



## FAST RECOVERY RECTIFIER

# FR251 THRU FR257

VOLTAGE RANGE  
CURRENT

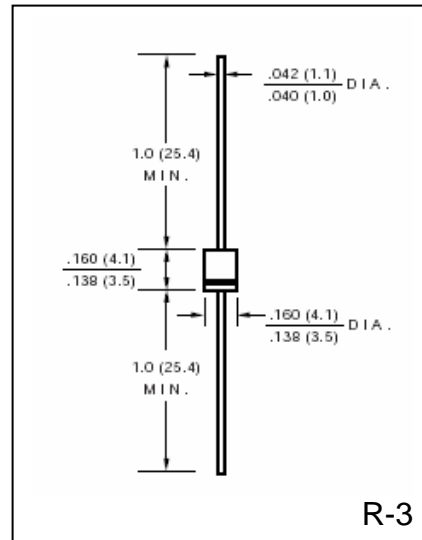
50 to 1000 Volts  
2.5 Ampere

### FEATURES

- Fast switching speed for high efficiency
- Low reverse leakage
- High forward surge current capacity
- High temperature soldering guaranteed:  
260 /10 seconds, 0.375" (9.5mm) lead length

### 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: 0.014 ounce, 0.39 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	FR251	FR252	FR253	FR254	FR255	FR256	FR257	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 $T_C = 75^\circ C$	$I_{(AV)}$	2.5							Amps
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	150							Amps
Maximum Instantaneous Forward Voltage @ 2.5A	$V_F$	1.3							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage per element	$I_R$	5.0							$\mu A$
		500							
Maximum Reverse Recovery Time Test conditions $I_F = 0.5A$ , $I_R = 1.0A$ , $I_{RR} = 0.25A$	$t_{rr}$	150			250		500		nS
Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V)	$C_J$	35							pF
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	35							$^\circ C/W$
Operating Junction Temperature Range	$T_J$	(-65 to +150)							$^\circ C$
Storage Temperature Range	$T_{STG}$	(-65 to +150)							$^\circ C$

### Notes:

1. Thermal resistance from junction to ambient with 0.375" (9.5mm) lead length, PCB mounted



# RATINGS AND CHARACTERISTIC CURVES FR251 THRU FR251

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

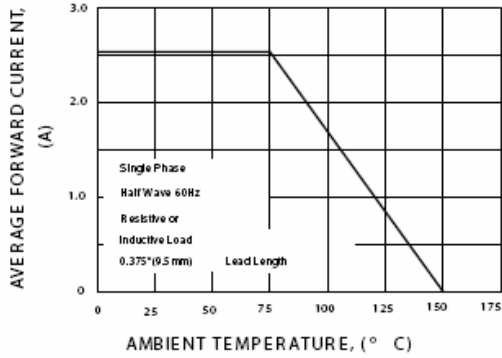


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

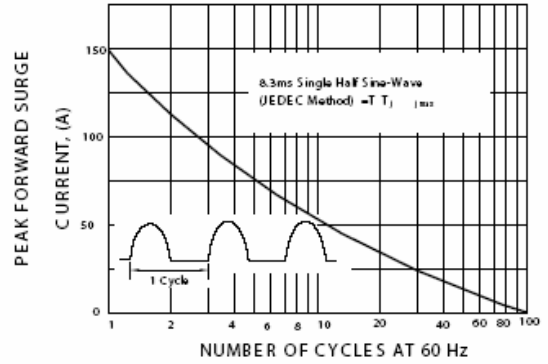


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

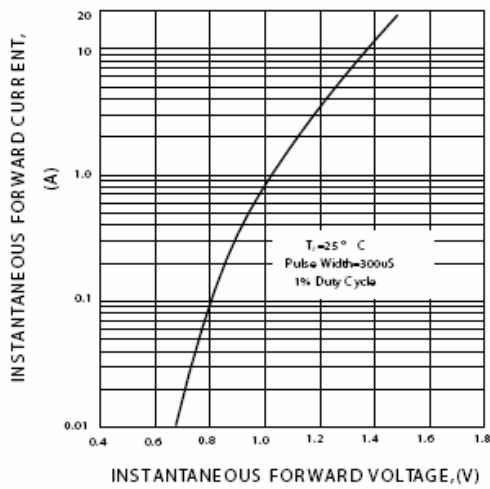


FIG.4-TYPICAL REVERSE CHARACTERISTICS

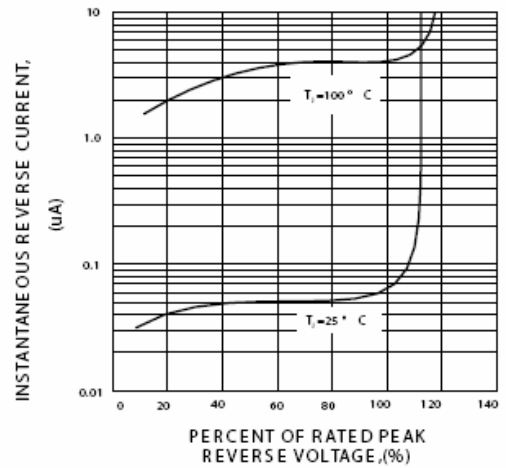


FIG.5-TYPICAL JUNCTION CAPACITANCE

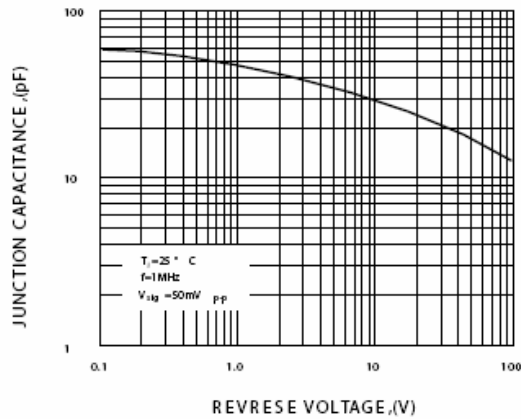
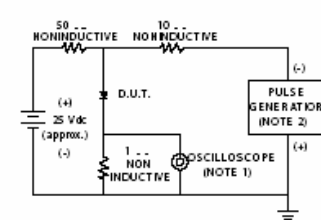


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

