



# Fast Recovery Rectifiers

## F1 THRU F7 50 to 1000 V 1.0A

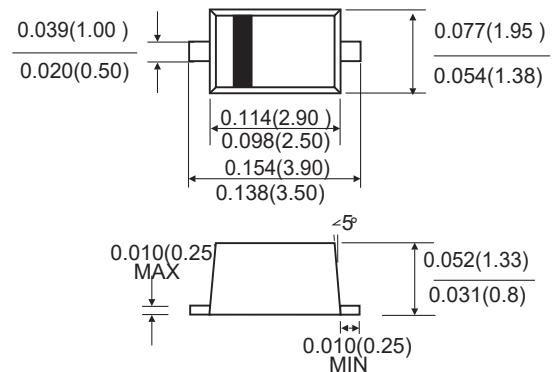
### FEATURES

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Fast Recovery times for high efficiency
- Plastic package has Underwriters Laboratory
- Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals

### MECHANICAL DATA

- Case: Molded plastic, SOD-123FL
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number

SOD-123FL



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	F1	F2	F3	F4	F5	F6	F7	Unit
		FM101 F1A	FM102 F1B	FM103 F1D	FM104 F1G	FM105 F1J	FM106 F1K	FM107 F1M	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	800	V
Maximum Average Rectified Output Current @60Hz sine wave, Resistance load, $T_a$ (Fig 1)	$I_{(AV)}$	1.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	25							A
Maximum Forward Voltage at $I_{(AV)}$ and $T_A=25^\circ\text{C}$	$V_{FM}$	1.3							V
Peak Reverse Current @ $T_A = 25^\circ\text{C}$ At Rated DC Blocking Voltage @ $T_A = 100^\circ\text{C}$	$I_{RM}$	10 500							$\mu\text{A}$
Reverse Recovery Time (Note 1)	$t_{rr}$	150			250	500			nS
Typical Junction Capacitance (Note 2)	$C_j$	16							pF
Typical Thermal Resistance (Note 3) Between junction and ambient, On alumina substrate	$R_{\theta Ja}$	70							$^\circ\text{C/W}$
Typical Thermal Resistance (Note 3) Between junction and lead	$R_{\theta JL}$	30							$^\circ\text{C/W}$
Typical Thermal Resistance (Note 3) Between junction and Icase	$R_{\theta Jc}$	40							$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150							$^\circ\text{C}$

Note: 1. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{rr} = 0.25\text{A}$ .  
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.  
3. P.C.B. mounted with 0.2 X 0.2"(5.0 X 5.0mm)copper pad areas



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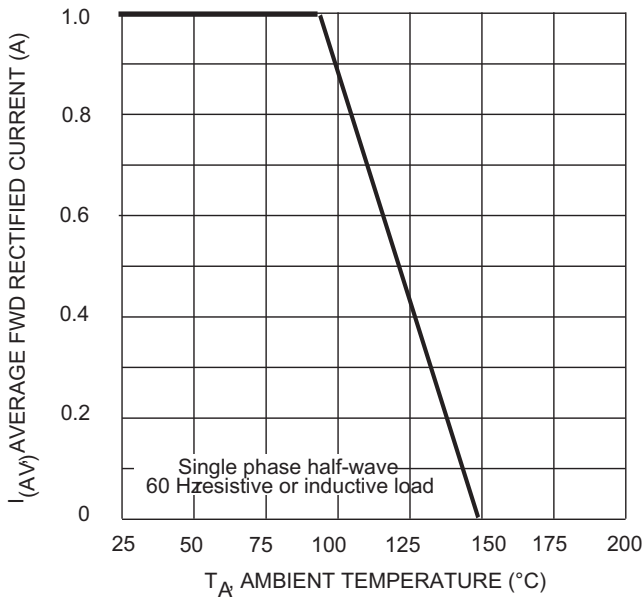


Fig. 1 Forward Derating Curve

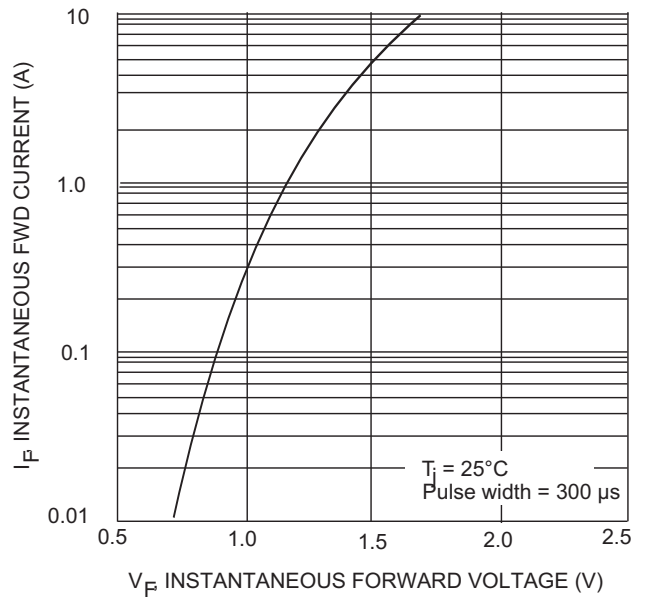


Fig. 2 Typical Forward Characteristics

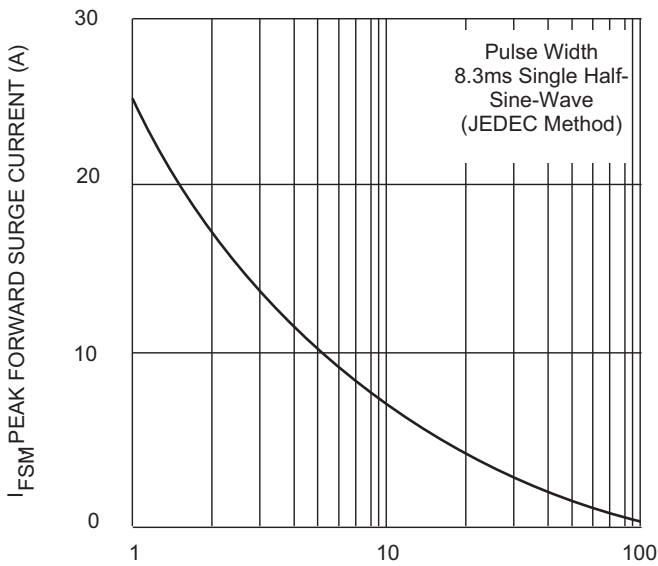


Fig. 3 Peak Forward Surge Current

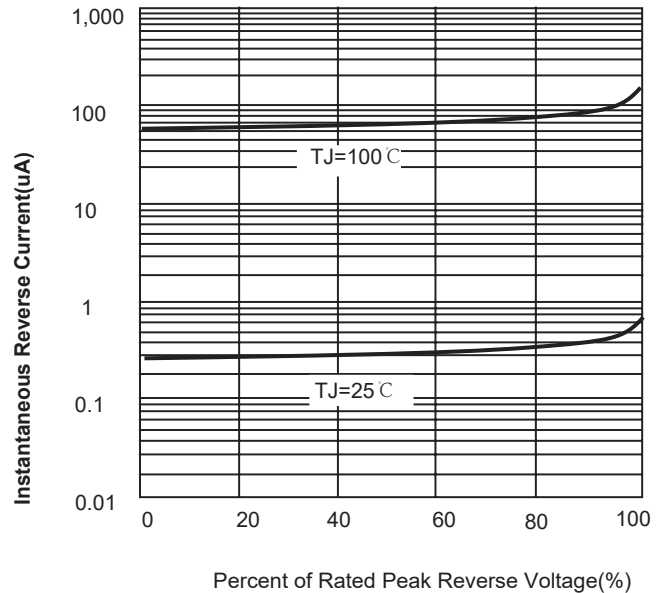
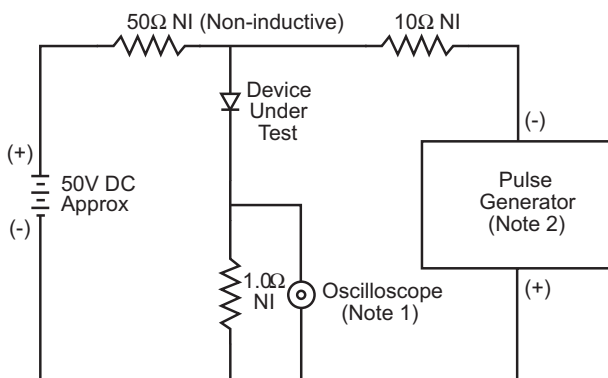
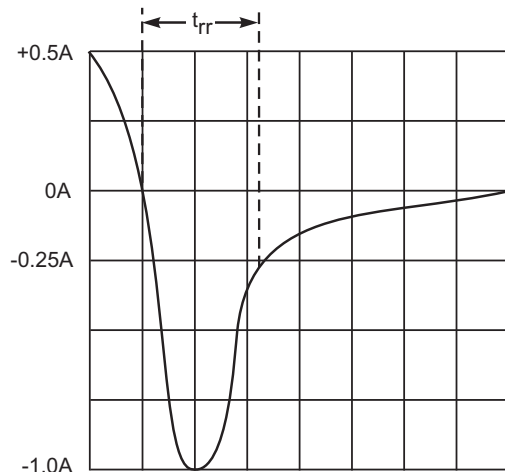


FIG4: Typical Reverse Characteristics



- Notes:
1. Rise Time=7ns max .Input Impedance=1MΩ 22pf
  2. Rise Time=10ns max.Source Impedance=50Ω



Set time base for 5/10ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

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