

FAST RECOVERY RECTIFIERS

VOLTAGE RANGE: 50 --- 1000 V
CURRENT: 3.0 A

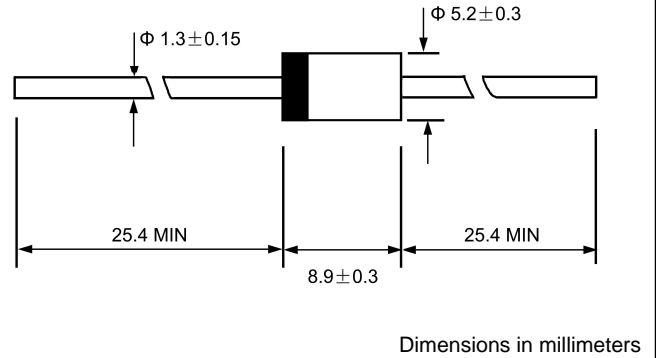
FEATURES

- ◇ Low cost
- ◇ Diffused junction
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ The plastic material carries U/L recognition 94V-0

MECHANICAL DATA

- ◇ Case: JEDEC DO-27, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.041 unces, 1.15 grams
- ◇ Mounting position: Any

DO - 27



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%.

| | | FR 301 | FR 302 | FR 303 | FR 304 | FR 305 | FR 306 | FR 307 | 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 forward rectified current 9.5mm lead length, @ $T_A=75^\circ C$ | $I_{F(AV)}$ | 3.0 | | | | | | | A |
| Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load | I_{FSM} | 150.0 | | | | | | | A |
| Maximum instantaneous forward voltage @ 3.0 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 | 10.0 200.0 | | | | | | | μA |
| Maximum reverse recovery time (Note1) | t_{rr} | 150 | | | 250 | | 500 | | ns |
| Typical junction capacitance (Note2) | C_J | 32 | | | | | | | pF |
| Typical thermal resistance (Note3) | $R_{\theta JA}$ | 22 | | | | | | | $^\circ C/W$ |
| Operating junction temperature range | T_J | - 55---- +125 | | | | | | | $^\circ C$ |
| Storage temperature range | T_{STG} | - 55---- + 150 | | | | | | | $^\circ C$ |

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.

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FIG.1 – FORWARD DERATING CURVE

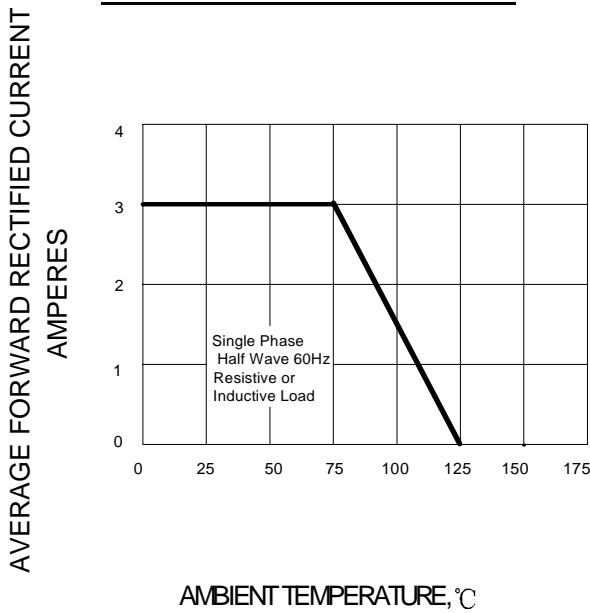


FIG.2—PEAK FORWARD SURGE CURRENT

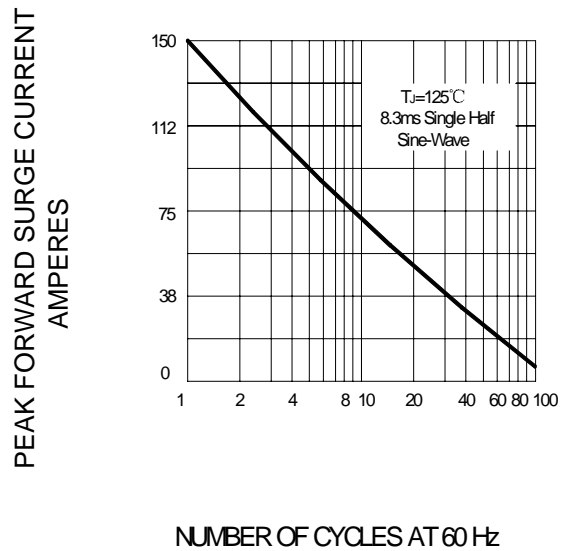


FIG.3—TYPICAL JUNCTION CAPACITANCE

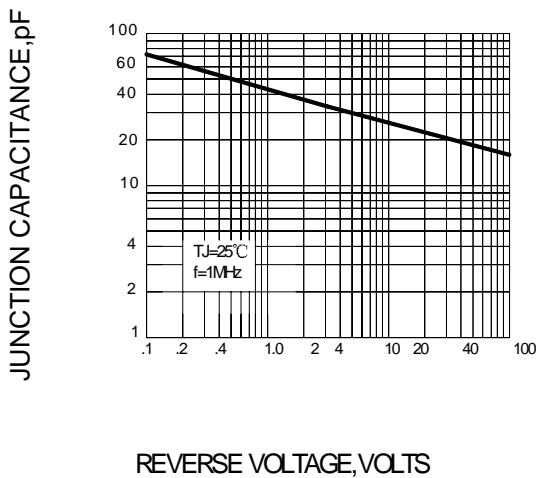


FIG.4 – TYPICAL FORWARD CHARACTERISTIC

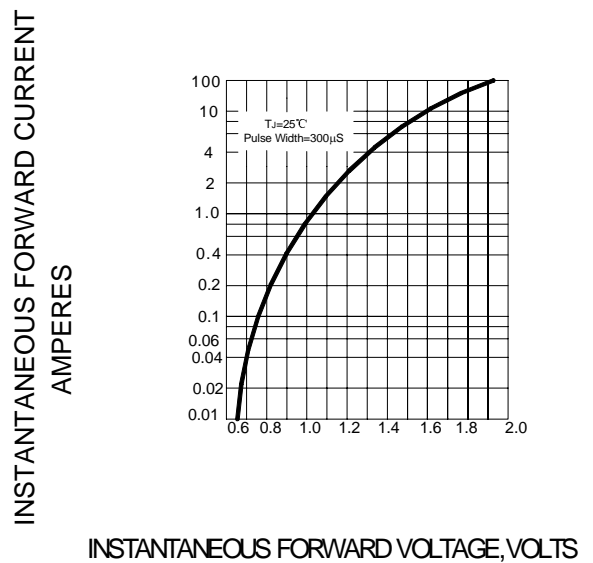
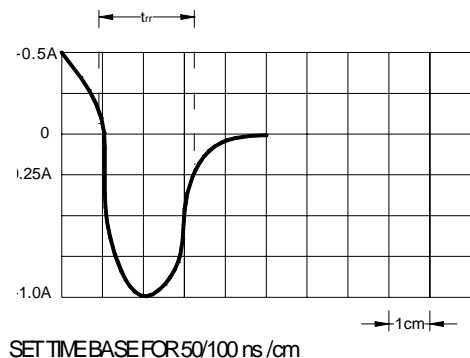
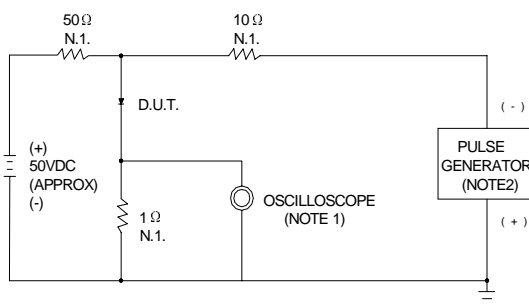


FIG.5 – REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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