

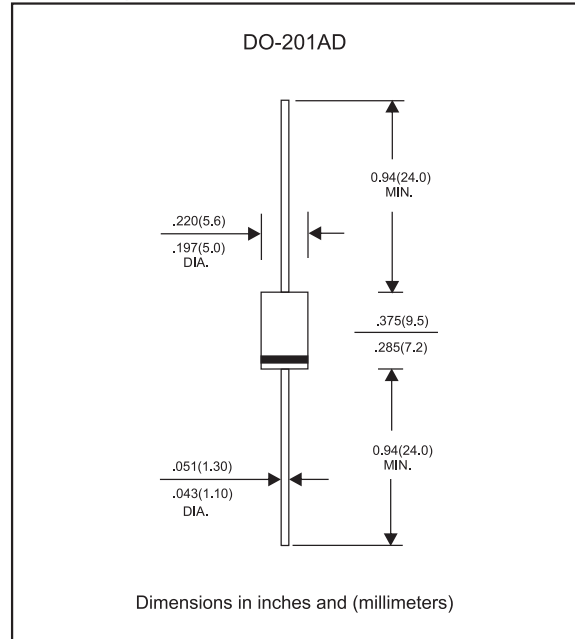
Features

- Axial lead type devices for through hole design.
- High current capability.
- Fast switching for high efficiency.
- High surge capability.
- Glass passivation junction chip insid.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex. FR301G-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, DO-201AD
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: Color band denotes cathode end
- Mounting Position : Any

Package outline



Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER | CONDITIONS | Symbol | MIN. | TYP. | MAX. | UNIT |
|----------------------------|---|-----------|------|------|------|------------------|
| Forward rectified current | See Fig.2 | I_O | | | 3.0 | A |
| Forward surge current | 8.3ms single half sine-wave (JEDEC methode) | I_{FSM} | | | 100 | A |
| Reverse current | $V_R = V_{RRM} T_J = 25^\circ\text{C}$ | I_R | | | 5.0 | μA |
| | $V_R = V_{RRM} T_J = 125^\circ\text{C}$ | | | | 150 | |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage | C_J | | 60 | | pF |
| Storage temperature | | T_{STG} | -65 | | +175 | $^\circ\text{C}$ |

| SYMBOLS | V_{RRM}^{*1} (V) | V_{RMS}^{*2} (V) | V_R^{*3} (V) | V_F^{*4} (V) | t_{rr}^{*5} (ns) | Operating temperature $T_J, (^\circ\text{C})$ |
|---------|-----------------------|-----------------------|-------------------|-------------------|-----------------------|--|
| FR301G | 50 | 35 | 50 | 1.30 | 150 | -55 to +150 |
| FR302G | 100 | 70 | 100 | | | |
| FR303G | 200 | 140 | 200 | | | |
| FR304G | 400 | 280 | 400 | | 250 | |
| FR305G | 600 | 420 | 600 | | | |
| FR306G | 800 | 560 | 800 | | | |
| FR307G | 1000 | 700 | 1000 | 500 | | |

- *1 Repetitive peak reverse voltage
- *2 RMS voltage
- *3 Continuous reverse voltage
- *4 Maximum forward voltage@ $I_F=3.0\text{A}$
- *5 Maximum Reverse recovery time, note 1

Note 1. Reverse recovery time test condition, $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$

Rating and characteristic curves (FR301G THRU FR307G)

FIG.1-TYPICAL FORWARD CHARACTERISTICS

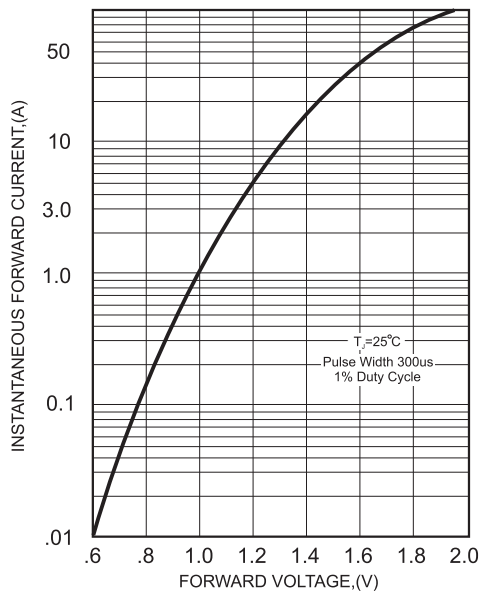


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

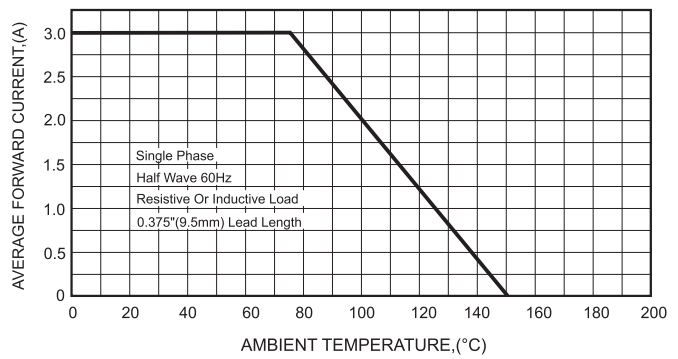


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

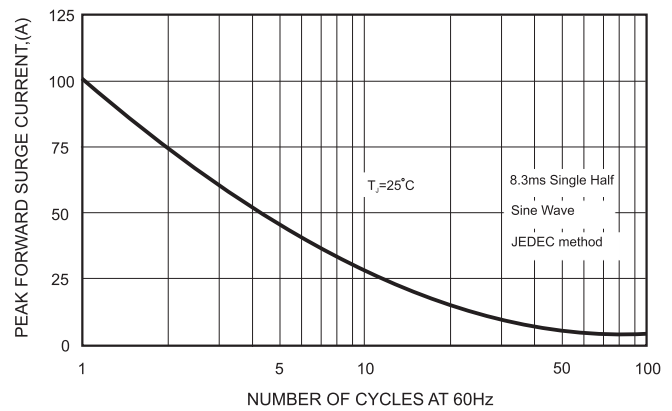
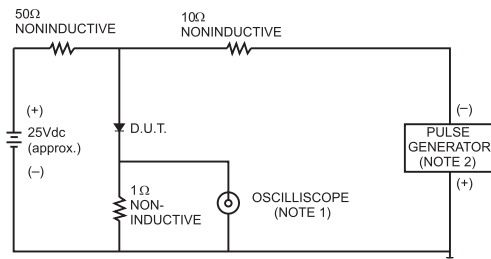


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.
2. Rise Time= 10ns max., Source Impedance= 50 ohms.

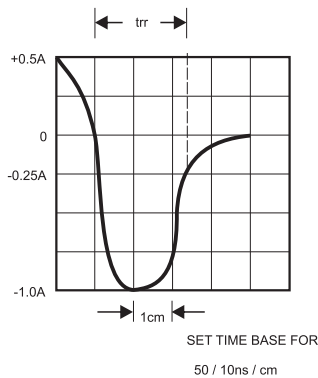
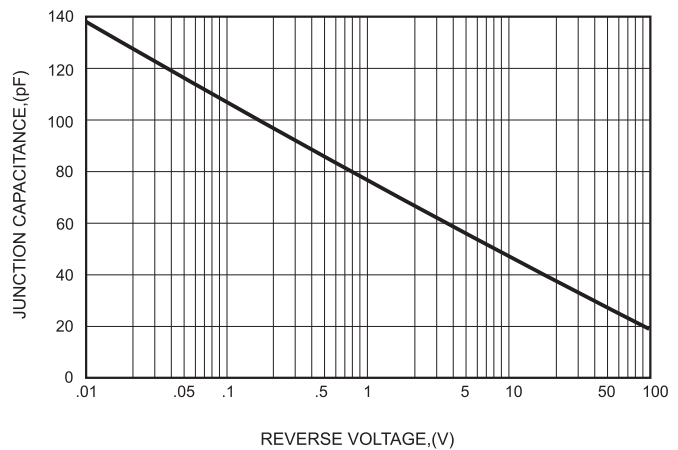




FIG.5-TYPICAL JUNCTION CAPACITANCE



Pinning information

| Pin | Simplified outline | Symbol |
|----------------------------|--|---|
| Pin1 cathode Pin2 anode |  |  |

Marking

| Type number | Marking code |
|-------------|--------------|
| FR301G | FR301G |
| FR302G | FR302G |
| FR303G | FR303G |
| FR304G | FR304G |
| FR305G | FR305G |
| FR306G | FR306G |
| FR307G | FR307G |