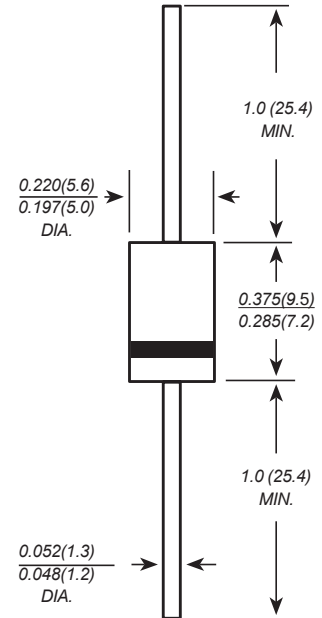


## FAST RECOVERY RECTIFIERS

### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0 Idea for printed circuit board
- ◆ Fast switching for high efficiency
- ◆ Low reverse leakage
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:  
250°C/ 10 seconds at terminals

### DO-201AD



Dimensions in inches and (millimeters)

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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

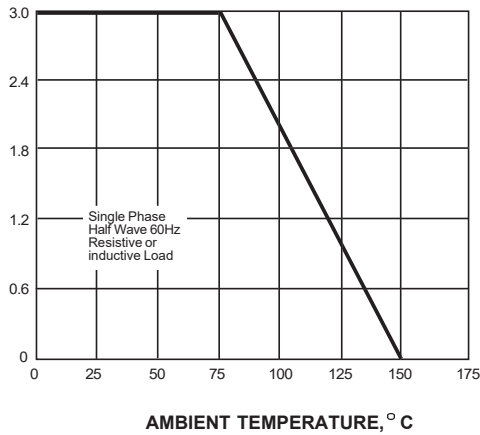
| Parameter                                                                                                       | SYMBOLS                           | FR301        | FR302 | FR303 | FR304 | FR305 | FR306 | FR307 | UNITS |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|
| Marking Code                                                                                                    |                                   | FR301        | FR302 | FR303 | FR304 | FR305 | FR306 | FR307 |       |
| Maximum repetitive peak reverse voltage                                                                         | V <sub>RMM</sub>                  | 50           | 100   | 200   | 400   | 600   | 800   | 1000  | V     |
| Maximum RMS voltage                                                                                             | V <sub>RMS</sub>                  | 35           | 70    | 140   | 280   | 420   | 560   | 700   | V     |
| Maximum DC blocking voltage                                                                                     | V <sub>DC</sub>                   | 50           | 100   | 200   | 400   | 600   | 800   | 1000  | V     |
| Maximum average forward rectified current at T <sub>A</sub> =75°C                                               | I <sub>(AV)</sub>                 | 3.0          |       |       |       |       |       |       | A     |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed on rated load (JEDEC Method)          | I <sub>FSM</sub>                  | 150          |       |       |       |       |       |       | A     |
| Maximum instantaneous forward voltage at 3.0A                                                                   | V <sub>F</sub>                    | 1.30         |       |       |       |       |       |       | V     |
| Maximum DC reverse current      T <sub>A</sub> =25°C<br>at rated DC blocking voltage      T <sub>A</sub> =100°C | I <sub>R</sub>                    | 5.0<br>100.0 |       |       |       |       |       |       | μA    |
| Maximum reverse recovery time      (NOTE 1)                                                                     | t <sub>rr</sub>                   | 150          |       |       |       | 250   | 500   |       | ns    |
| Typical junction capacitance (NOTE 2)                                                                           | C <sub>J</sub>                    | 60.0         |       |       |       |       |       |       | pF    |
| Typical thermal resistance (NOTE 3)                                                                             | R <sub>θJA</sub>                  | 20.0         |       |       |       |       |       |       | °C/W  |
| Operating junction and storage temperature range                                                                | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150  |       |       |       |       |       |       | °C    |

**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$   
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. Thermal resistance from junction to ambient at 0.375"(9.5mm) lead length, P.C.B. mounted

## Ratings And Characteristic Curves

AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



PEAK FORWARD SURGE CURRENT,  
AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

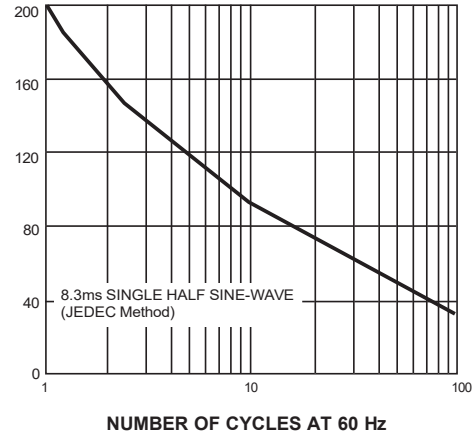
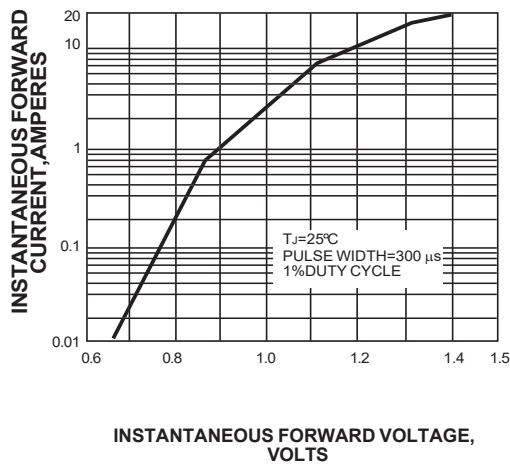


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

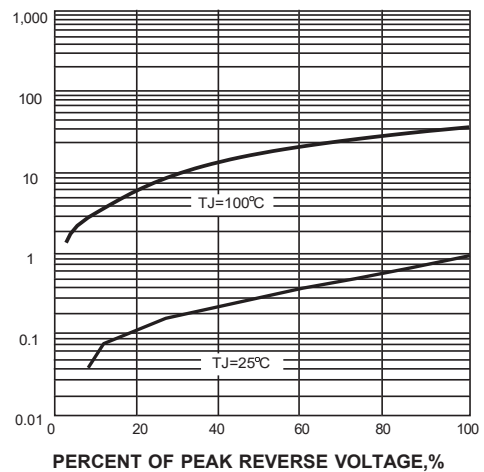
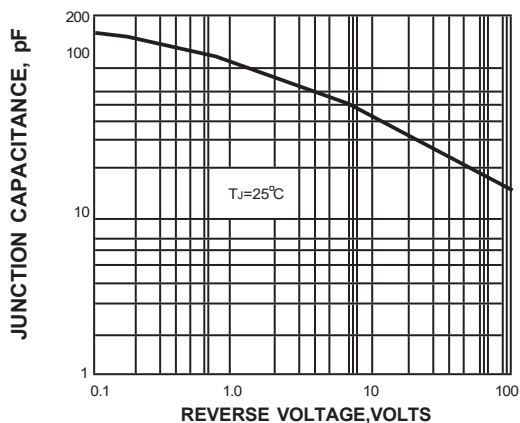
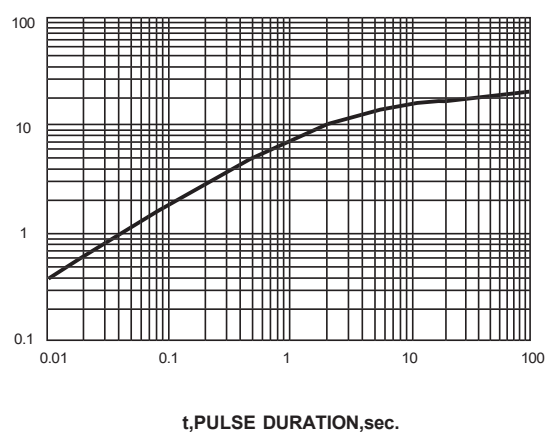


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



The curve above is for reference only.