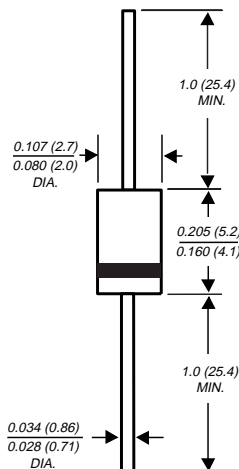


# 1N5391 THRU 1N5399

## GENERAL PURPOSE PLASTIC RECTIFIER

*Reverse Voltage - 50 to 1000 Volts      Forward Current - 1.5 Amperes*

### DO-204AL



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ High surge current capability
- ◆ 1.5 Ampere operation at  $T_L=70^\circ\text{C}$  with no thermal runaway
- ◆ Low reverse leakage
- ◆ Construction utilizes void-free molded plastic technique
- ◆ High temperature soldering guaranteed:  $250^\circ\text{C}/10$  seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension



### MECHANICAL DATA

**Case:** JEDEC DO-204AL molded plastic body  
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.012 ounce, 0.3 gram

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

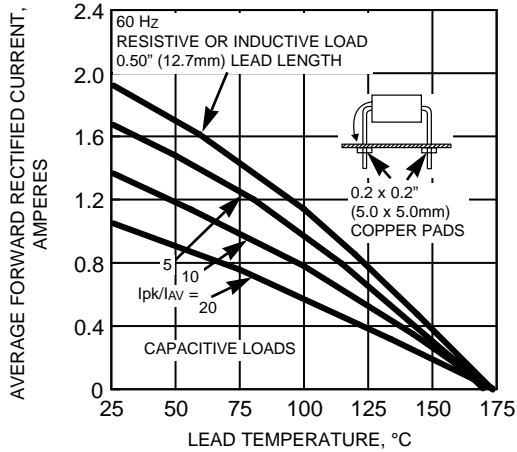
|   | SYMBOLS                            | 1N 5391      | 1N 5392 | 1N 5393 | 1N 5394 | 1N 5395 | 1N 5396 | 1N 5397 | 1N 5398 | 1N 5399 | UNITS                     |
|---|------------------------------------|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------------------------|
| *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<br>0.500" (12.7mm) lead length at $T_L=70^\circ\text{C}$                               | $I_{(AV)}$                         | 1.5          |         |         |         |         |         |         |         |         | Amps                      |
| *Peak forward surge current<br>8.3ms single half sine-wave superimposed on<br>rated load (JEDEC Method) at $T_A=75^\circ\text{C}$ | $I_{FSM}$                          | 50.0         |         |         |         |         |         |         |         |         | Amps                      |
| *Maximum instantaneous forward voltage<br>at 1.5A $T_A=70^\circ\text{C}$  | $V_F$                              | 1.4          |         |         |         |         |         |         |         |         | Volts                     |
| *Maximum DC reverse current $T_A=25^\circ\text{C}$<br>at rated DC blocking voltage $T_A=150^\circ\text{C}$                        | $I_R$                              | 5.0<br>300.0 |         |         |         |         |         |         |         |         | $\mu\text{A}$             |
| *Maximum full load reverse current full cycle<br>average, 0.375", (9.5mm) lead length at $T_L=70^\circ\text{C}$                   | $I_{R(AV)}$                        | 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)   | $R_{\theta JA}$<br>$R_{\theta JL}$ | 50.0<br>25.0 |         |         |         |         |         |         |         |         | $^\circ\text{C}/\text{W}$ |
| *Maximum DC blocking voltage temperature  | $T_A$                              | +150         |         |         |         |         |         |         |         |         | $^\circ\text{C}$          |
| *Operating junction temperature range   | $T_J$                              | -50 to +170  |         |         |         |         |         |         |         |         | $^\circ\text{C}$          |
| *Storage temperature range  | $T_{STG}$                          | -50 to +175  |         |         |         |         |         |         |         |         | $^\circ\text{C}$          |

#### NOTES:

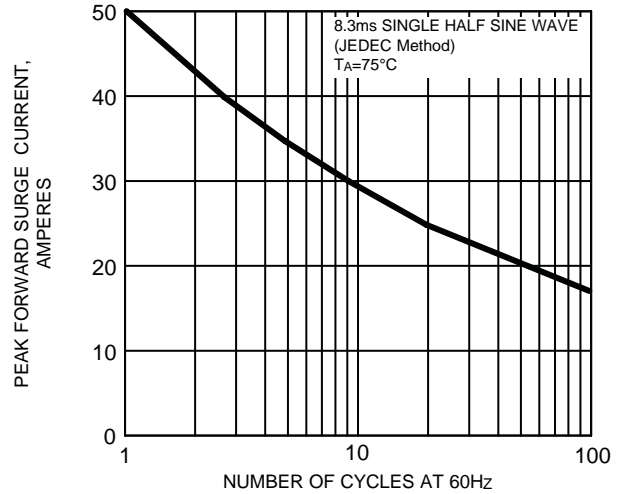
- (1) Measured with  $I_F=0.5\text{A}$ ,  $I_R=0.1\text{A}$ ,  $I_{rr}=0.25\text{A}$
  - (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
  - (3) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5mm) lead length, P.C.B. mounted
- \*JEDEC registered value

# RATINGS AND CHARACTERISTIC CURVES 1N5391 THRU 1N5399

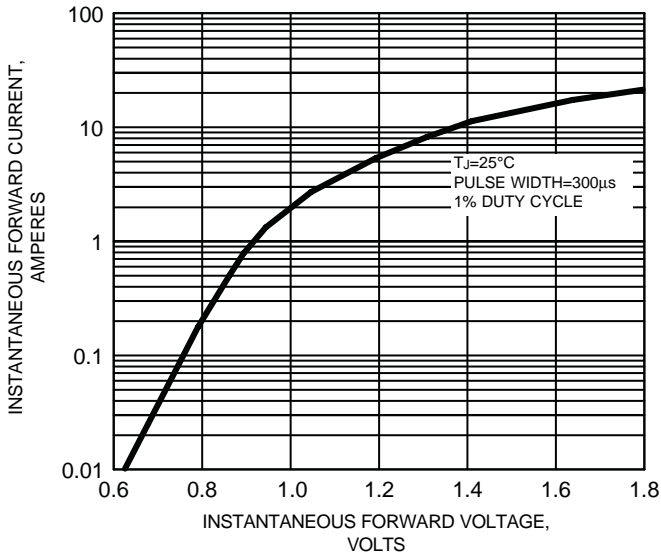
**FIG. 1 - FORWARD CURRENT DERATING CURVE**



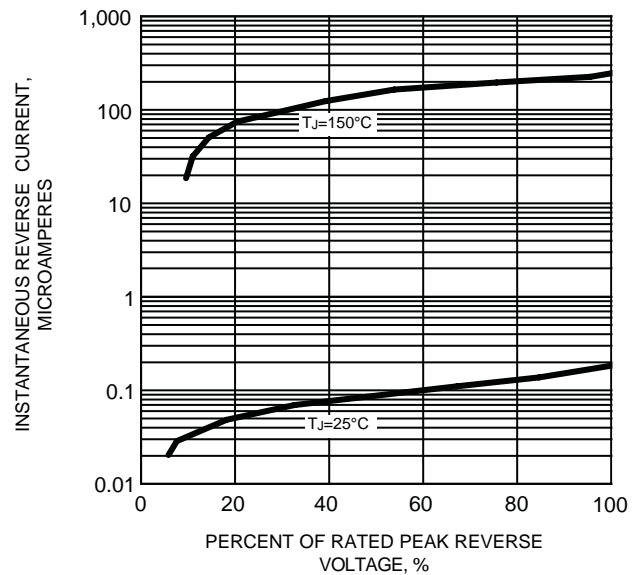
**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



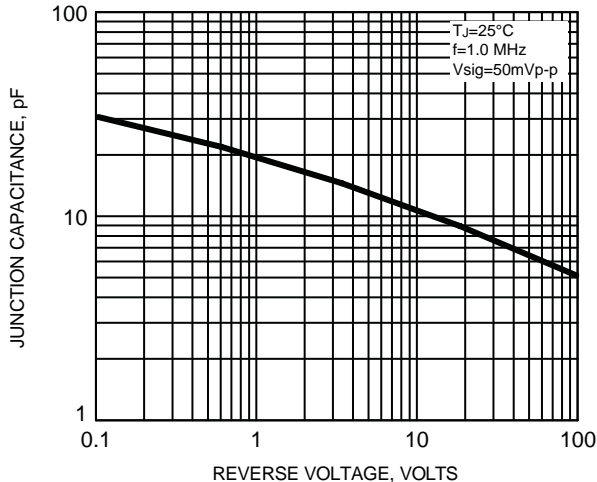
**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



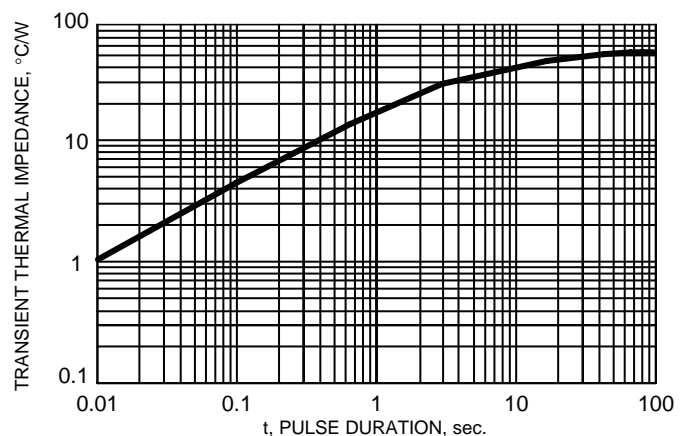
**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**



**FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE**



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