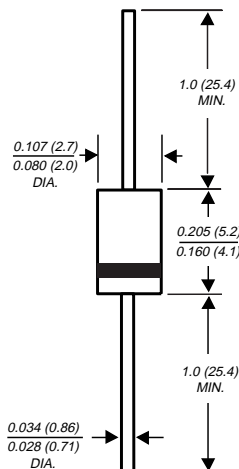


# 1N5391 THRU 1N5399

## 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.

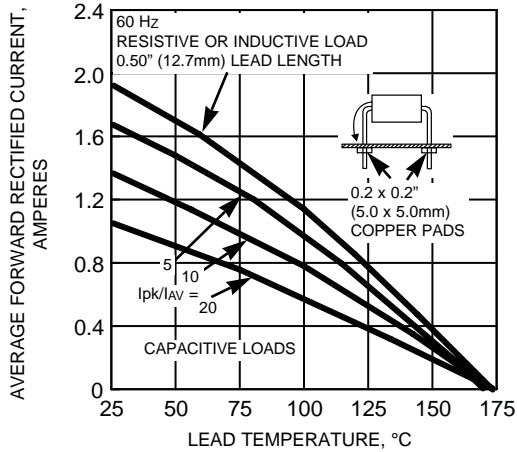
	SYMBOLS	1N 5391	1N 5392	1N 5393	1N 5394	1N 5395	1N 5396	1N 5397	1N 5398	1N 5399	UNITS
*Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	300	400	500	600	800	1000	Volts
*Maximum RMS voltage	$V_{RMS}$	35	70	140	210	280	350	420	560	700	Volts
*Maximum DC blocking voltage	$V_{DC}$	50	100	200	300	400	500	600	800	1000	Volts
*Maximum average forward rectified current 0.500" (12.7mm) 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) at $T_A=75^\circ\text{C}$	$I_{FSM}$	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 $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=150^\circ\text{C}$	$I_R$	5.0 300.0									$\mu\text{A}$
*Maximum full load reverse current full cycle 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)	$R_{\theta JA}$ $R_{\theta JL}$	50.0 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:

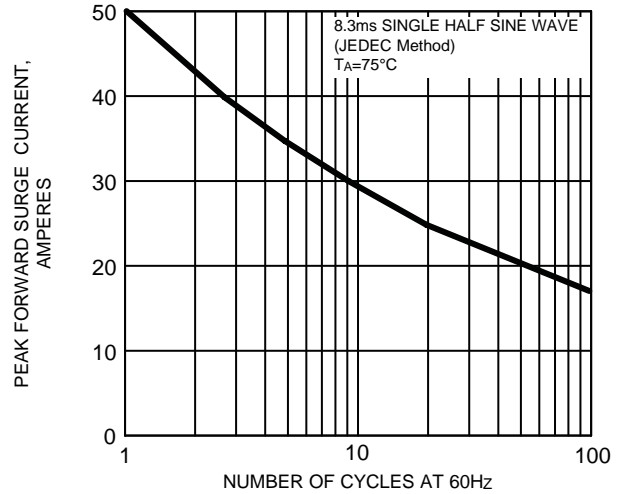
- (1) Measured with  $I_F=0.5\text{A}$ ,  $I_R=0.1\text{A}$ ,  $I_{rr}=0.25\text{A}$
  - (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
  - (3) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5mm) lead length, P.C.B. mounted
- \*JEDEC registered value

# RATINGS AND CHARACTERISTIC CURVES 1N5391 THRU 1N5399

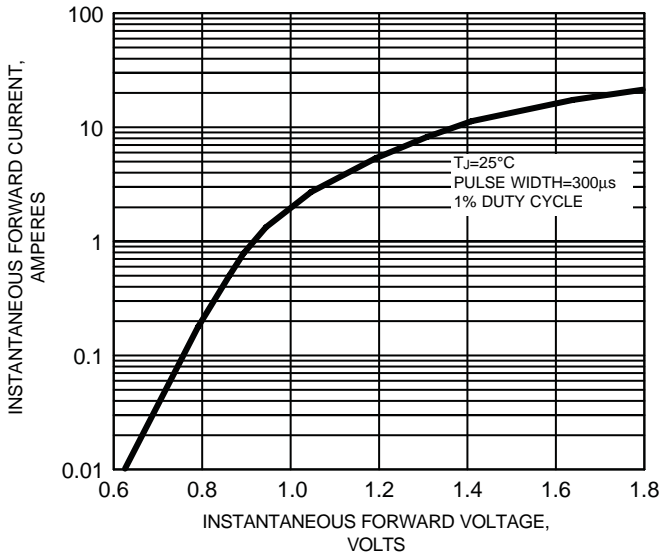
**FIG. 1 - FORWARD CURRENT DERATING CURVE**



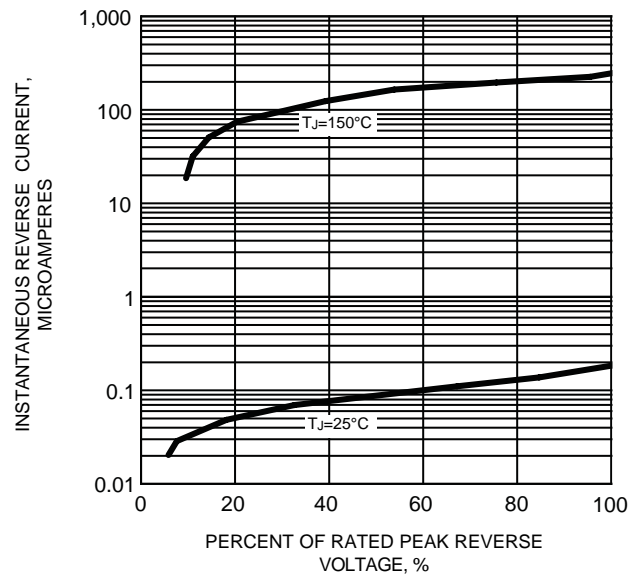
**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



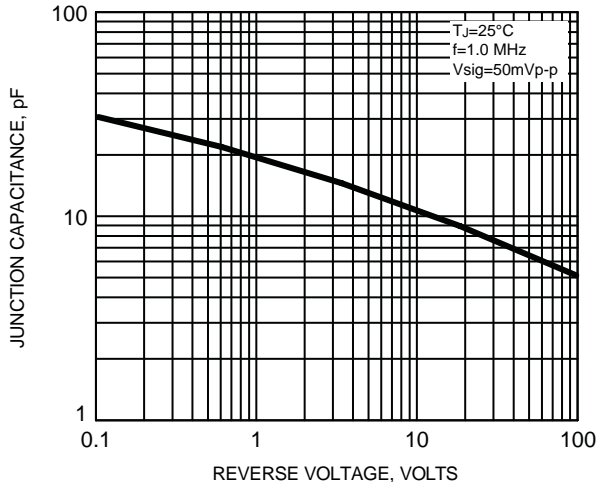
**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**



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

