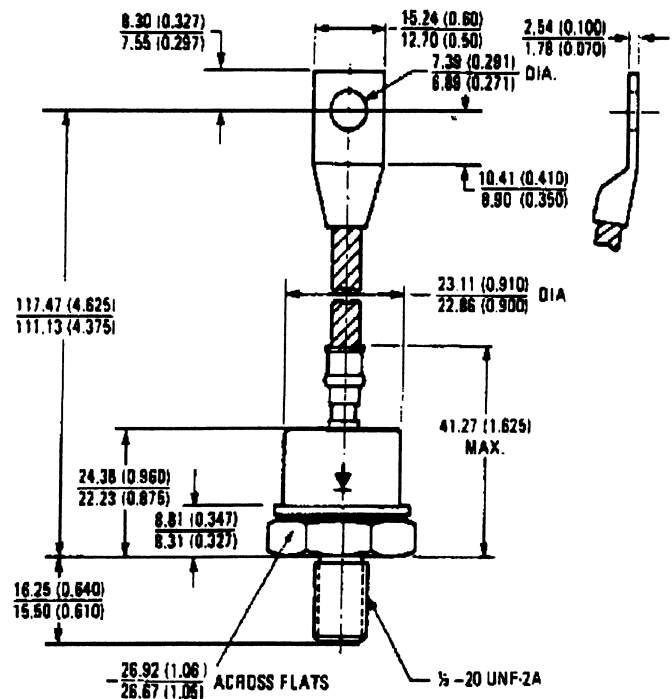
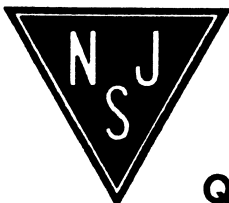
	1N3111	1N3085	1N5162	Units
$I_F(AV)$	150°			A
@ Max. T_C	150°			°C
I_{FSM} @ 50 Hz	2,850			A
@ 60 Hz	3,000°			
I^2_t @ 50 Hz	41,000			A ² s
@ 60 Hz	37,500			
$I^2\sqrt{t}$	580,000			A ² $\sqrt{s}$
V_{RRM} Range	50	100 – 1000	1200	V

*JEDEC registered value

Description and Features

- Alloy junction for soft recovery characteristics
- Rugged device for duty cycle applications
- Reverse voltage ratings up to 1200 volts
- Applications include power rectification in extreme environmental conditions

CASE STYLE AND DIMENSIONS:



Quality Semi-Conductors

Conforms to JEDEC Outline DO-205AC (DO-30)
All dimensions in Millimeters and (Inches)

VOLTAGE RATINGS

① Part Number	V_{RRM} Max. Repetitive Peak Reverse Voltage (V)	V_R Max. Direct Reverse Voltage (V)	$I_R(AV)$ Max. Average Reverse Current at Max. Rated $I_F(AV)$ and V_{RRM} , $T_C = 150^\circ\text{C}$ 1 Phase Operation (mA)
	$T_C = -65^\circ\text{C to } 200^\circ\text{C}$	$T_C = -65^\circ\text{C to } 200^\circ\text{C}$	
1N3111	50*	40*	25*
1N3085	100*	80*	25*
1N3086	200*	160*	17*
1N3087	300*	240*	17*
1N3088	400*	320*	17*
1N3089	500*	400*	17*
1N3090	600*	480*	17*
1N3091	800*	640*	16*
1N3092	1000*	800*	12*
1N5162	1200*	960*	10*

ELECTRICAL SPECIFICATIONS

		1N3111, 1N3085, 1N5162 Series	Units	Conditions
$I_F(AV)$	Max. average forward current	150*	A	180° sinusoidal conduction Max. $T_C = 150^\circ\text{C}$
I_{FSM}	Max. peak one-cycle non-repetitive surge current	2,850	A	Half cycle 50 Hz sine wave or 5 ms rectangular pulse Following any rated load condition and with rated V_{RRM} applied
		3,000*		Half cycle 60 Hz sine wave or 5 ms rectangular pulse
		3,400		Half cycle 50 Hz sine wave or 5 ms rectangular pulse Following any rated load condition and with V_{RRM} applied following surge = 0
		3,550		Half cycle 60 Hz sine wave or 5 ms rectangular pulse
I^2t	Max. I^2t for fusing	41,000	A^2s	$t = 10\text{ ms}$ With rated V_{RRM} applied following surge, initial $T = 200^\circ\text{C}$.
		37,500		$t = 8.3\text{ ms}$
	Max. I^2t for individual device fusing	58,000		$t = 10\text{ ms}$ With $V_{RRM} = 0$ following surge, initial $T = 200^\circ\text{C}$
		53,000		$t = 8.3\text{ ms}$
$I^2\sqrt{t}$	Max. $I^2\sqrt{t}$ for individual device fusing ②	580,000	$A^2\sqrt{s}$	$t = 0.1\text{ to } 10\text{ ms}$, $V_{RRM} = 0$ following surge.
V_{FM}	Max. peak forward voltage	1.2*	V	$I_F(AV) = 150\text{ A}$ (471 A peak), $T_C = 150^\circ\text{C}$

THERMAL-MECHANICAL SPECIFICATIONS

T_C	Max. operating case temperature range	$-65^\circ\text{ to } 200^\circ$	$^\circ\text{C}$	
T_{stg}	Max. storage temperature range	$-65^\circ\text{ to } 200^\circ$	$^\circ\text{C}$	
R_{thJC}	Max. internal thermal resistance, junction-to-case	0.25*	deg C/W	DC operation
R_{thCS}	Thermal resistance, case-to-sink	0.10	deg C/W	Mounting surface flat, smooth, and gressed
T	Mounting torque	Min.	Nm (lb·in)	
		Max.		
		14.1 (125)		
		17.0 (150)		
wt	Approximate weight	91 (3.2)	g (oz)	
*	Case style	DO-205AC (DO-30)		JEDEC

① Basic part number indicates cathode-to-case. For anode-to-case, add "R" to part number, e.g. 1N3086R.

*JEDEC registered values. ② I^2t for time $t_x = I^2\sqrt{t} \cdot \sqrt{t_x}$