

ULTRA FAST RECTIFIER

VOLTAGE RANGE: 50 --- 600 V
CURRENT: 1.0 A

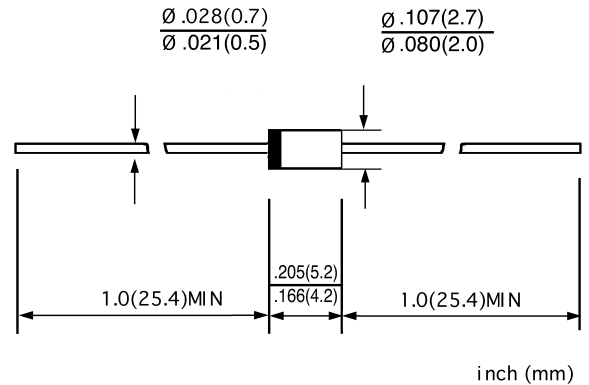
FEATURES

- ◇ Low cost
- ◇ Diffuse junction
- ◇ Ultra fast switching for high efficiency
- ◇ Low reverse leakage current
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ The plastic material carries U/L recognition 94V-0

MECHANICAL DATA

- ◇ Case: JEDEC A-405, molded plastic
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.008 ounces, 0.23 grams
- ◇ Mounting position: Any

A - 405



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%.

| | | ER 100S | ER 101S | ER 101AS | ER 102S | ER 103S | ER 104S | ER 106S | UNITS |
|---|-----------------|------------------|---------|----------|---------|---------|---------|---------|--------------|
| Maximum recurrent peak reverse voltage | V_{RRM} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 105 | 140 | 210 | 280 | 420 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | 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 @ 1.0A | V_F | 0.95 | | | 1.25 | | 1.7 | | V |
| Maximum reverse current @ $T_A=25^\circ C$ at rated DC blocking voltage @ $T_A=100^\circ C$ | I_R | 5.0 150.0 | | | | | | | μA |
| Maximum reverse recovery time (Note1) | t_{rr} | 35 | | | | | | | ns |
| Typical junction capacitance (Note2) | C_J | 17 | | | | | | | pF |
| Typical thermal resistance (Note3) | $R_{\theta JA}$ | 50 | | | | | | | $^\circ C/W$ |
| Operating junction temperature range | T_J | - 55 ----- + 150 | | | | | | | $^\circ C$ |
| Storage temperature range | T_{STG} | - 55 ----- + 150 | | | | | | | $^\circ C$ |

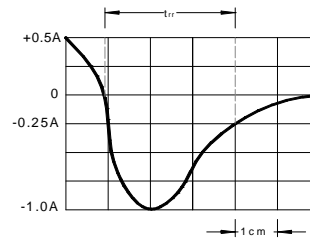
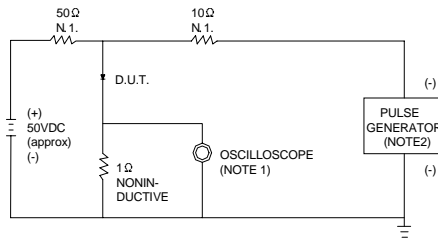
NOTE: 1. Measured with $I_F=0.5A$, $I_R=1A$, $I_{rr}=0.25A$.

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

3. Thermal resistance junction to ambient

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



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

SET TIME BASE FOR 5 ns/cm

FIG.2 -- TYPICAL FORWARD CHARACTERISTIC

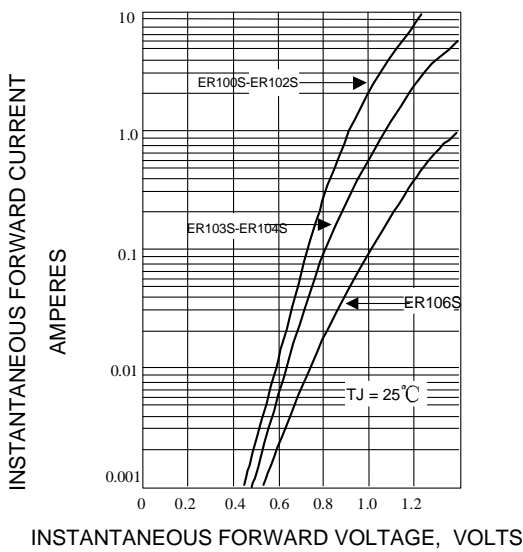


FIG.3 -- FORWARD DERATING CURVE

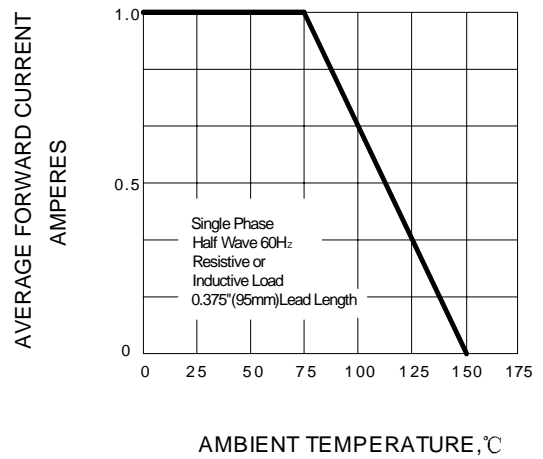


FIG.4 -- TYPICAL JUNCTION CAPACITANCE

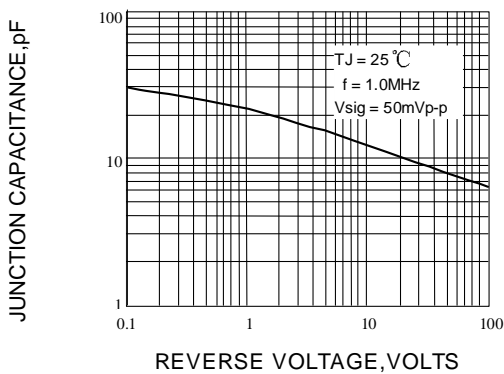


FIG.5 -- PEAK FORWARD SURGE CURRENT

