



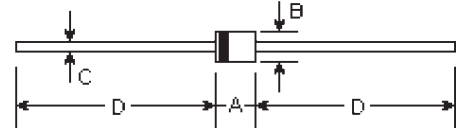
FR251 THRU FR257

FAST RECOVERY RECTIFIER
Reverse Voltage - 50 to 1000 Volts
Forward Current - 2.5 Amperes

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Construction utilizes void-free molded plastic technique
- 2.5 ampere operation at $T_A = 85^\circ\text{C}$ with no thermal runaway
- High temperature soldering guaranteed: $250^\circ\text{C}/10$ seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

R-3



Mechanical Data

- **Case:** R-3 molded plastic body
- **Terminals:** Plated axial leads, solderable per MIL-STD-750, method 2026
- **Polarity:** Color band denotes cathode end
- **Mounting Position:** Any
- **Weight:** 0.021 ounce, 0.60 gram

DIMENSIONS					
DIM	inches		mm		Note
	Min.	Max.	Min.	Max.	
A	0.138	0.161	3.50	4.10	
B	0.138	0.161	3.50	4.10	φ
C	0.040	0.043	1.00	1.10	φ
D	1.000	-	25.40	-	

Maximum Ratings and Electrical Characteristics @25°C unless otherwise specified

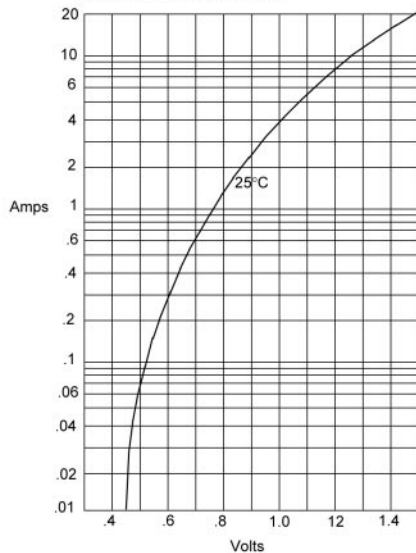
	Symbols	FR251	FR252	FR253	FR254	FR255	FR256	FR257	FR257-STR	Units
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	200	400	600	800	1000	1000	Volts
Maximum RMS voltage	V _{RMS}	35	70	140	280	420	560	700	700	Volts
Maximum DC blocking voltage	V _{DC}	50	100	200	400	600	800	1000	1000	Volts
Average forward rectified current at T _A =85°C	I _(AV)	2.5								Amps
Peak forward surge current 8.3mS single half sine-wave (MIL-STD-750D 4066 method)	I _{FSM}	150.0								Amps
Maximum instantaneous forward voltage at I _{FM} =2.5A, T _A =25°C (Note 3)	V _F	1.3								Volts
Maximum DC reverse current at rated DC blocking voltage T _A =25°C T _A =55°C	I _R	10.0 150.0								μ A
Maximum reverse recovery time (Note 1)	T _{rr}	150				250	500		250	nS
Typical junction capacitance (Note 2)	C _j	65.0								p F
Operating and storage temperature range	T _J † T _{STG}	-65 to +150								°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 1.0MHz and applied reverse voltage of 4.0 volts
- (3) Pulse test: pulse width 300μSec, Duty cycle 1%

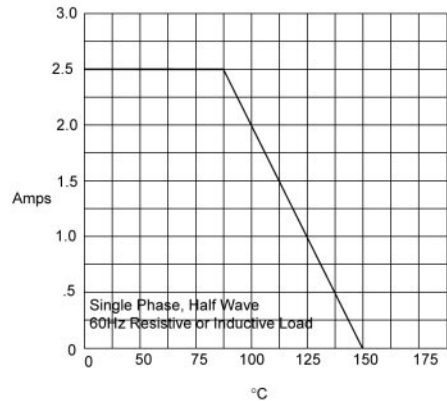
RATINGS AND CHARACTERISTIC CURVES

Figure 1
Typical Forward Characteristics



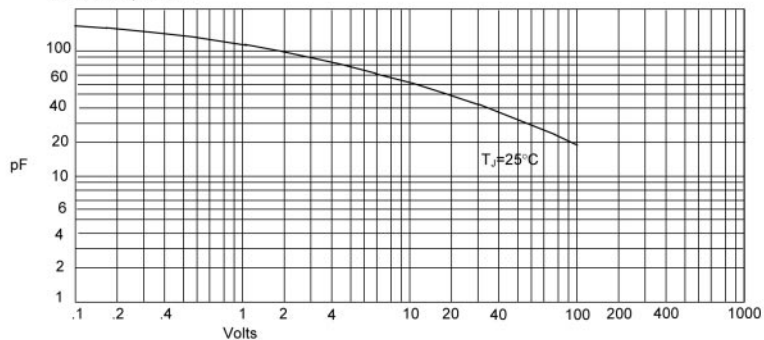
Instantaneous Forward Current - Amperes *versus*
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



Average Forward Rectified Current - Amperes *versus*
Ambient Temperature - °C

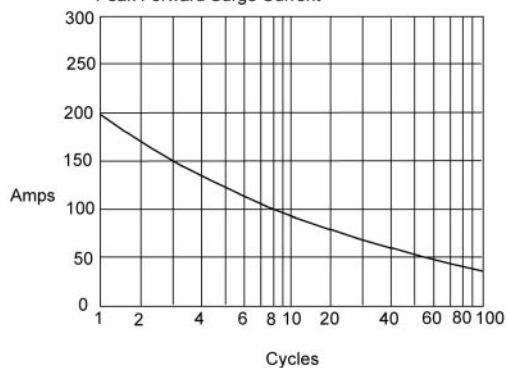
Figure 3
Junction Capacitance



Junction Capacitance - pF *versus*
Reverse Voltage - Volts

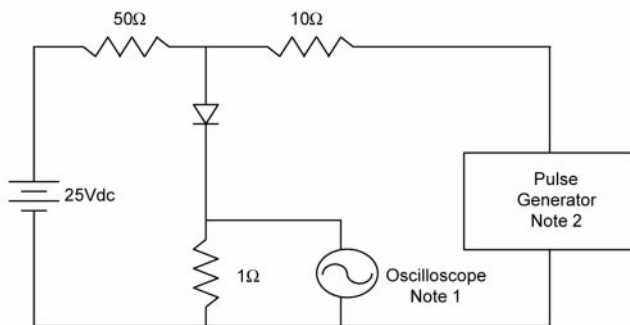
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Figure 4
Peak Forward Surge Current



Peak Forward Surge Current - Amperes *versus*
Number Of Cycles At 60Hz - Cycles

Figure 5
Reverse Recovery Time Characteristic And Test Circuit Diagram



- Notes:
1. Rise Time = 7ns max.
Input impedance = 1 megohm, 22pF
 2. Rise Time = 10ns max.
Source impedance = 50 ohms
 3. Resistors are non-inductive

