

4855452 INTERNATIONAL RECTIFIER

55C 04909 D

Data Sheet No. PD-2.083

Y-01-15

INTERNATIONAL RECTIFIER 

## 1N5401 SERIES

### 3 Amp Medium Power Silicon Rectifier Diodes

#### Major Ratings and Characteristics

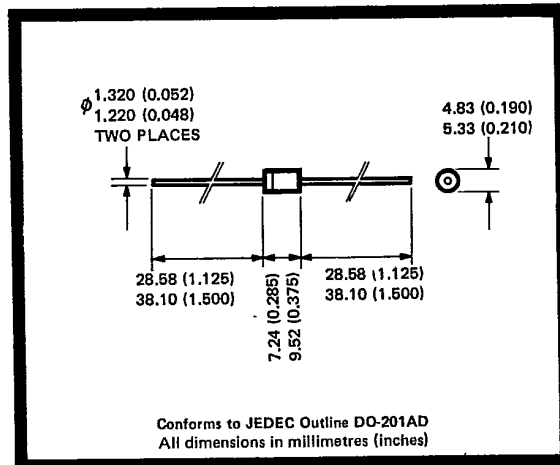
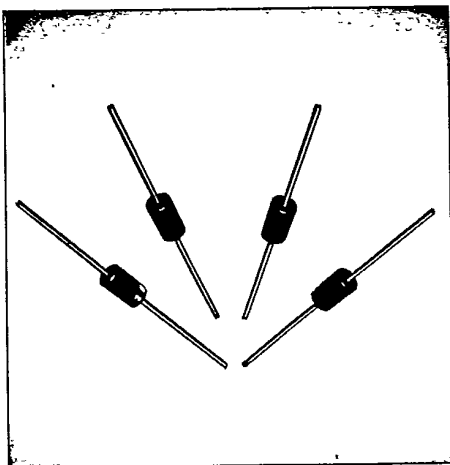
	1N5401	Units
$I_F(AV)$	3.0*	A
@ max $T_L$	105*	°C
$I_{FSM}$	50Hz	191
	60Hz	200*
$I^2\sqrt{t}$	2580*	$A^2\sqrt{s}$
$T_L$ Range	-65 to 170*	°C
$V_{RRM}$ Range	100 to 1000*	V

\*JEDEC registered values

#### Description/Features

- 3A lead mounted rectifier.
- Subminiature molded package.
- Corrosion resistant surfaces.
- Peak reverse voltage from 100 to 1000V.
- Improved environmental operating capability.
- High surge current capability.

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55C 04910 D

1N5401 Series

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## Voltage Ratings

T-01-15

	$V_{RRM}$ - Maximum Repetitive Peak Reverse Voltage (V)	$V_R$ - Maximum Direct Reverse Voltage (V)
Part numbers	$T_L = -65$ to $175^\circ\text{C}$	$T_L = -65$ to $150^\circ\text{C}$
1N5401	100*	100*
1N5402	200*	200*
1N5404	400*	400*
1N5406	600*	600*
1N5407	800*	800*
1N5408	1000*	1000*

## Electrical Specifications

	1N5401	Units	Conditions
$I_F(AV)$ Maximum average forward current @ Max $T_L$	3.0*	A	180° sine wave conduction
	105*	°C	
$I_{FSM}$ Maximum peak one cycle non-repetitive surge current	191	A	t = 10ms t = 8.3ms Following any rated load condition and with rated $V_{RRM}$ reapplied
	200*	A	
$I^2\sqrt{t}$ Maximum $I^2\sqrt{t}$ for fusing <sup>①</sup>	2580	$A^2\sqrt{s}$	t = 0.1 to 10ms, $V_{RRM} = 0$ following surge
$V_{FM}$ Maximum peak forward voltage	1.2*	A	$I_F(AV) = 3A$ (9.4 $A_{pk}$ ), $T_J = 25^\circ\text{C}$
$I_{RM}$ Maximum average reverse current	100	$\mu\text{A}$	$T_L = 105^\circ\text{C}$ , $V_{RRM} = \text{rated } V_{RRM}$ , $I_F(AV) = 3A$
$I_R$ Maximum direct reverse current	500*	$\mu\text{A}$	$T_L = 150^\circ\text{C}$ , $V_R = \text{rated } V_R$

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

\*JEDEC registered value.

## Thermal and Mechanical Specifications

$T_L$	Lead operating temperature range	-65 to 170*	°C	
$T_{stg}$	Storage temperature range	-65 to 175*	°C	
wt	Approximate weight	0.65 (0.023)	g (oz)	
$T_{sld}$	Max. lead temperature during soldering	240*	°C	Duration, 10s max. measured 3.2mm (0.125in) from device case

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55C 04911 D



1N5401 Series

T-01-15

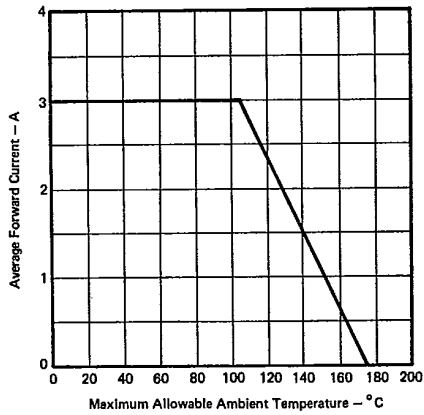


Fig. 1 - Average Forward Current Vs. Maximum Allowable Ambient Temperature

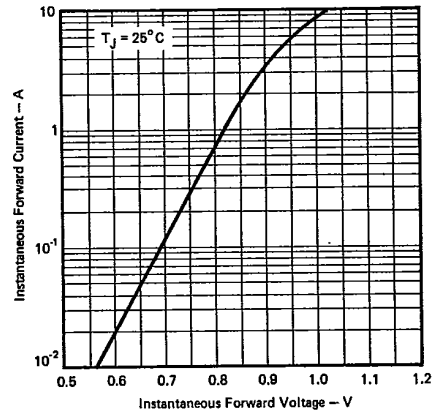


Fig. 2 - Maximum Forward Voltage Vs. Forward Current

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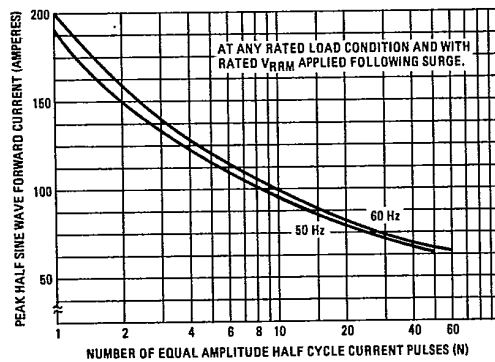


Fig. 3 - Maximum Non-Repetitive Surge Current Vs. Number of Current Pulses