

## Specification

- Part No. : **ISMP.868.35.6.A.02**
- Product Name : Embedded 2dBi 868MHz Ceramic Patch Antenna  
(35\*35\*6mm)
- Feature : Provides Compact Directive Pattern  
For RFID, LoRA, Sigfox and ISM 868MHz Applications  
2dBi peak gain on 70x70mm ground plane  
35x35x6mm Ceramic Patch  
Pin Mount  
Custom Tuning Optional  
**RoHS Compliant**



## 1. Introduction

ISMP.868 is a low-profile pin-mount ceramic patch antenna operating at 868MHz. At just 35x35mm, it provides a high-performing directive antenna solution using minimum board space.

When mounted on a 70x70mm ground plane, ISMP.868 provides efficiency of over 65% and peak gain of 2.17 dBi. It is also right-hand circularly polarized, with an excellent axial ratio of less than 3 dB, providing maximum link reliability between devices where the orientation to each other is changing. These characteristics make it a perfect choice for compact fixed wireless applications operating on the 868 MHz ISM band, including remote instrumentation and RFID applications. It also provides excellent performance on Low-Power Wide-Area Networks (LPWAN) operating at 868 MHz, such as LoRa and Sigfox, allowing users to take advantage of the low-power, long-range communications offered by these networks.

Like all antennas the ISMP.868 will perform differently subject to nearby device environment and ground-plane changes compared to specification. Taoglas offers custom tuning for specific device environments and ground-planes, subject to NRE and MOQ. Contact your regional Taoglas sales office for these services as well as additional support with device integration. 3D STEP file available for ease of mechanical integration.



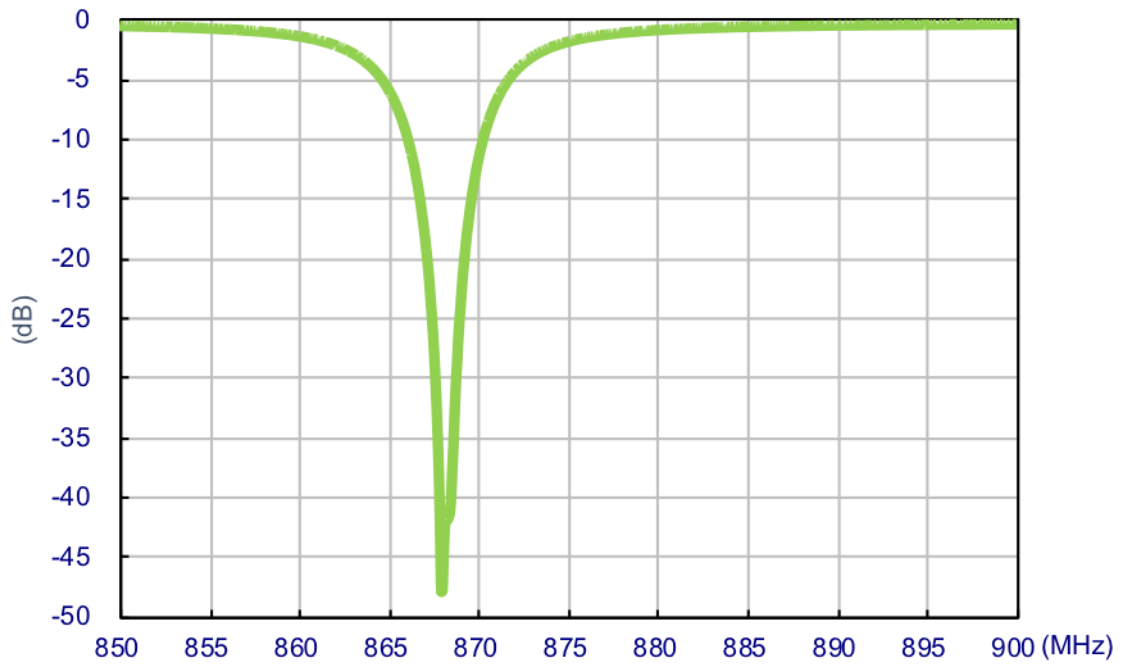
## 2. Specification

Electrical	
Frequency	868 MHz
Return Loss	-10dB max.
Efficiency	66.3 %
Average Gain	-1.78 dB
Peak Gain	2.17 dBi typ.
Axial Ratio	3.0 max @ Zenith
Polarization	RHCP
Impedance	50 Ω
Mechanical	
Dimensions	35 x 35 x 6 mm
Material	Ceramic
Pin Diameter	0.9 mm
Pin Length	2.0 mm
Weight	34.3 g
Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 105°C
Humidity	Non-condensing 65°C 95% RH

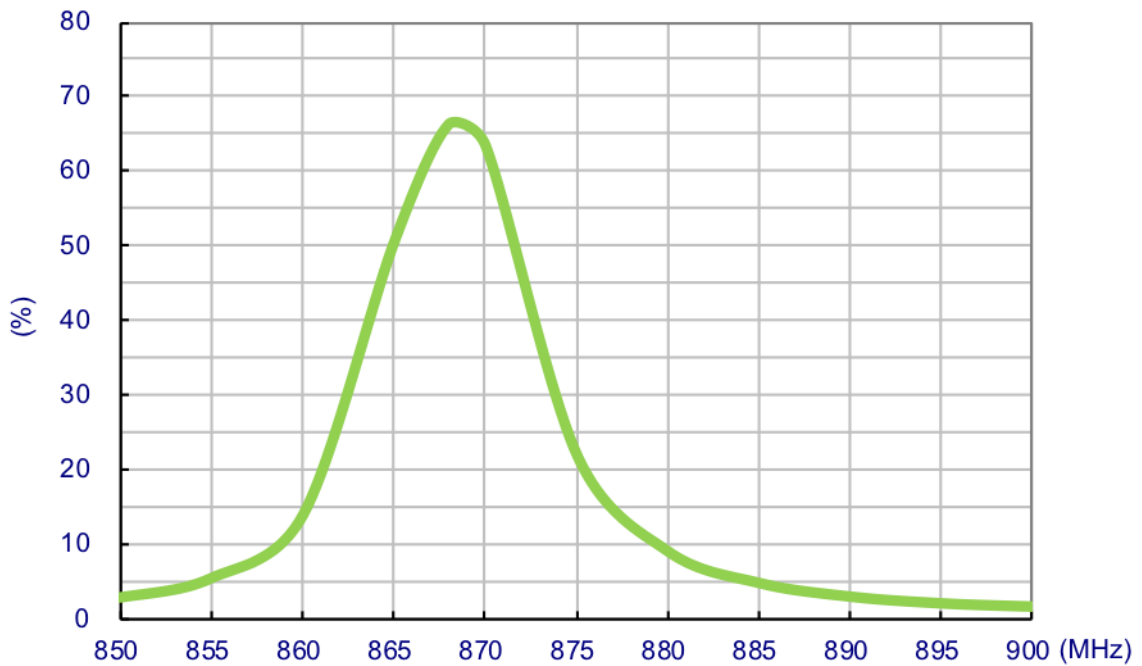
\* Antenna properties were measured with the antenna mounted on 70\*70mm Ground Plane

### 3. Antenna Characteristics

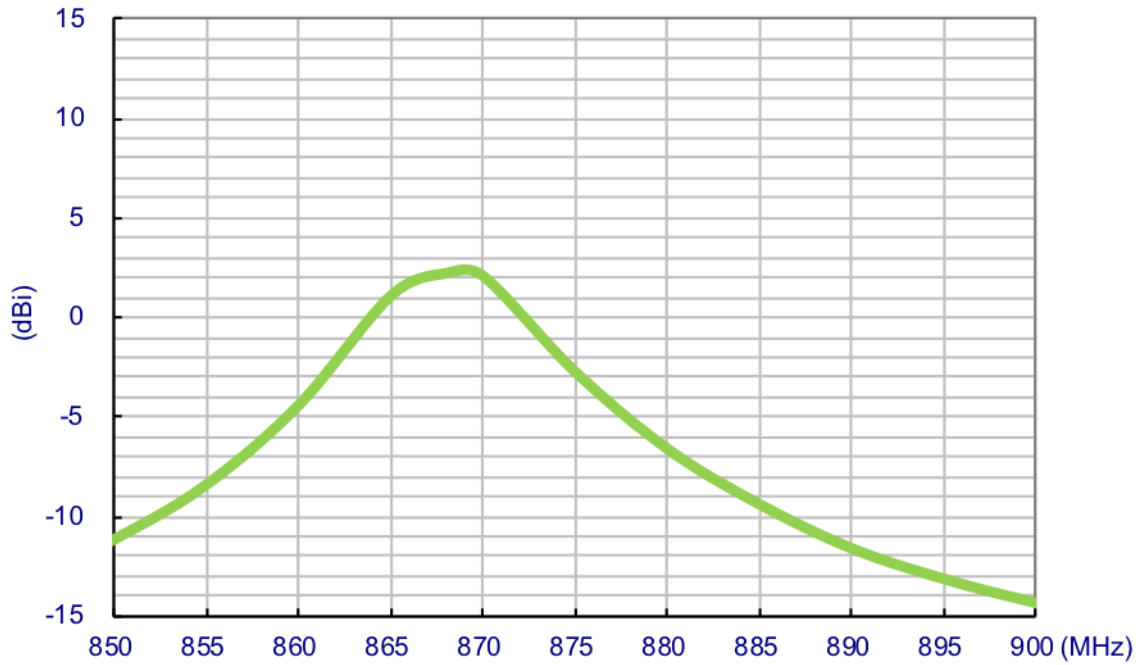
#### 3.1 Return Loss



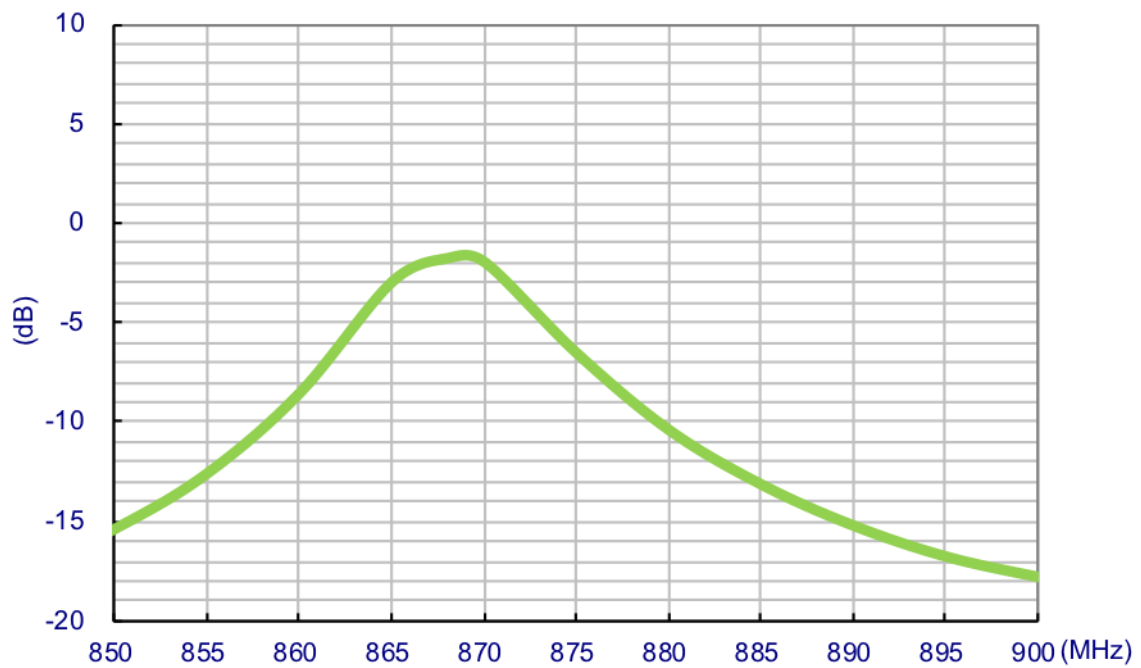
#### 3.2 Efficiency



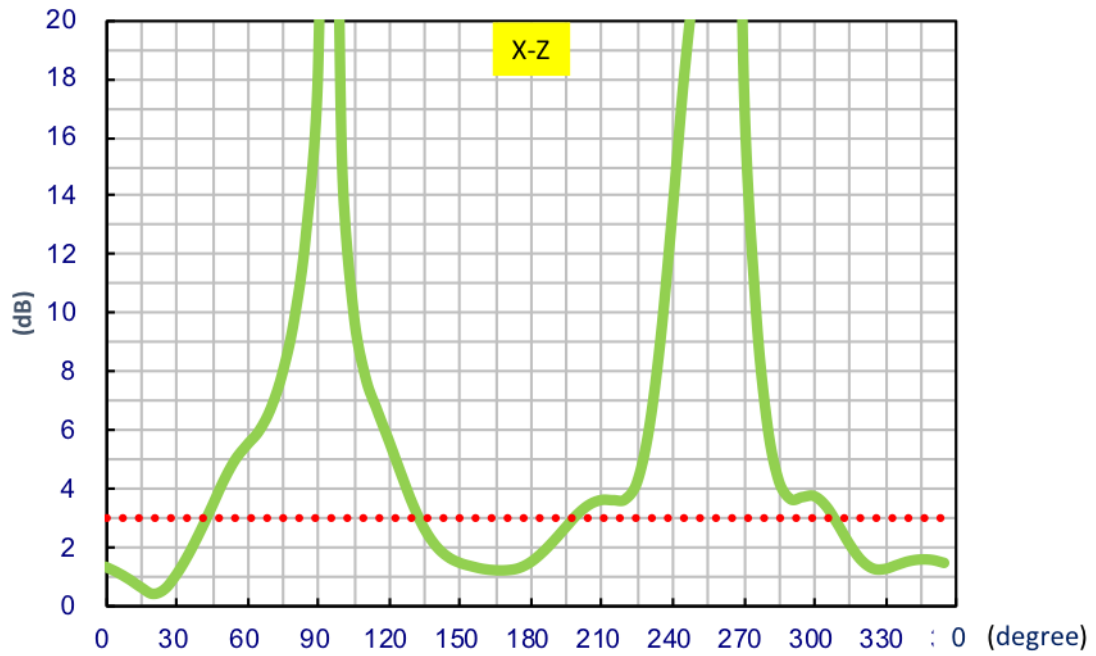
### 3.3 Peak Gain



### 3.4 Average Gain



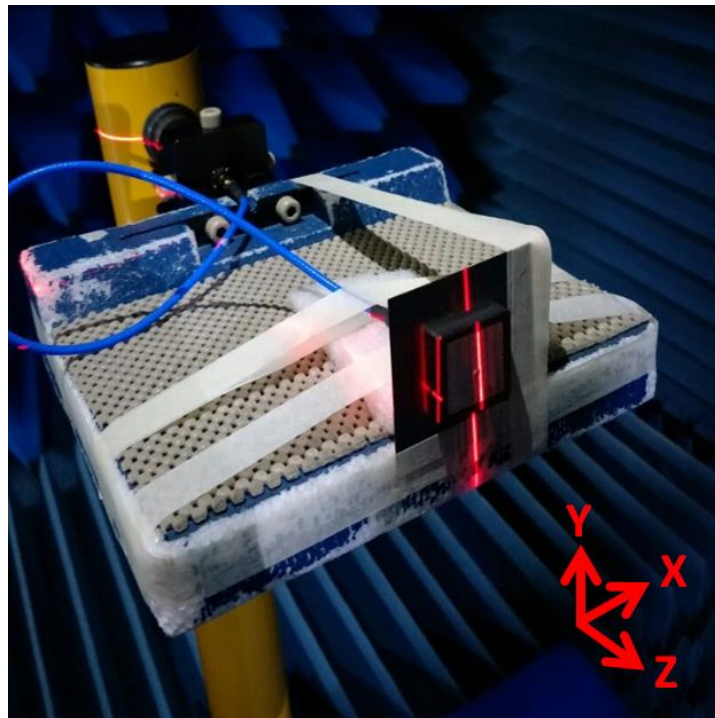
### 3.5 Axial Ratio (Zenith is at 0 degrees)



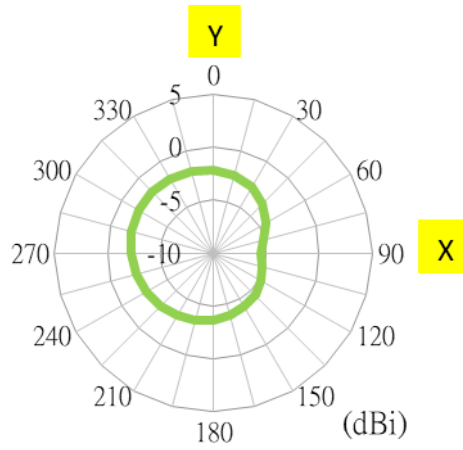
## 4.2D Radiation Pattern

### 70x70mm Ground Plane - 868 MHz

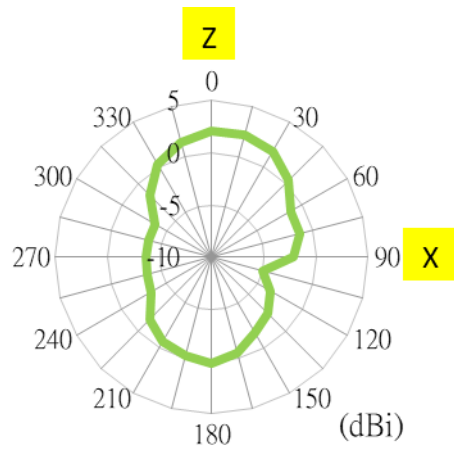
#### 4.1 Test Setup



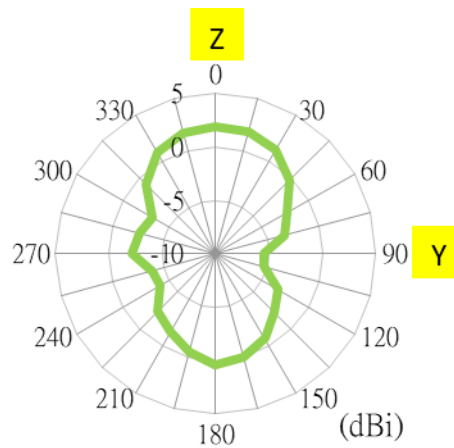
## 4.2 X-Y Plane



## X-Z Plane

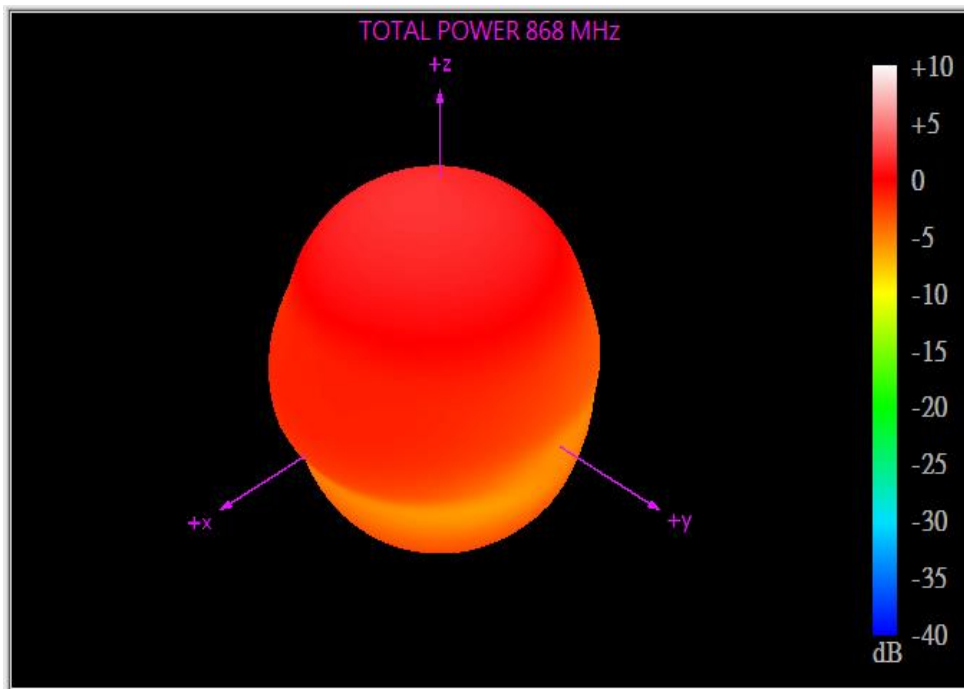


## Y-Z Plane

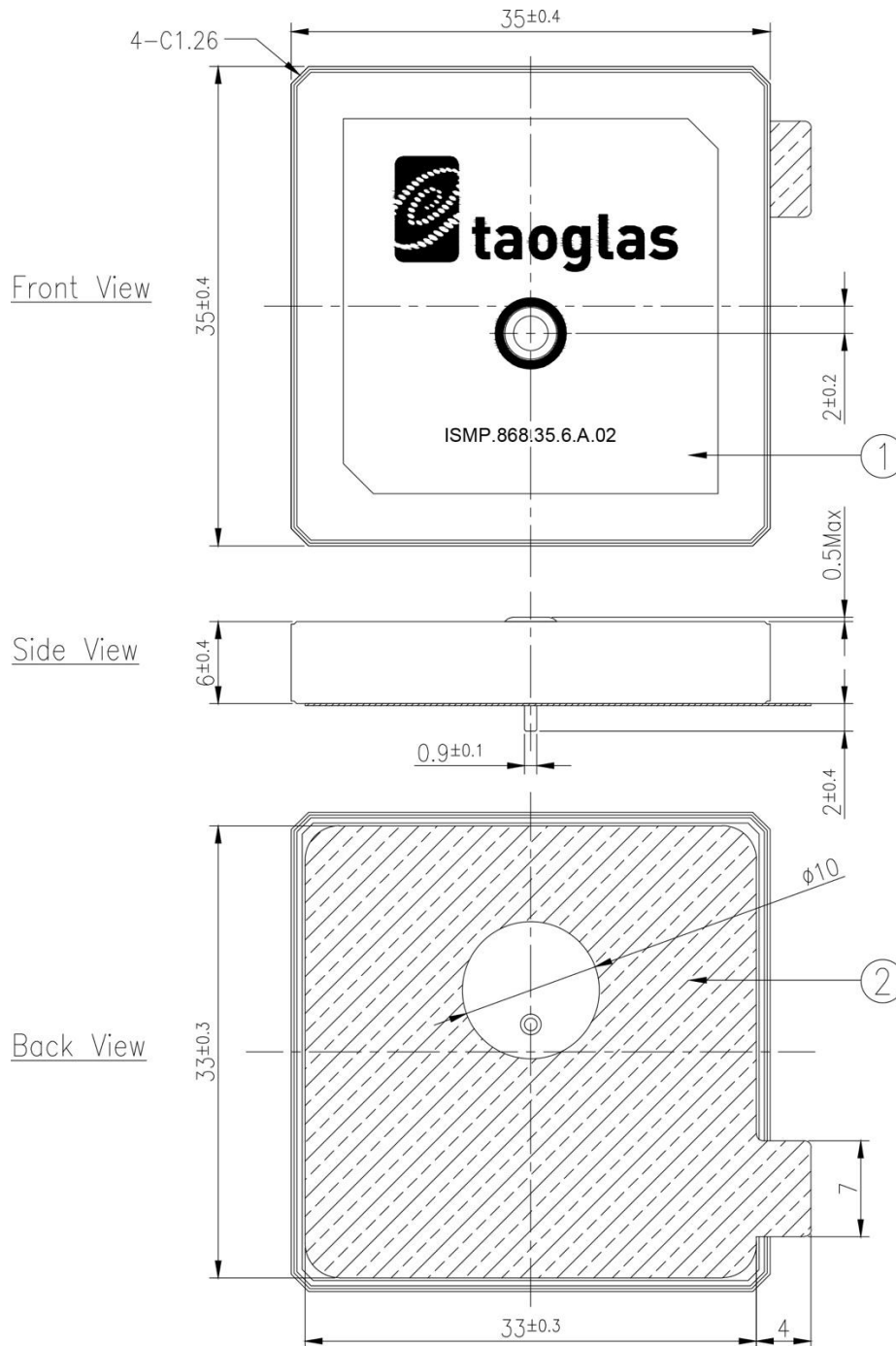




## 5. 3D Radiation Pattern on 70x70mm Ground Plane - 868 MHz

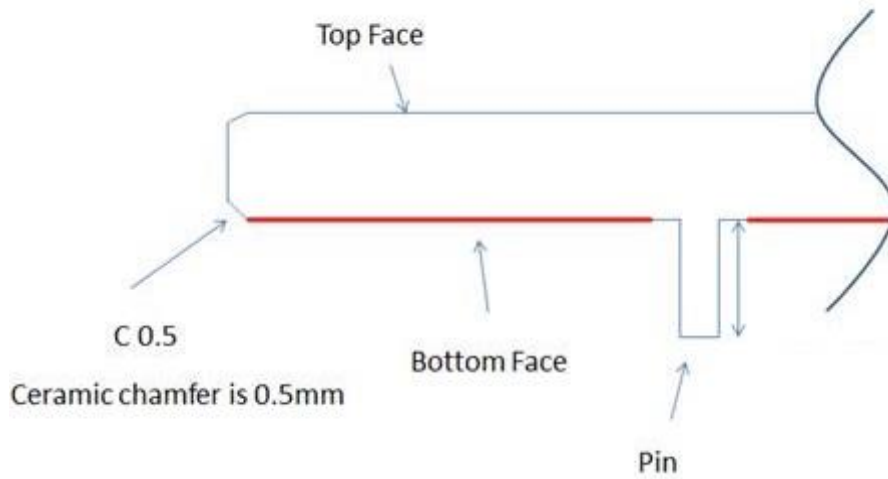


## 6. Mechanical Drawing



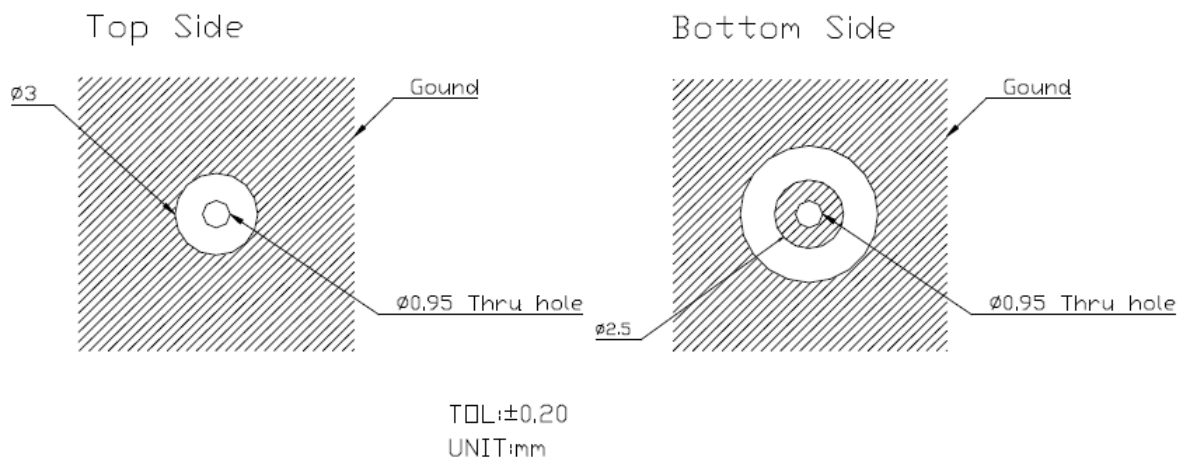
	Name	Material	Finish	QTY
1	Patch (35x35x6mm)	Ceramic	Clear	1
2	Double Sided Adhesive	NITTO 5015	White Liner	1

## 6.1 Adhesive Thickness



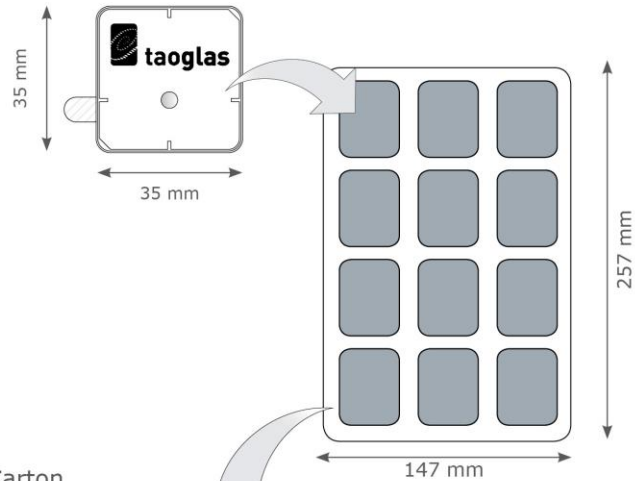
**Red Line** shows the adhesive without Liner – thickness 0.08~0.1mm

## 7. PCB Footprint Recommendation

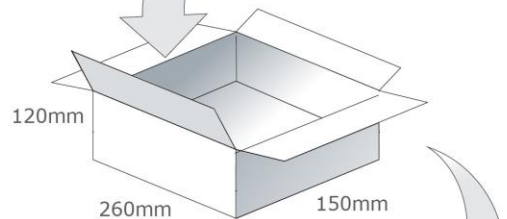


## 8. Packaging

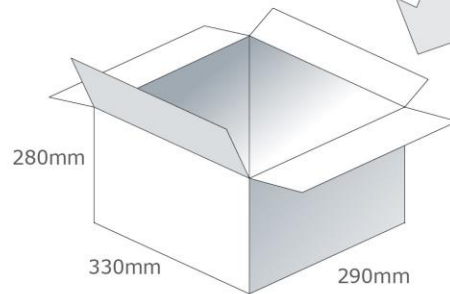
12 pcs ISMP.868.35.6.A.02 per tray  
 Tray Dimensions - 257\*147\*17mm  
 Weight - 450g



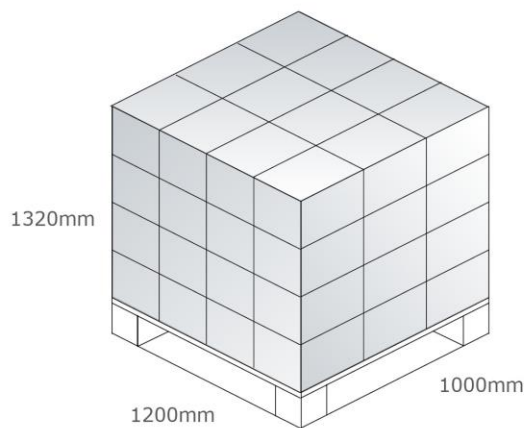
72 pcs ISMP.868.35.6.A.02 per Inner Carton  
 Carton Dimensions - 260 x 150 x 120mm  
 Weight - 2.86kg



4 Inner Cartons per Large Carton  
 288 pcs ISMP.35 per Large Carton  
 Carton Dimensions - 330\*290\*280mm  
 Weight - 12kg



Pallet Dimensions 1200\*1000\*1320mm  
 48 Cartons per Pallet  
 12 Cartons per layer  
 4 Layers



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