

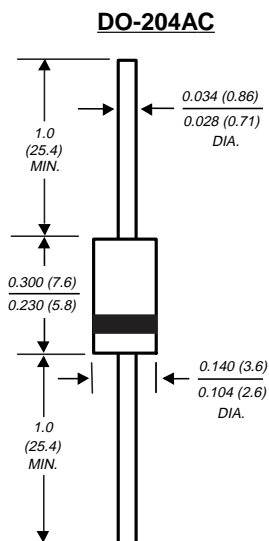
# 1N5391GP THRU 1N5399GP

## GLASS PASSIVATED JUNCTION RECTIFIER

Reverse Voltage - 50 to 1000 Volts

Forward Current - 1.5 Amperes

**PATENTED\***



Dimensions in inches and (millimeters)

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



### FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ High temperature metallurgically bonded construction
- ◆ Glass passivated cavity-free junction
- ◆ Capable of meeting environmental standards of MIL-S-19500
- ◆ 1.5 Ampere operation at  $T_A=70^\circ\text{C}$  with no thermal runaway
- ◆ Typical  $I_R$  less than  $0.1\mu\text{A}$
- ◆ High temperature soldering guaranteed:  $350^\circ\text{C}/10$  seconds,  $0.375''$  (9.5mm) lead length, 5 lbs. (2.3kg) tension



### MECHANICAL DATA

**Case:** JEDEC DO-204AC molded plastic over glass body  
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.015 ounce, 0.4 gram

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

	SYMBOLS	1N53 91GP	1N53 92GP	1N53 93GP	1N53 94GP	1N53 95GP	1N53 96GP	1N53 97GP	1N53 98GP	1N53 99GP	UNITS
* Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	300	400	500	600	800	1000	Volts
* Maximum RMS voltage	$V_{RMS}$	35	70	140	210	280	350	420	560	700	Volts
* Maximum DC blocking voltage	$V_{DC}$	50	100	200	300	400	500	600	800	1000	Volts
* Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_L=70^\circ\text{C}$	$I_{(AV)}$	1.5									Amps
* Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	50.0									Amps
* Maximum instantaneous forward voltage at 1.5A, $T_A=70^\circ\text{C}$	$V_F$	1.4									Volts
*Maximum DC reverse current at rated DC blocking voltage	$I_R$	$T_A=25^\circ\text{C}$ : 5.0 $T_A=150^\circ\text{C}$ : 300.0									$\mu\text{A}$
* Maximum full load reverse current full cycle average, 0.375" (9.5mm) lead length at $T_A=70^\circ\text{C}$	$I_{R(AV)}$	300.0									$\mu\text{A}$
Typical reverse recovery time (NOTE 1)	$t_{rr}$	2.0									$\mu\text{s}$
Typical junction capacitance (NOTE 2)	$C_J$	15.0									pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	45.0									$^\circ\text{C}/\text{W}$
*Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +175									$^\circ\text{C}$

**NOTES:**

- (1) Reverse recovery test condition:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$
  - (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
  - (3) Thermal resistance from junction to ambient at  $0.375''$  (9.5mm) lead length, P.C.B. mounted
- \* JEDEC registered values

# RATINGS AND CHARACTERISTIC CURVES 1N5391GP THRU 1N5399GP

FIG. 1 - FORWARD CURRENT DERATING CURVE

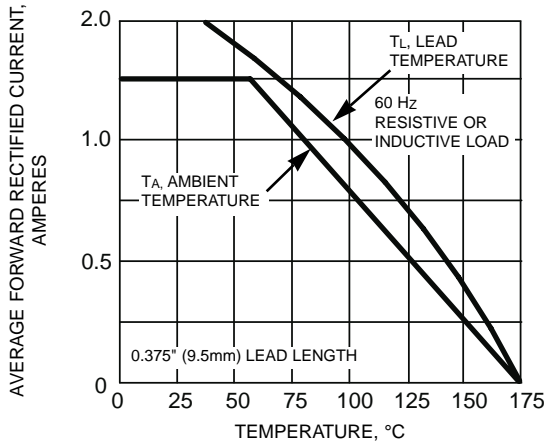


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

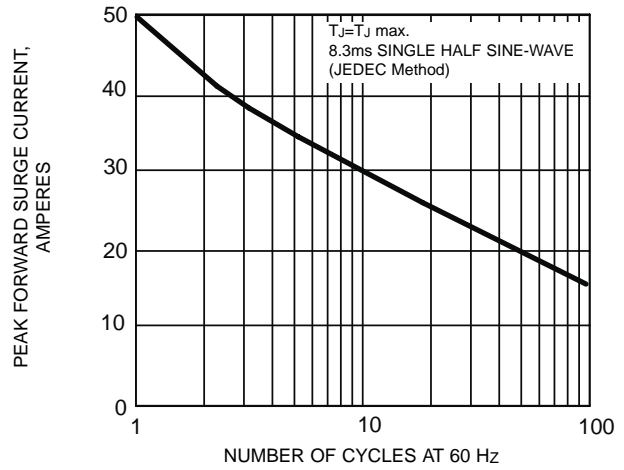


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

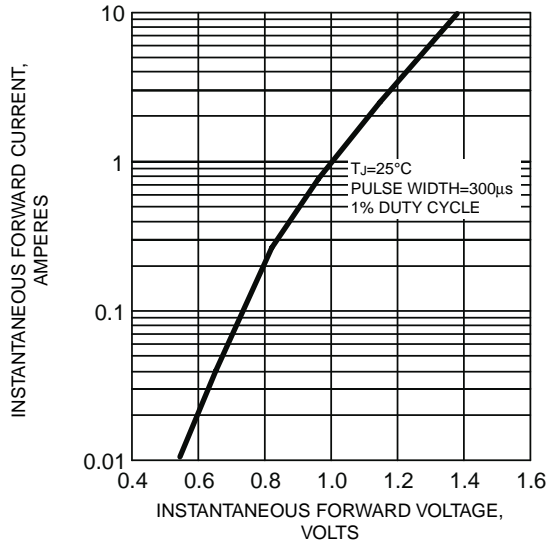


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

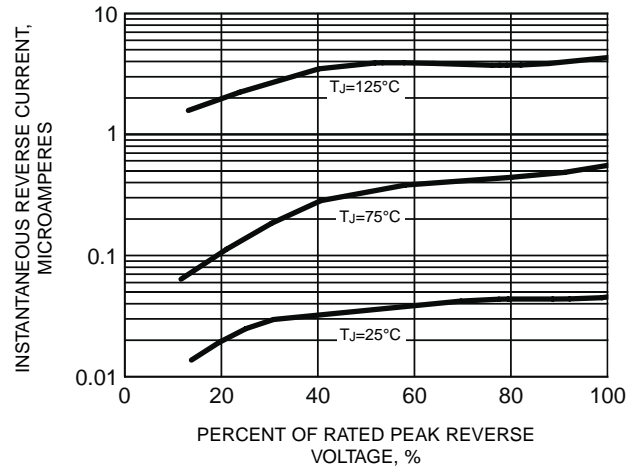


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

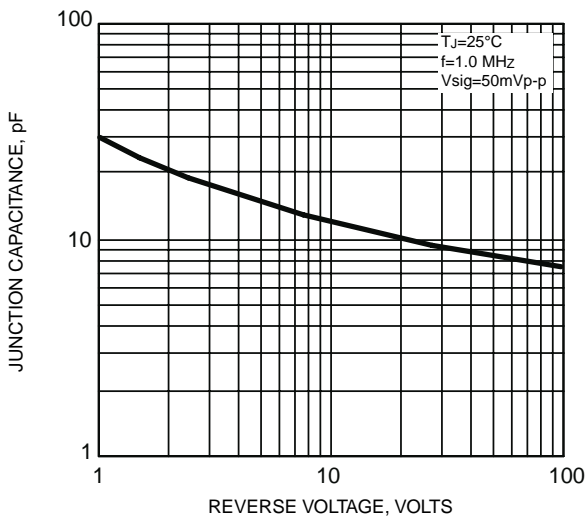


FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE

