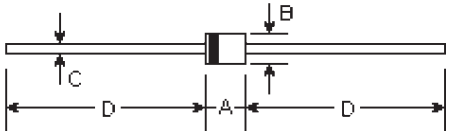
FR251 THRU FR257

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℃ with no thermal runaway
- High temperature soldering guaranteed: 250℃/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	ф
C	0.040	0.043	1.00	1.10	ф
D	1.000	-	25.40	-	

Maximum Ratings and Electrical Characteristics @25℃ 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℃	$I_{(AV)}$	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℃ (Note 3)	V_F	1.3								Volts
Maximum DC reverse current T_A=25℃ at rated DC blocking voltage T_A=55℃	I_R	10.0 150.0								μA
Maximum reverse recovery time (Note 1)	T_{rr}	150				250	500		250	nS
Typical junction capacitance (Note 2)	C_J	65.0								ρF
Operating and storage temperature range	T_J, T_{STG}	-65 to +150								℃

Notes:

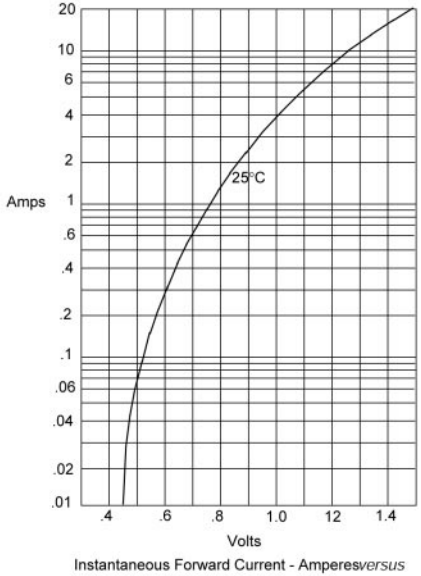
(1) Reverse recovery test conditions: I_F=0.5A, I_R=1.0A, I_{rr}=0.25A

(2) Measured at 1.0MHz and applied reverse voltage of 4.0 volts

(3) Pulse test: pulse width 300uSec, Duty cycle 1%

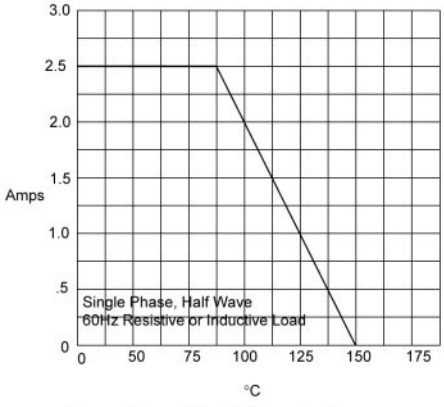
RATINGS AND CHARACTERISTIC CURVES

Figure 1
Typical Forward Characteristics



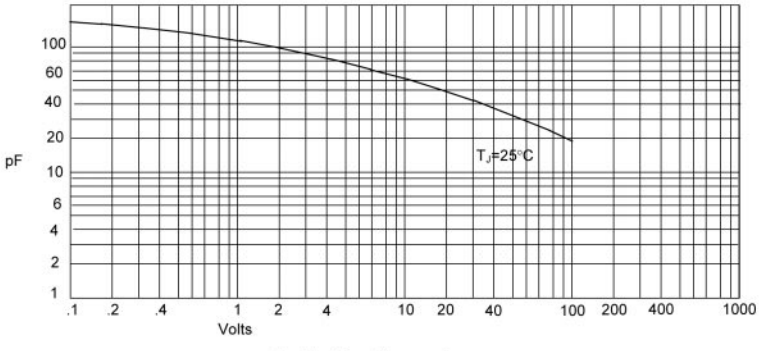
Instantaneous Forward Current - Amperes *versus*
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



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

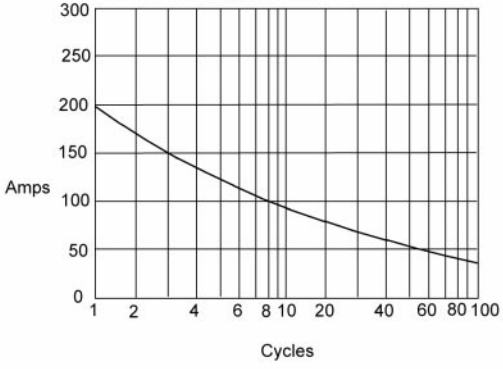
Figure 3
Junction Capacitance



Junction Capacitance - pF *versus*
Reverse Voltage - Volts

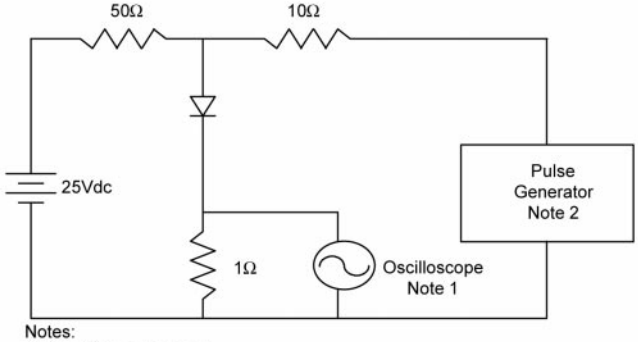
RATINGS AND CHARACTERISTIC CURVES

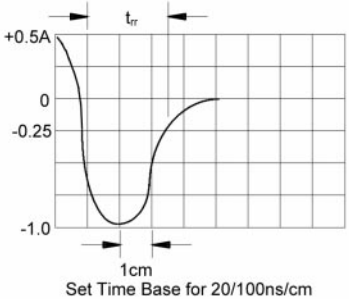
Figure 4
Peak Forward Surge Current



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

Figure 5
Reverse Recovery Time Characteristic And Test Circuit Diagram





Set Time Base for 20/100ns/cm

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