

### HIGH EFFICIENCY RECTIFIERS

VOLTAGE RANGE: 70--- 600 V  
CURRENT: 0.5---1.0 A

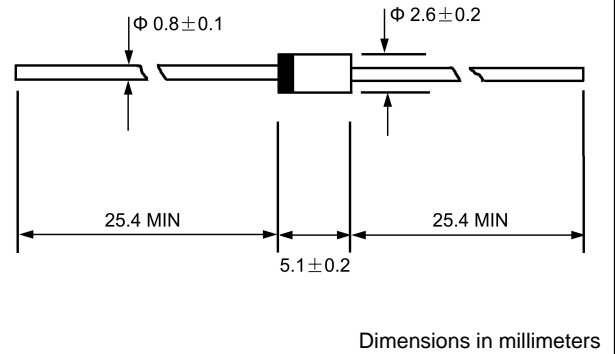
#### FEATURES

- ◇ Low cost
- ◇ Diffused junction
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ Easily cleaned with freon, alcohol, Isopropand and similar solvents

#### MECHANICAL DATA

- ◇ Case: JEDEC DO-41, molded plastic
- ◇ Terminals: Axial leads, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.012 ounces, 0.34 grams
- ◇ Mounting: Any

#### DO-41



#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 50 Hz, resistive or inductive load. For capacitive load, derate by 20%.

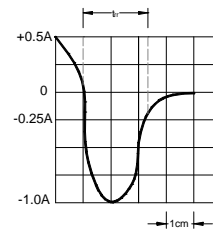
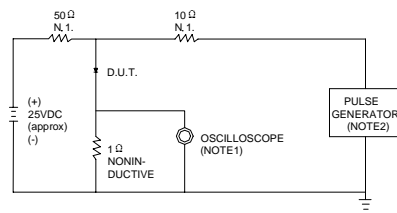
|  |                 | AG01Y | AG01Z            | AG01 | AG01A | UNITS        |
|--|-----------------|-------|------------------|------|-------|--------------|
| Maximum peak repetitive reverse voltage  | $V_{RRM}$       | 100   | 200              | 400  | 600   | V            |
| Maximum RMS voltage  | $V_{RMS}$       | 70    | 140              | 280  | 420   |              |
| Maximum DC blocking voltage  | $V_{DC}$        | 100   | 200              | 400  | 600   |              |
| Maximum average forward rectified current<br>9.5mm lead length, @ $T_A=75^\circ C$                         | $I_{F(AV)}$     | 1.0   | 0.7              |      | 0.5   | A            |
| Peak forward surge current<br>10ms single half-sine-wave<br>superimposed on rated load @ $T_J=125^\circ C$ | $I_{FSM}$       | 25    | 15               |      |       | A            |
| Maximum instantaneous forward voltage<br>@ $I_F=I_{F(AV)}$   | $V_F$           | 1.2   | 1.8              |      |       | V            |
| Maximum reverse current @ $T_A=25^\circ C$<br>at rated DC blocking voltage @ $T_A=100^\circ C$             | $I_R$           |       | 100<br>500       |      |       | $\mu A$      |
| Maximum reverse recovery time (Note1)  | $t_{rr}$        |       | 50               |      |       | ns           |
| Typical junction capacitance (Note2)   | $C_J$           |       | 20               |      | 15    | pF           |
| Typical thermal resistance (Note3)   | $R_{\theta JC}$ |       | 22               |      |       | $^\circ C/W$ |
| 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 case.

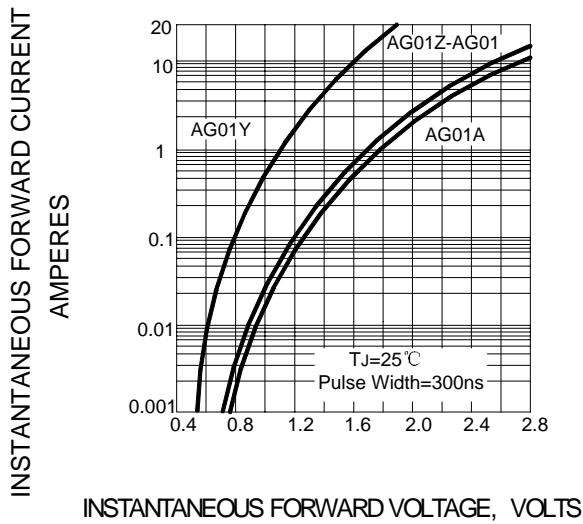
**FIG.1 – TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



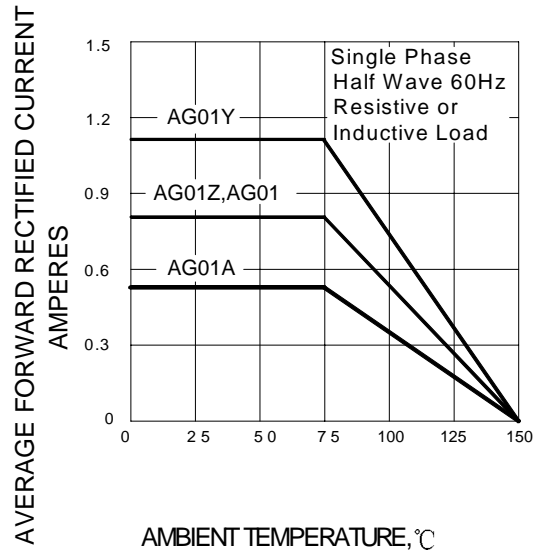
NOTES: 1. RISE TIME = 7ns MAX INPUT IMPEDANCE = 1MΩ, 22pF.  
 2. RISE TIME = 10ns MAX SOURCE IMPEDANCE = 50 Ω.

SET TIME BASE FOR 10/20 ns/cm

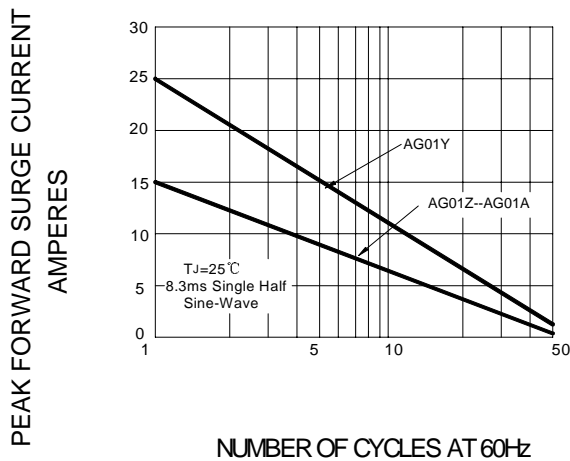
**FIG.2 – TYPICAL FORWARD CHARACTERISTIC**



**FIG.3 – FORWARD DERATING CURVE**



**FIG.4 – PEAK FORWARD SURGE CURRENT**



**FIG.5 – TYPICAL JUNCTION CAPACITANCE**

