

FAST RECOVERY RECTIFIERS

VOLTAGE RANGE: 200 --- 1000 V
CURRENT: 1.0 A

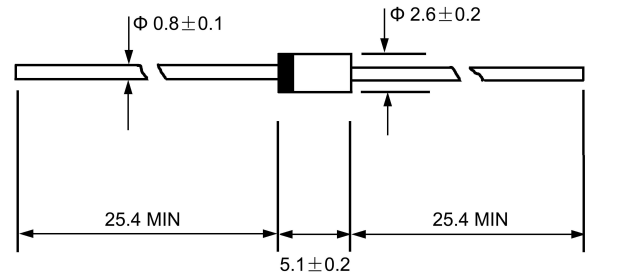
FEATURES

- ◇ Low cost
- ◇ Diffused junction
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ Easily cleaned with Freon, Alcohol, Isopropanol and similar solvents
- ◇ The plastic material carries U/L recognition 94V-0

MECHANICAL DATA

- ◇ Case: JEDEC DO-41, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.34 grams
- ◇ Mounting position: Any

DO - 41



Dimensions in millimeters

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate by 20%.

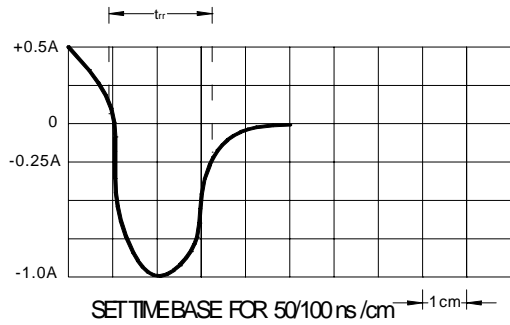
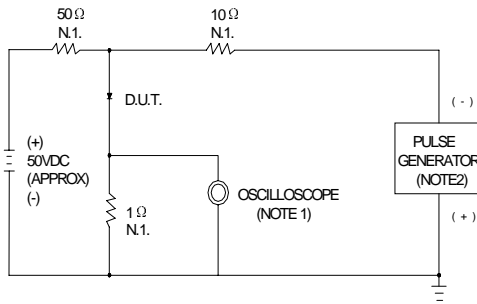
| | | 1N 4942 | 1N 4944 | 1N 4946 | 1N 4947 | 1N 4948 | UNITS |
|---|-----------------|----------------|------------|------------|------------|------------|--------------|
| Maximum recurrent peak reverse voltage | V_{RRM} | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V_{DC} | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ C$ | $I_{F(AV)}$ | 1.0 | | | | | A |
| Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ C$ | I_{FSM} | 30.0 | | | | | A |
| Maximum instantaneous forward voltage @ 1.0 A | V_F | 1.3 | | | | | V |
| Maximum reverse current @ $T_A=25^\circ C$ at rated DC blocking voltage @ $T_A=100^\circ C$ | I_R | 5.0 100 | | | | | μA |
| Maximum reverse recovery time (Note1) | t_{rr} | 150 | 250 | | 500 | | ns |
| Typical junction capacitance (Note2) | C_J | 12 | | | | | pF |
| Typical thermal resistance (Note3) | $R_{\theta JA}$ | 55 | | | | | $^\circ C/W$ |
| Operating junction temperature range | T_J | - 55 --- + 150 | | | | | $^\circ C$ |
| Storage temperature range | T_{STG} | - 55 --- + 150 | | | | | $^\circ C$ |

NOTE: 1. Measured with $I_F=0.5A$, $I_R=1A$, $t_{rr}=0.25A$.

2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

3. Thermal resistance from junction to ambient.

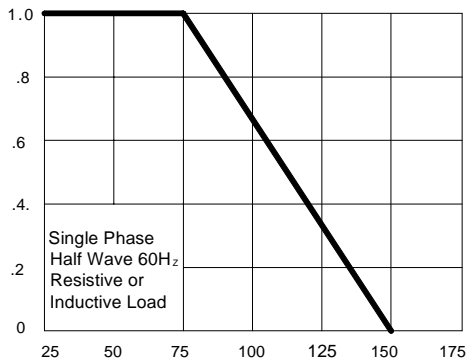
FIG.1 – REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. RISE TIME = 7ns MAX. INPUT IMPEDANCE = 1MΩ, 22pF
 2. RISE TIME = 10ns MAX. SOURCE IMPEDANCE = 50Ω

FIG.2 – FORWARD DERATING CURVE

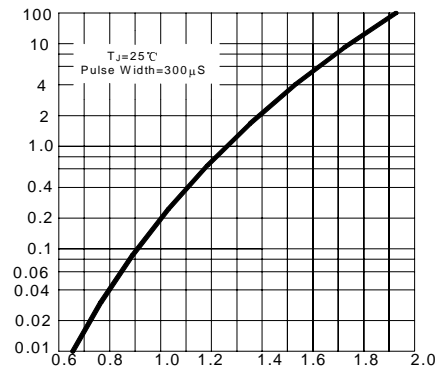
AVERAGE FORWARD CURRENT AMPERES



AMBIENT TEMPERATURE, °C

FIG.3 – TYPICAL FORWARD CHARACTERISTICS

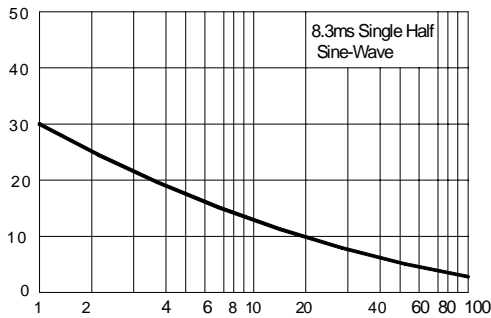
INSTANTANEOUS FORWARD CURRENT AMPERES



INSTANTANEOUS FORWARD VOLTAGE, VOLTS

FIG.4 – PEAK FORWARD SURGE CURRENT

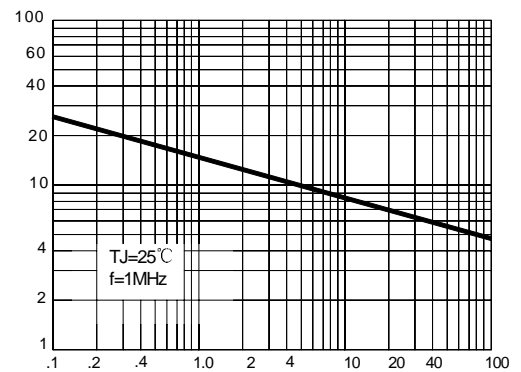
PEAK FORWARD SURGE CURRENT AMPERES



NUMBER OF CYCLES AT 60 Hz

FIG.5 – TYPICAL JUNCTION CAPACITANCE

JUNCTION CAPACITANCE, pF



REVERSE VOLTAGE, VOLTS