

# FR101 THRU FR107

## FAST RECOVERY RECTIFIER



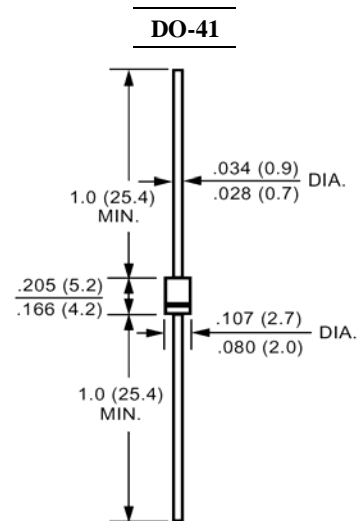
**REVERSE VOLTAGE:** 50 to 1000 VOLTS  
**FORWARD CURRENT:** 1.0 AMPERE

### FEATURES

- High current capability
- 1.0 ampere operation at  $T_A=55^\circ\text{C}$  with no thermal runaway.
- Fast switching for high efficiency
- Exceeds environmental standards of MIL-S-19500/228
- Low leakage.

### 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  
 Weight: 0.012ounce, 0.33gram



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Ratings at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.  
 Single phase, half wave,  $60\text{Hz}$ , resistive or inductive load.  
 For capacitive load, derate current by 20%.

	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							Amp
Maximum Forward Voltage at 1.0A DC and $25^\circ\text{C}$	$V_F$	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)	$C_J$					12			pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$					50			$^\circ\text{C}/\text{W}$
Maximum Reverse Recovery Time (Note 3)	$T_{RR}$	150				250	500		nS
Operating and Storage Temperature Range	$T_J, T_{stg}$	-55 to +150							$^\circ\text{C}$

### NOTES:

- 1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.
- 2- Thermal Resistance From Junction to Ambient 0.375"(9.5mm) lead length P.C.B. Mounted.
- 3- Reverse Recovery Test Conditions:  $I_F=.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{RR}=.25\text{A}$ .

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### RATINGS AND CHARACTERISTIC CURVES

FIG.1- MAXIMUM TYPICAL FORWARD CURRENT DERATING CURVE

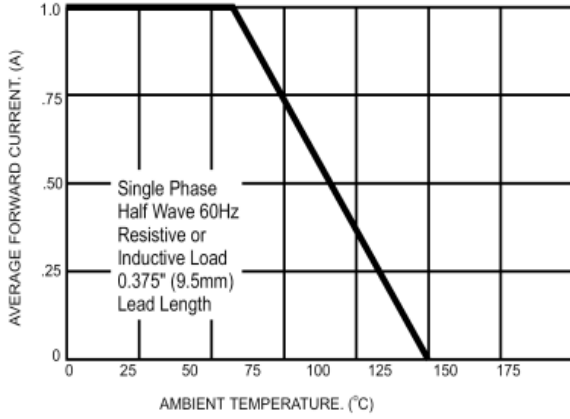


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

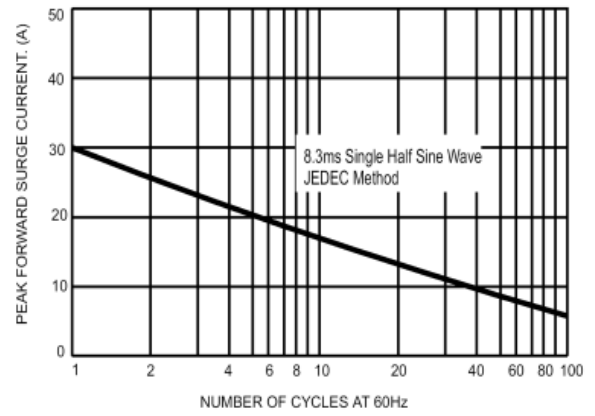


FIG.3- TYPICAL FORWARD CHARACTERISTICS

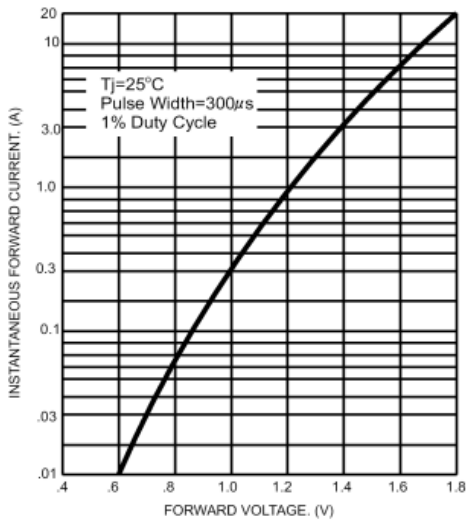


FIG.4- TYPICAL JUNCTION CAPACITANCE

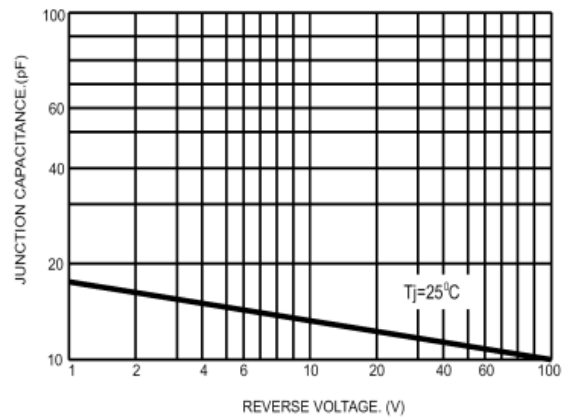


FIG.5- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

