

# 1N5400 thru 1N5408

1N5404 and 1N5406 are Preferred Devices

## Axial-Lead Standard Recovery Rectifiers

Lead mounted standard recovery rectifiers are designed for use in power supplies and other applications having need of a device with the following features:

- High Current to Small Size
- High Surge Current Capability
- Low Forward Voltage Drop
- Void-Free Economical Plastic Package
- Available in Volume Quantities
- Plastic Meets UL 94V-0 for Flammability

### Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 1.1 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 220°C Max. for 10 Seconds, 1/16" from case
- Polarity: Cathode Indicated by Polarity Band
- Marking: 1N5400, 1N5401, 1N5402, 1N5404, 1N5406, 1N5407, 1N5408

### MAXIMUM RATINGS

Please See the Table on the Following Page



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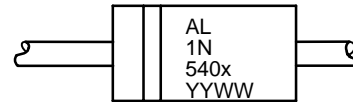
<http://onsemi.com>

## STANDARD RECOVERY RECTIFIERS 50–1000 VOLTS 3.0 AMPERES



AXIAL LEAD  
CASE 267-05  
STYLE 1

### MARKING DIAGRAM



AL = Assembly Location  
1N540x = Device Number  
x = 0, 1, 2, 4, 6, 7 or 8  
YY = Year  
WW = Work Week

### ORDERING INFORMATION

Device	Package	Shipping
1N5400	Axial Lead	500 Units/Box
1N5400RL	Axial Lead	1200/Tape & Reel
1N5401	Axial Lead	500 Units/Box
1N5401RL	Axial Lead	1200/Tape & Reel
1N5402	Axial Lead	500 Units/Box
1N5402RL	Axial Lead	1200/Tape & Reel
1N5404	Axial Lead	500 Units/Box
1N5404RL	Axial Lead	1200/Tape & Reel
1N5406	Axial Lead	500 Units/Box
1N5406RL	Axial Lead	1200/Tape & Reel
1N5407	Axial Lead	500 Units/Box
1N5407RL	Axial Lead	1200/Tape & Reel
1N5408	Axial Lead	500 Units/Box
1N5408RL	Axial Lead	1200/Tape & Reel

Preferred devices are recommended choices for future use and best overall value.

# 1N5400 thru 1N5408

## MAXIMUM RATINGS

Rating	Symbol	1N5400	1N5401	1N5402	1N5404	1N5406	1N5407	1N5408	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	200	400	600	800	1000	Volts
Non-repetitive Peak Reverse Voltage	$V_{RSM}$	100	200	300	525	800	1000	1200	Volts
Average Rectified Forward Current (Single Phase Resistive Load, 1/2" Leads, $T_L = 105^\circ\text{C}$ )	$I_O$	3.0							Amp
Non-repetitive Peak Surge Current (Surge Applied at Rated Load Conditions)	$I_{FSM}$	200 (one cycle)							Amp
Operating and Storage Junction Temperature Range	$T_J$ $T_{stg}$	- 65 to +170 - 65 to +175							$^\circ\text{C}$

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient (PC Board Mount, 1/2" Leads)	$R_{\theta JA}$	53	$^\circ\text{C/W}$

## ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Forward Voltage ( $I_F = 3.0$ Amp, $T_A = 25^\circ\text{C}$ )	$V_F$	-	-	1.0	Volts
Reverse Current (Rated dc Voltage) $T_A = 25^\circ\text{C}$ $T_A = 150^\circ\text{C}$	$I_R$	-	-	10 100	$\mu\text{A}$

Ratings at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.

60 Hz resistive or inductive loads.

For capacitive load, derate current by 20%.

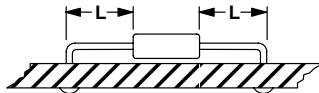
## NOTE 1 — AMBIENT MOUNTING DATA

Data shown for thermal resistance junction-to-ambient ( $R_{\theta JA}$ ) for the mountings shown is to be used as typical guideline values for preliminary engineering or in case the tie point temperature cannot be measured.

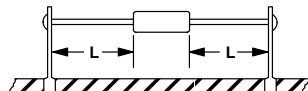
### TYPICAL VALUES FOR $R_{\theta JA}$ IN STILL AIR

Mounting Method	Lead Length, L (IN)				$R_{\theta JA}$
	1/8	1/4	1/2	3/4	
1	50	51	53	55	$^\circ\text{C/W}$
2	58	59	61	63	$^\circ\text{C/W}$
3	28				$^\circ\text{C/W}$

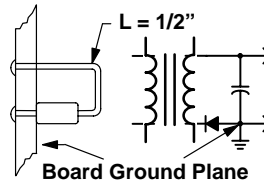
**MOUNTING METHOD 1**  
P.C. Board Where Available  
Copper Surface area is small



**MOUNTING METHOD 2**  
Vector Push-In Terminals T-28



**MOUNTING METHOD 3**  
P.C. Board with  
1-1/2" x 1-1/2" Copper Surface



# 1N5400 thru 1N5408

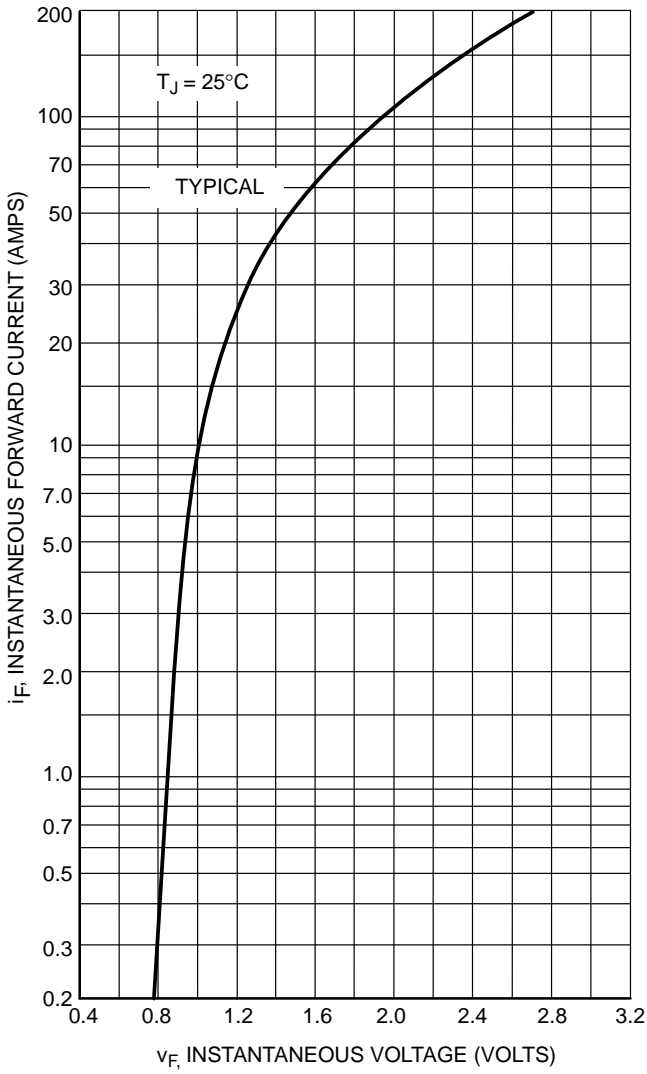


Figure 1. Forward Voltage

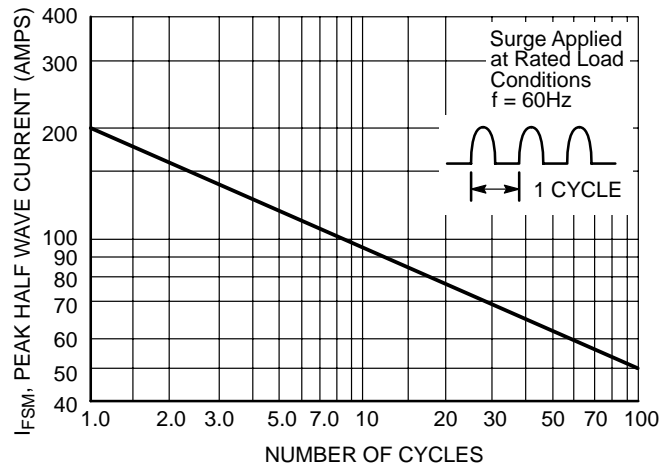


Figure 2. Maximum Nonrepetitive Surge Current

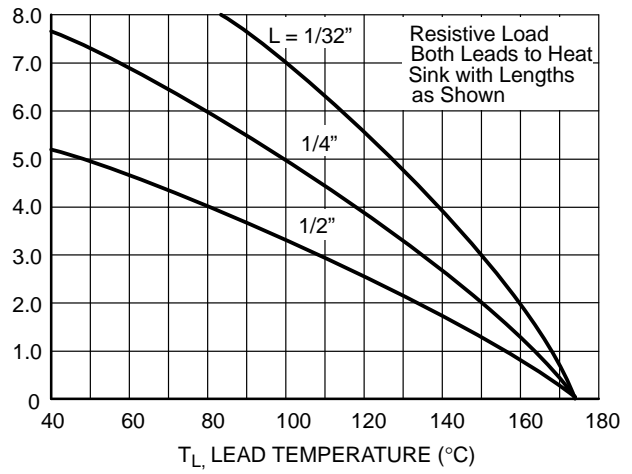


Figure 3. Current Derating Various Lead Lengths

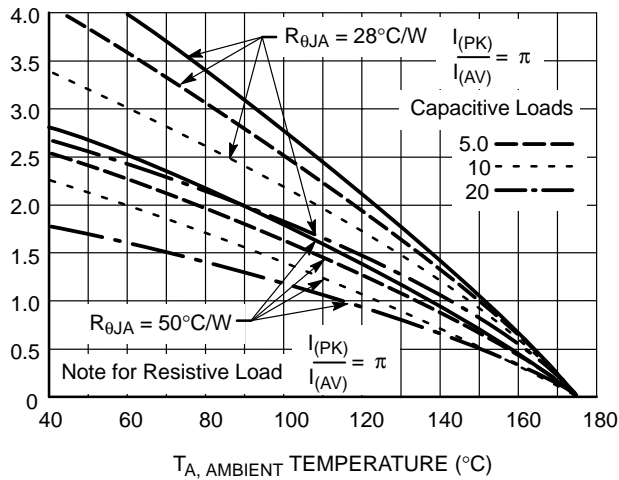
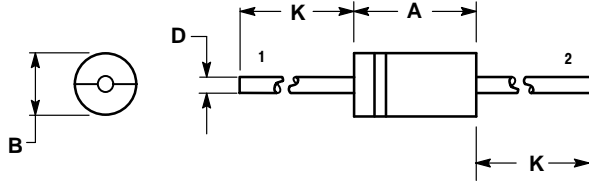


Figure 4. Current Derating PC Board Mounting

# 1N5400 thru 1N5408

## PACKAGE DIMENSIONS

### AXIAL LEAD CASE 267-05 ISSUE G



#### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.287	0.374	7.30	9.50
B	0.189	0.209	4.80	5.30
D	0.047	0.051	1.20	1.30
K	1.000	---	25.40	---

#### STYLE 1:

- PIN 1. CATHODE (POLARITY BAND)
- ANODE

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