

# FR05-12--FR05-20

Fast Recovery Rectifiers

VOLTAGE RANGE: 1200 --- 2000 V

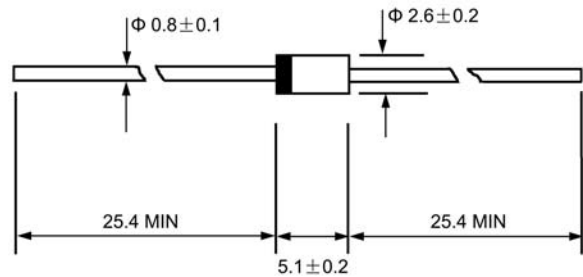
CURRENT: 0.5 A



DO - 41

## Features

- ◇ Low cost
- ◇ Diffused junction
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ Easily cleaned with Freon Alcohol, Isopropanol and similar solvents



Dimensions in millimeters

## Mechanical Data

- ◇ Case: JEDEC DO--41, molded plastic
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.012 ounces, 0.34 grams
- ◇ Mounting position: Any

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 50Hz, resistive or inductive load. For capacitive load, derate by 20%.

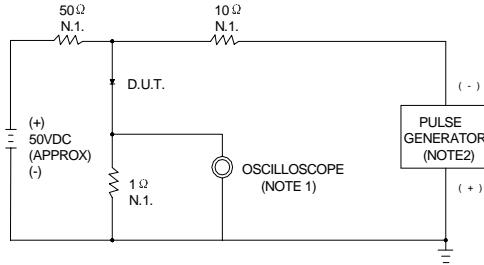
		FR05 -12	FR05 -14	FR05 -15	FR05 -16	FR05 -18	FR05 -20	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	1200	1400	1500	1600	1800	2000	V
Maximum RMS voltage	$V_{RMS}$	840	980	1050	1120	1260	1400	V
Maximum DC blocking voltage	$V_{DC}$	1200	1400	1500	1600	1800	2000	V
Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ C$	$I_{F(AV)}$	0.5						A
Peak forward surge current 10ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ C$	$I_{FSM}$	30.0						A
Maximum instantaneous forward voltage @ 0.5 A	$V_F$	2.0						V
Maximum reverse current @ $T_A=25^\circ C$ at rated DC blocking voltage @ $T_A=100^\circ C$	$I_R$	5.0 100.0						$\mu A$
Maximum reverse recovery time (Note1)	$t_{rr}$	500						ns
Typical junction capacitance (Note2)	$C_J$	12						pF
Typical thermal resistance (Note3)	$R_{\theta JA}$	55						$^\circ C/W$
Operating junction temperature range	$T_J$	-55 ---- + 150						$^\circ C$
Storage temperature range	$T_{STG}$	-55 ---- + 150						$^\circ C$

NOTE:1. Measured with  $I_F=0.5A$ ,  $I_R=1A$ ,  $I_r=0.25A$ .

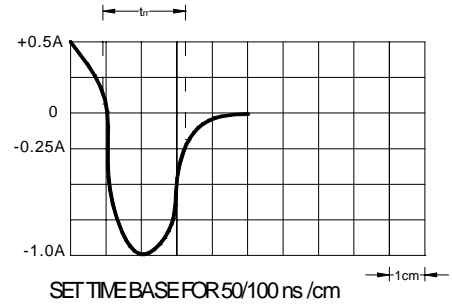
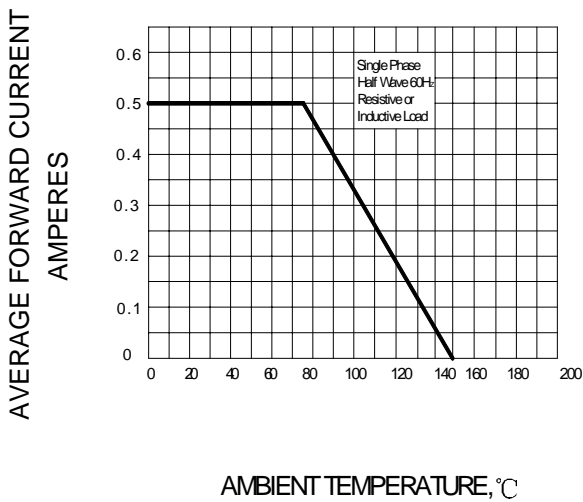
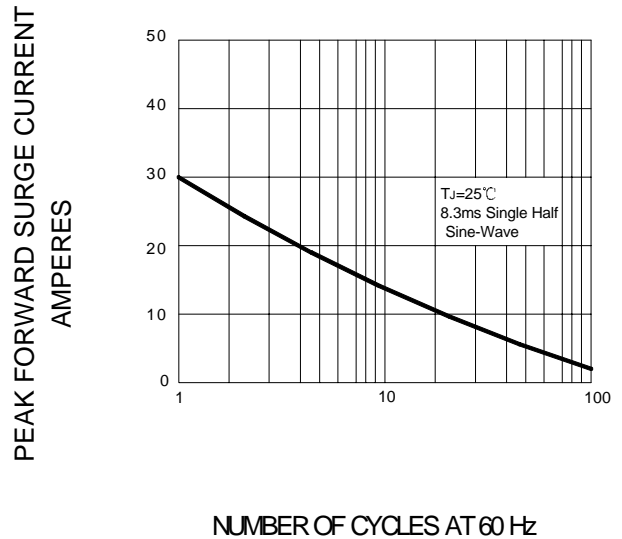
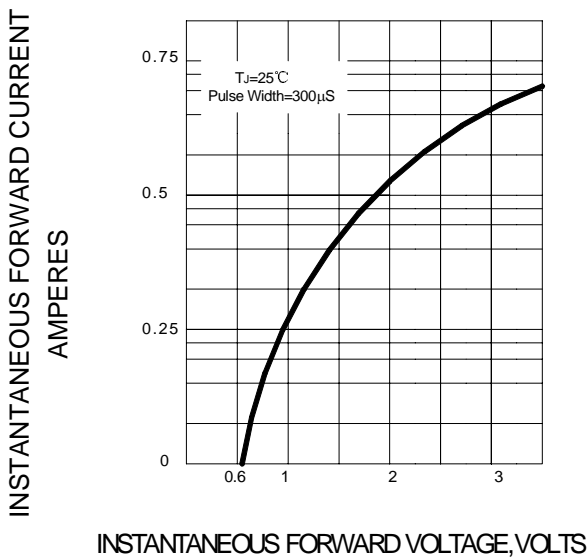
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

3. Thermal resistance from junction to ambient.

## Ratings AND Characteristic Curves

**FIG.1 – REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**


NOTES: 1. RISE TIME=7ns MAX. INPUT IMPEDANCE=1MΩ, 22pF  
 2. RISE TIME=10ns MAX. SOURCE IMPEDANCE=50Ω


**FIG.2 – FORWARD DERATING CURVE**

**FIG.3 – PEAK FORWARD SURGE CURRENT**

**FIG.4 – TYPICAL FORWARD CHARACTERISTIC**

**FIG.5 – TYPICAL JUNCTION CAPACITANCE**
