

# FR101 THRU FR107



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HORNBY ELECTRONIC

## FAST RECOVERY RECTIFIER

**REVERSE VOLTAGE:** 50 to 1000 VOLTS

**FORWARD CURRENT:** 1.0 AMPERE

### FEATURES

- High current capability
- Fast switching for high efficiency
- Exceeds environmental standards of MIL-S-19500/228
- Low leakage.
- Suffix "H" indicates Halogen-free parts, ex. FR101H

### MECHANICAL DATA

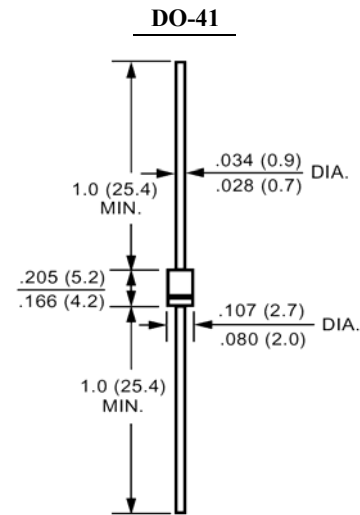
Case : Molded plastic, DO-41

Epoxy : UL 94V-O rate flame retardant

Lead : Axial leads, solderable per MIL-STD-202,  
method 208 guaranteed

Polarity : Color band denotes cathode end

Mounting position : Any



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, derate current by 20%.

Parameter	Symbols	FR101	FR102	FR103	FR104	FR105	FR106	FR107	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current .375"(9.5mm) Lead Length at $T_A=55^\circ\text{C}$	$I_{(AV)}$	1.0							Amp
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	30.0							Amp
Maximum Forward Voltage at 1.0A DC and 25°C	$V_F$	1.3							Volts
Maximum Reverse Current at $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A=100^\circ\text{C}$	$I_R$					5.0			uAmp
Typical Junction Capacitance (Note 1)	$C_J$	15							pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	65.0							°C/W
Maximum Reverse Recovery Time (Note 3)	$T_{RR}$	150			250		500		nS
Operating and Storage Temperature Range	$T_J, T_{stg}$	-65 to +150							°C

#### NOTES:

1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.

2- Thermal Resistance Junction to Ambient and form junction to lead at 0.375"(9.5mm) lead length P.C.B. Mounted.

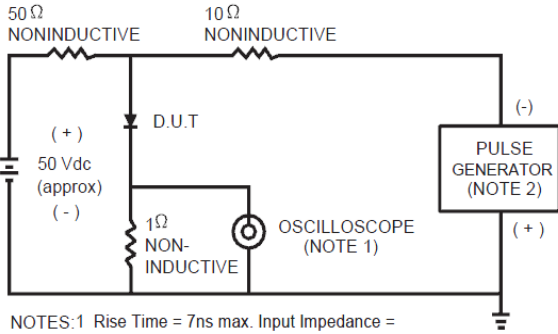
3- Reverse Recovery Test Conditions:  $I_F=5A$ ,  $I_R=1A$ ,  $I_{RR}=25A$ .

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### RATINGS AND CHARACTERISTIC CURVES

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

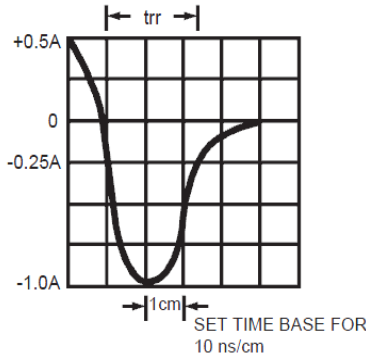


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

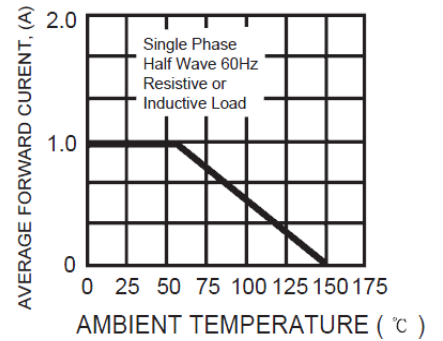


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

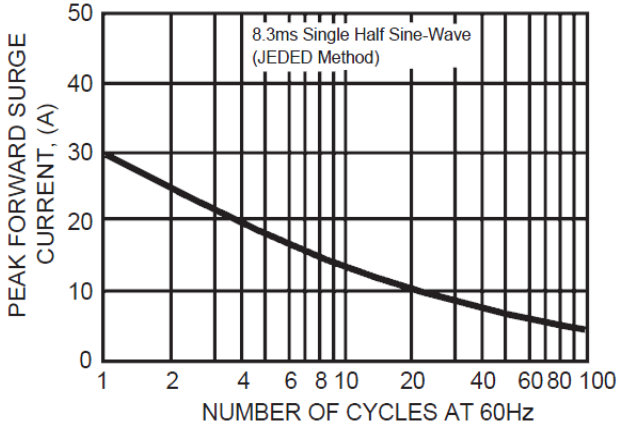


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

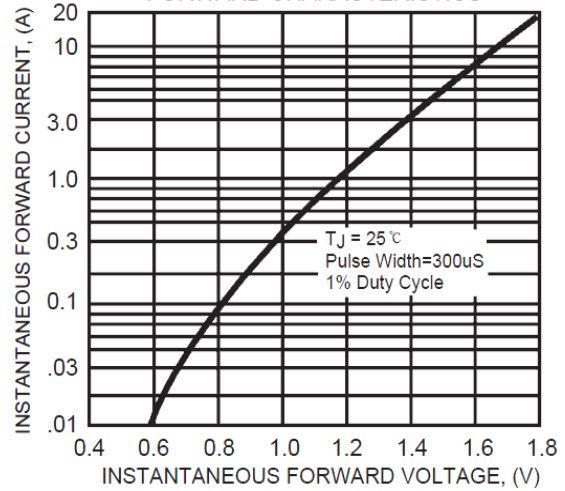


FIG. 5 - TYPICAL REVERSE CHARACTERISTICS

