

# Diode - Fast

RoHS  
Compliant



## Features:

- Glass passivated chip junction
- High efficiency, low  $V_F$
- High current capability
- High reliability
- High surge current capability
- Low power loss

## Specifications:

### Mechanical Data:

Cases	: Moulded plastic
Lead	: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
Polarity	: Colour band denotes cathode end
High temperature soldering guaranteed	: 260°C/10 seconds/0.375 inch, (9.5mm) lead lengths at 5lbs., (2.3kg) tension
Mounting position	: Any
Weight	: 1.2 grams

## Maximum Ratings and Electrical Characteristics:

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Type Number	Symbol	FR302G	FR305G	FR307G	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	100	600	1000	V
Maximum RMS Voltage	$V_{RMS}$	70	420	700	
Maximum DC Blocking Voltage	$V_{DC}$	100	600	1000	
Maximum Average Forward Rectified Current 0.375 inch (9.5mm) Lead Length at $T_A = 55^\circ\text{C}$	$I_{(AV)}$	3			A
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )	$I_{FSM}$	125			
Maximum Instantaneous Forward Voltage at 3A	$V_F$	1.3			V

Type Number	Symbol	FR302G	FR305G	FR307G	Units
Maximum DC Reverse Current at $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage at $T_A = 125^\circ\text{C}$	$I_R$	5 100			$\mu\text{A}$ $\mu\text{A}$
Maximum Reverse Recovery Time (Note 1)	$T_{rr}$	150	250	500	nS
Typical Junction Capacitance (Note 2)	$C_j$	30			pF
Typical Thermal Resistance	$R_{\theta JA}$	35			$^\circ\text{C/W}$
Operating Temperature Range	$T_J$	-65 to +150			$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$				

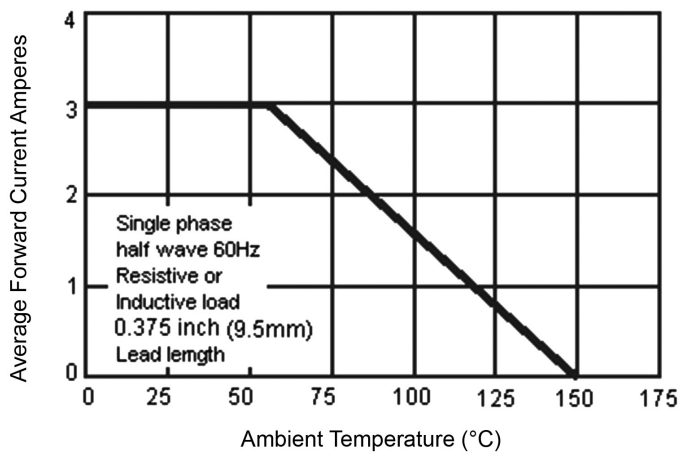
**Note: 1.** Reverse Recovery Test Conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1\text{A}$ ,  $I_{RR} = 0.25\text{A}$ .

**Note: 2.** Measured at 1MHz and Applied Reverse Voltage of 4 Volts DC.

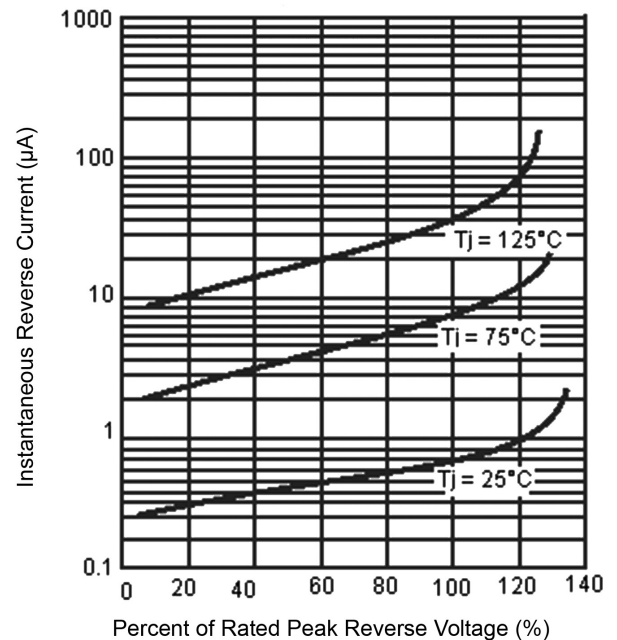
**Note: 3.** Mount on Cu-Pad Size 16mm x 16mm on PCB.

## Ratings and Characteristic Curves (FR302G, FR305G, FR307G)

Maximum Forward Current Derating Curve



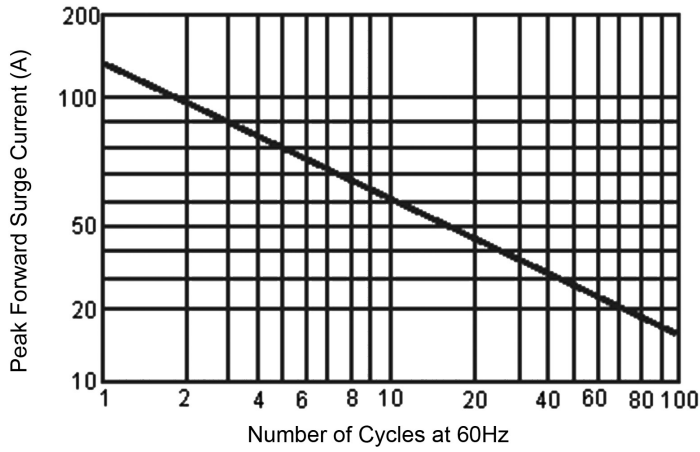
Typical Reverse Characteristics Per Leg



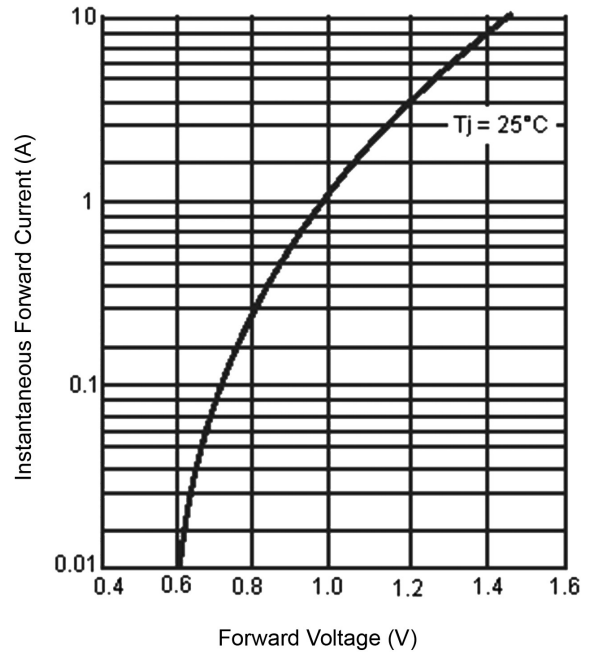
# Diode - Fast



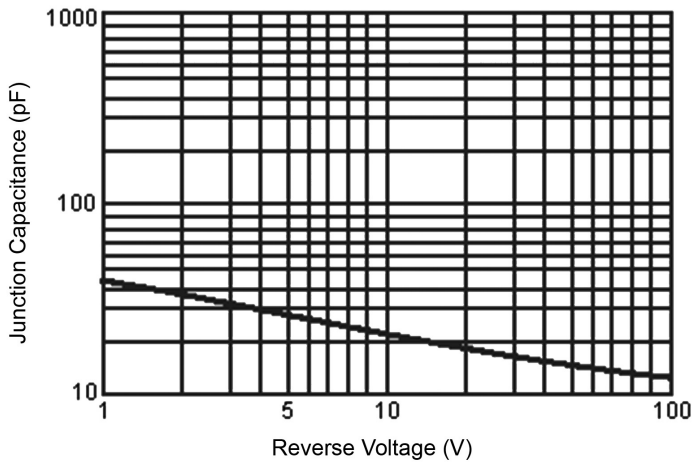
Maximum Non-Repetitive Peak Forward Surge Current



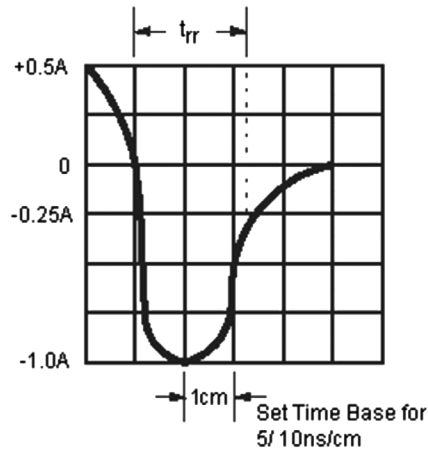
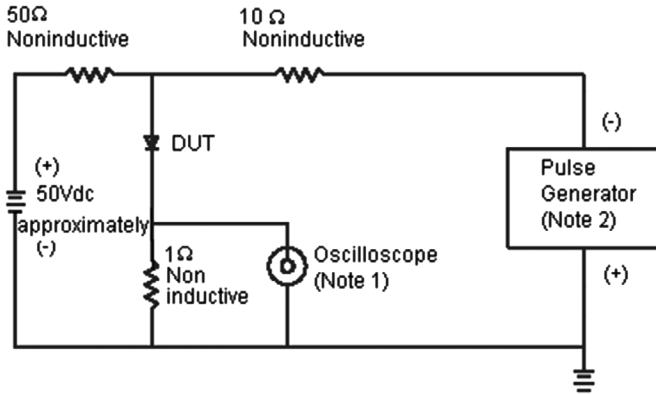
Typical Forward Characteristics



Typical Junction Capacitance



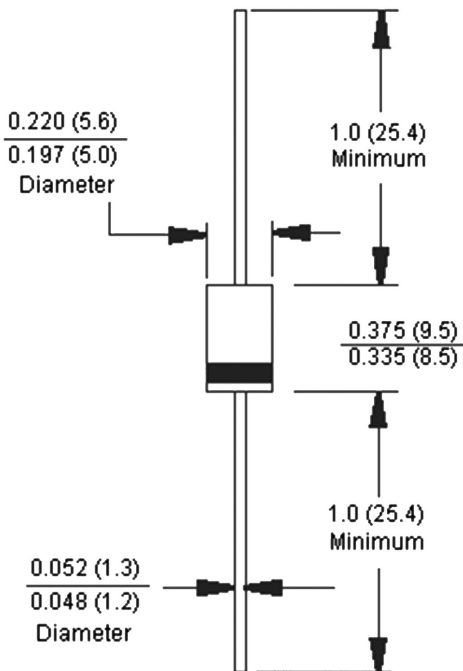
## Reverse Recovery Time Characteristic and Test Circuit Diagram



**Note: 1.** Rise Time = 7ns Maximum. Input Impedance = 1 MΩ 22pf

**Note: 2.** Rise Time = 10ns Maximum Source Impedance = 50Ω

## DO-201AD



Dimensions : Inches (Millimetres)

## Part Number Table

Description	Part Number
Diode, Fast, 3A, 100V	FR302G
Diode, Fast, 3A, 600V	FR305G
Diode, Fast, 3A, 1000V	FR307G

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