# FR251---FR257

## FAST RECOVERY RECTIFIERS

**VOLTAGE RANGE:50--1000**
**CURRENT: 2.5 A**

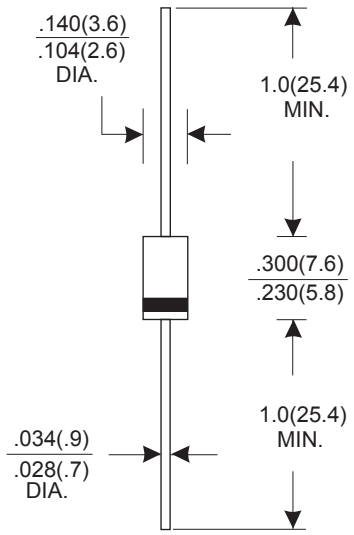
### FEATURES

- 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-15,molded plastic
- Terminals: Axial lead ,solderable per MIL-STD-202,Method 208
- Polarity: Color band denotes cathode
- Weight:0.021 unces,0.58 grams
- Mounting position: Any

**DO-15**




Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

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

| | | FR 251 | FR 252 | FR 253 | FR 254 | FR 255 | FR 256 | FR 257 | UNITS |
|---|---|---|---|---|---|---|---|---|---|
| Maximum recurrent peak reverse voltage | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forw ard rectified current 9.5mm lead length, @$T_A$=75℃ | $I_{F(AV)}$ | 2.5 | | | | | | | A |
| Peak forw ard surge current 8.3ms single half-sine-w ave superimposed on rated load @$T_J$=125℃ | $I_{FSM}$ | 150.0 | | | | | | | A |
| Maximum instantaneous forw ard voltage @ 2.5 A | $V_F$ | 1.3 | | | | | | | V |
| Maximum reverse current @$T_A$=25℃ | $I_R$ | 5.0 | | | | | | | μA |
| at rated DC blocking voltage @$T_A$=100℃ | | 100.0 | | | | | | | |
| Maximum reverse recovery time (Note1) | $t_{rr}$ | 150 | | | | 250 | 500 | | ns |
| Typical junction capacitance (Note2) | $C_J$ | 22 | | | | | | | pF |
| Typical thermal resistance (Note3) | $R_{\theta JA}$ | 35 | | | | | | | ℃/W |
| Operating junction temperature range | $T_J$ | - 55---- +150 | | | | | | | ℃ |
| Storage temperature range | $T_{STG}$ | - 55---- + 150 | | | | | | | ℃ |

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

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

3. Thermal resistance from junction to ambient.

# RATINGS AND CHARACTERISTIC CURVES

**FIG.1 – TYPICAL FORWARD DERATING CURVE**

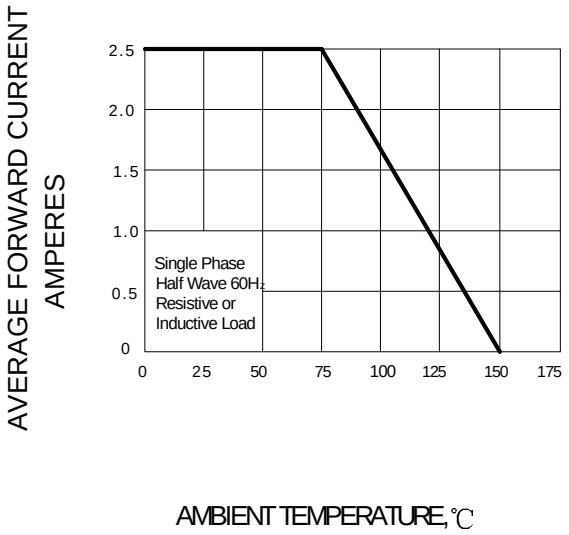



**FIG.2– FORWARD SURGE CURRENT**

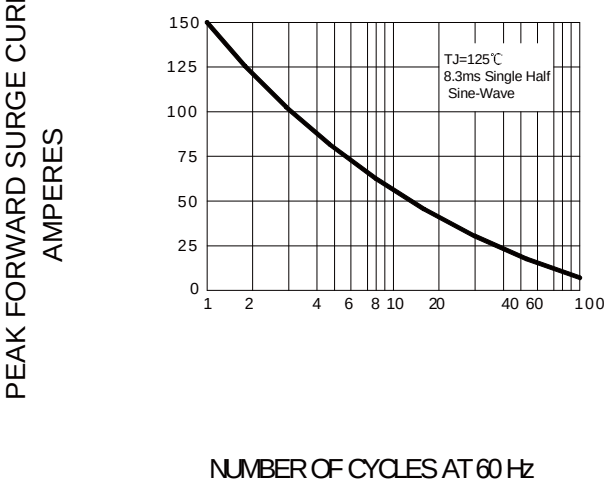



**FIG.3–TYPICAL JUNCTION CAPACITANCE**

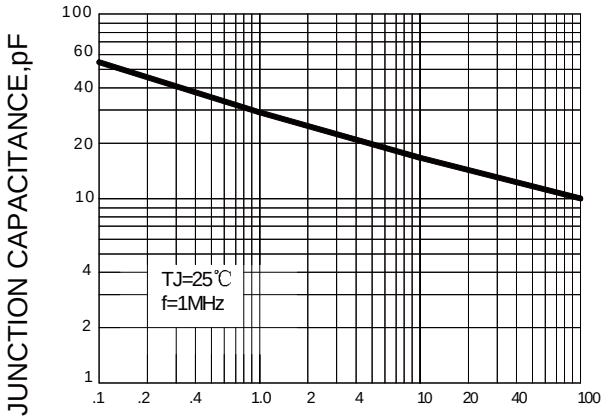



**FIG.4 –TYPICAL FORWARD CHARACTERISTIC**

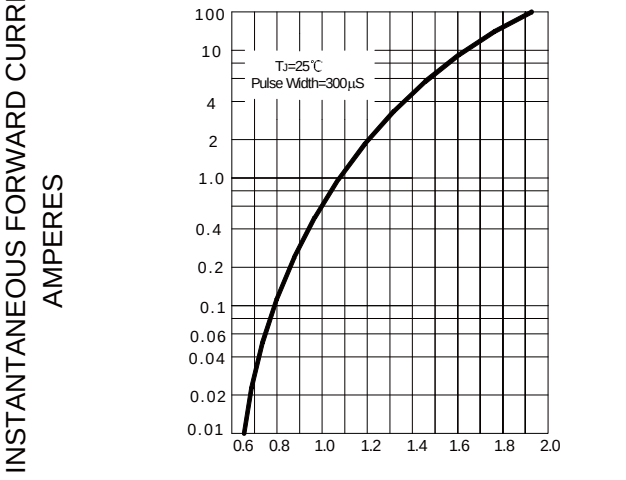
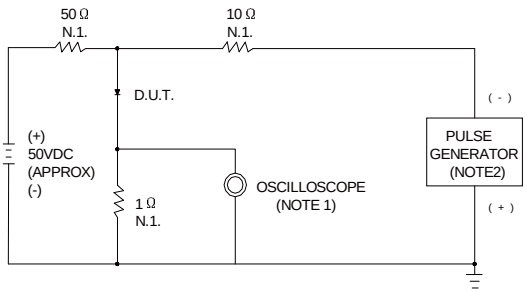
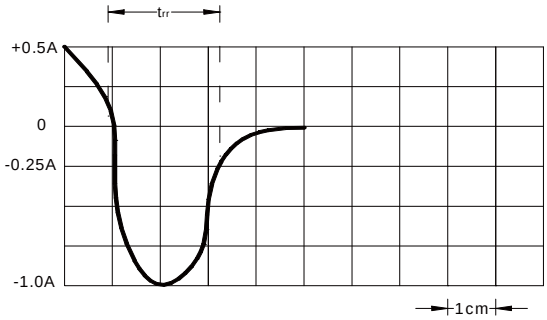



**FIG.5 – REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**




NOTES:1.RISE TIME=7ns MAX. INPUT IMPEDANCE=1MΩ.22pF

2.RISE TIME=10ns MAX. SOURCE IMPEDANCE=50Ω

SET TIME BASE FOR 50/100 ns /cm