



# FR1001G - FR1007G

## Isolated 10 Amps Glass Passivated Fast Recovery Rectifiers

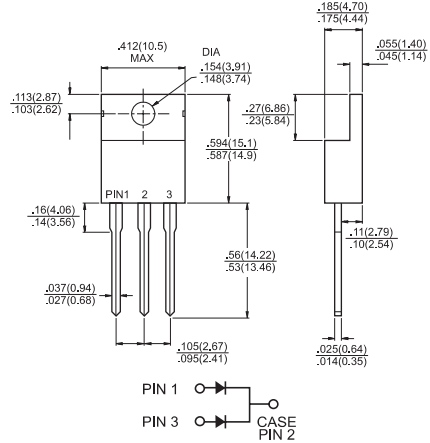
### TO-220AB

## Features

- ✧ Glass passivated chip junction.
- ✧ High efficiency, Low VF
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability
- ✧ Low power loss

## Mechanical Data

- ✧ Cases: TO-220AB molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Terminals: Pure tin plated, Lead free.  
Leads solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ High temperature soldering guaranteed:  
260°C/10 seconds .16", (4.06mm) from case.
- ✧ Mounting position: Any
- ✧ Weight: 2.24 grams



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

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

Type Number	Symbol	FR 1001G	FR 1002G	FR 1003G	FR 1004G	FR 1005G	FR 1006G	FR 1007G	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current See Fig. 1	$I_{(AV)}$	10							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )	$I_{FSM}$	125							A
Maximum Instantaneous Forward Voltage @ 5.0A	$V_F$	1.3							V
Maximum DC Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_c=125^\circ\text{C}$	$I_R$	5.0 100							$\mu\text{A}$ $\mu\text{A}$
Maximum Reverse Recovery Time ( Note 1)	$T_{rr}$	150				250	500		nS
Typical Junction Capacitance (Note 3)	$C_j$	40							pF
Typical Thermal Resistance $R_{\theta JC}$ (Note 2)	$R_{\theta JC}$	3.0							°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150							°C

- Notes:
1. Reverse Recovery Test Conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{RR}=0.25A$
  2. Thermal Resistance from Junction to Case Per Leg Mounted on Heatsink  
Size 2" x 3" x 0.25" Al-Plate.
  3. Measured at 1MHz and Applied Reverse Voltage of 4.0 Volts D.C.

## RATINGS AND CHARACTERISTIC CURVES (FR1001G THRU FR1007G)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

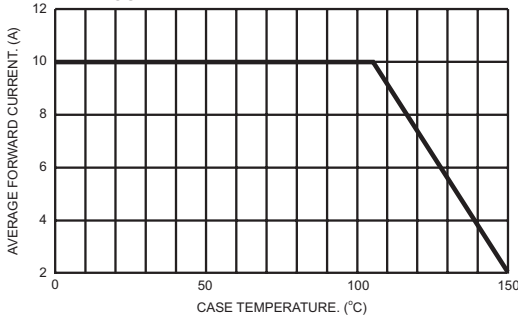


FIG.2- TYPICAL REVERSE CHARACTERISTICS PER LEG

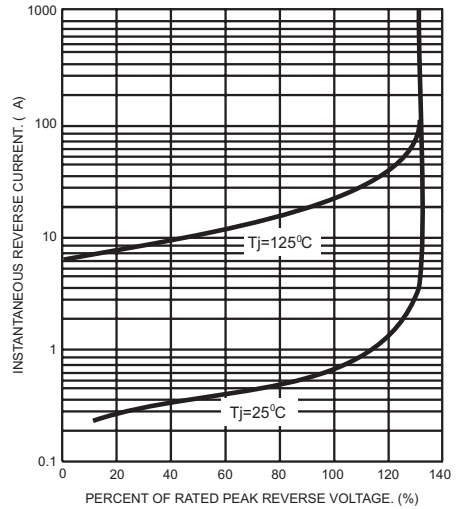


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

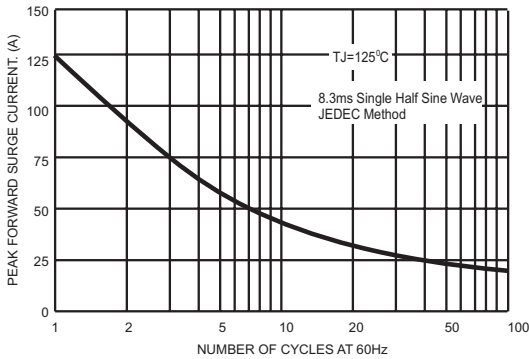


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

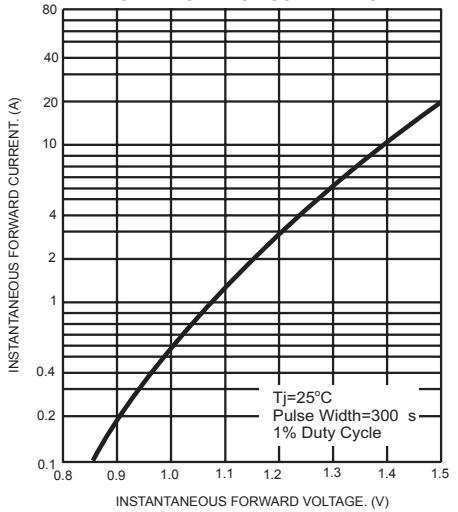


FIG.4- TYPICAL JUNCTION CAPACITANCE

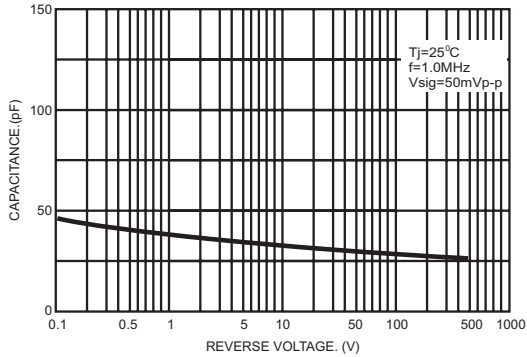


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

