



# FR101 thru FR107

Fast Recovery Rectifiers  
Reverse Voltage 50 to 1000 Volts Forward Current 1.0 Ampere

## Features

- ◆ Low forward voltage drop
- ◆ High current capability
- ◆ High reliability
- ◆ High surge current capability
- ◆  $T_J$  is 150°C (Max.) and  $T_{STG}$  is 175°C (Max.) with PI glue

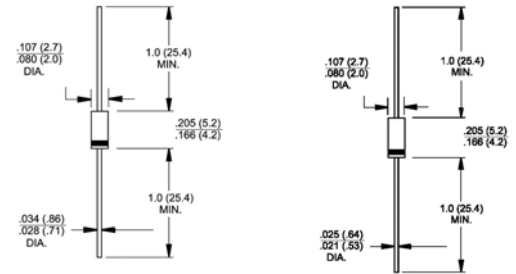


DO-204AL (DO-41)

A-405

## Mechanical Data

- ◆ Case: Molded plastic DO-204AL (DO-41)/A-405
- ◆ Epoxy: UL 94V-O rate flame retardant
- ◆ Lead: Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- ◆ Polarity: Color band denotes cathode end
- ◆ High temperature soldering guaranteed:  
250°C/10 seconds .375" (9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ◆ Weight: DO-41 - 0.012 ounce, 0.33 gram  
A-405 - 0.008 ounce, 0.23 gram



Dimensions in inches and (millimeters)      Dimensions in inches and (millimeters)

**Note:** Lead diameter is 0.025(0.64)/0.021(0.53) for suffix "S" part numbers

## 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 repetitive 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 0.375" (9.5mm) lead length at $T_A=55^\circ\text{C}$	$I_{AV}$	1.0							Amp
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30.0							Amps
Maximum instantaneous forward voltage @ 1.0A	$V_F$	1.3							Volts
Maximum DC reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=100^\circ\text{C}$	$I_R$	5.0 100							$\mu\text{A}$
Maximum reverse recovery time (Note 1)	$t_{rr}$	150				250	500		nS
Typical junction capacitance (Note 2)	$C_J$	15							pF
Typical thermal resistance	$R_{\theta JA}$ $R_{\theta JC}$	55 8							$^\circ\text{C/W}$
Operating junction temperature range	$T_J$	-55 to +125							$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150							$^\circ\text{C}$

**Notes:** 1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$   
2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.

# RATINGS AND CHARACTERISTIC CURVES

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

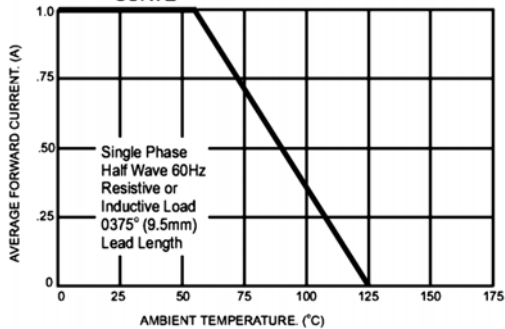


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

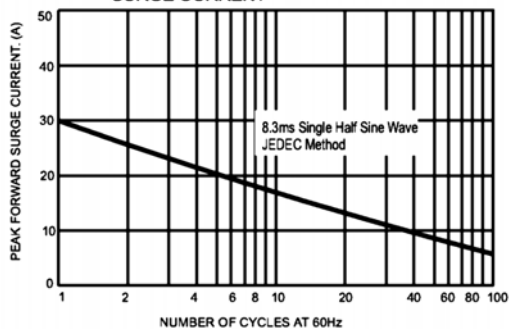


FIG.3- TYPICAL FORWARD CHARACTERISTICS

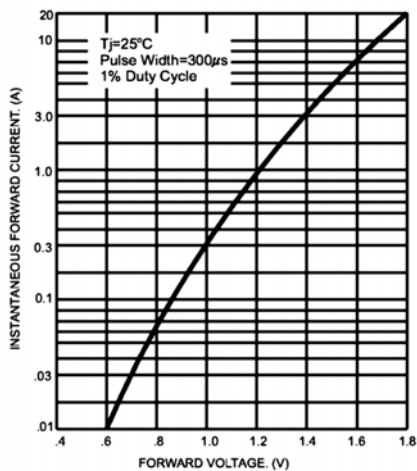


FIG.4- TYPICAL JUNCTION CAPACITANCE

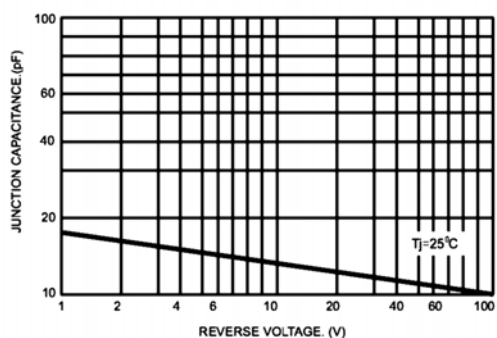
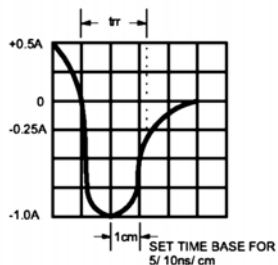
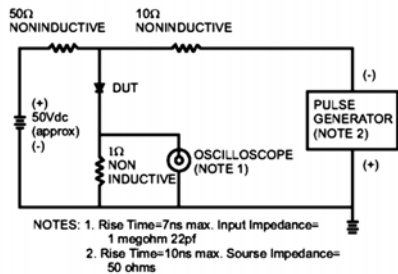


FIG.5- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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