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:

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 94 V-0 for Flammability
- These devices are manufactured with a Pb–Free external lead finish only*

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



ON Semiconductor®

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

See detailed ordering and shipping information on page 2 of this data sheet.

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

^{*}For additional information on our Pb–Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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	V
Non-repetitive Peak Reverse Voltage	V _{RSM}	100	200	300	525	800	1000	1200	V
Average Rectified Forward Current (Single Phase Resistive Load, 1/2 in. Leads, T _L = 105°C)	lo	3.0					А		
Non-repetitive Peak Surge Current (Surge Applied at Rated Load Conditions)	I _{FSM}	200 (one cycle)					А		
Operating and Storage Junction Temperature Range	T _J T _{stg}	– 65 to +170 – 65 to +175					°C		

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

Characteristic		Тур	Unit
Thermal Resistance, Junction-to-Ambient (PC Board Mount, 1/2 in. Leads)	$R_{\theta JA}$	53	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Тур	Max	Unit
Forward Voltage (I _F = 3.0 Amp, T _A = 25°C)	٧F	-	_	1.0	V
Reverse Current (Rated DC Voltage) T _A = 25°C T _A = 150°C	I _R	-	-	10 100	μΑ

Ratings at 25°C ambient temperature unless otherwise specified.

60 Hz resistive or inductive loads.

For capacitive load, derate current by 20%.

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

[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

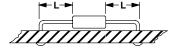
NOTE 1 — AMBIENT MOUNTING DATA

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.

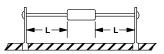
TYPICAL VALUES FOR $R_{\theta \text{JA}}$ IN STILL AIR

Mounting	Lea	$R_{\theta JA}$			
Method	1/8	1/4	1/2	3/4	
1	50	51	53	55	°C/W
2	58	59	61	63	°C/W
3	28				°C/W

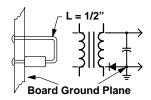
MOUNTING METHOD 1 P.C. Board Where Available Copper Surface area is small



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



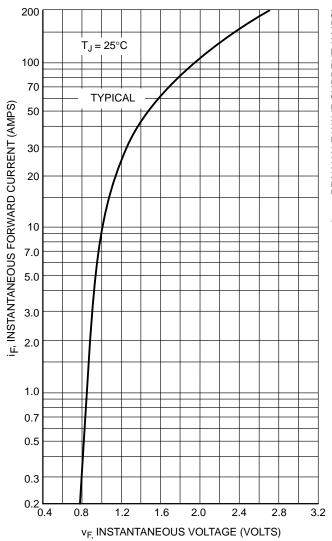


Figure 1. Forward Voltage

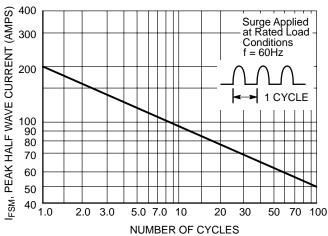


Figure 2. Maximum Nonrepetitive Surge Current

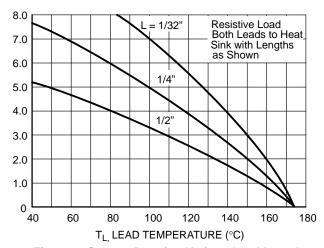


Figure 3. Current Derating Various Lead Lengths

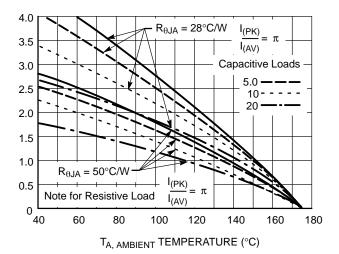
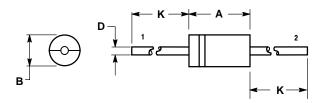


Figure 4. Current Derating PC Board Mounting

PACKAGE DIMENSIONS

AXIAL LEAD CASE 267-05 **ISSUE G**



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

	INCHES		MILLIMETERS			
DIM	MIN	MAX	MIN	MAX		
Α	0.287	0.374	7.30	9.50		
В	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)
2. ANODE

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