



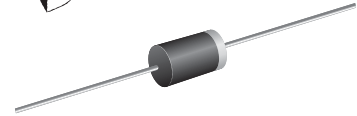
# 1N5391GP thru 1N5399GP

Vishay General Semiconductor

## Glass Passivated Junction Rectifier

### Major Ratings and Characteristics

$I_{F(AV)}$	1.5 A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	50 A
$I_R$	5.0 $\mu$ A
$V_F$	1.4 V
$T_j$ max.	175 °C



DO-204AC (DO-15)

Patented\*

\* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, and brazed-lead assembly by Patent No. 3,930,306

### Features

- Superelectifier structure for High Reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current, typical  $I_R$  less than 0.1  $\mu$ A
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds



### Mechanical Data

**Case:** DO-204AC, molded epoxy over glass body  
Epoxy meets UL-94V-0 Flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

**Polarity:** Color band denotes cathode end

### Typical Applications

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes application

### Maximum Ratings

( $T_A = 25$  °C unless otherwise noted)

Parameter	Symbol	1N5391GP	1N5392GP	1N5393GP	1N5394GP	1N5395GP	1N5396GP	1N5397GP	1N5398GP	1N5399GP	Unit
* Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	300	400	500	600	800	1000	V
* Maximum RMS voltage	$V_{RMS}$	35	70	140	210	280	350	420	560	700	V
* Maximum DC blocking voltage	$V_{DC}$	50	100	200	300	400	500	600	800	1000	V
* Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_L = 70$ °C	$I_{F(AV)}$	1.5									A
* Peak forward surge current 8.3 ms single half sine-wave super-imposed on rated load	$I_{FSM}$	50									A
* Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 70$ °C	$I_{R(AV)}$	300									$\mu$ A
* Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175									°C

# 1N5391GP thru 1N5399GP



Vishay General Semiconductor

## Electrical Characteristics

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

Parameter	Test condition	Symbol	1N53 91GP	1N53 92GP	1N53 93GP	1N53 94GP	1N53 95GP	1N53 96GP	1N53 97GP	1N53 98GP	1N53 99GP	Unit
* Maximum instantaneous forward voltage	at 1.5 A $T_A = 70\text{ }^\circ\text{C}$	$V_F$	1.4									V
* Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 150\text{ }^\circ\text{C}$	$I_R$	5.0 300									$\mu\text{A}$
Typical reverse recovery time	at $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$	2.0									$\mu\text{s}$
Typical junction capacitance	at 4.0V, 1MHz	$C_J$	15									pF

## Thermal Characteristics

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	1N53 91GP	1N53 92GP	1N53 93GP	1N53 94GP	1N53 95GP	1N53 96GP	1N53 97GP	1N53 98GP	1N53 99GP	Unit
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	45									$^\circ\text{C/W}$

Notes:

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

\*JEDEC registered values

## Ratings and Characteristics Curves

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

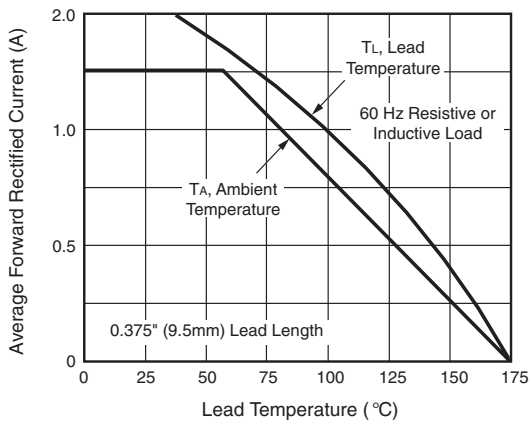


Figure 1. Forward Current Derating Curve

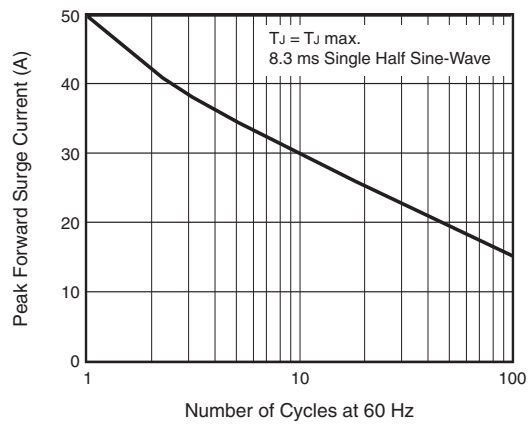


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

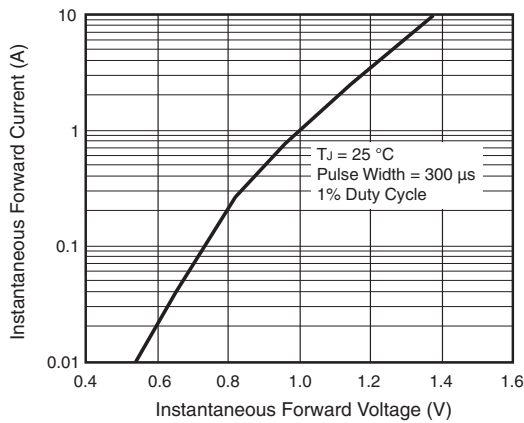


Figure 3. Typical Instantaneous Forward Characteristics

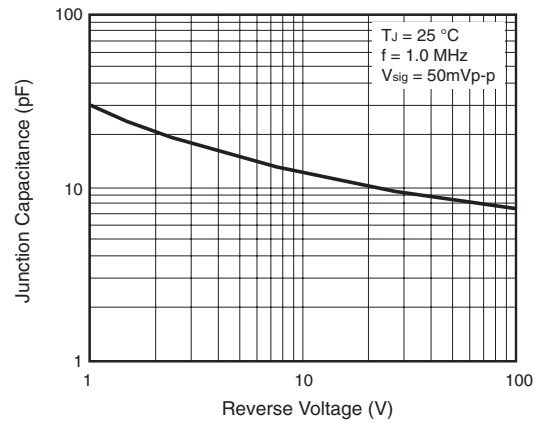


Figure 5. Typical Junction Capacitance

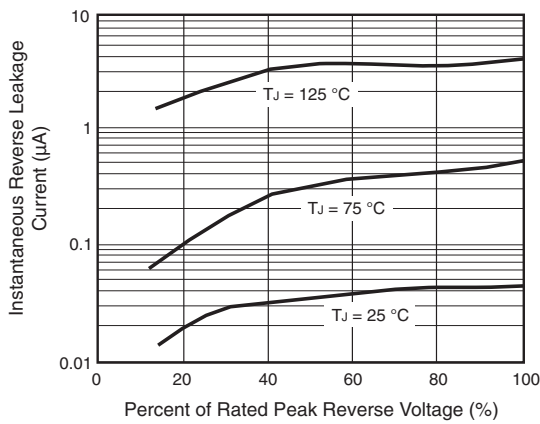


Figure 4. Typical Reverse Characteristics

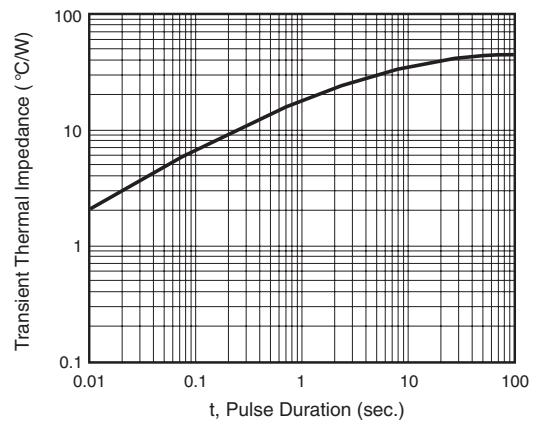
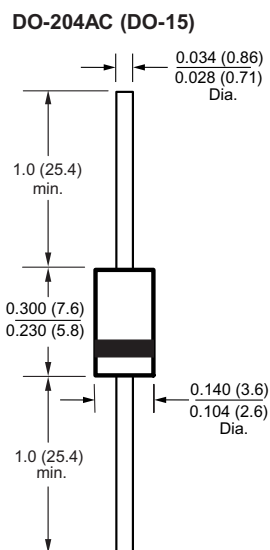


Figure 6. Typical Transient Thermal Impedance

## Package outline dimensions in inches (millimeters)





---

**Notice**

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.