

### FAST RECOVERY RECTIFIER

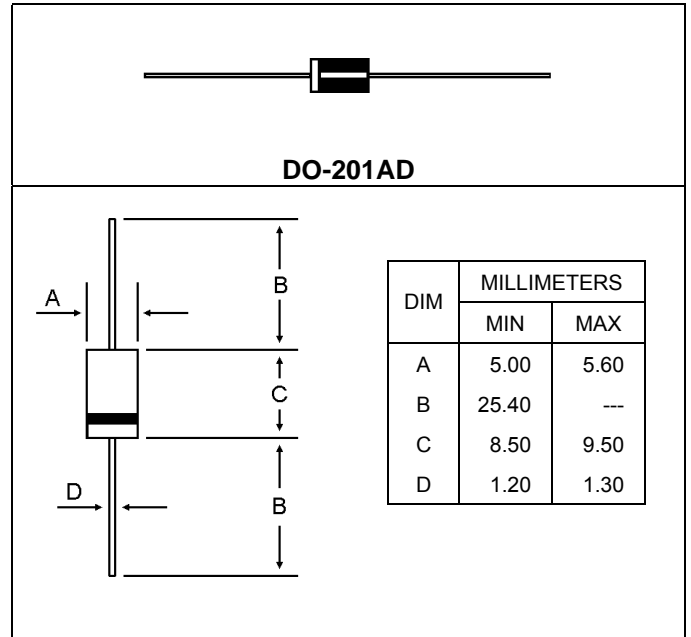
**Voltage range** 50 TO 1000 Volts  
**Current** 3.0 Ampere

#### FEATURES

- \* Fast switching for high efficiency
- \* Glass Passivated Chip junction
- \* Low leakage
- \* High temperature soldering guaranteed  
260 /10 seconds, 0.375"(9.5 mm) lead length at 5 lbs(2.3kg) tension

#### MECHANICAL DATA

- \* Case : Transfer Molded Plastic
- \* Epoxy: UL94V-O rate flame retardant
- \* Terminals : Plated axial lead, Solderable Per MIL-STD-202 Method 208
- \* Polarity : Color band denotes cathode end
- \* Mounting position: Any
- \* Weight : 0.042 ounce. 1.19 gram (approx)



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- \* Rating at 25 ambient temperature unless otherwise specified
- \* Single phase, half wave. 60Hz, resistive or inductive load.
- \* For capacitive load derate current by 20 %

Characteristic	Symbol	FR301	FR302	FR303	FR304	FR305	FR306	FR307	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Average Rectifier Forward Current Per Leg $T_C=55$	$I_{F(AV)}$	3.0							A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	$I_{FSM}$	125							A
Maximum Instantaneous Forward Voltage ( $I_F=1.5$ Amp $T_C=25$ )	$V_F$	1.3							V
Maximum Instantaneous Reverse Current ( Rated DC Voltage, $T_C=25$ ) ( Rated DC Voltage, $T_C=125$ )	$I_R$	5.0 500							uA
Reverse Recovery Time (Note 3)	$T_{rr}$	150			250		500		ns
Typical Junction Capacitance (Note 1)	$C_j$	40							pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	30							/W
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +175							

#### NOTES:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 volts
2. Thermal Resistance from Junction to ambient at .375"(9.5mm)lead length, P.C. board mounted
3. Test conditions:  $I_F=0.5$  A,  $I_R=1.0$ ,  $I_{RR}=0.25$  A

# FR301 Thru FR307

FIG-1 TYPICAL FORWARD CHARACTERISTICS

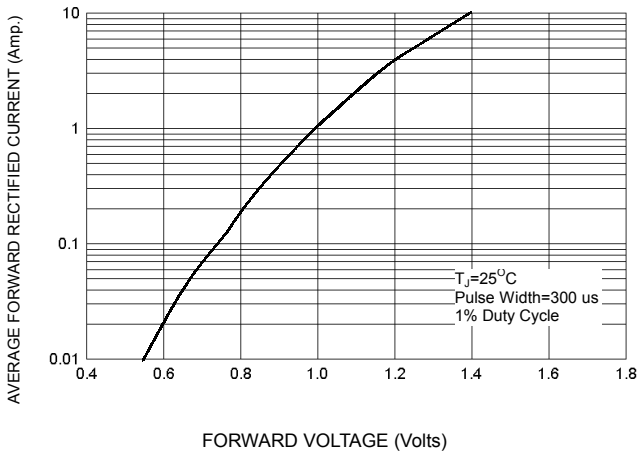


FIG-3 FORWARD CURRENT DERATING CURVE

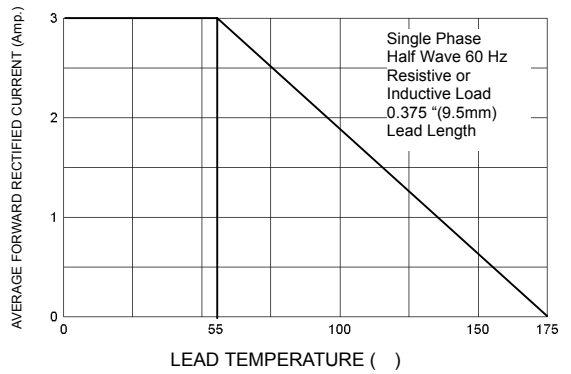


FIG-2 TYPICAL REVERSE CHARACTERISTICS

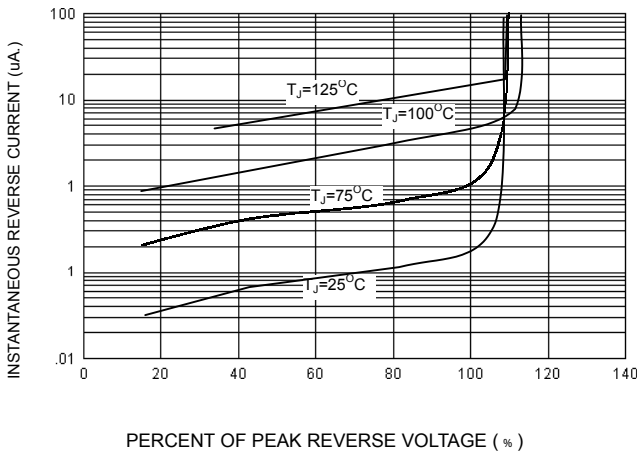


FIG-4 TYPICAL JUNCTION CAPACITANCE

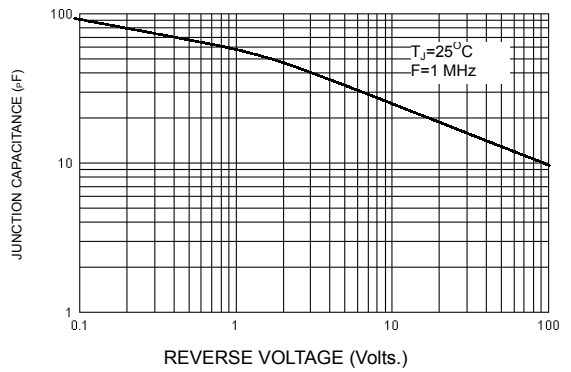
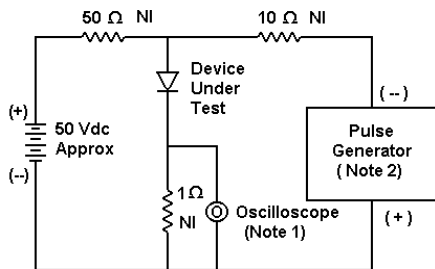
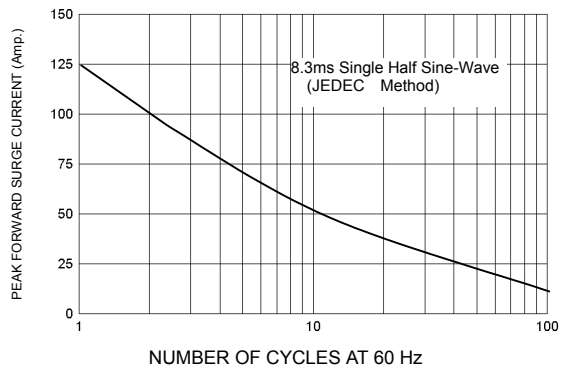
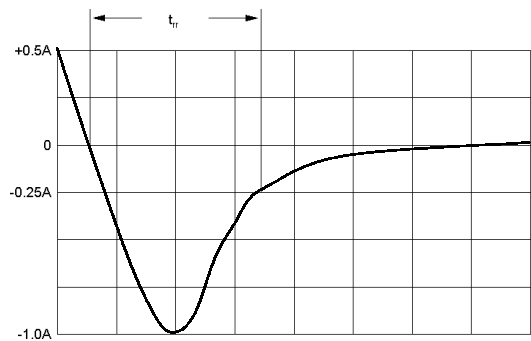


FIG-5 PEAK FORWARD SURGE CURRENT



- Notes:  
 1. Rise Time = 7 ns max. Input Impedance = 1 M  $\Omega$ , 22 pF  
 2. Rise Time = 10 ns max. Input Impedance = 50  $\Omega$



Set time base for 50/100 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram

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