



## FAST RECOVERY GLASS PASSIVATED RECTIFIER

FR301G THRU FR307G

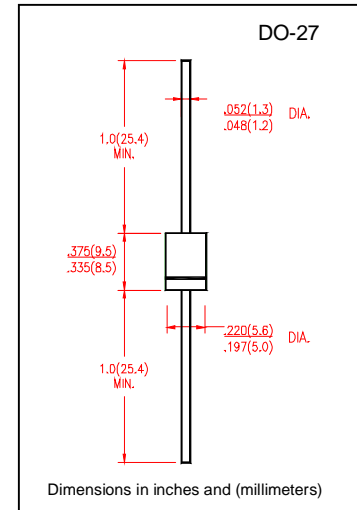
VOLTAGE RANGE 50 to 1000 Volts  
CURRENT 3.0 Ampere

### FEATURES

- Fast switching for high efficiency
- Glass passivated chip junction
- High current surge capability
- Low leakage
- High temperature soldering guaranteed  
260°C/10 seconds, 0.375" (9.5mm) lead length at 5 lbs (2.3kg) tension

### MECHANICAL DATA

- Case: Transfer molded plastic
- Epoxy: UL94V-0 rate flame retardant
- Polarity: Color band denotes cathode end
- Lead: Plated axial lead, solderable per MIL-STD-202E method 208C
- Mounting position: Any
- Weight: 0.042 ounce, 1.19 gram



### 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%

	SYMBOLS	FR 301G	FR 302G	FR 303G	FR 304G	FR 305G	FR 306G	FR 307G	UNIT
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 $T_A = 55^\circ\text{C}$	$I_{(AV)}$	3.0							Amps
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	125							Amps
Maximum Instantaneous Forward Voltage at 3.0A	$V_F$	1.3							Volts
Maximum DC Reverse Current at rated DC Blocking Voltage	$T_A = 25^\circ\text{C}$	5.0							$\mu\text{A}$
	$T_A = 125^\circ\text{C}$	500							
Maximum Reverse Recovery Time (NOTE 3)	$t_{rr}$	150				250	500		nS
Typical Junction Capacitance (NOTE 1)	$C_J$	40							pF
Typical Thermal Resistance (NOTE 2)	$R_{\theta JA}$	30							$^\circ\text{C}/\text{W}$
Operating Temperature Range	$T_J$	(-55 to +150)							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	(-55 to +150)							$^\circ\text{C}$

#### Notes:

1. Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts.
2. Thermal Resistance from Junction to Ambient at 0.375" (9.5mm) lead length, P.C board mounted.
3. Test conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = 0.25\text{A}$ .



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## RATING AND CHARACTERISTIC CURVES FR301G THRU FR307G

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

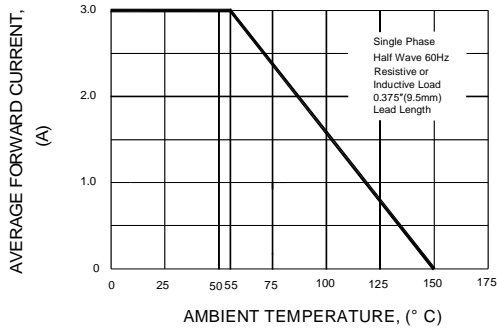


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

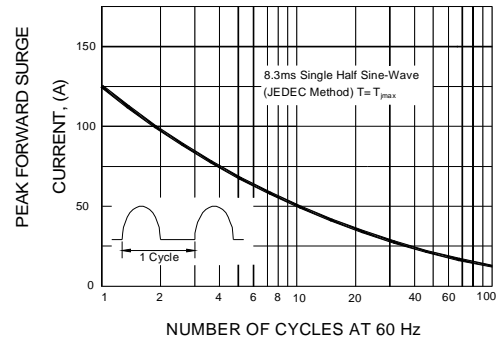


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

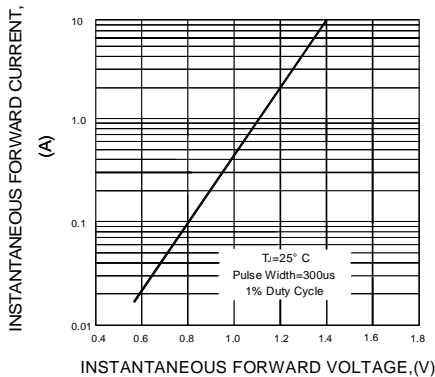


FIG.4-TYPICAL REVERSE CHARACTERISTICS

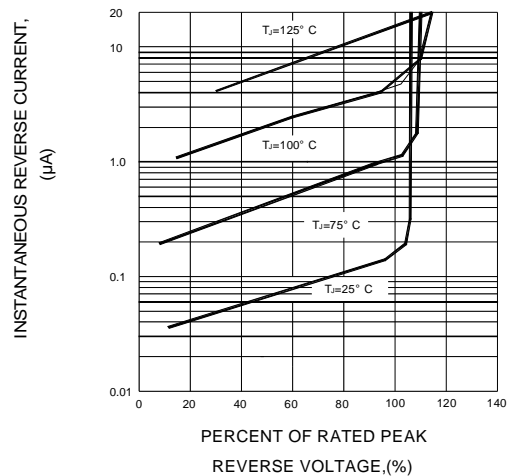


FIG.5-TYPICAL JUNCTION CAPACITANCE

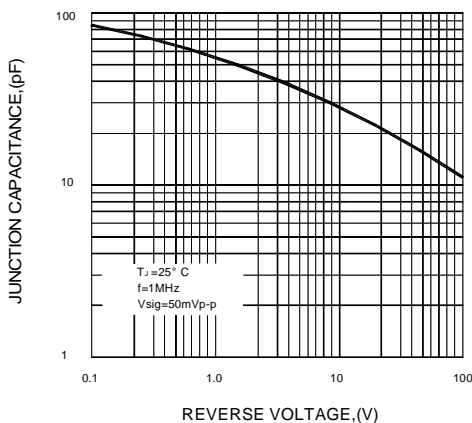
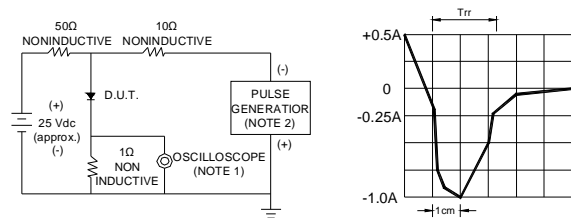


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES : 1. Rise Time=7ns max. Input Impedance= 1 magohm, 22pF  
2. Rise time=10ns max. Source Impedance= 50 ohms

SET TIME BASE FOR 50/100ns/cm