



*DC COMPONENTS CO., LTD.*

RECTIFIER SPECIALISTS

FR1AFL  
THRU  
FR1MFL

**TECHNICAL SPECIFICATIONS OF FAST RECOVERY RECTIFIER**

**VOLTAGE RANGE - 50 to 1000 Volts**

**CURRENT - 1.0 Ampere**

**FEATURES**

- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Glass passivated junction
- \* High efficiency
- \* Fast reverse recovery time

**MECHANICAL DATA**

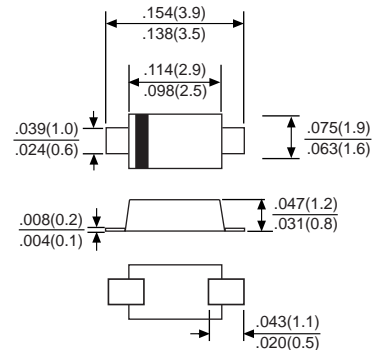
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- \* Polarity: As marked
- \* Mounting position: Any
- \* Weight: 0.02 gram

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25 °C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.



SOD-123FL



Dimensions in inches and (millimeters)

	SYMBOL	FR1AFL	FR1BFL	FR1DFL	FR1GFL	FR1JFL	FR1KFL	FR1MFL	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current at T <sub>A</sub> = 65°C	I <sub>O</sub>	1.0							Amps
Peak Forward Surge Current I <sub>FM</sub> (surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	25							Amps
Maximum Forward Voltage at 1.0A DC	V <sub>F</sub>	1.3							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	I <sub>R</sub>	@ T <sub>A</sub> = 25°C						5.0	µAmps
		@ T <sub>A</sub> = 125°C						100	
Maximum Reverse Recovery Time (Note 1)	t <sub>rr</sub>	150				250	500		nSec
Typical Thermal Resistance (Note 2)	R <sub>θJA</sub>	120							°C/W
Typical Junction Capacitance (Note 3)	C <sub>J</sub>	15							pF
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150							°C

NOTES : 1. Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A.

2. P.C.B. mounted with 0.2x0.2 in<sup>2</sup> (5x5mm<sup>2</sup>) copper pads to each terminal.

3. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC.

# RATING AND CHARACTERISTIC CURVES ( FR1AFL THRU FR1MFL )

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

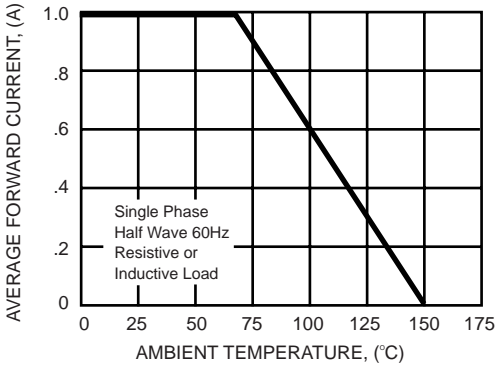


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

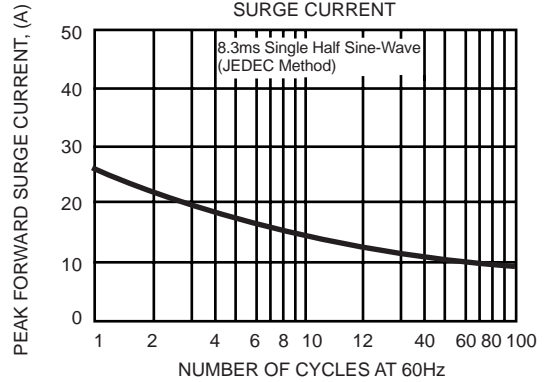


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

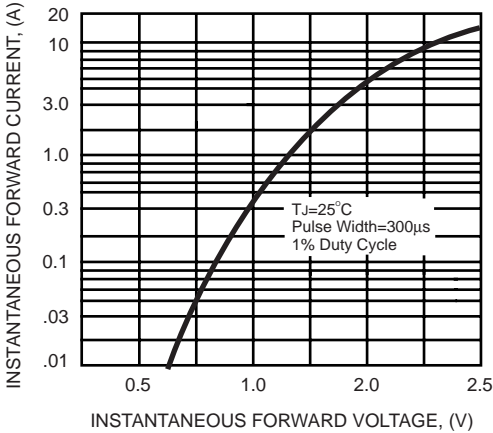


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

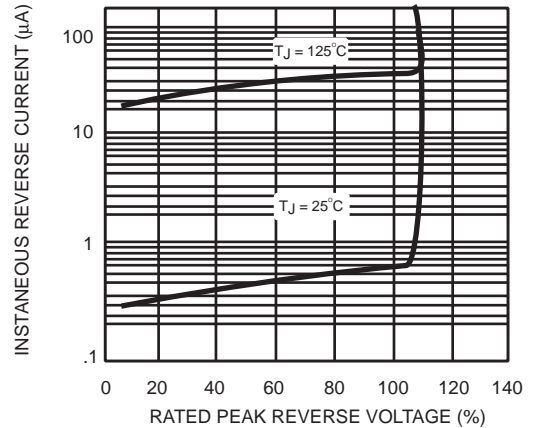


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

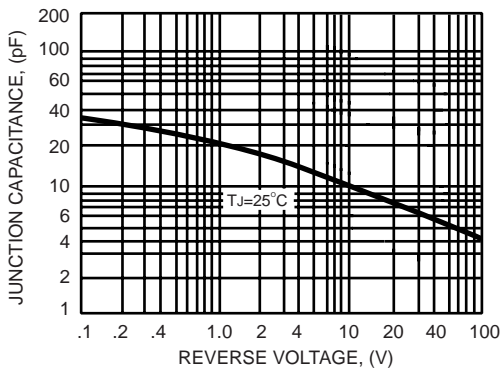
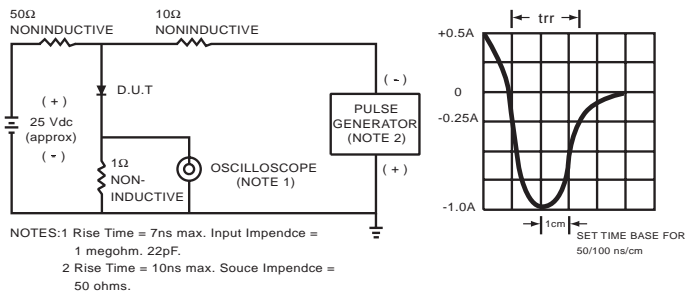


FIG. 6 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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