

SPECIFICATION

| | |
|-------------|--|
| Part No. | : DBP.1575.W.A.30 |
| Description | : Dielectric Band Pass Filter for 1575MHz Bandwidth 10MHz |
| Features | : Center Frequency 1575.42MHz Support GPS L1 Low Insertion Loss Low Pass-Band Ripple High Ultimate Attenuation Dims: 5.8*5.1*2.8 mm |



1. Introduction

Taoglas are utilizing their deep understanding of the RF component design and manufacturing process to provide high-quality, small-form-factor, cost-effective and easy to implement RF filters. The Taoglas Filters Division will feature a range of off-the-shelf filters for a variety of applications, including filters for emerging license free bands used for IoT and for GPS L1/L2 and L1/L5 applications. We can also work with customers to develop bespoke filter solutions.

Taoglas dielectric filters are designed to be used in wireless transmitters or receivers. These filters are designed to protect the LNA from noisy out of band emissions originated from nearby transmitters that can overdrive, or even damage your LNA. Overdriving the LNA results in non-linear distortion which negatively impacts the sensitivity of your receiver.

By selecting the proper Taoglas filter you can eliminate unnecessary out of band noise while maintaining minimal in-band insertion loss. The filter is manufactured as a single ceramic block [monoblock] which provides high reliability, low insertion loss and high attenuation in a simple compact SMD package.

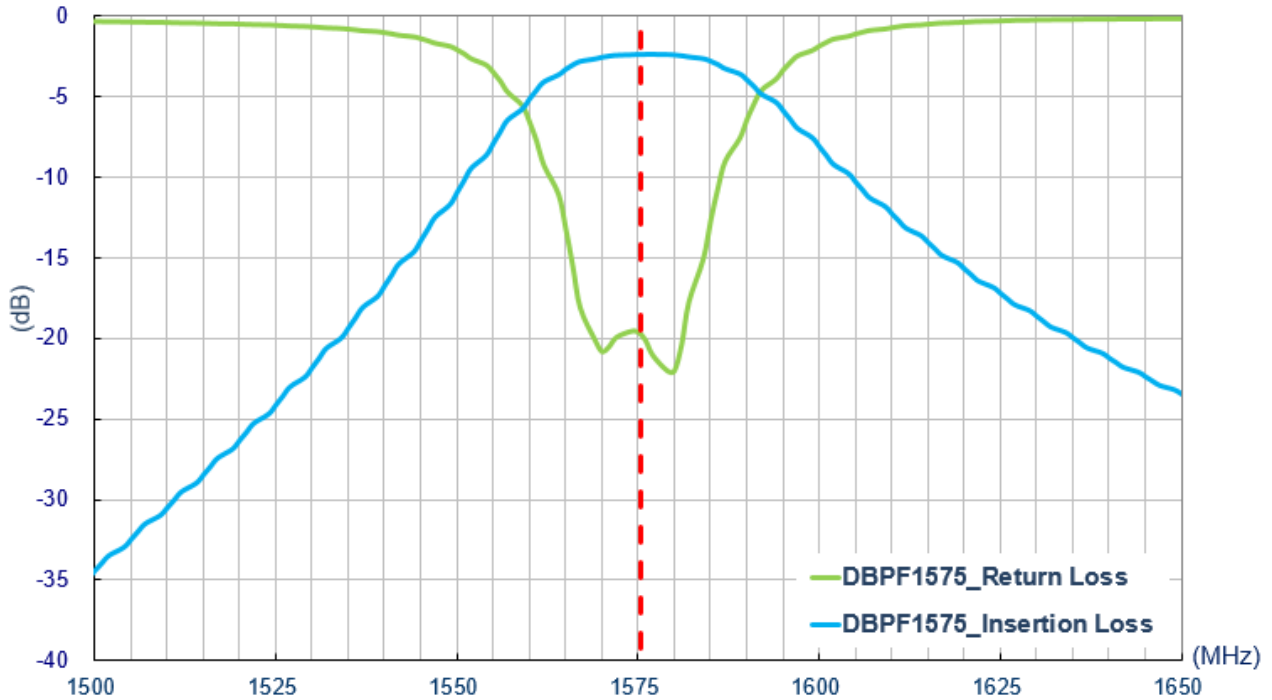
The DBP.1575.W.A.30 is a standard Taoglas product but can be customized for specific customer needs. For more information please contact your regional sales office.

2. Specification

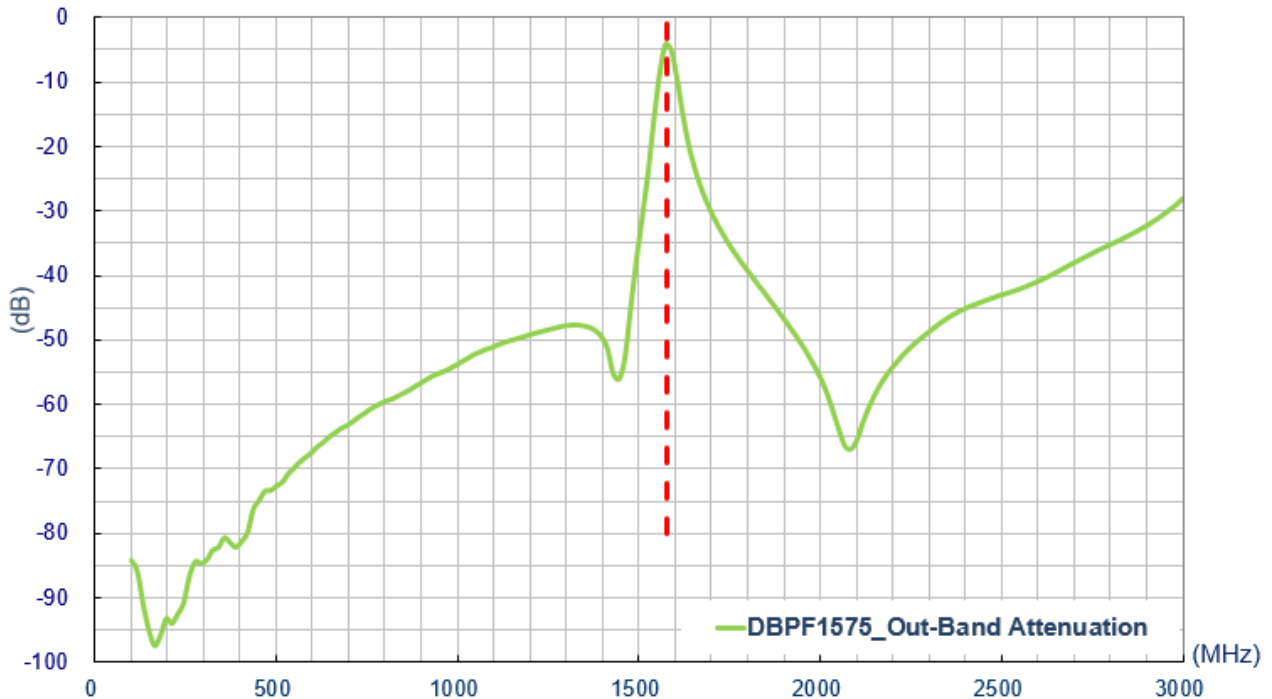
| ELECTRICAL | |
|-----------------------|---|
| Centre Frequency (Fo) | 1575.42MHz |
| 3dB Bandwidth | 10MHz |
| Insertion Loss | 3.5 dB max |
| Passband Ripple | 0.5 dB max |
| Return Loss | < -10 dB |
| Attenuation | > 50dB @ 100MHz ~ 1100MHz > 45dB @ 1100MHz ~ 1400MHz > 30dB @ 1400MHz ~ 1500MHz > 35dB @ 1800MHz ~ 1900MHz > 45dB @ 1900MHz ~ 2300MHz > 25dB @ 2300MHz ~ 3000MHz |
| In/Out Impedance | 50 Ω |
| Power Dissipation | 1.0 W min. |
| MECHANICAL | |
| Dimension | 5.8*5.1*2.8 (L*W*H) |
| Material | Ceramic |
| Finish | Ag plated |
| ENVIRONMENTAL | |
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -40°C to 85°C |

3. Characteristics Curve

3.1. Pass Band Return & Insertion Loss



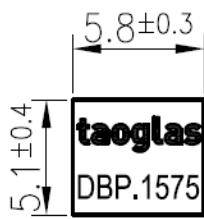
3.2. Out-Of-Band Attenuation



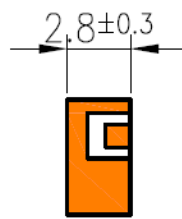
4. Mechanical Drawings (Unit: mm)

4.1. Antenna Drawing

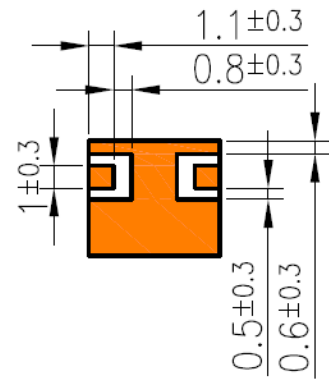
Front View



Side View

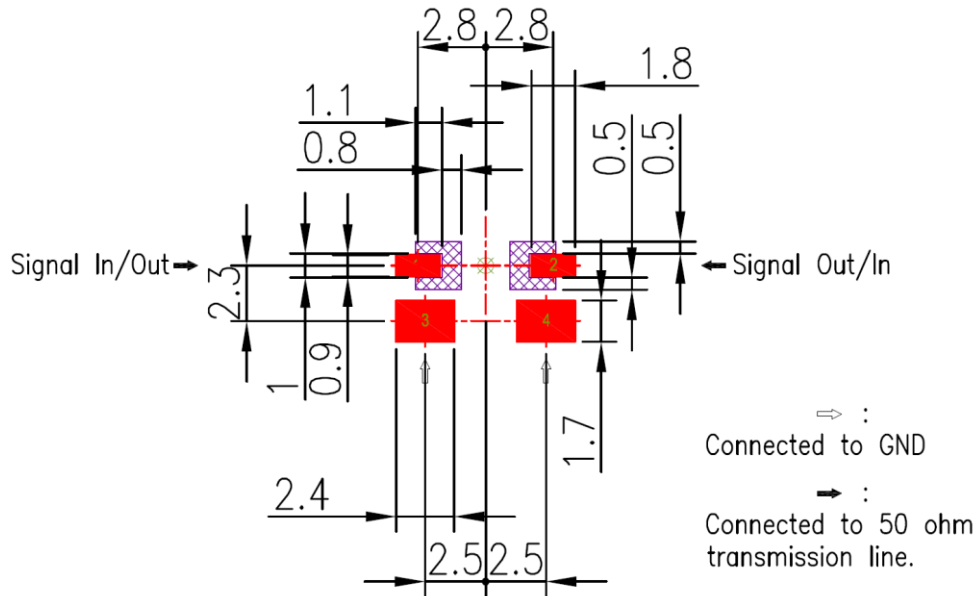


Back View

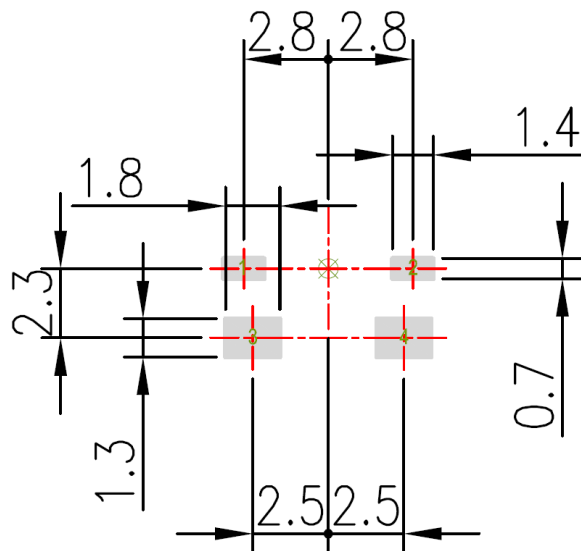


4.2. Recommended PCB Layout

4.2.1. Top Copper

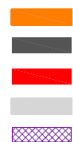


4.2.2. Top Solder Paste



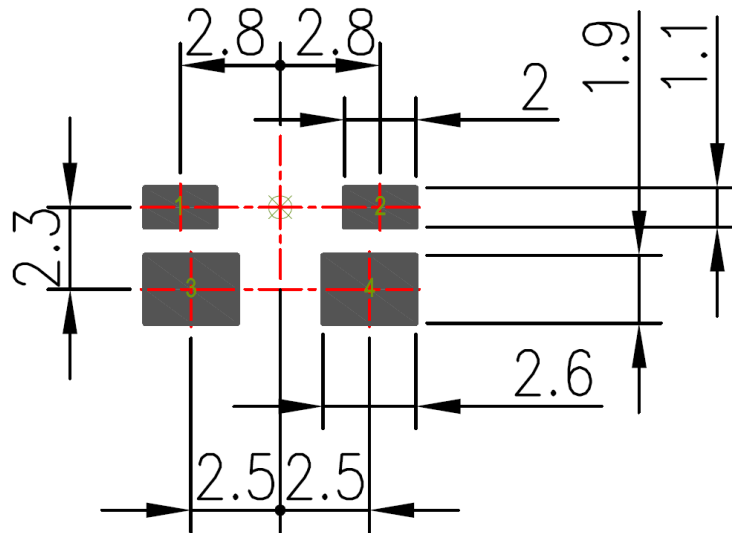
NOTE:

- 1. Ag Plated area
- 2. Solder Mask area
- 3. Copper area
- 4. Paste area
- 5. Copper Keepout Area

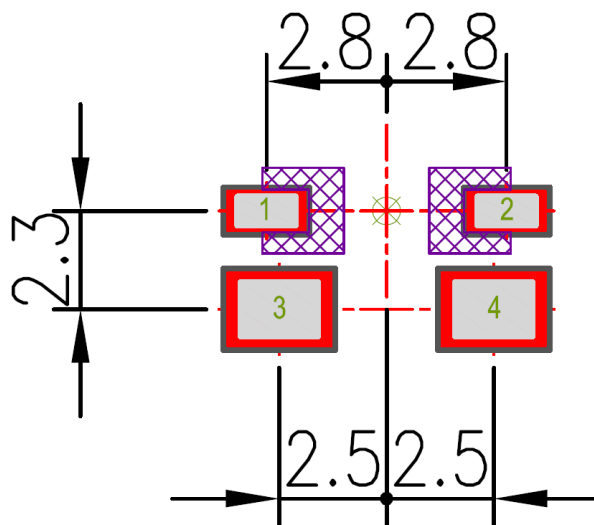


- 6. Any vias in pads should be either filled or tented to prevent solder from wicking away from the pad during reflow.
- 7. The dimension tolerances should follow standard PCB manufacturing guidelines

4.2.3. Top solder Mask



4.2.4. Composite Diagram



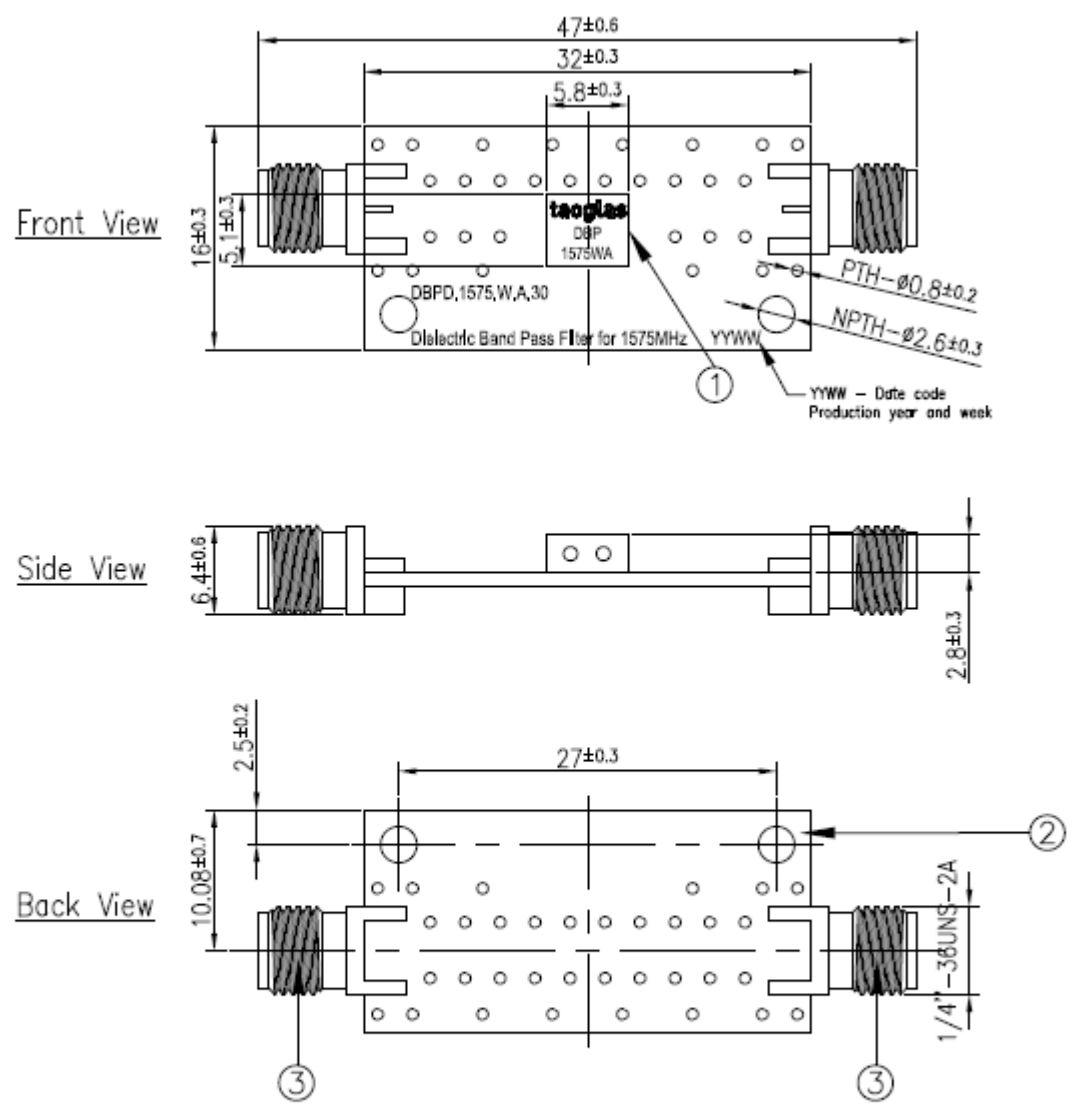
NOTE:

- 1. Ag Plated area
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- 4. Paste area
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- 6. Any vias in pads should be either filled or tented to prevent solder from wicking away from the pad during reflow.
- 7. The dimension tolerances should follow standard PCB manufacturing guidelines

4.3. Evaluation Board

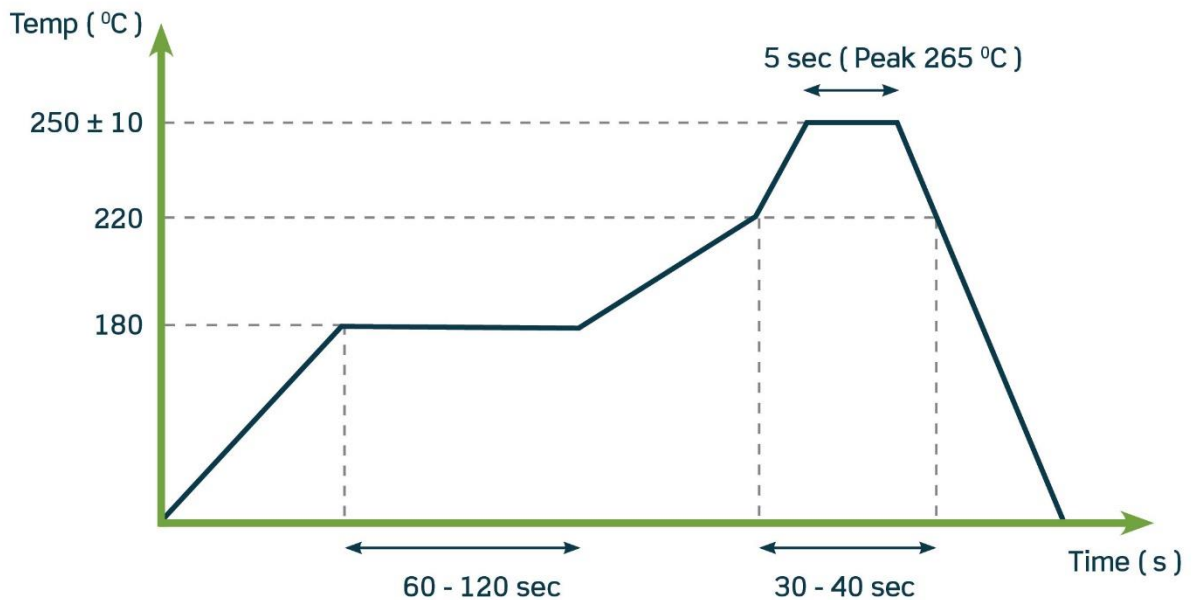


NOTE:
1. All material must be RoHS compliant.

| | Name | Material | Finish | QTY |
|---|-----------|----------------|-----------|-----|
| 1 | Filter | Ceramic | Clear | 1 |
| 2 | PCB | Composite 1.0t | Black | 1 |
| 3 | SMA(F) ST | Brass | Au Plated | 2 |

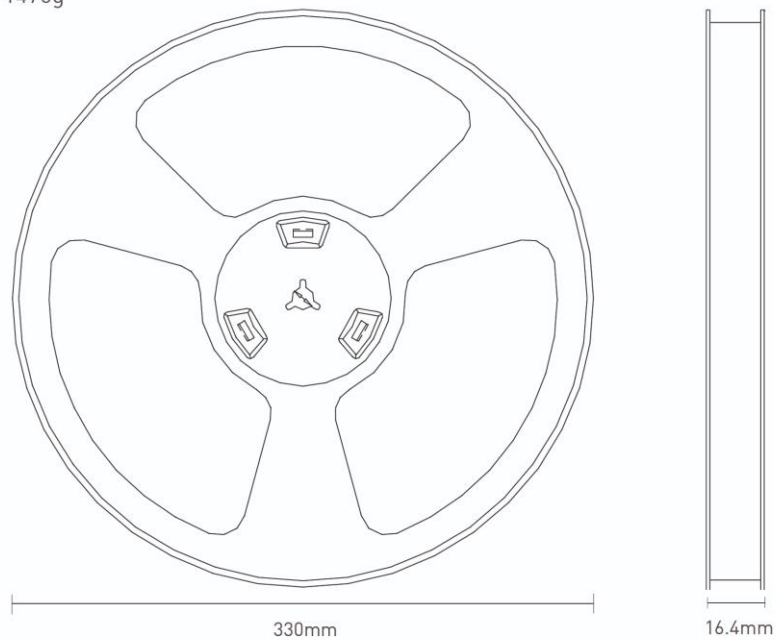
5. Recommended Reflow Soldering Profile

| Phase | Profile Features | Maximum |
|-----------|---------------------|----------------|
| Preheat | Temperature Min | 150 °C |
| | Temperature Max | 180 °C |
| | Duration | 60-120 sec |
| Ramp-Up | Avg. Ramp up rate | 3 °C/sec (max) |
| Reflow | Temperature | 220 °C |
| | Duration | 30-40 sec |
| Peak | Temperature | 265 °C |
| | Duration | 5 sec Max |
| Ramp Down | Avg. Ramp down rate | 3 °C/sec (max) |

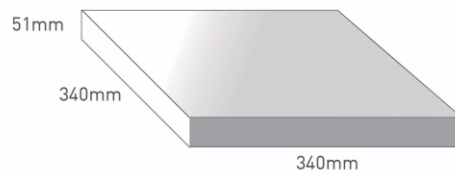


6. Packaging

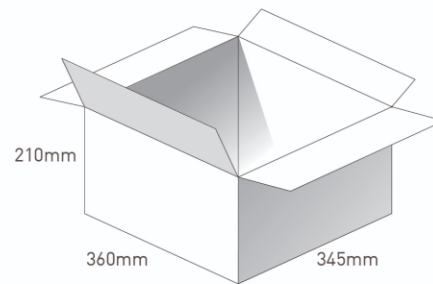
2500 pc DBP.1575.W.A.30
1 reel per small inner box
Dimensions - 330*16.4mm
Weight - 1470g



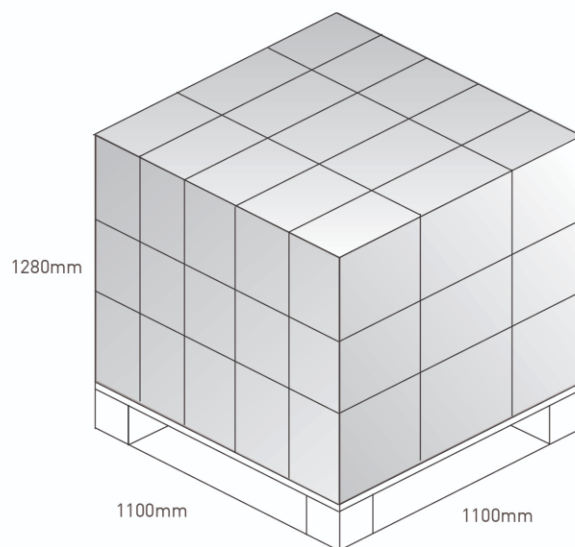
5000 pc DBP.1575.W.A.30
 2 reel in small inner box
 Dimensions - 340*340*51
 Weight - 3.05Kg



4 inner boxes / 20000 pcs in one carton
 Carton Dimensions - 210*345*360mm
 Weight - 12.7Kg



Pallet Dimensions 1100*1100*1280mm
 24 Cartons per Pallet
 6 Cartons per layer
 4 Layers



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