

## Surface Mount Fast Recovery Rectifier

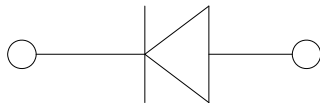


### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Fast switching for fast recovery
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

### Typical Applications

For use in fast switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer, and telecommunication.



### Mechanical Date

- **Package:** SOD-123FL  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

### ■ Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	F1A	F1B	F1D	F1G	F1J	F1K	F1M
Device marking code			F1A	F1B	F1D	F1G	F1J	F1K	F1M
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	V	50	100	200	400	600	800	1000
Maximum RMS Voltage	V <sub>RMS</sub>	V	35	70	140	280	420	560	700
Maximum DC blocking Voltage	V <sub>DC</sub>	V	50	100	200	400	600	800	1000
Average rectified output current @60Hz sine wave, Resistance load, TL (FIG.1)	I <sub>O</sub>	A	1.0						
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T <sub>j</sub> =25°C	I <sub>FSM</sub>	A	30						
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T <sub>j</sub> =25°C			60						
Current squared time @1ms≤t≤8.3ms T <sub>j</sub> =25°C	i <sup>2</sup> t	A <sup>2</sup> s	3.735						
Storage temperature	T <sub>stg</sub>	°C	-55 ~ +150						
Junction temperature	T <sub>j</sub>	°C	-55 ~ +150						

### ■ Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	F1A	F1B	F1D	F1G	F1J	F1K	F1M
Maximum instantaneous forward voltage	V <sub>F</sub>	V	I <sub>FM</sub> =1.0A	1.3						
Maximum reverse recovery time	t <sub>rr</sub>	ns	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>r</sub> =0.25A	150			250		500	
Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	μA	T <sub>j</sub> =25°C	5						
			T <sub>j</sub> =125°C	100						
Typical junction capacitance	C <sub>j</sub>	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	11				6		



# F1A THRU F1M

## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	F1A	F1B	F1D	F1G	F1J	F1K	F1M
Typical Thermal resistance	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	68						
	R <sub>θJ-L</sub> <sup>(1)</sup>		20						
	R <sub>θJ-C</sub> <sup>(1)</sup>		18						

Note:  
 (1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm\*3mm copper pad areas.

## ■ Characteristics (Typical)

FIG.1: I<sub>o</sub>-T<sub>L</sub> Curve

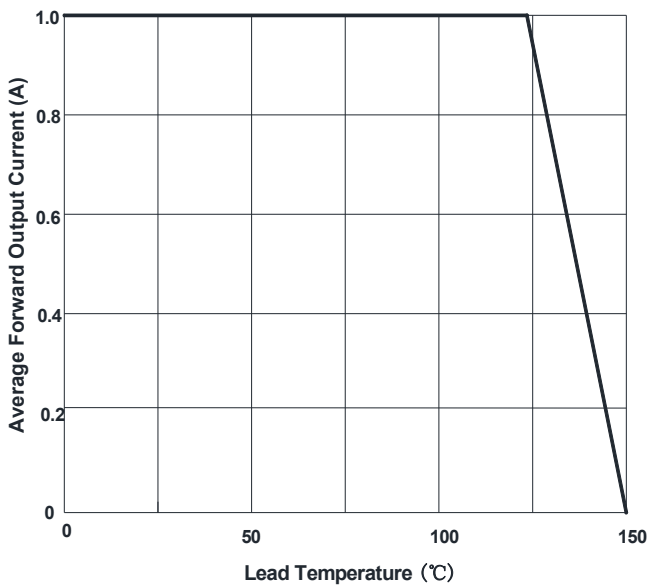


FIG.2: Forward Surge Current Capability

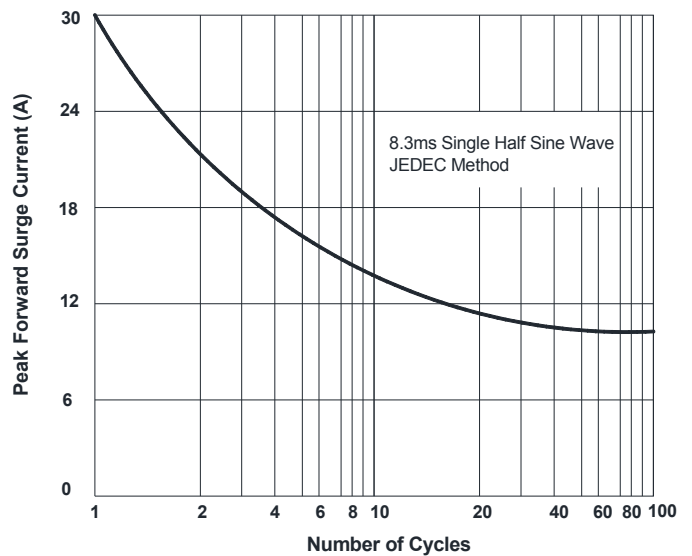


FIG.3: Typical Forward Voltage

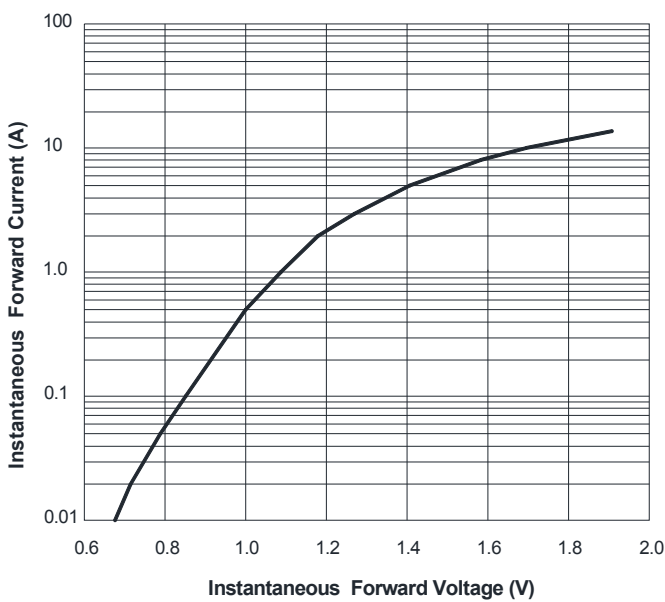


FIG.4: Typical Reverse Characteristics

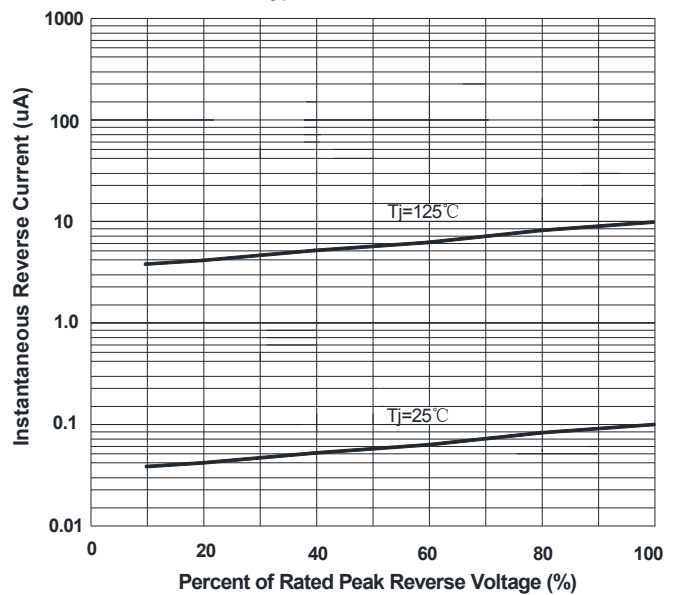
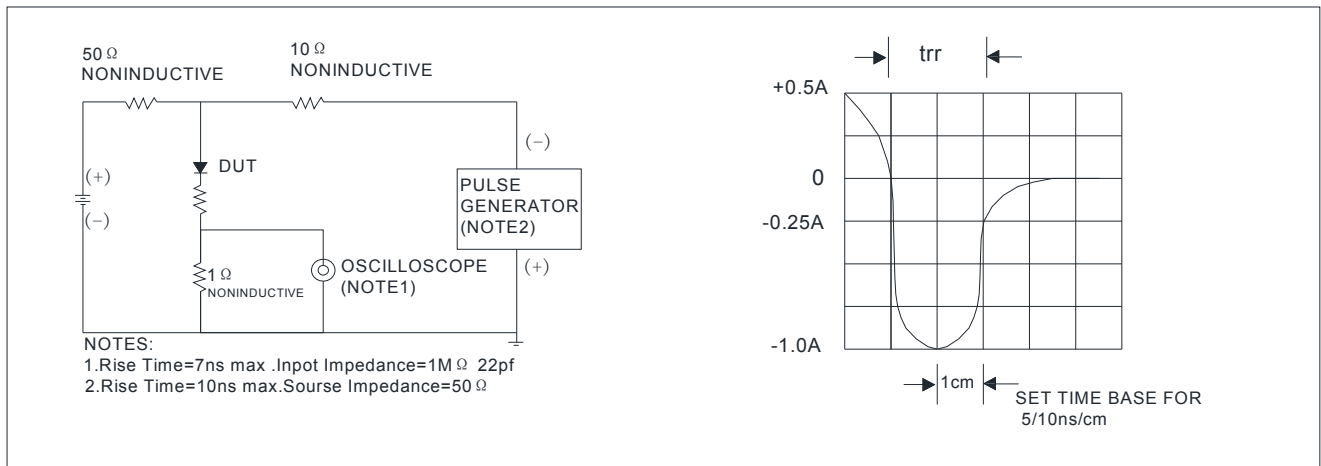


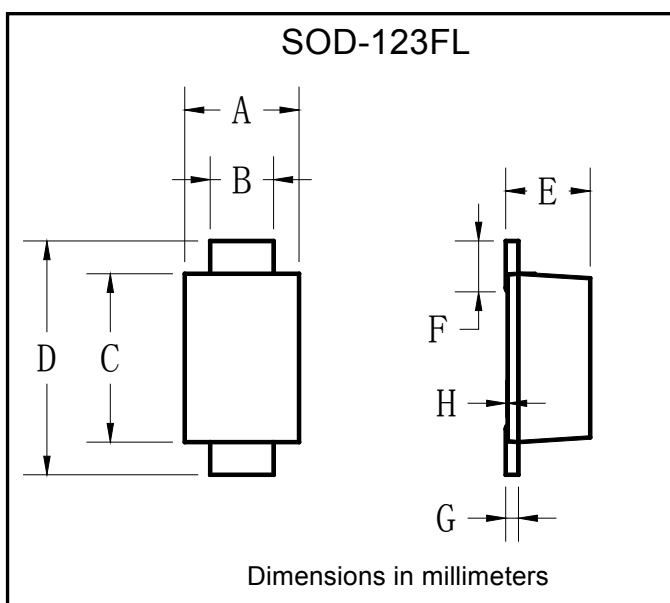
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
F1A THRU F1M	F1	Approximate 0.0169	3000	30000	120000	7" reel
F1A THRU F1M	F2	Approximate 0.0169	2500	25000	100000	7" reel
F1A THRU F1M	F3	Approximate 0.0169	10000	/	210000	13" reel
F1A THRU F1M	F4	Approximate 0.0169	3000	54000	108000	7" reel
F1A THRU F1M	F5	Approximate 0.0169	10000	/	160000	13" reel
F1A THRU F1M	F6	Approximate 0.0169	3000	12000	60000	7" reel

## Outline Dimensions

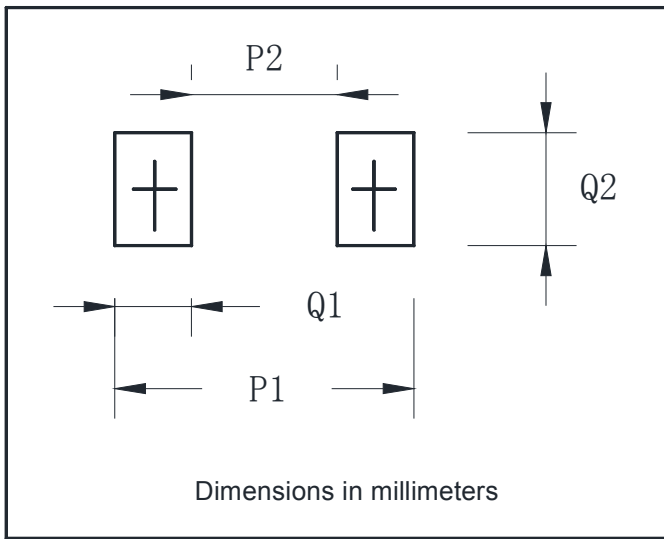


SOD-123FL		
Dim	Min	Max
A	1.60	1.90
B	0.90	1.10
C	2.55	2.85
D	3.60	3.90
E	1.00	1.20
F	0.40	0.90
G	0.10	0.25
H	0.02	0.05



## F1A THRU F1M

### ■ Suggested pad layout



SOD-123FL	
Dim	Millimeters
P1	3.90
P2	1.90
Q1	1.00
Q2	1.50



## F1A THRU F1M

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