



# 1N4942 thru 1N4948

Fast Recovery Rectifiers  
Revers Voltage 200 to 1000 Volts Forward Current 1.0 Ampere

## Features

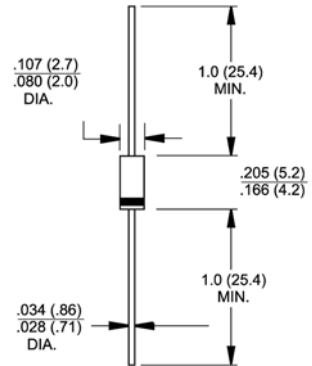
- ◆ High switching capability
- ◆ Low leakage
- ◆ Low forward voltage drop
- ◆ High current capability
- ◆ High surge current capability
- ◆  $T_J$  is 150°C (Max.) and  $T_{STG}$  is 175°C (Max.) with PI glue



DO-204AL (DO-41)

## Mechanical Data

- ◆ Case: Molded plastic
- ◆ Epoxy: UL 94V-O rate flame retardant
- ◆ Lead: MIL-STD-202E method 208C guaranteed
- ◆ Mounting position: Any
- ◆ Weight: 0.012 ounce, 0.33 gram



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Parameter	Symbols	1N4942	1N4944	1N4946	1N4947	1N4948	Units
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	400	600	800	1000	Volts
Maximum RMS voltage	$V_{RMS}$	140	280	420	560	700	Volts
Maximum DC blocking voltage	$V_{DC}$	200	400	600	800	1000	Volts
Maximum average forward rectified current at $T_A=75^\circ\text{C}$	$I_{F(AV)}$	1.0					Amp
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30.0					Amps
Maximum instantaneous forward voltage at 1.0A DC	$V_F$	1.2					Volts
Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$	$I_R$	5.0					$\mu\text{A}$
Maximum full load reverse current full cycle average, .375" (9.5mm) lead length at $T_C=55^\circ\text{C}$		100					$\mu\text{A}$
Maximum reverse recovery time (Note 1)	$t_{rr}$	150		250		500	nS
Typical junction capacitance (Note 2)	$C_J$	15					pF
Operating junction temperature range	$T_J$	-55 to +125					$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150					$^\circ\text{C}$

- Notes:**
1. Test Conditions:  $I_F = 1.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = 0.25\text{A}$
  2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

# RATINGS AND CHARACTERISTIC CURVES

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

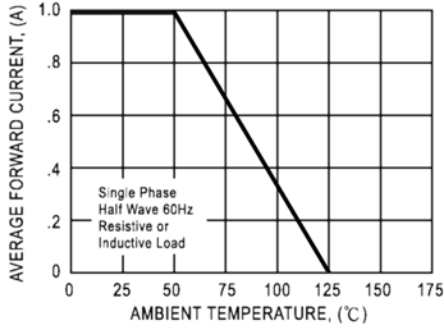


FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

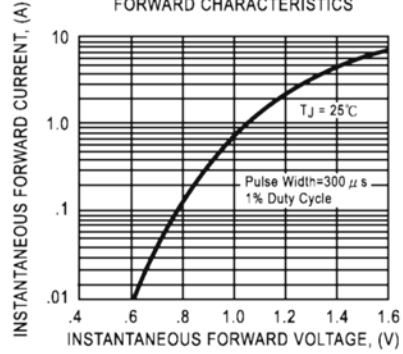


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

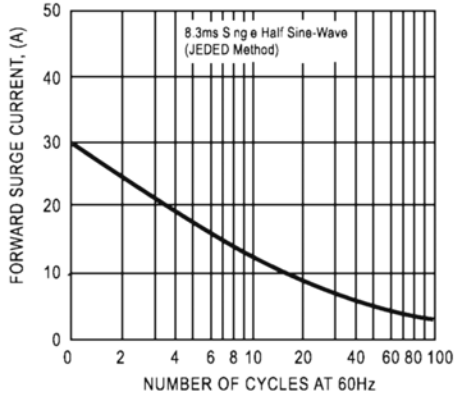


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

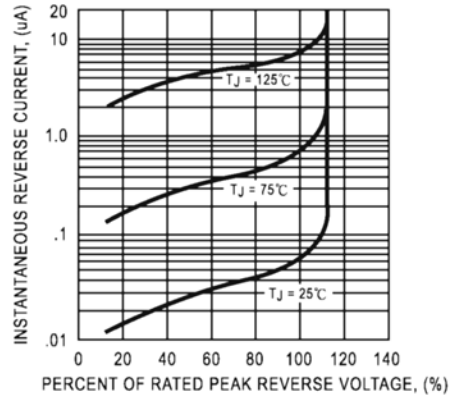


FIG. 3 - TYPICAL JUNCTION CAPACITANCE

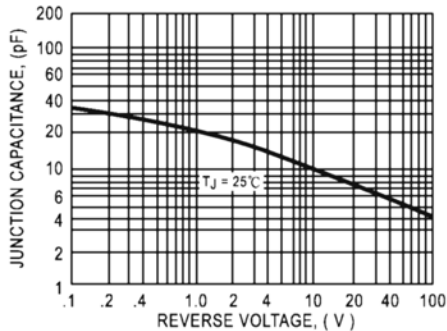


FIG. 6 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

