

## SPECIFICATION

Part No.	:	<b>DXP.01.A</b>
Product Name	:	SMD L1/L2 SAW Diplexer For GPS/GALILEO L1, GLONASS L2 & BeiDou B2
Features	:	L2 1222.7625 / L1 1575.42MHz SAW Diplexer SMT Direct Mount Compact Size 5*5*1.7mm Low Insertion Loss In band High Isolation Port to Port RoHS Compliant



## 1. Introduction

The Taoglas DXP.01.A is an advanced compact SAW diplexer for use in any navigation system application using the GPS/GALILEO L1, GLONASS L2 and BeiDou B2 bands.

The diplexer is designed to function as both a bandpass filter for each band and to either split one path into two or to combine both bands back into one RF feed. For example, a customer who wanted to use passive dual band antenna elements would need to implement a diplexer in some cases to split both bands out into separate paths. It is also designed to isolate and reject any unwanted GPS/GALILEO signals from getting to the application port.

It is housed in a compact 5\*5\*1.7mm over-molded laminate package and is easy to integrate using SMT process mounting directly onto the target PCB.

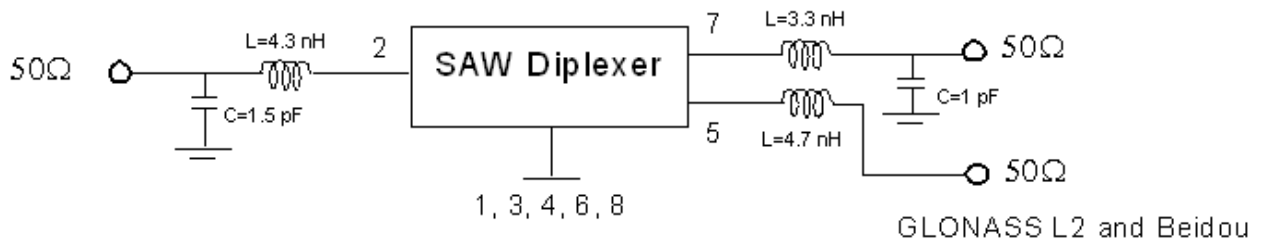
Contact your regional Taoglas sales office for more information or support.

## 2. Specification

L1 Band GPS/GALILEO			
	Min.	Typ.	Max.
<b>Center Frequency</b> (MHz)	-	1575.42	-
<b>Insertion Loss</b> (dB)	-	3.3	3.8
<b>Amplitude Ripple</b> (dB)	-	0.1	1.0
<b>Return Loss</b> (dB)	-	-12	-8.5
<b>Attenuation</b> (Reference level from 0dB)			
824 ~ 960 (MHz)	25	47	-
1500 ~ 1525.42 (MHz)	8	19	-
1625.42 ~ 1650 (MHz)	8	16	-
1710 ~ 2170 (MHz)	25	34	-
L2 Band GLONASS and B2 Band BeiDou			
	Min.	Typ.	Max.
<b>Center frequency</b> (MHz)	-	1222.7625	-
<b>Insertion Loss</b> (dB)	-	4.1	4.8
<b>Amplitude Ripple</b> (dB)	-	0.9	1.8
<b>Return Loss</b> (dB)	-	-12	8.5
<b>Attenuation</b> (Reference level from 0dB)			
464 ~ 600 (MHz)	25	32	-
1110 ~ 1130 (MHz)	16	23	-
1330 ~ 1450 (MHz)	28	37	-
1500 ~ 1820 (MHz)	25	30	-
L1 Band GPS/GALILEO, L2 Band GLONASS and B2 Band BeiDou			
	Min.	Typ.	Max.
Isolation (1196.9~1248.625MHz)	22	36	-
Isolation (1574.22~1576.62 dB)	22	33	-
Environmental			
Operating Temperature	-40°C to 85°C		
Storage Temperature	-40°C to 85°C		
Input power Level	10 dBm		
DC Voltage	3 V		

### 3. Measurement circuit

HP Network analyzer

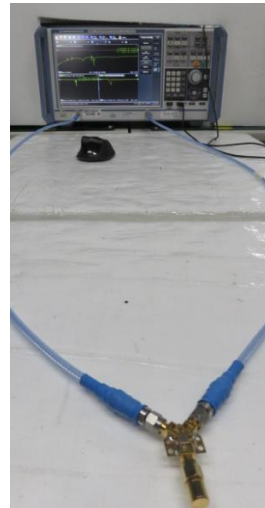


#### 3.1 Test setup

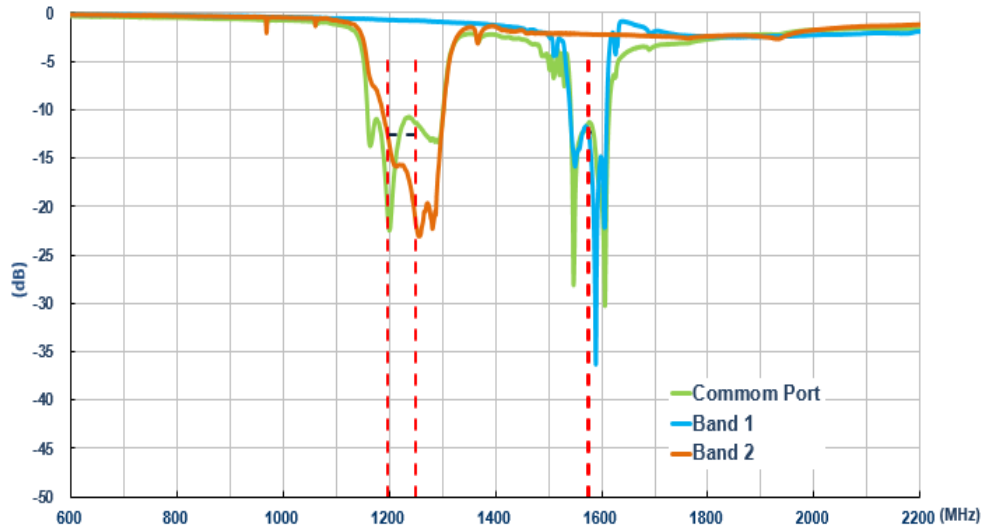
**Band 1 (L1)**      **Band 2(L2/L5)**



**Common Port**

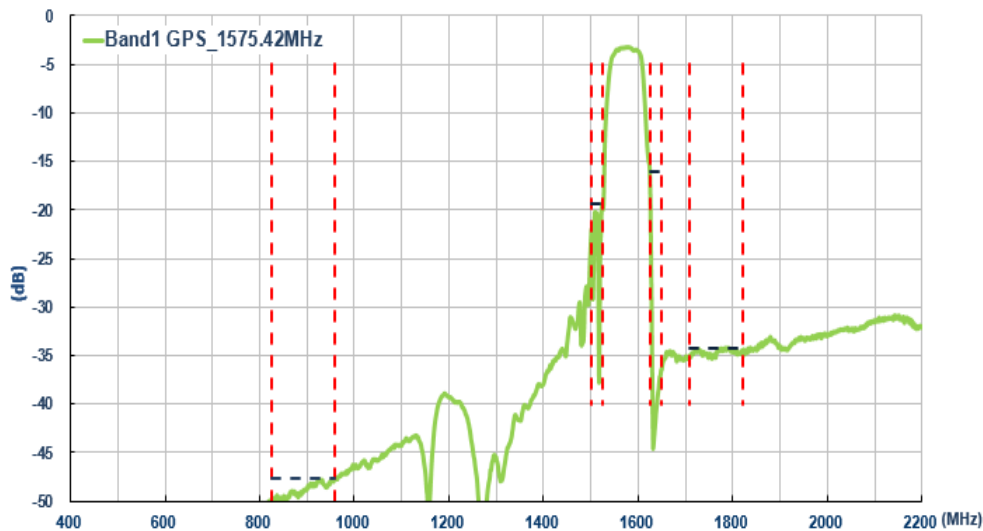


### 3.2 S-Parameter



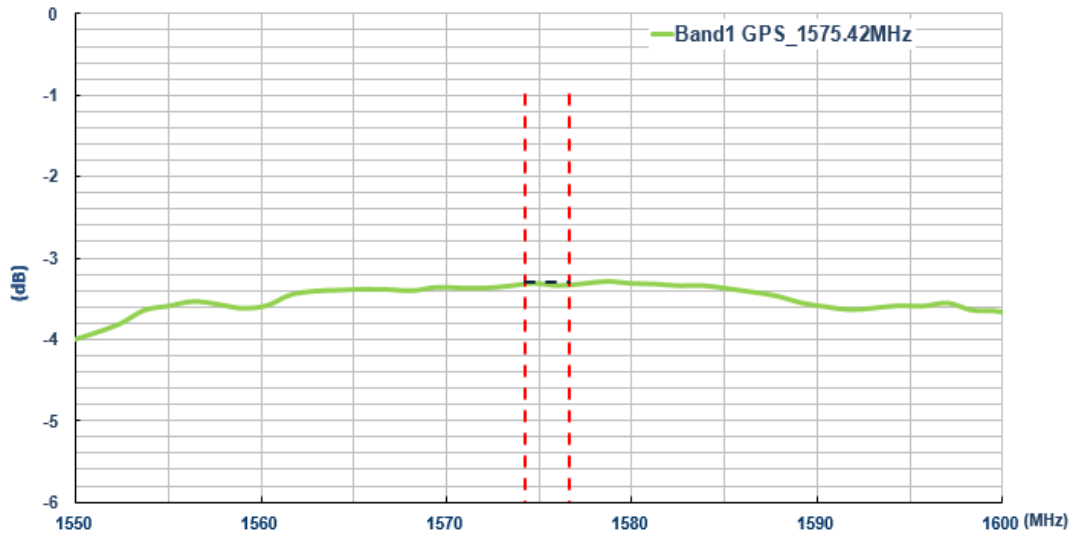
Return Loss (dB)	
<b>Band 1</b> 1574.22~1576.62MHz	<b>Band 2</b> 1196.9~1248.625MHz
<-12.3	<12.6

### 3.3. Common Port to Band 1 Port \_ 1575.42MHz Attenuation



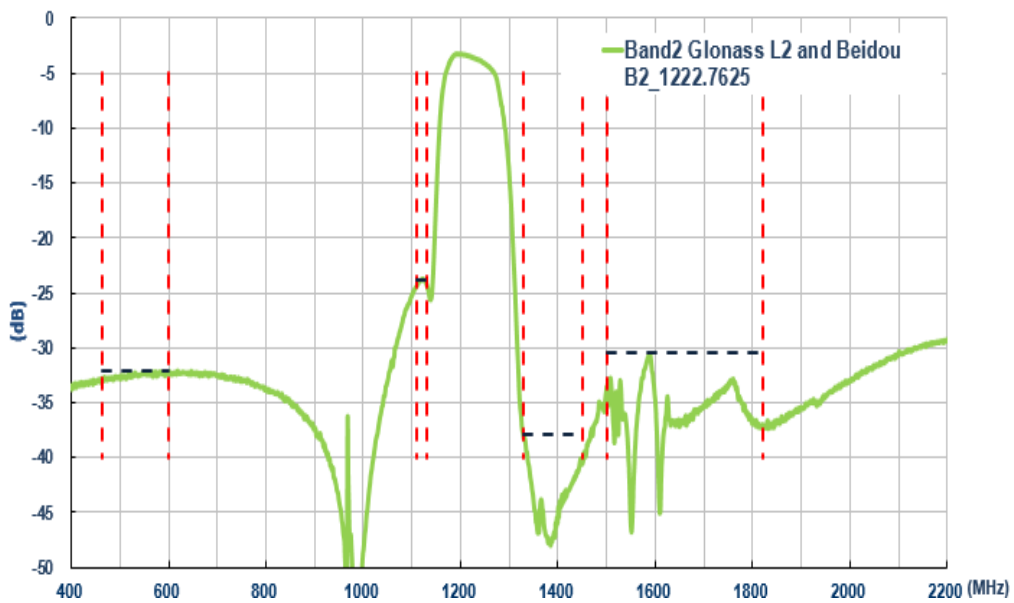
Attenuation (dB)			
<b>824~960MHz</b>	<b>1500~1525.42MHz</b>	<b>1625.42~1650MHz</b>	<b>1710~1820MHz</b>
<-47.6	<-19.4	<-16.1	<-34.2

### 3.4. Common Port to Band 1 Port \_ 1575.42MHz Insertion Loss



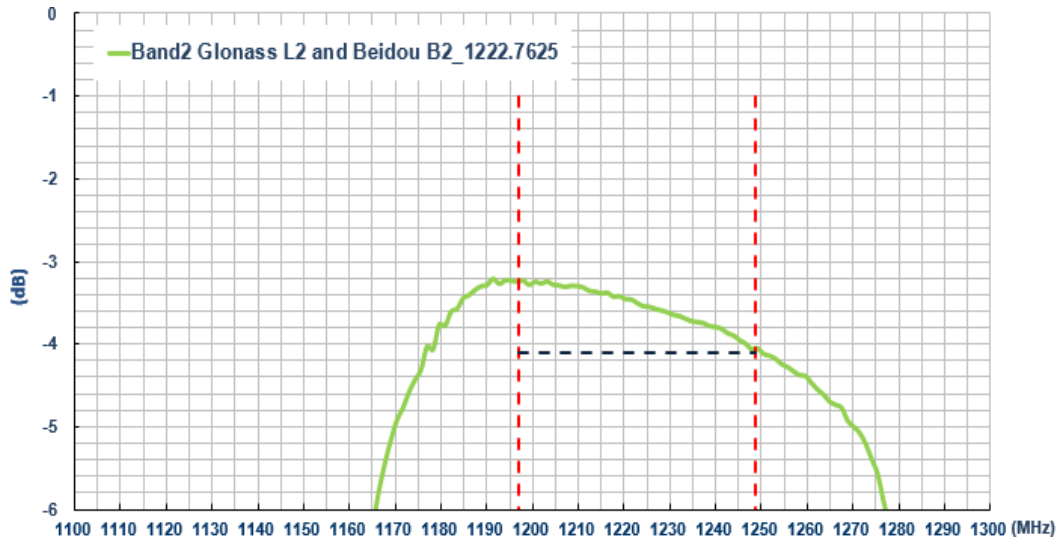
Insertion Loss(dB)
1574.22~1576.62MHz
> -3.3

### 3.5. Common Port to Band 1 Port \_1222.7625MHz Attenuation



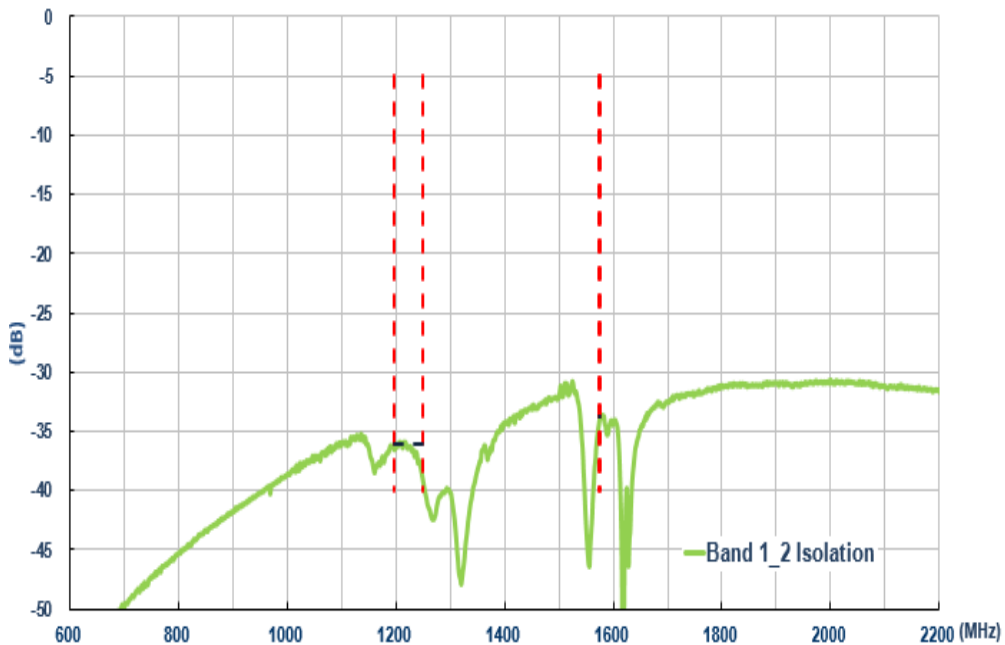
Attenuation (dB)			
<b>464~600MHz</b>	<b>1110~1130MHz</b>	<b>1330~1450MHz</b>	<b>1500~1820MHz</b>
<-32.1	<-23.8	<-37.9	<-30.5

### 3.6. Common Port to Band 1 Port \_1222.7625MHz Insertion Loss



Insertion Loss(dB)
1196.9~1248.625MHz
> -4.1

### 3.7. Band1 Port – Band2 Port Isolation

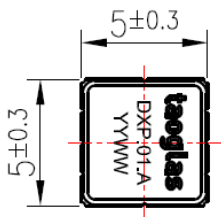


Isolation (dB)	
<b>Band 1</b> 1196.5~1248.625MHz	<b>Band 2</b> 1574.22~1576.62MHz
<-36.1	<-33.8

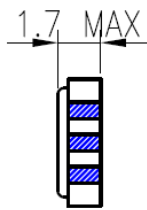
## 4. Drawing (Unit: mm)

### 4.1. Diplexer Drawing

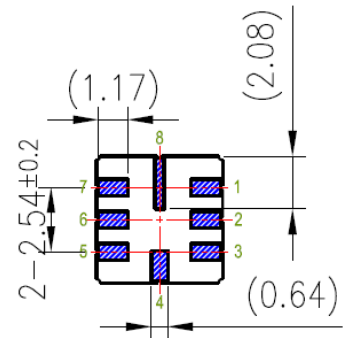
Front View



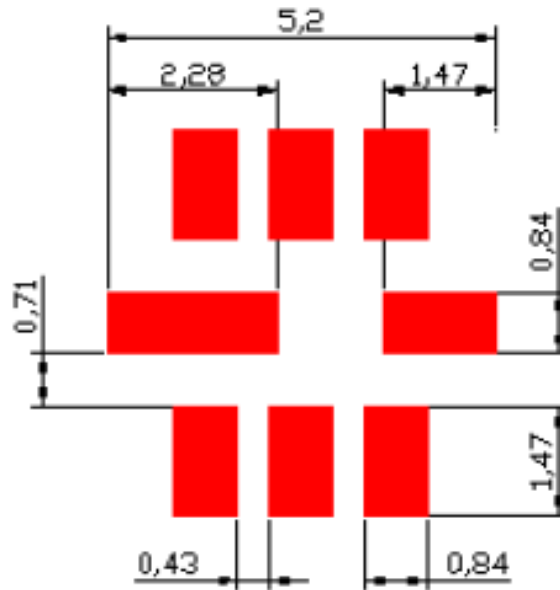
Side View



Back View

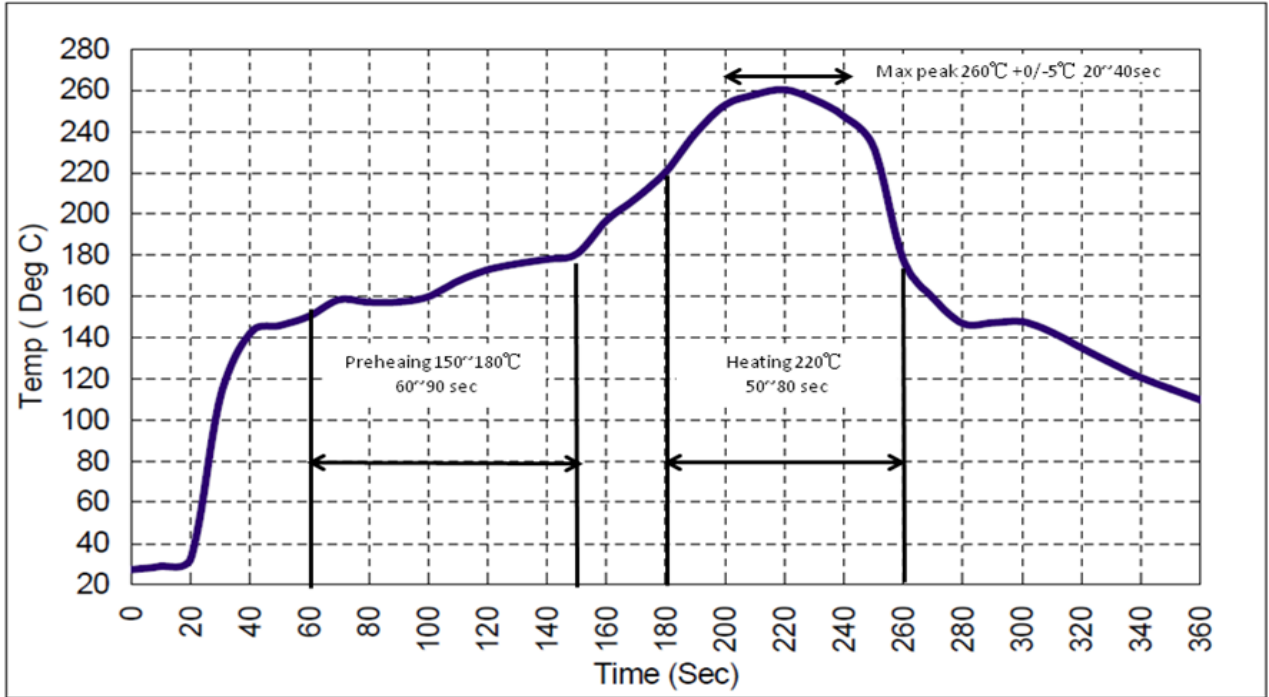


### 4.2. Foot Print





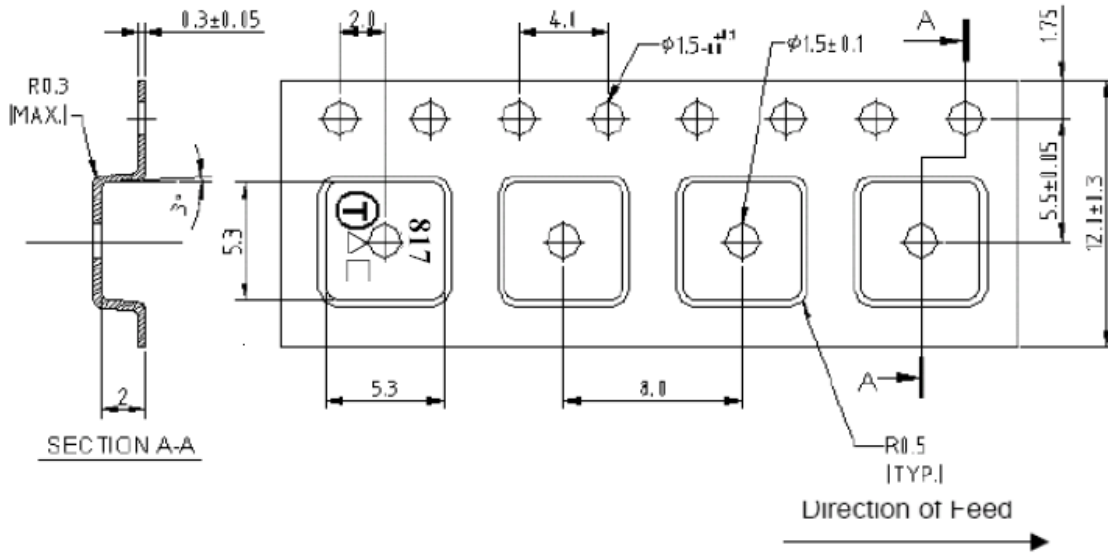
## 5. Recommended Reflow Profile



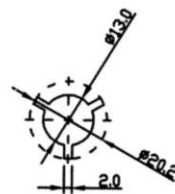
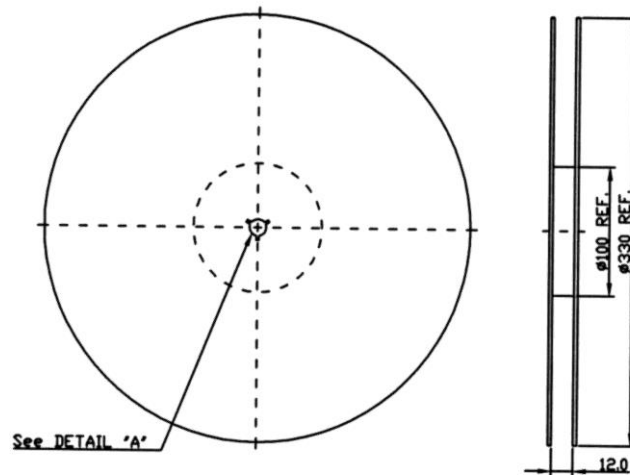
1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds minimum.
3. Heating shall be fixed at 220°C for 50~80 seconds and 260°C as the peak for 20-40 seconds.
4. Time: 2 times.

## 6. Packaging

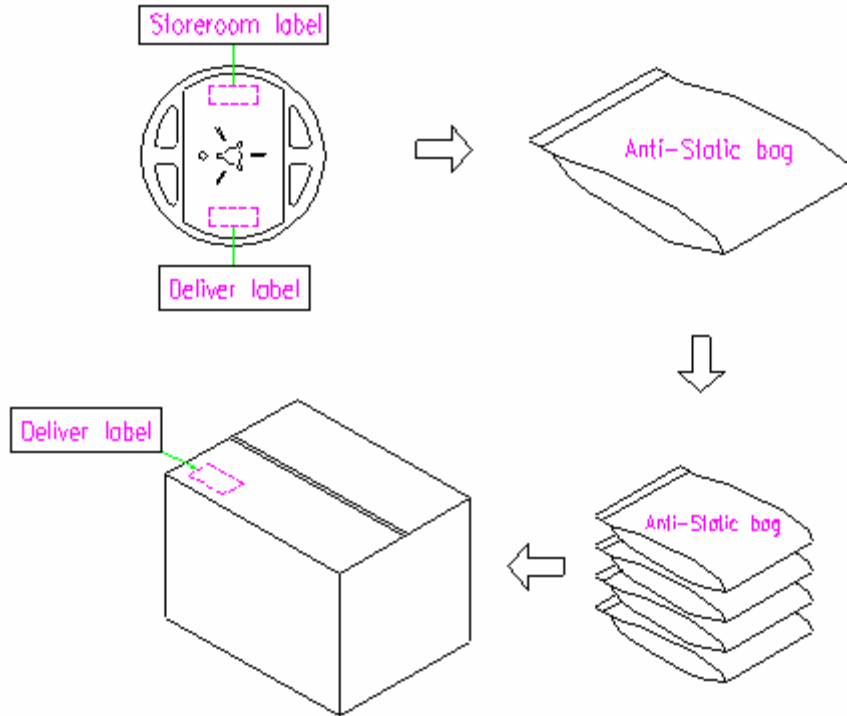
### Tape Dimension



### Reel Dimension



## Packaging Detail



**1k pieces per reel, 4 reels per carton.**

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