1. Synopsis

1-1. General Description

These Devices Employ The Schottky Barrier Principle in a Metal−to−Silicon Power Rectifier. Features Epitaxial Construction With Oxide Passivation and Metal Overlay Contact. Ideally Suited For Low Voltage, High Frequency Switching Power Supplies; Free Wheeling Diodes and Polarity Protection Diodes.

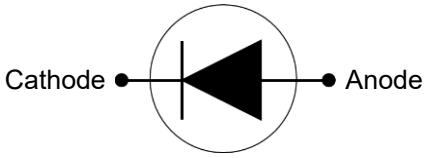
SOD-123FL

1-2. Feature List

- High Surge Current Capability
- Low Power Loss, High Efficiency

1-3. Applications

- For Use In Low Voltage High Frequency Inverters, Freewheeling, DC/DC Converters, and Polarity Protection Applications.



1-4. Benefits

- Essentially No Switching Losses
- Higher Efficiency
- Reduction Of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway
- Higher System Reliability Due To Lower Operating Temperatures

1-5. Mechanical Characteristics

- Molded JEDEC Package: SOD-123FL
- Packing: Tape and Reel
- Flammability rating UL 94V-0
- Halogen Free
- JEDEC MSL Classification: Level 1

2. Contents

3. Electrical Property

3-1. Absolute Maximum Ratings

Maximum Ratings@25°C Unless Otherwise Specified					
Parameter	**Symbol**	**Values**			**Units**
		SS24FL	**SS26FL**	**SS210FL**	
Peak Reverse Voltage	V_{RRM}	40	60	100	V
Reverse Voltage	V_R				
Average Forward Current	I_O	2			A
Non-Repetitive Peak Forward Current ($t_p \leq 8.3$ ms)	I_{FSM}	50			
Operating Temperature	T_J	-55 ~ +150			°C
Storage Temperature	T_{STG}				

3-2. Electrical Characteristics (TA=25°C)

Parameter	**Symbol**	**Condition**		**Min.**	**Max.**	**Units**
Reverse Leakage Current	I_R	@ V_{RWM} = 40V	SS24FL	-	150	uA
		@ V_{RWM} = 60V	SS26FL	-	50	
		@ V_{RWM} = 100V	SS210FL	-	10	
Forward Voltage	V_F	I_F = 2.0A	SS24FL	-	500	mV
			SS26FL	-	700	
			SS210FL	-	800	

3-3. Ratings and Characteristics Curve (TA=25°C unless otherwise noted)

Fig 1. Maximum Forward Current Derating Curve

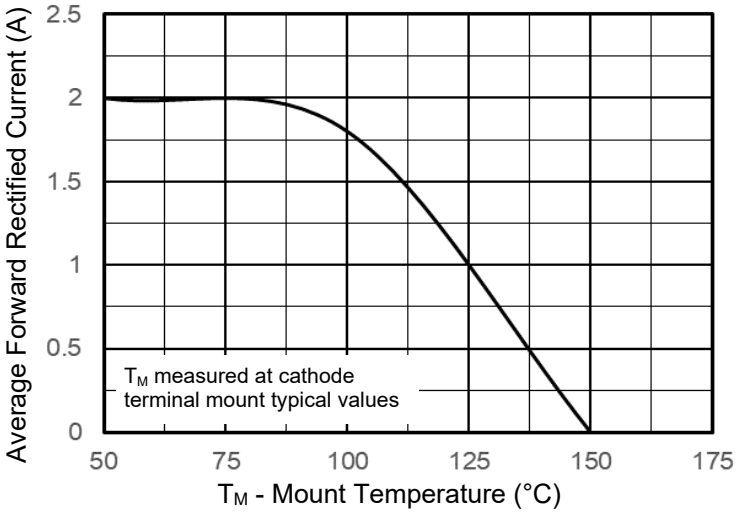


Fig 2. Typical Instantaneous Forward Characteristics

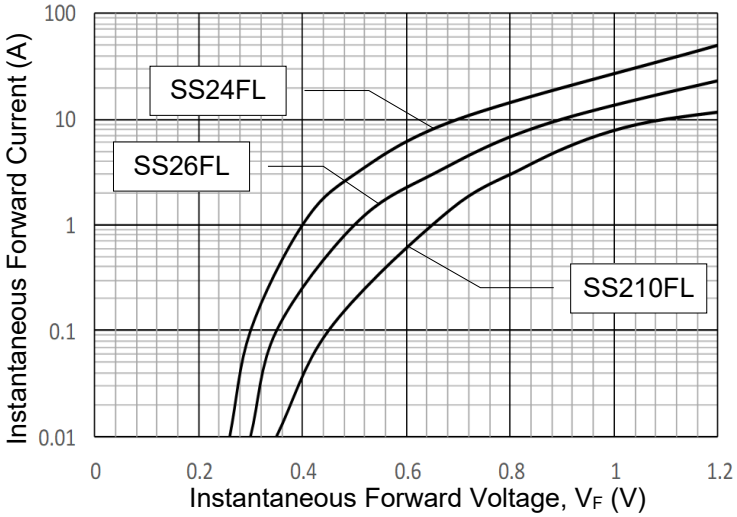


Fig 3. Typical Reverse Current Characteristics

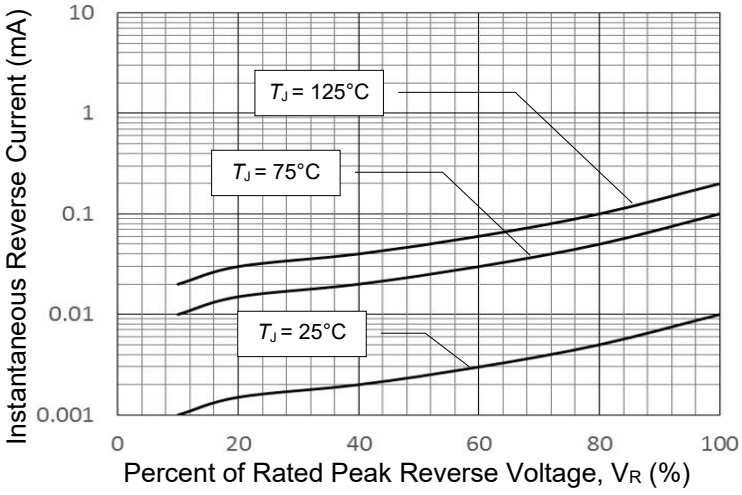
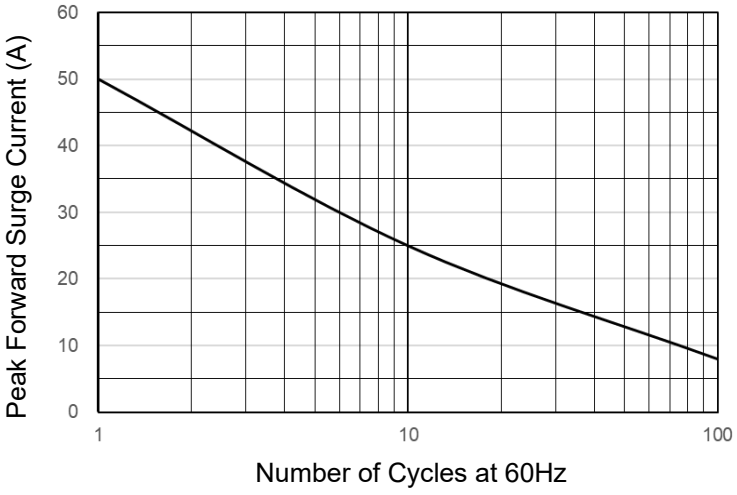
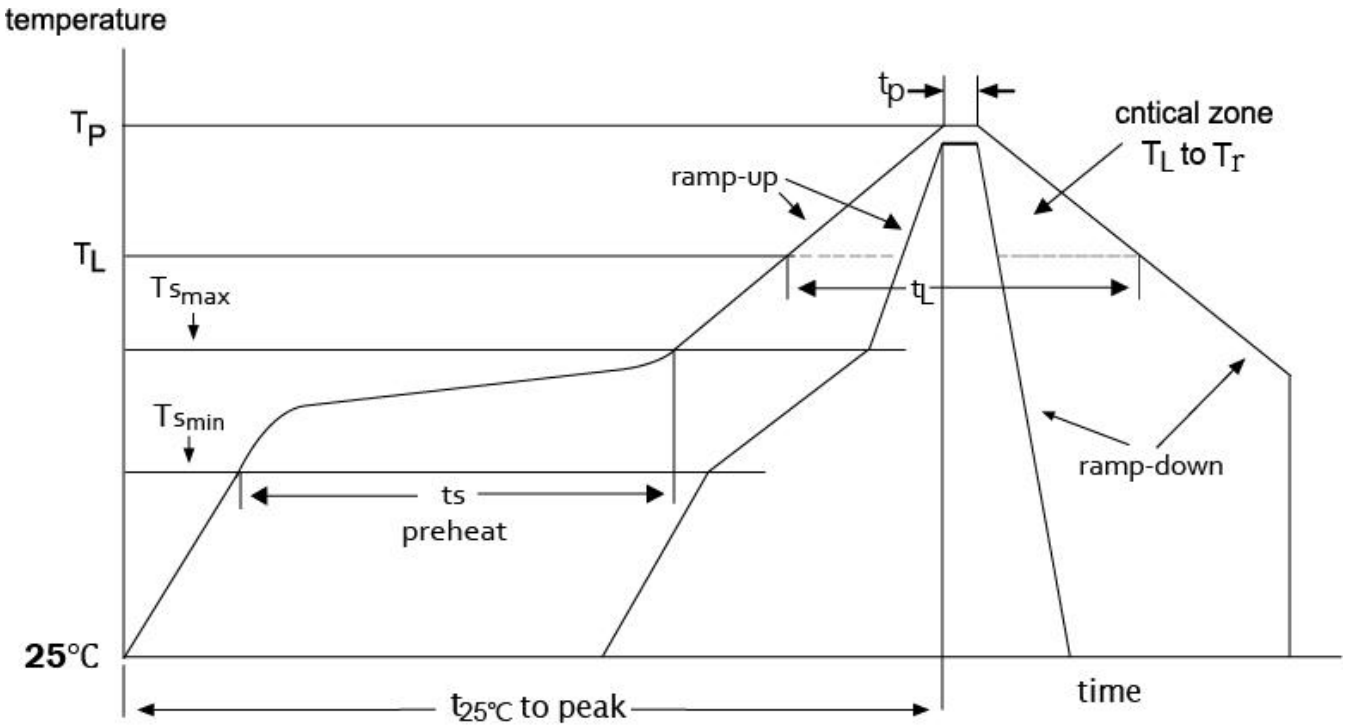


Fig 4. Maximum Non-Repetitive Forward Surge Current



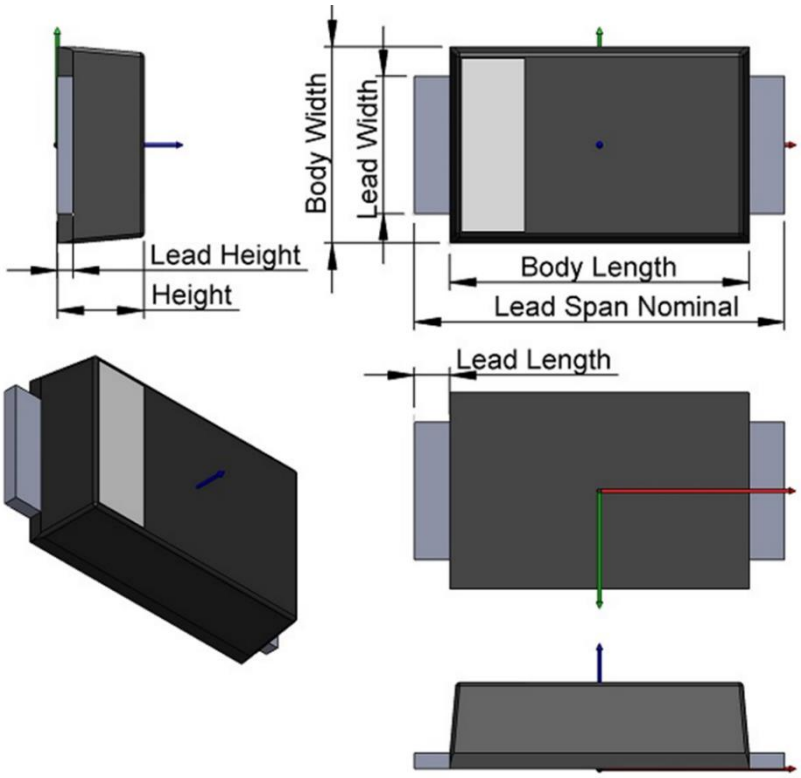
4. Soldering Parameters

Profile Feature	SnPb eutectic assembly	Pb-free assembly
Average ramp-up rate (Tsmax to Tp)	3 °C/s maximum	3 °C/s maximum
Preheat		
Temperature minimum (Tsmin)	100 °C	150 °C
Temperature maximum (Tsmax)	150 °C	200 °C
Time (tsmin to tsmax)	60 s to 120 s	60 s to 180 s
Time maintained above		
Temperature (TL)	183 °C	217 °C
Time (tL)	60 s to 150 s	60 s to 150 s
Peak/classificationtemperature(T)	235 °C	260 °C
Number of allowed reflow cycles	3	3
Time within 5 °C of actual peak temperature (tp)	10 s to 30 s	20 s to 40 s
Ramp-down rate	6 °C/s maximum	6 °C/s maximum
Time 25 °C to peak temperature	6 minutes maximum	8 minutes maximum



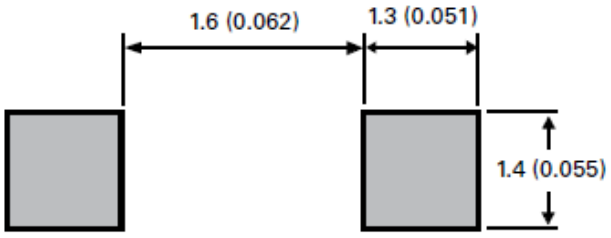
5. Package Information

5-1. Dimension



SOD-123FL (mm)		
Dim	**Min**	**Max**
Body Length	2.60	3.00
Lead Span Nominal	3.50	3.90
Lead Width	0.70	1.20
Body Width	1.65	1.95
Height	0.8	1.45
Lead Height	0.195	0.205
Lead Length	0.35	0.60

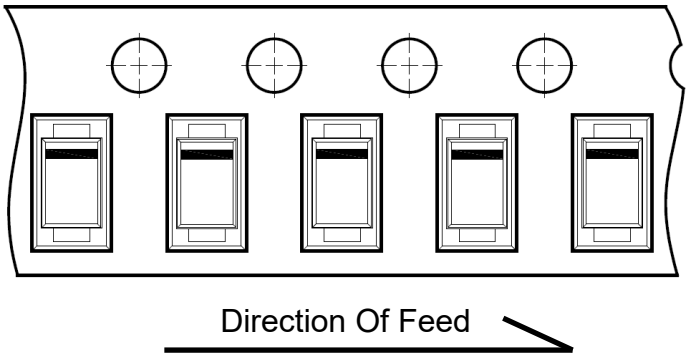
5-2. PCB Pad Layout Recommendation



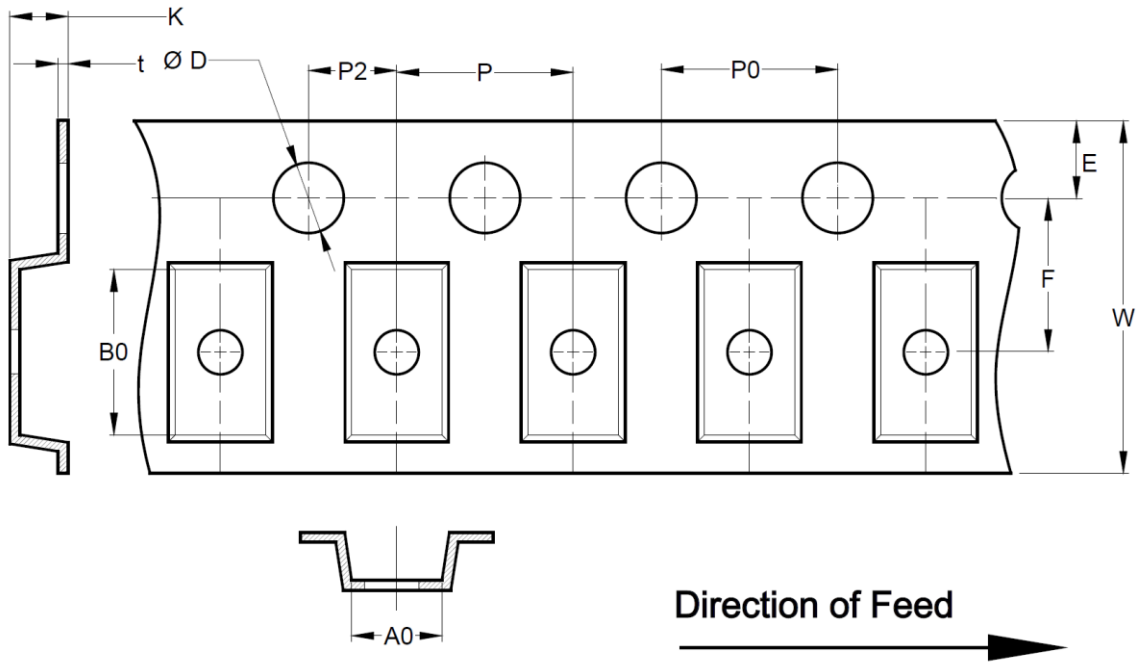
Unit: mm(inch)

6. Packing

6-1. Taping and Reel Specification

Taping Width	Tape Orientation
8mm	

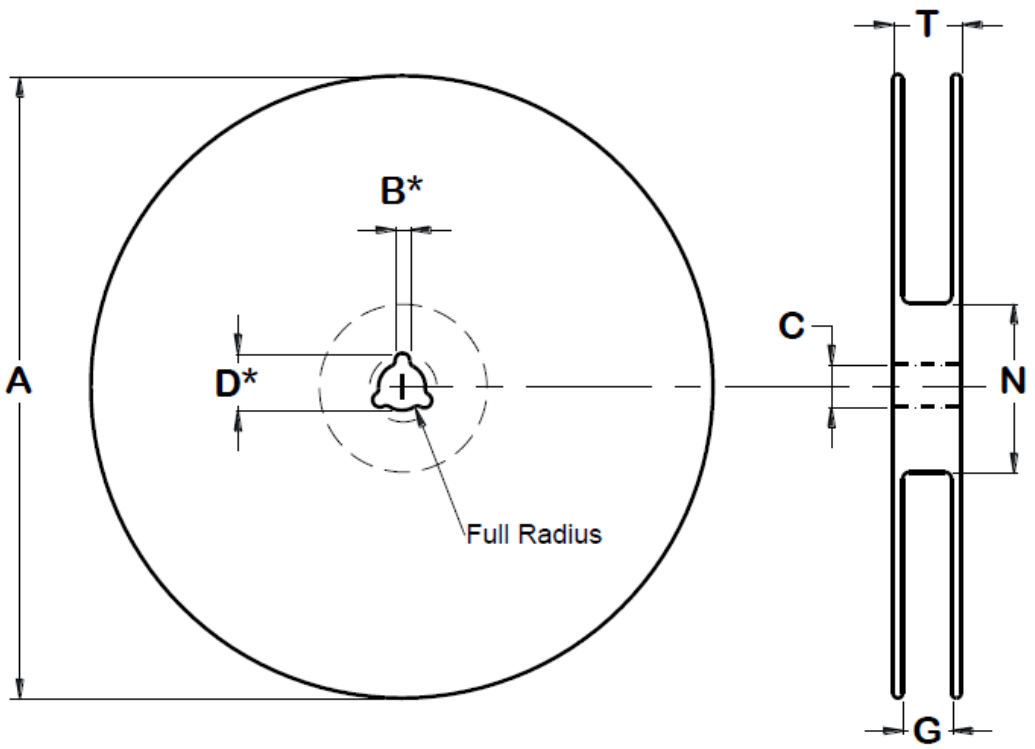
6-2. Embossed Carrier Tape Specification



Unit:mm

Dimension	W	A0	B0	D	E	F	K	P	P0	P2	t	W
Value	8 mm	2.05 ±0.10	3.75 ±0.20	1.50 +0.10	1.75 ±0.10	3.5 ±0.05	1.32 ±0.10	4.0 ±0.10	4.0 ±0.10	2.0 ±0.05	0.23 ±0.02	8 +0.3/ -0.1
A0 / B0 / K0	Determined by Component Size. The Clearance Between The Component And The Cavity Must Comply to The Rotational and Lateral Movement Requirement Provided in Figures in The "Maximum Component Movement in Tape Pocket" Section.											

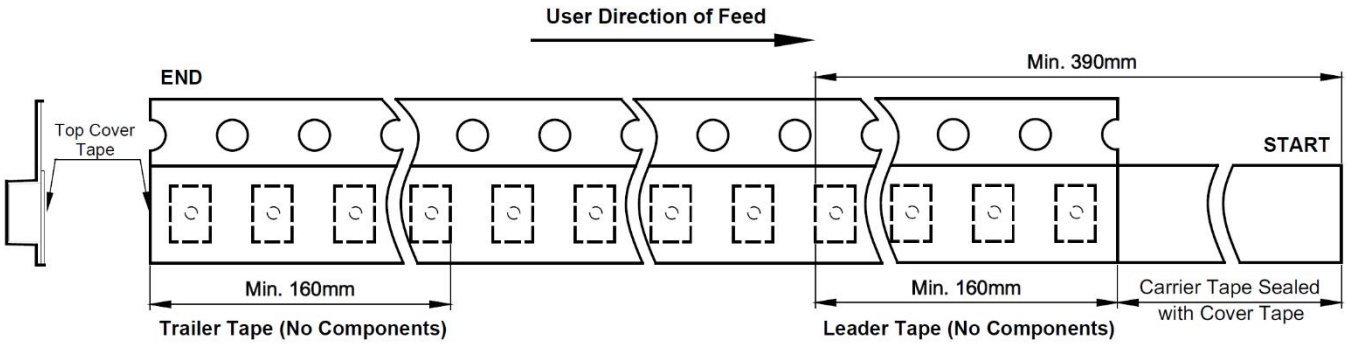
6-3. Surface Mount Reel Specification



Unit:mm

Dimension	Tape Width	Reel Size	A	B	C	D	N	G	T
Value	8 mm	7"	178 ±2	2.0 +0.5-0	13 +0.5-0.2	20.5 ±0.2	55 ±5	8.4 +1.5/ -0.0	14.4

6-4. Tape Leader and Trailer Specification



7. Ordering Information

Part Number	Marking Code	Quantity	Component Package	Packaging Option
SS24FL	S24L	3,000 PCS	SOD-123FL	7" Reel
SS26FL	S26L			
SS210FL	S210			

8. Version

8-1. History

Version	Date	File No.	Recording	Basis
A	06-May-2018	F218331	New Create	Market
B	13-Jun-2019		Update Company Info.	System
2.0	13-Apr-2021		Update Version	System
2.1	08-Nov-2021		Update Version	System

FUTURE WAFER
Futurewafer Tech Co., Ltd. 台灣未來芯科技股份有限公司
TEL: +886-3-3350161 / FAX: +886-3-3350172
cherry@futurewafer.com.tw
No. 286-11F, Sec. 3, Sanmin Rd., Taoyuan Dist., Taoyuan City 330, Taiwan