

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.

2. Feature List

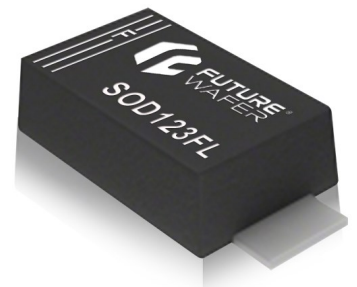
- High Surge Current Capability
- Low Power Loss, High Efficiency
- Highly Stable Oxide Passivated Junction
- Low Forward Voltage Drop

3. Mechanical Characteristics

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



SMAJ



SOD-123FL



4. Absolute Maximum Ratings

Maximum Ratings@25°C Unless Otherwise Specified

Parameter	Symbol	Value			Units
		SS14A/FL	SS16A/FL	SS110A/FL	
Peak Reverse Current	V_{RRM}	40	60	100	V
Reverse Current	V_R				
Average Forward Current	I_O	1			A
Non-Repetitive Peak Forward Current (tp≤8.3ms)	I_{FSM}	30			
Operating Temperature	T_J	-55 ~ +150			°C
Storage Temperature	T_{STG}				

5. Electrical Characteristics (TA=25°C)

Maximum Ratings@25°C Unless Otherwise Specified

Parameter	Symbol	Condition	Value			Units
			SS14A	SS16A	SS110A	
Reverse Leakage Current	I_R	$T_A = 25^\circ\text{C}$	0.5			mA
		$T_A = 125^\circ\text{C}$	10			
Forward Voltage	V_F	$I_F = 3.0\text{A}$	0.50	0.70	0.85	V

6. Rating and Characteristic Curve

Fig. 1 ,Forward Current Derating Curve

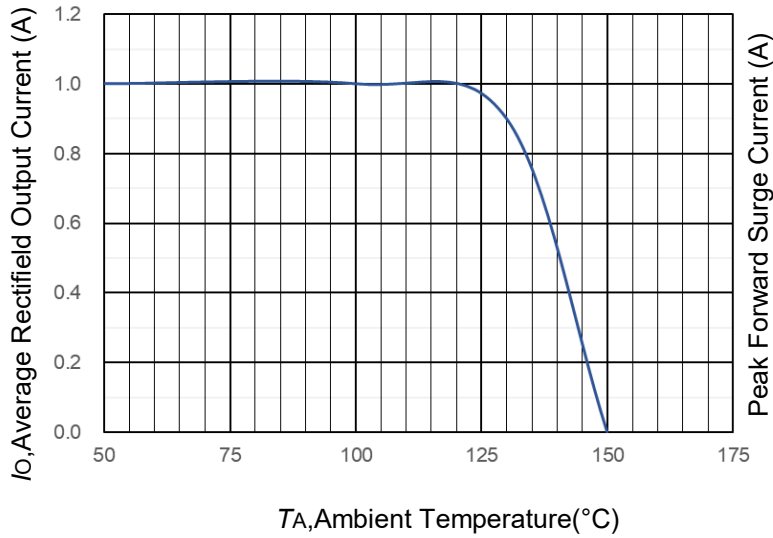


Fig. 2 Typical Forward Characteristics

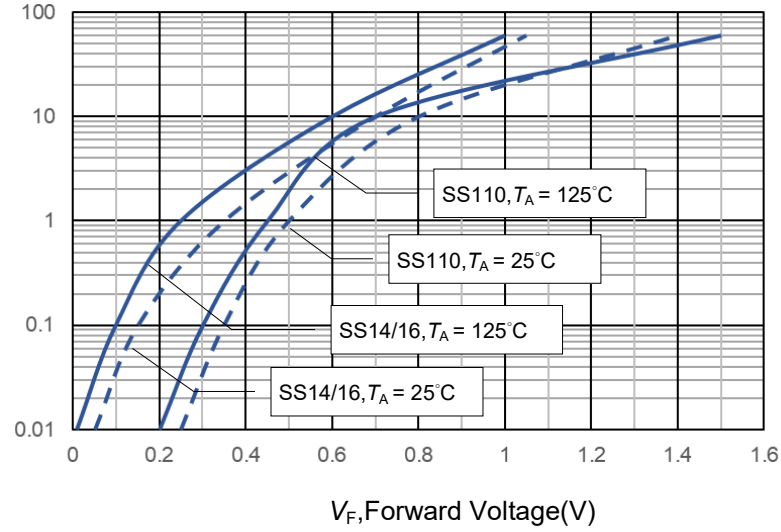


Fig. 3

Maximum Non-Repetitive Forward Surge Current

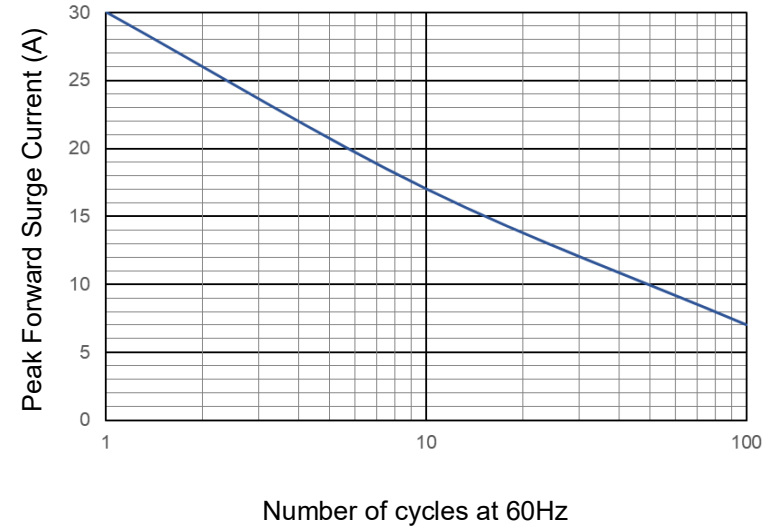
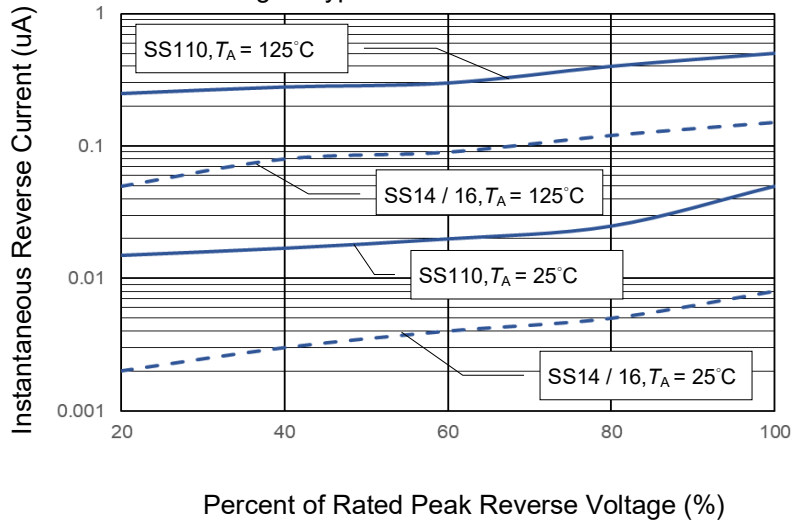
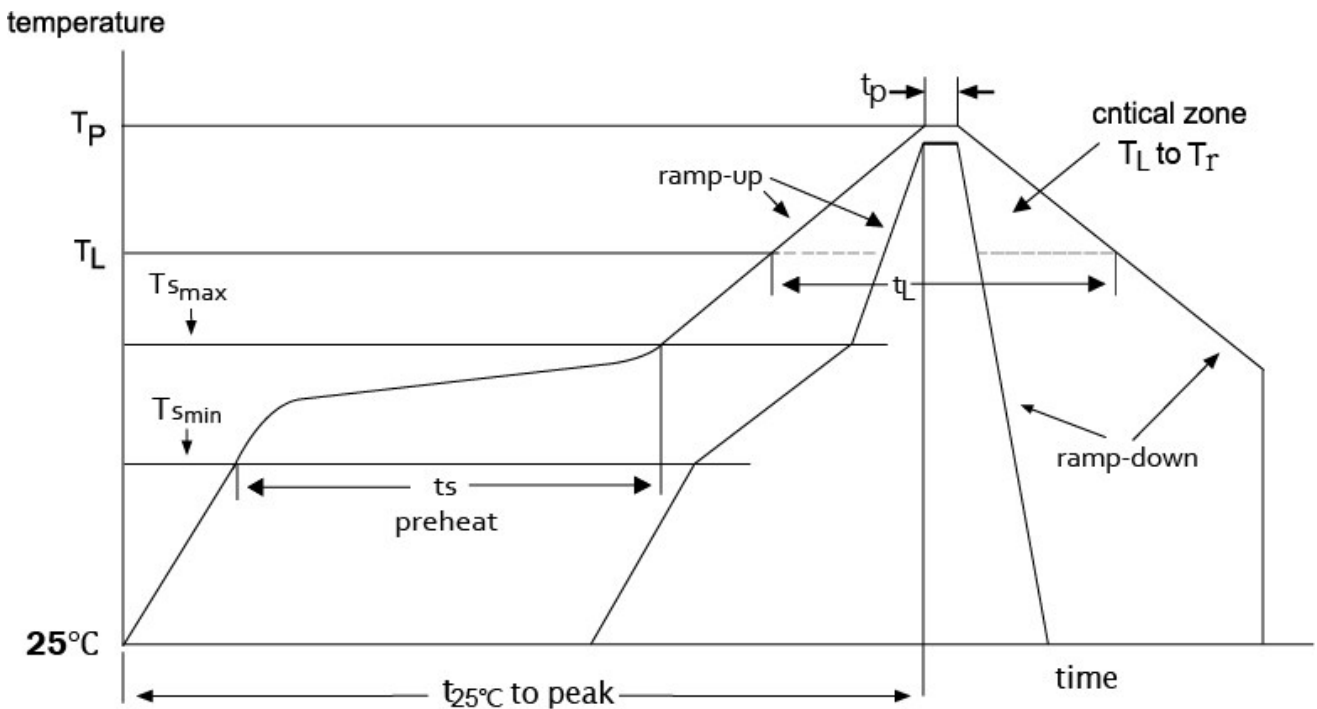


Fig. 4 Typical Reverse Characteristics

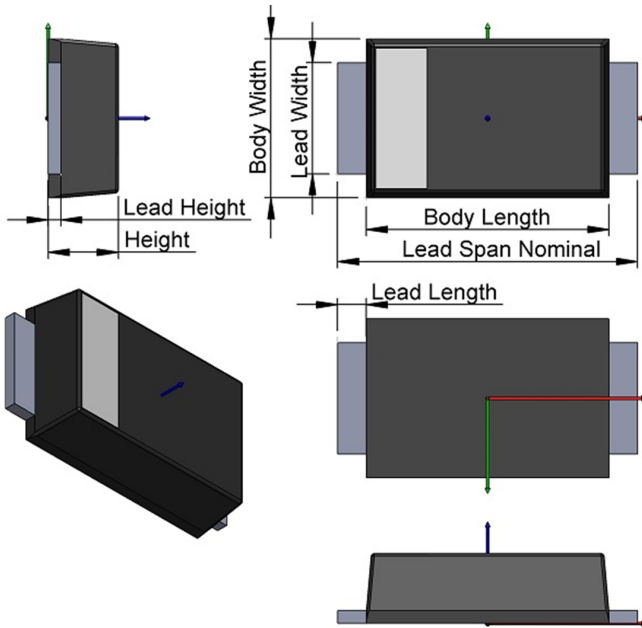


7. Soldering Parameters

Profile Feature	SnPb eutectic assembly	Pb-free assembly
Average ramp-up rate (T _{smax} to T _p)	3 °C/s maximum	3 °C/s maximum
Preheat		
Temperature minimum (T _{smin})	100 °C	150 °C
Temperature maximum (T _{smax})	150 °C	200 °C
Time (t _{smin} to t _{smax})	60 s to 120 s	60 s to 180 s
Time maintained above		
Temperature (T _L)	183 °C	217 °C
Time (t _L)	60 s to 150 s	60 s to 150 s
Peak/classification temperature (T)	235 °C	260 °C
Number of allowed reflow cycles	3	3
Time within 5 °C of actual peak temperature (t _p)	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



8. Dimensions and Packing-SOD123FL

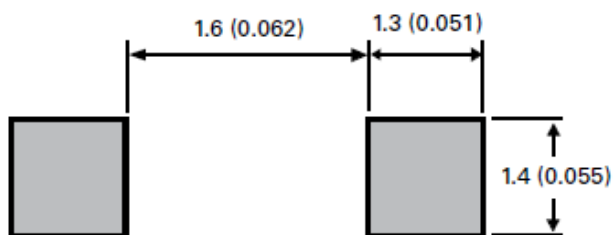


SOD-123FL (mm)

Dim	Min	Max
Body Length	2.50	2.90
Lead Span Nominal	3.40	3.90
Lead Width	0.70	1.20
Body Width	1.50	2.00
Height	0.90	1.40
Lead Height	0.10	0.20
Lead Length	0.35	0.90

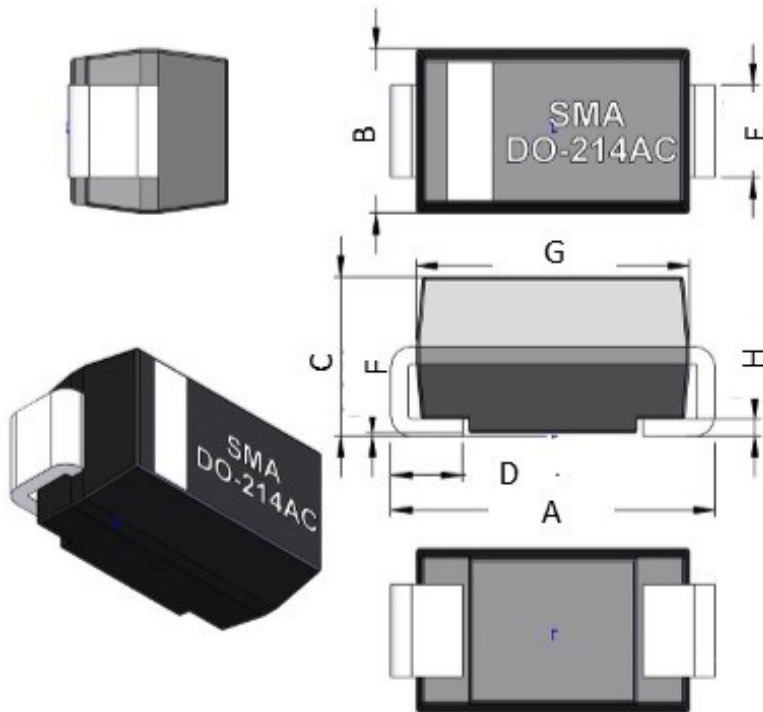
All Dimensions in mm

9. Suggest Pad Layout-SOD123FL



All Dimensions in mm

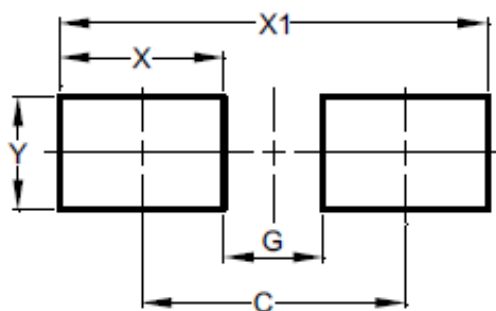
8. Dimensions and Packing-SMAJ



SMAJ

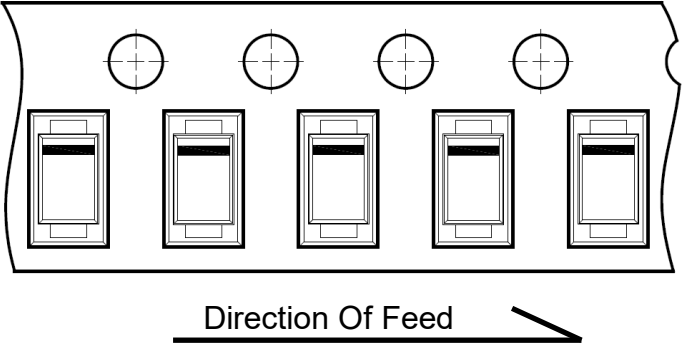
Dim	Min	Max
A	4.75	5.25
B	2.55	2.85
C	2.00	2.50
D	0.85	1.55
E	1.35	1.65
F	-	0.40
G	4.25	4.55
H	0.15	0.30

9. Suggest Pad Layout-SMAJ

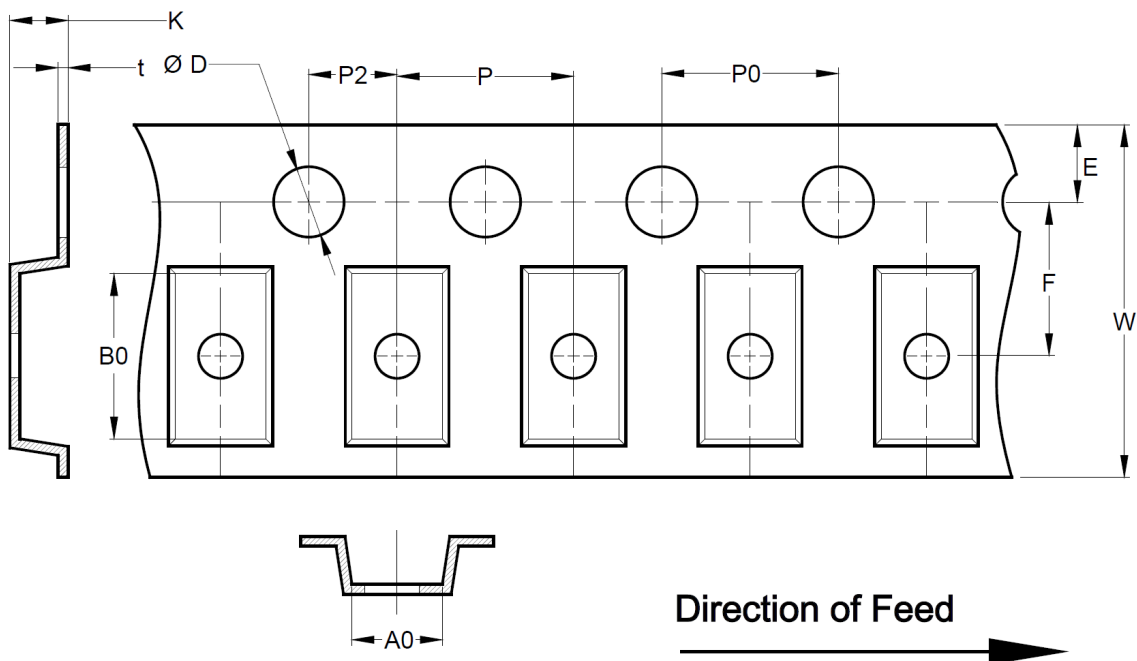


Dimensions	Value (in mm)
C	4.00
G	1.50
X	2.50
X1	6.50
Y	1.70

10. Taping and Reel Specification-SOD123FL

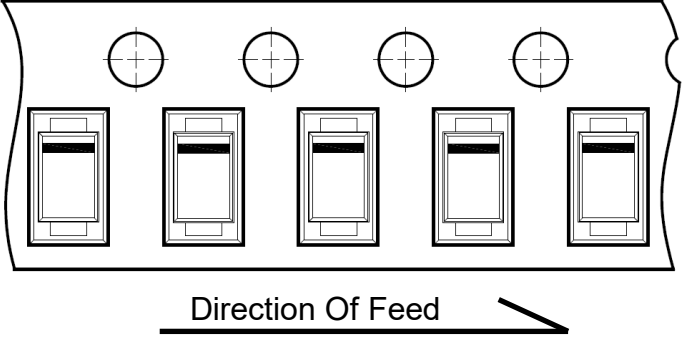
Taping Width	Tape Orientation
8 mm	

11. Embossed Carrier Tape Specifications-SOD123FL

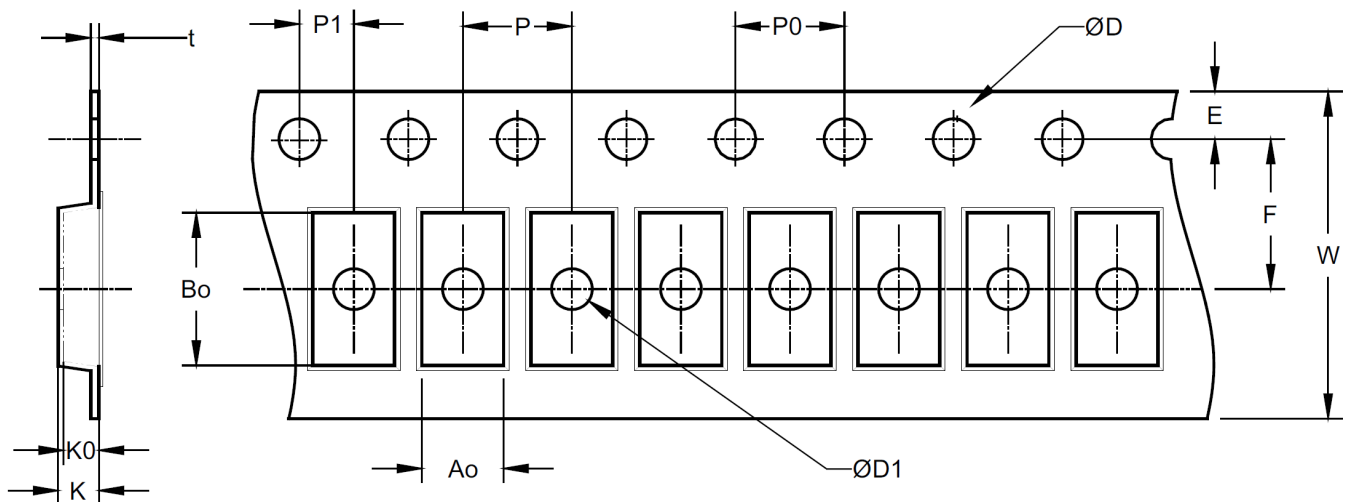


Dimension	W	D	D1	E	F	K	P	P0	P2	t
Value	8 mm	1.5 +0.1/-0.0	1.4mm	1.75 ±0.10	7.5 ±0.10	3.7 Max.	8.0 ±0.10	4.0 ±0.10	2.0 ±0.10	0.4 Max.
A0 / B0 / K0	Determined by Component Size. The Clearance Between The Component And The Cavity Must Comply to The Rotational and Lateral Movement Requirement Provided in Figures in The "Maximum Component Movement in Tape Pocket" Section.									

10. Taping and Reel Specification-SMAJ

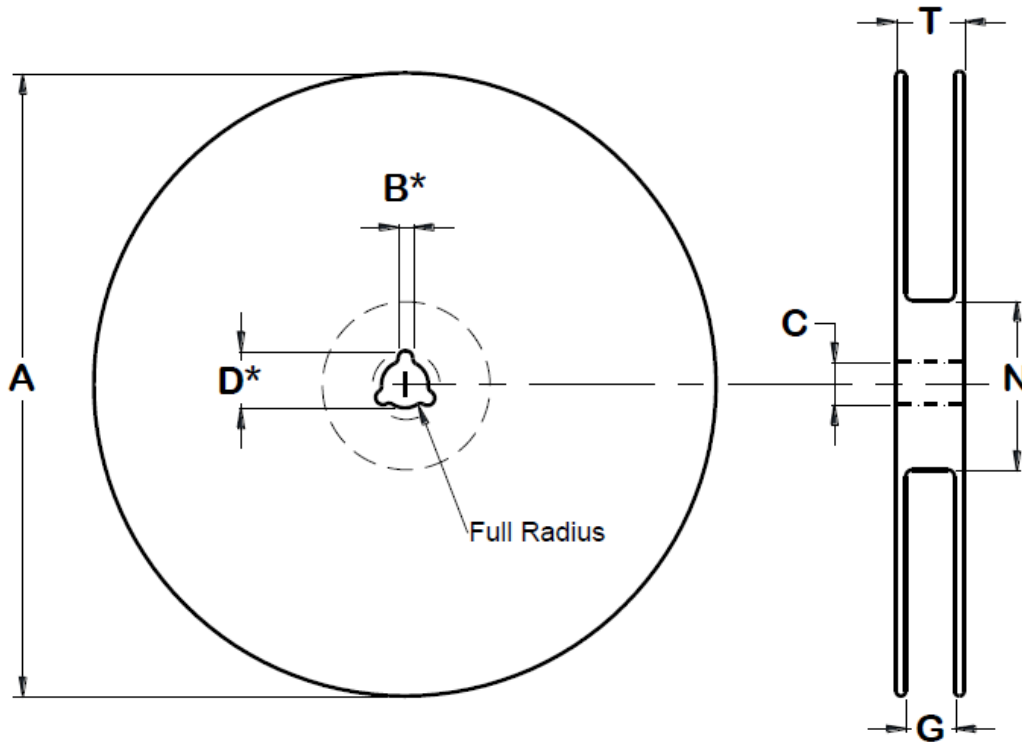
Taping Width	Tape Orientation
12 mm	

11. Embossed Carrier Tape Specifications-SMAJ



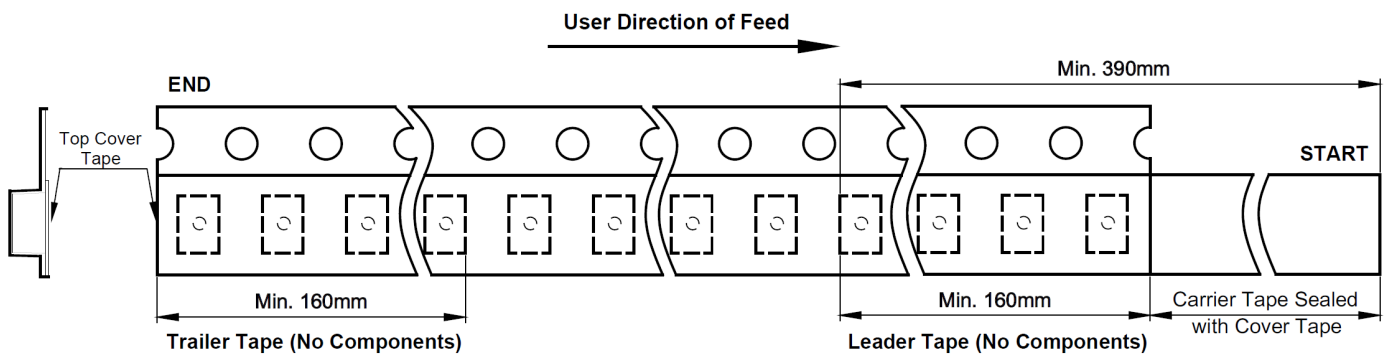
Dimension	W	Ao	Bo	D	D1	E	F	K	P	P0	P1	t	W
Value	12 mm	3.0 ±0.10	5.6 ±0.10	1.5 ±0.10	1.5 Min	1.75 ±0.10	5.5 ±0.05	1.2 ±0.10	4.0 ±0.10	4.0 ±0.05	2.0 ±0.05	0.25 ±0.05	12 ±0.2
A0 / B0 / K0	Determined by Component Size. The Clearance Between the Component And The Cavity Must Comply to The Rotational And Lateral Movement Requirement Provided in Figures in The "Maximum Component Movement in Tape Pocket" Section.												

12. Surface Mount Reel Specification-SOD123FL

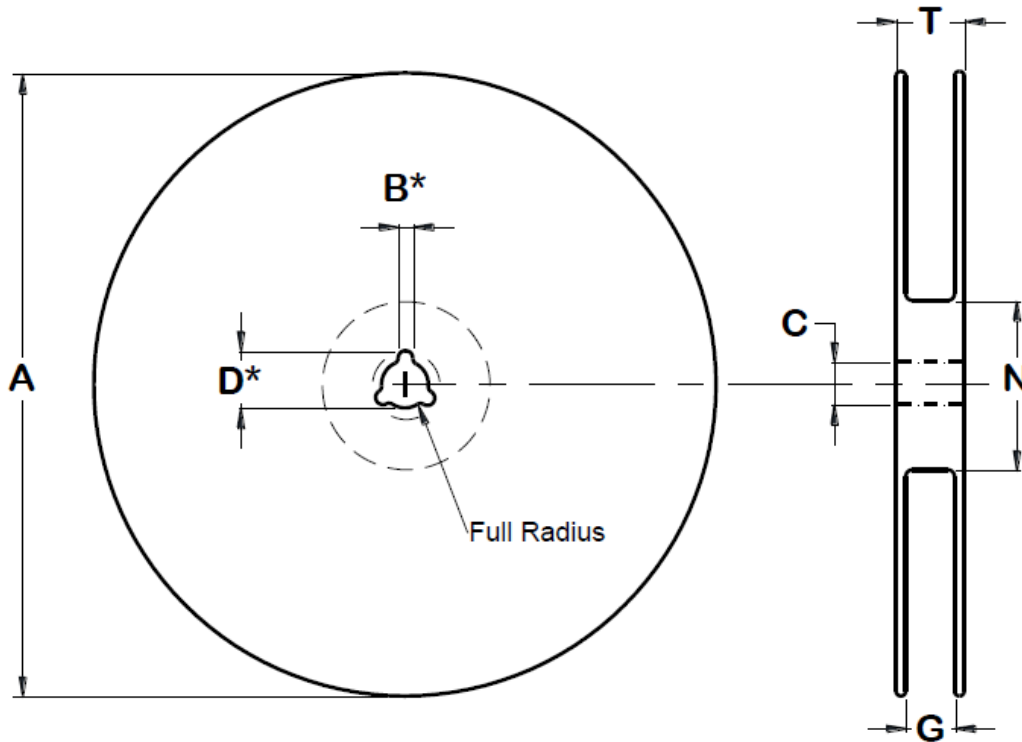


Dimension	Tape Width	Reel Size	A	B	C	D	N	G	T
Value	8 mm	7"	178 ±2	2.0 +0.5-0	13 +0.5-0.2	20.5 ±0.2	55 ±5	8.4 +1.5/ -0.0	14.4

13. Tape Leader and Trailer Specification-SOD123FL

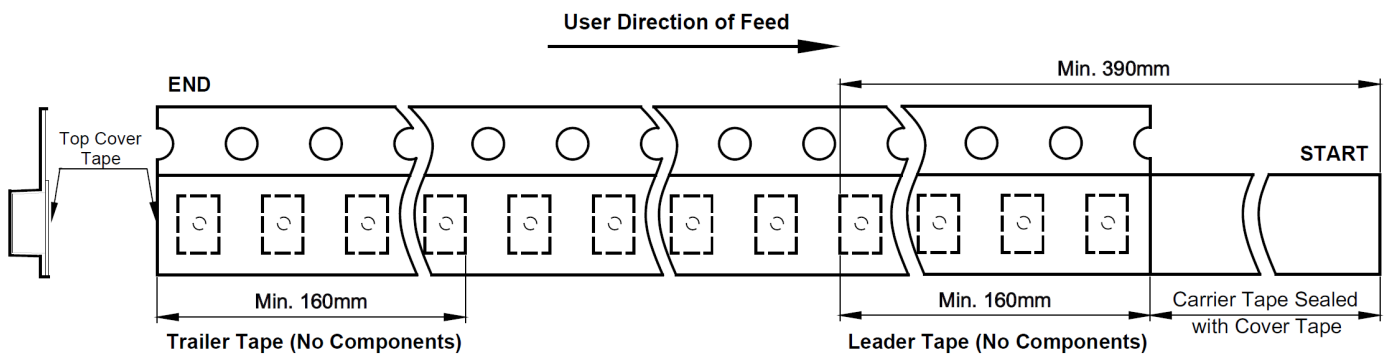


12. Surface Mount Reel Specification-SMAJ



Dimension	Tape Width	Reel Size	A	B	C	D	N	G	T
Value	12 mm	13"	330 ±2	2.0 +0.5-0	13 +0.5-0.2	20.5 ±0.2	100 ±2	12.4 +2.0 -0.0	18.4

13. Tape Leader and Trailer Specification-SMAJ



14. Ordering Information

Part No.	Marking	Quantity	Package Type	Taping
SS14FL	SS14	3,000pcs	SOD-123FL	7" Reel
SS16FL	SS16			
SS110FL	SS110			
SS14A	SS14	5,000pcs	SMAJ	13" Reel
SS16A	SS16			
SS110A	SS110			

15. History

Version	Date	File No.	Recording	Basis
A	13-Mar-2018	F21804S	New Create	Market
B	25-Mar-2019		Update Company Information	System
2.0	07-Jul-2021		Update Version	System