# Fast Recovery Rectifier

## Features

- Fast switching speed for high efficiency
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed: 260℃/10 seconds, 0.375" (9.5mm) lead length
- RoHS and REACH Compliance

DO-204AL (DO-41)

## Mechanical Data

| | |
|---|---|
| **Case:** | Transfer molded plastic |
| **Polarity** | Color band denotes cathode end |
| **Epoxy:** | UL94V – 0 rate flame retardant |
| **Lead:** | Plated axial lead, solderable per MIL-STD-202E method 208C |
| **Mounting position:** | Any |
| **Weight:** | 0.012 ounce, 0.33 gram |

## Maximum Ratings *(T Ambient=25ºC unless noted otherwise)*

| Symbol | Description | 1N4942 | 1N4944 | 1N4946 | 1N4947 | 1N4948 | Unit | Conditions |
|---|---|---|---|---|---|---|---|---|
| **VRRM** | Max Recurrent Peak Reverse Voltage | 200 | 400 | 600 | 800 | 1000 | **V** | |
| **VRMS** | Max RMS Voltage | 140 | 280 | 420 | 560 | 700 | **V** | |
| **VDC** | Max DC Blocking Voltage | 200 | 400 | 600 | 800 | 1000 | **V** | |
| **I(AV)** | Max Average Forward Rectified Current | 1.0 | | | | | **A** | 0.375 (9.5MM) TC=75℃ |
| **IFSM** | Peak Forward Surge Current | 30 | | | | | **A** | JEDEC method |
| **TJ,TSTG** | Operating and Storage Temperature Range | -65 to +150, -65 to +150 | | | | | **℃** | |
| **TRR** | Maximum Reverse Recovery Time | 150 | | 250 | | 500 | **nS** | Note 1 |

## Electrical Characteristics *(T Ambient=25ºC unless noted otherwise)*

| Symbol | Description | 1N4942 | 1N4944 | 1N4946 | 1N4947 | 1N4948 | Unit | Conditions |
|---|---|---|---|---|---|---|---|---|
| **VF** | Max Instantaneous Forward Voltage | 1.3 | | | | | **V** | Drop per Bridge element 1.0A |
| **IR** | Max DC Reverse Current at Rated DC Blocking Voltage | 5.0 | | | | | **μA** | TA=25℃ |
| | | 200 | | | | | **mA** | TA=125℃ |
| **RθJA** | Typical Thermal Resistance | 50 | | | | | **℃/W** | Note 2 |
| **CJ** | Typical Junction Capacitance | 15 | | | | | **pF** | Measured at 1.0MHz / 4.0V |

**Note:**

1. Reverse Recovery Test conditions: $I_R$=1.0A, $V_R$=30V,di/dt=50A/μS, $I_{RR}$=10% $I_{RM}$
2. Thermal resistance from junction to ambient with 0.375" (9.5mm) lead length, PCB mounted.

# 1N4942 ~ 1N4948

## RATINGS AND CHARACTERISTIC CURVES 1N4942 THRU 1N4948

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

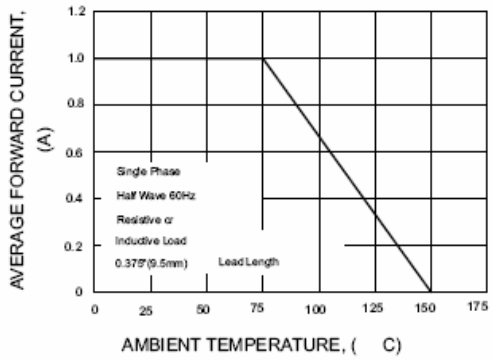



FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

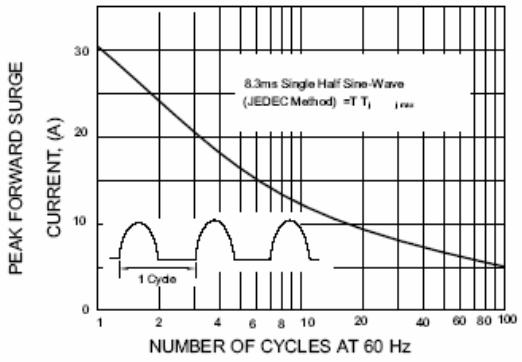



FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

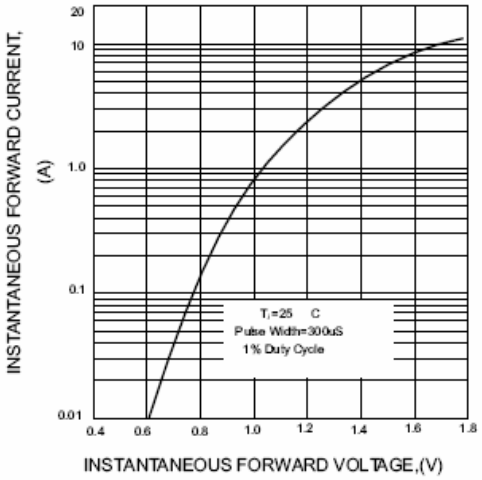



FIG.4-TYPICAL REVERSE CHARACTERISTICS

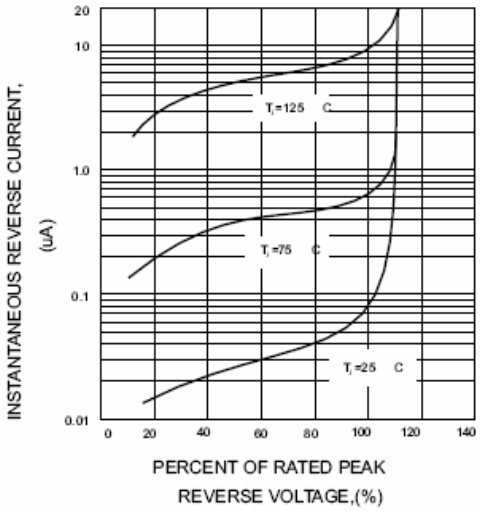



FIG.5-TYPICAL JUNCTION CAPACITANCE

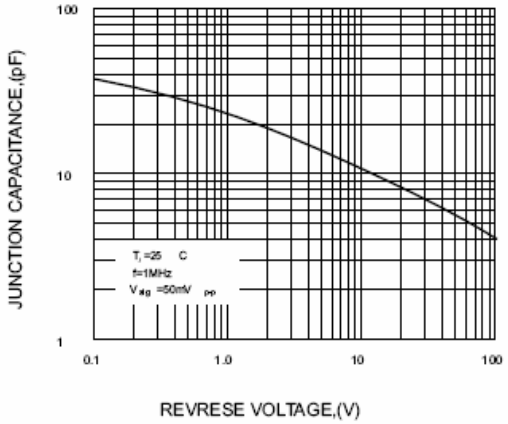
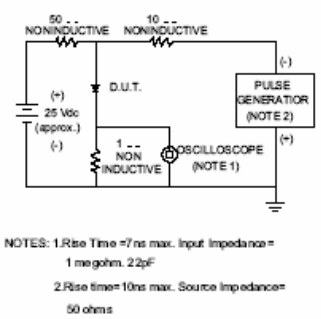
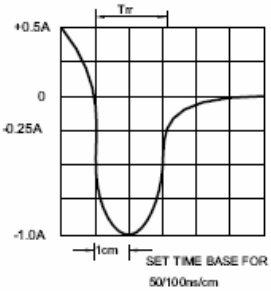



FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



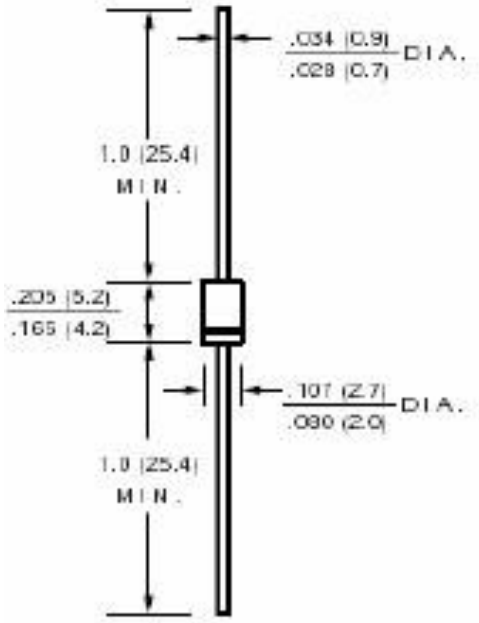

NOTES: 1.Rise Time =7ns max. Input Impedance = 1 megohm. 22pF

2.Rise time=10ns max. Source Impedance= 50 ohms



# 1N4942 ~ 1N4948

## Dimensions in inches (mm)

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