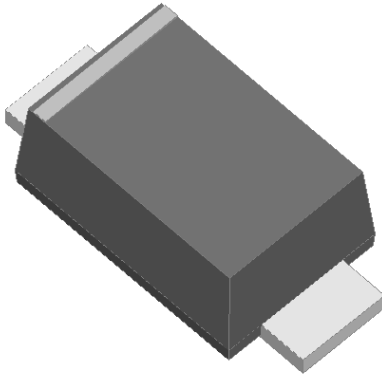


Surface Mount Fast Recovery Rectifier

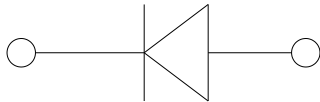


Features

- 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 (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	F1MX
Device marking code			F1MX
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	V	1000
Maximum RMS Voltage	V _{RMS}	V	700
Maximum DC blocking Voltage	V _{DC}	V	1000
Average rectified output current @60Hz sine wave, Resistance load, TL (FIG.1)	I _O	A	1.0
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _j =25°C	I _{FSM}	A	30
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T _j =25°C			60
Current squared time @1ms≤t≤8.3ms T _j =25°C	I ² t	A ² s	3.735
Storage temperature	T _{stg}	°C	-55 ~ +150
Junction temperature	T _j	°C	-55 ~ +150

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	F1MX
Maximum instantaneous forward voltage	V _F	V	I _{FM} =1.0A	1.3
Maximum reverse recovery time	t _{rr}	ns	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	200
Maximum DC reverse current at rated DC blocking voltage	I _R	μA	T _j =25°C	5
			T _j =125°C	100
Typical junction capacitance	C _j	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	6



■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	F1MX
Typical Thermal resistance	R _{θJ-A} ⁽¹⁾	°C/W	68
	R _{θJ-L} ⁽¹⁾		20
	R _{θJ-C} ⁽¹⁾		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_o-T_C Curve

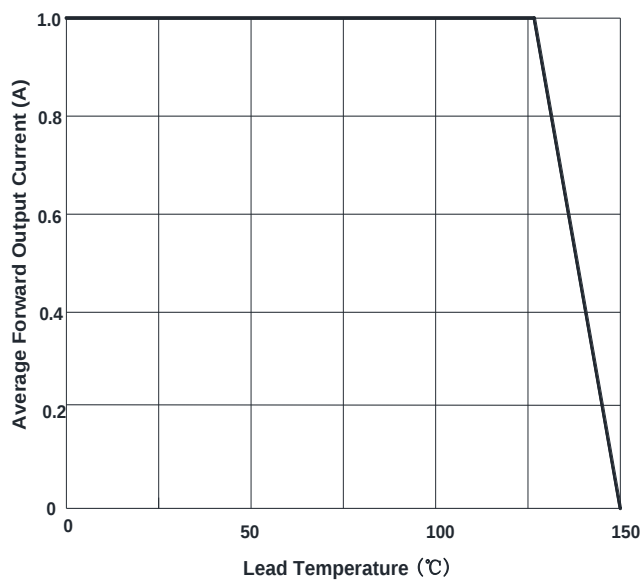


FIG.2: Forward Surge Current Capability

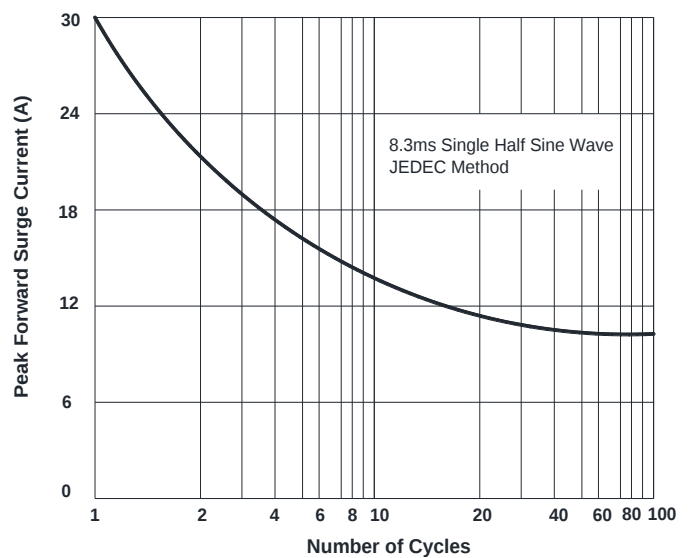


FIG.3: Typical Forward Voltage

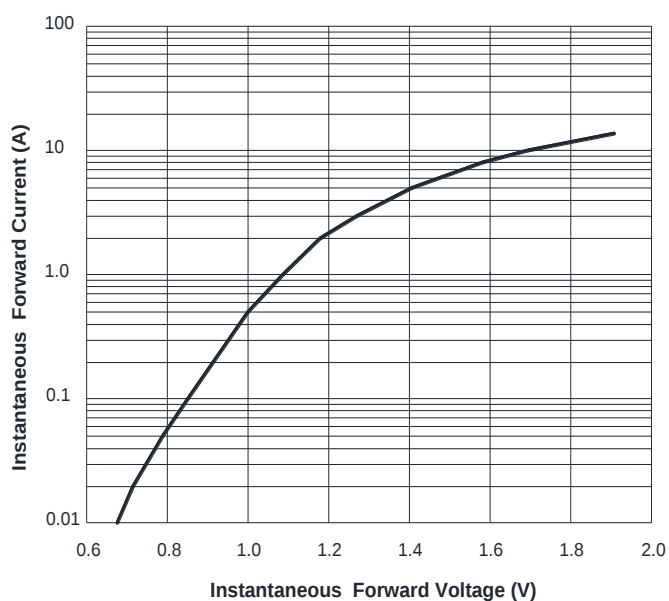


FIG.4: Typical Reverse Characteristics

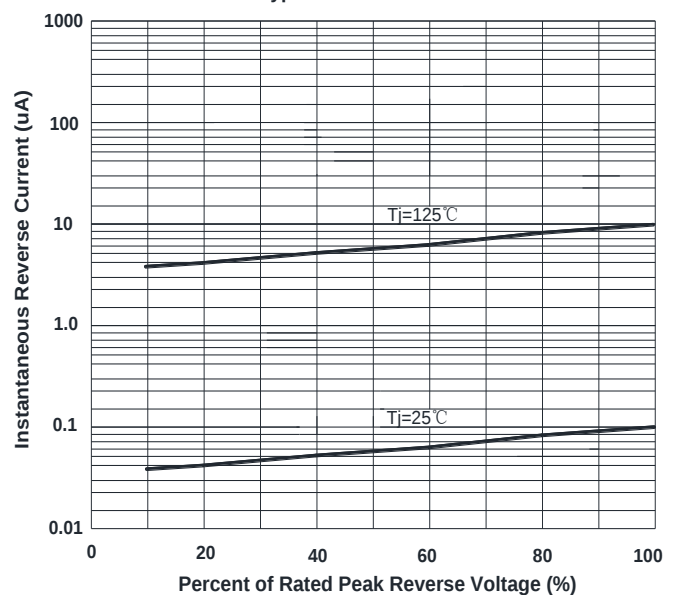
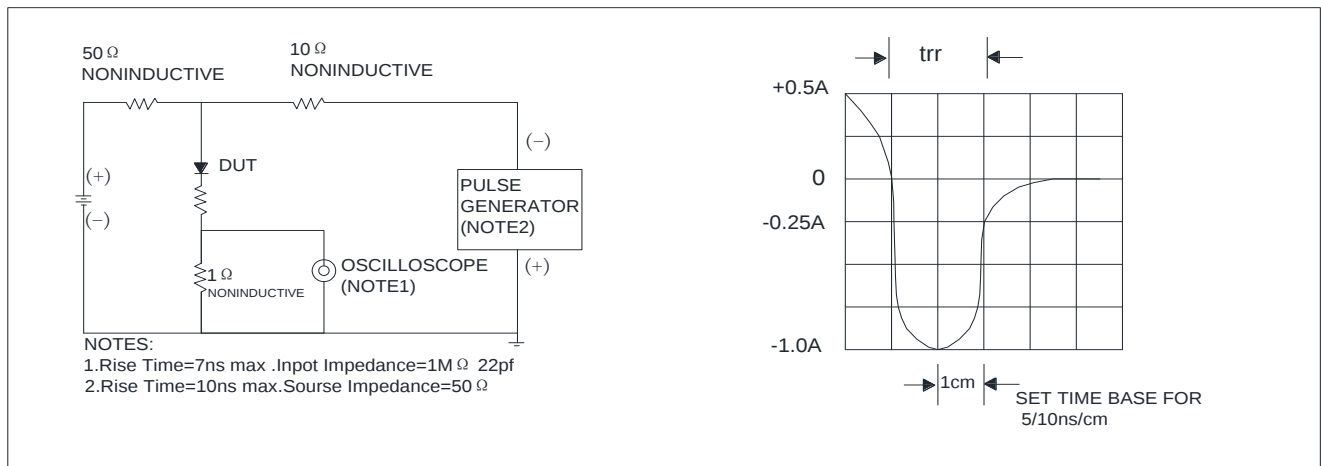


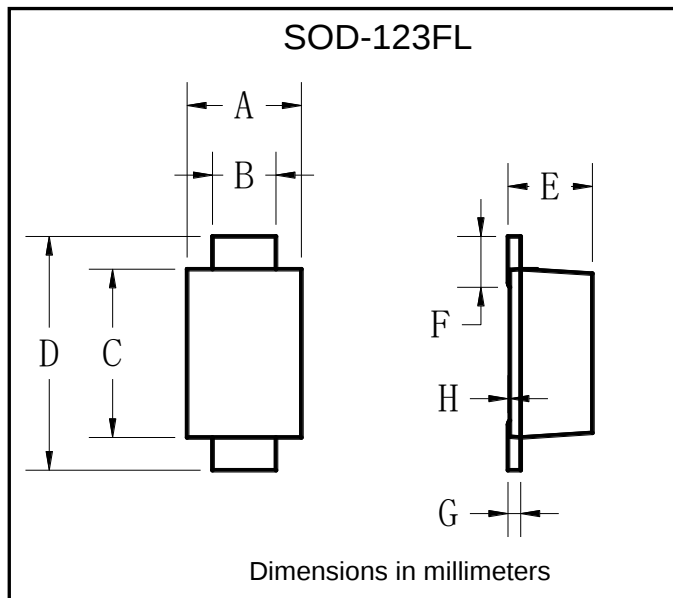
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
F1MX	F1	Approximate 0.0169	3000	30000	120000	7" reel

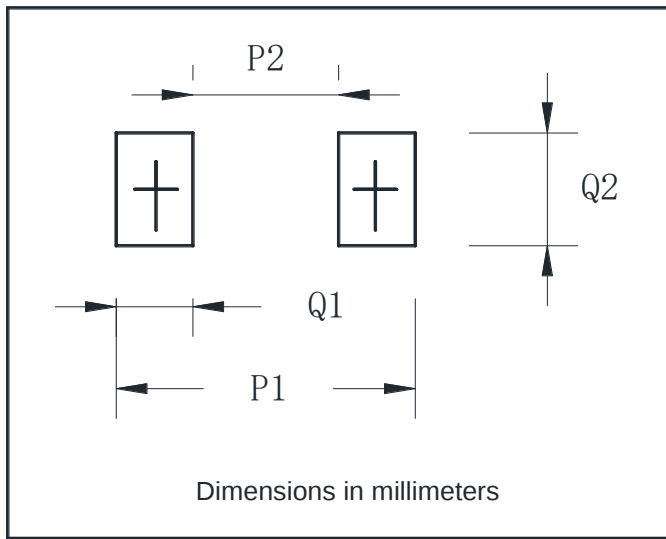
■ Outline Dimensions



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



■ Suggested pad layout



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



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