

SMDAntena Specification

OverAir® SMD Antena Series
RoHSCompliant

PN : OA-C07

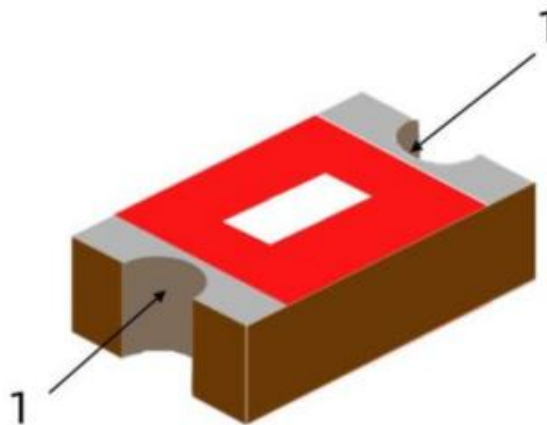
2.4GHz ISM band antenna

Characteristic

1. Size only 3.5X1.7 X 1.2 mm³ small size SMD patch antenna.
2. Low energy loss, high antenna efficiency.
3. It has high stability when the temperature and humidity change.

Application

1. Application of 2.4GHz ISM Band Antenna.
2. Bluetooth, ZigBee, Wireless applications, Smart Home applications, etc.
3. WIFI (2.4G only).

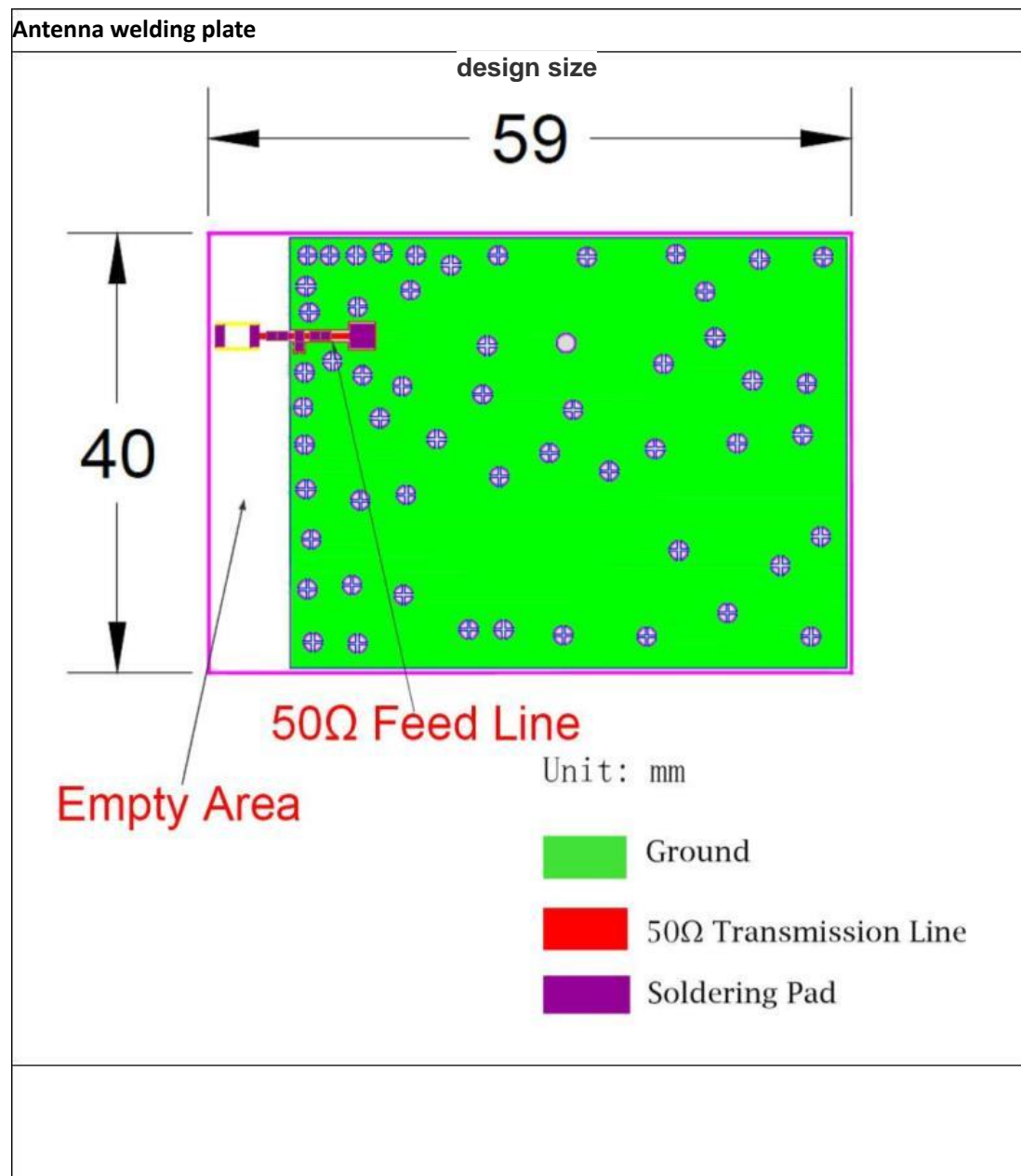
Structure

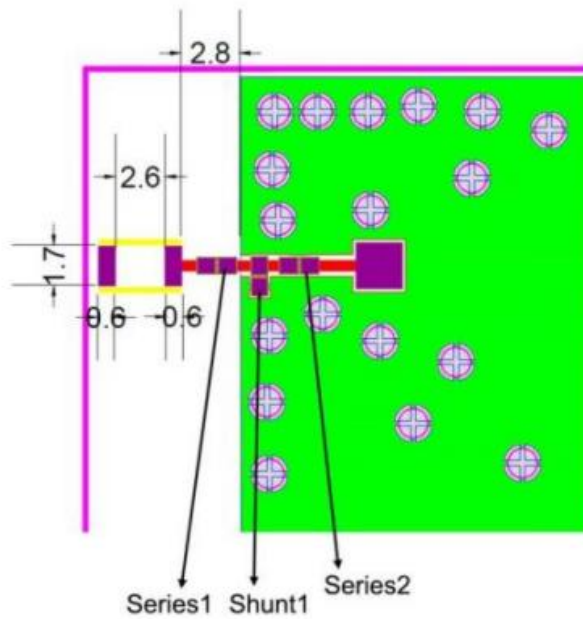
Does not distinguish between feed pads and fixed pads at both ends of the antenna

Size

Three views	Symbol	Size(mm)
	L	3.5±0.2
	w	1.7±0.1
	T	1.2±0.1
	a	0.4±0.1

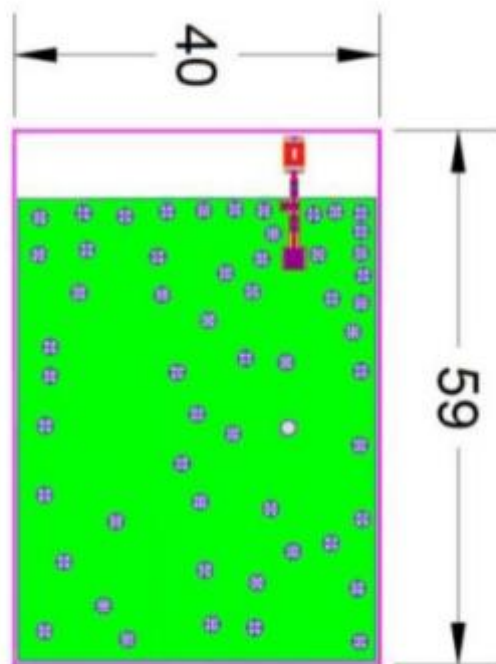
Electrical specification	
OA-C07	Specification
Working Frequency	2450 ± 50MHz
The initial frequency(GHz)	2.9GHz
Band Width	>100MHz
Impedance	50Ω
Gain(dBi)	3.74 (peak)
VSWR	<2
Operation Temperature	-40℃~+95℃
Power Capacity	3W



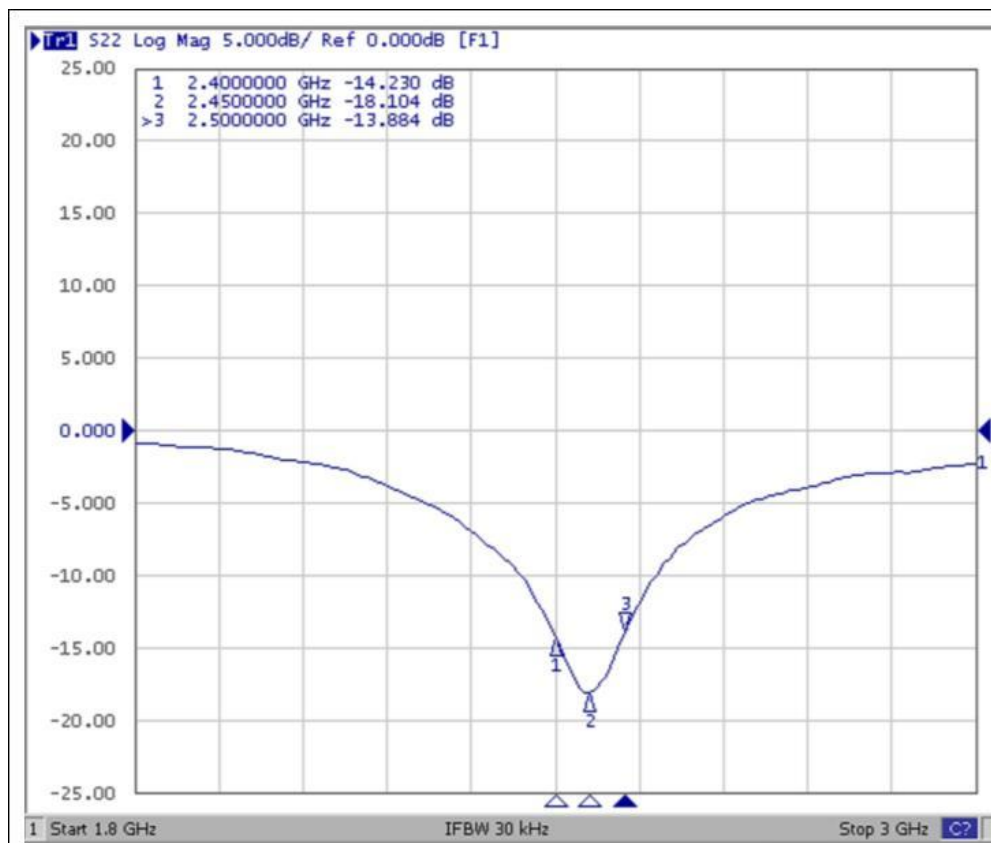


Matching device value	Series 1	Inductance	5.6nh
	Shunt 1	Inductance	4.7nh
	Series 2	0 Ω	

Antenna test on test board(thickness of plate**1.0mm**)

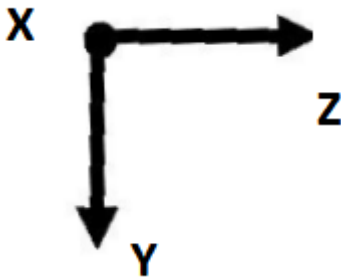
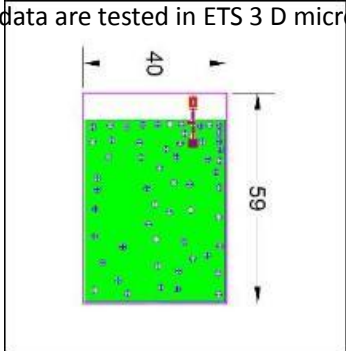


AntennaeS11Character

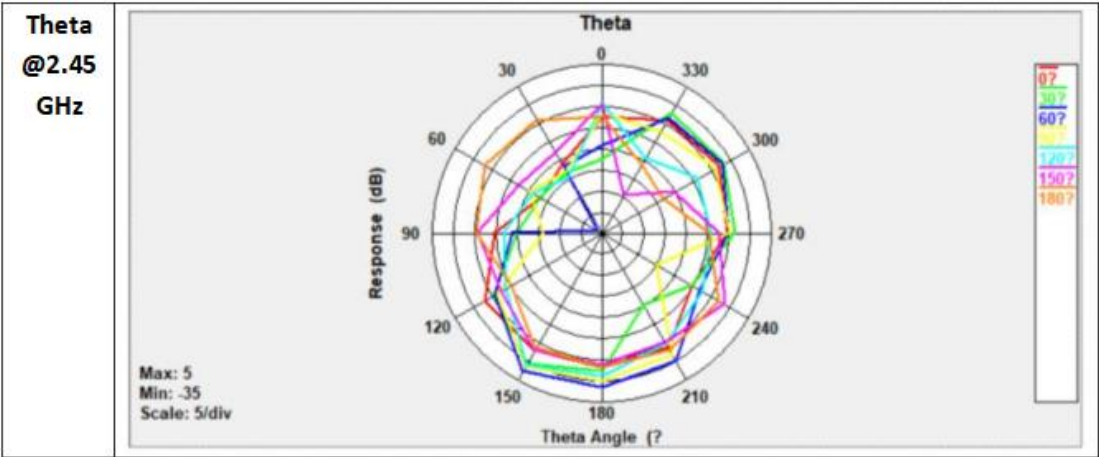


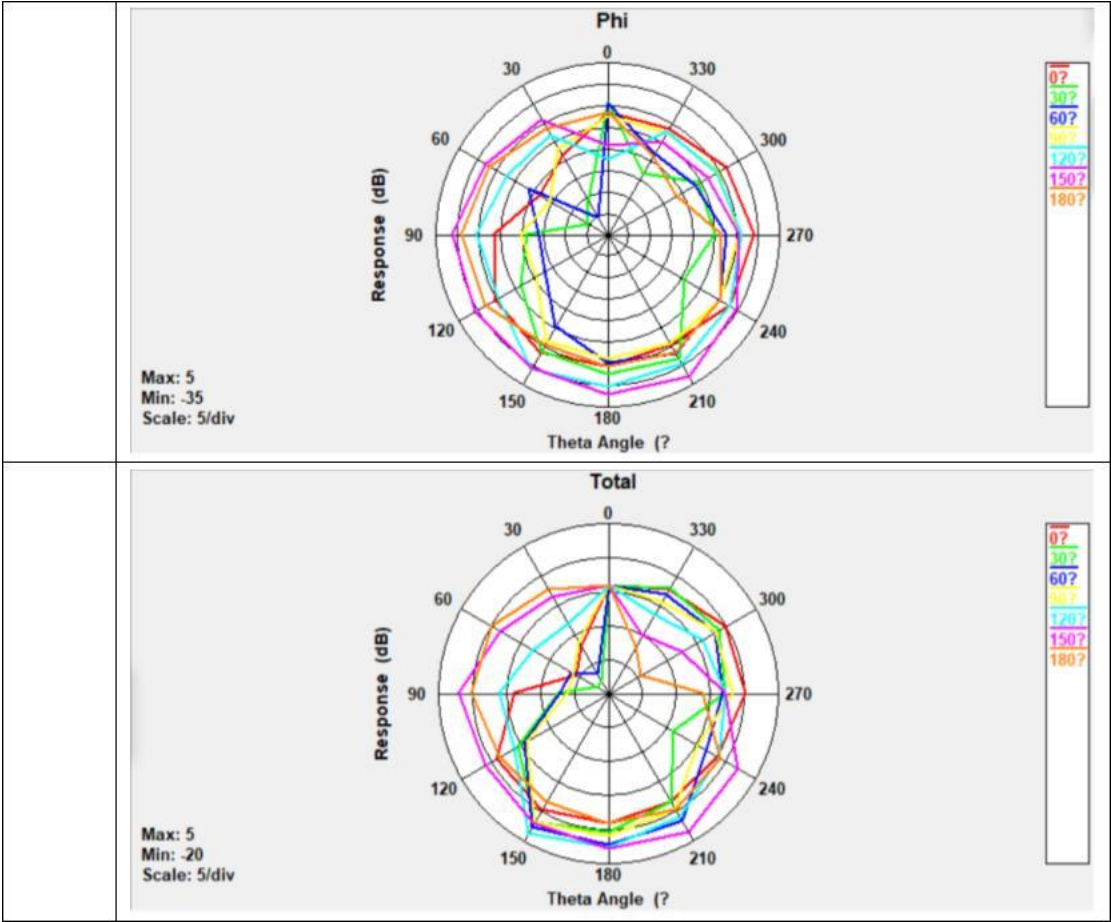
Efficiency and radiation map

The performance of efficiency, radiation diagram, gain and so on is based on the design of test board. The test data of the specification and characteristics of the OA-C07 antenna are based on the size of the PCB board and the test direction shown in the following figure. The following data are tested in ETS 3 D microwave anechoic chamber.



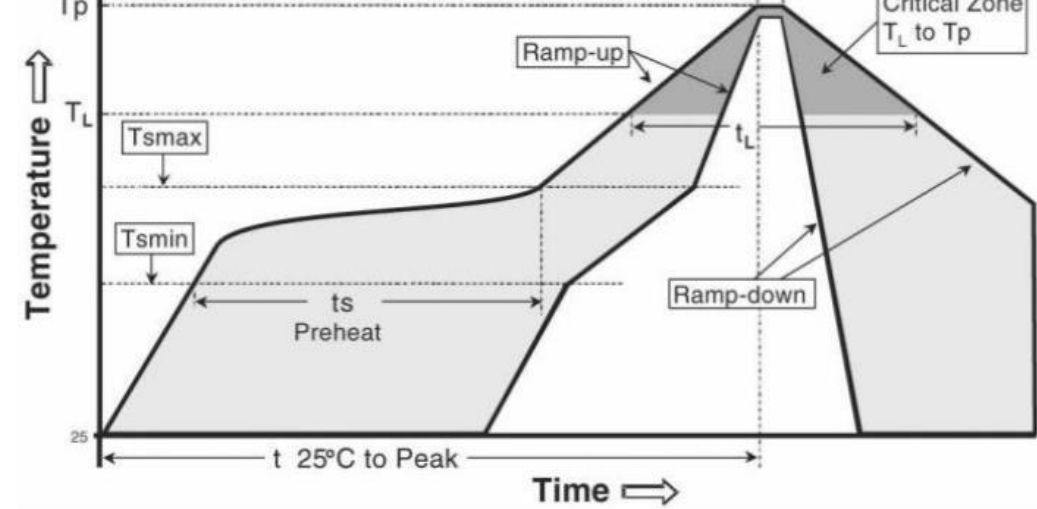
Gain and efficiency	Broad Band 2.4G-2.5GHz
Peak Gain	3.74dBi
Average Gain across the band	3.66dBi
Gain Range across the band	3.42dBi~3.74dBi
Peak Efficiency	58.9%
Average Efficiency across the band	55.9%
Efficiency Range across the band	53.0%~58.9%



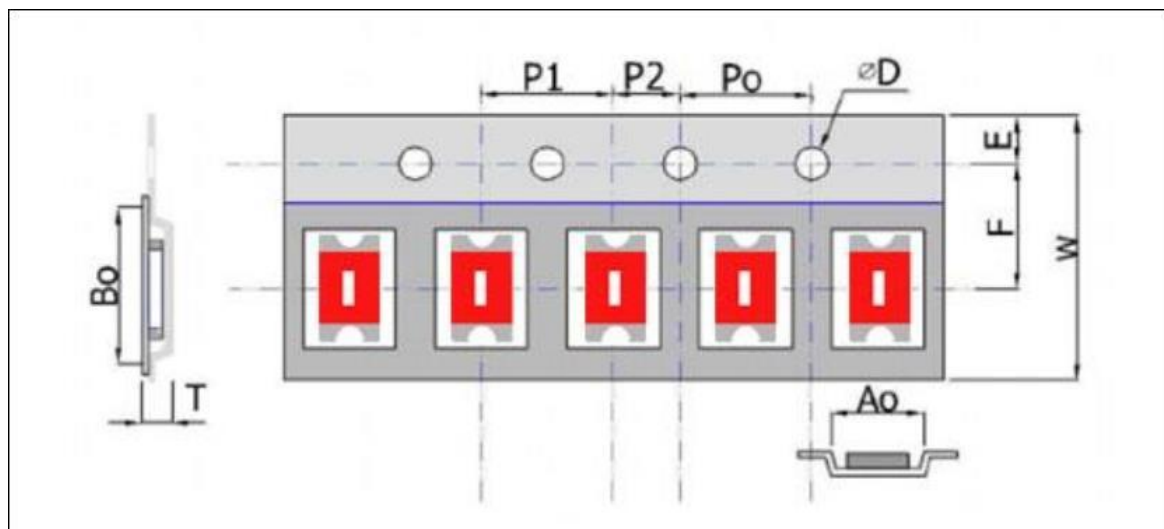


Welding condition

The typical welding specification for reliable loss is shown in the following figure:



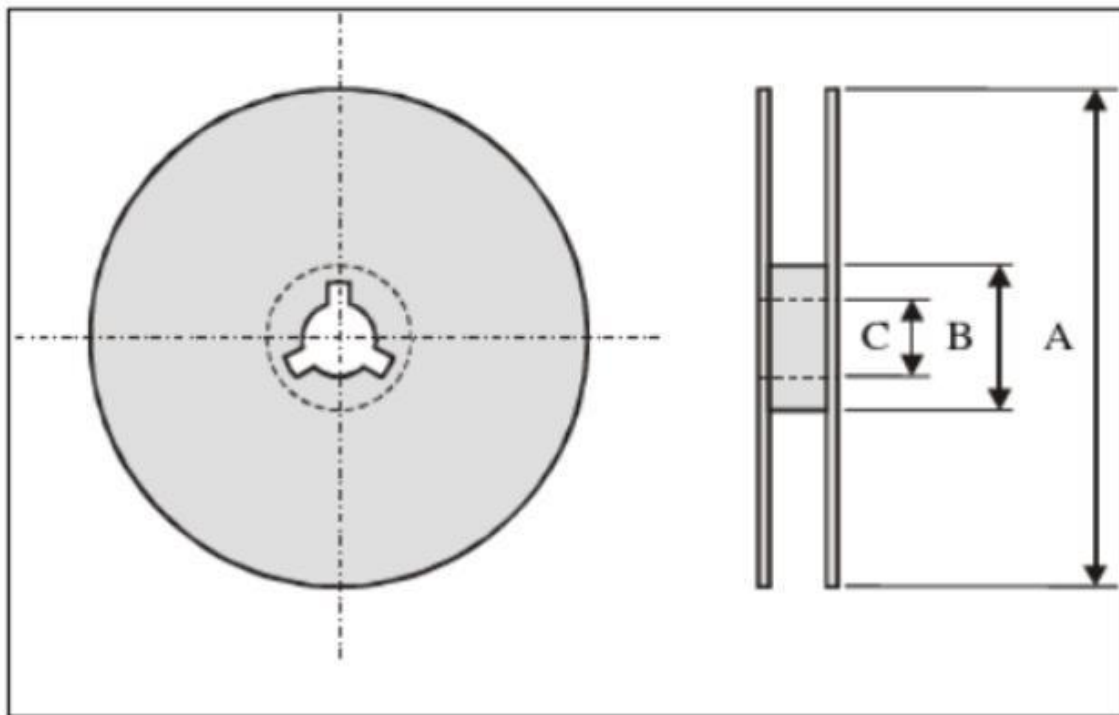
Phase	Profile features	Pb-Free assembly (SnAgCu)
RAMP-UP	Avg. Ramp-up Rate (T _{smax} to T _p)	3 °C / second (max.)
PREHEAT	<ul style="list-style-type: none"> - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (t_{smin} to t_{smax}) 	150 °C 200 °C 60-180 seconds
REFLOW	<ul style="list-style-type: none"> - Temperature (T_L) - Total Time above T_L (t_L) 	217 °C 60-150 seconds
PEAK	<ul style="list-style-type: none"> - Temperature (T_p) - Time (t_p) 	260 °C 20-40 seconds
RAMP-DOWN	Rate	6 °C/second max
Time from 25 °C to Peak Temperature		8 minutes max



Plastic carrier tape specification (Units: mm)

Index	Ao	Bo	ΦD	T	W
Dimension (mm)	2.0 ± 0.1	4.0 ± 0.1	1.55 ± 0.05	1.8 ± 0.1	12 ± 0.1
Index	E	F	Po	P1	P2
Dimension (mm)	1.5 ± 0.1	5.4 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.1

Reel size



Index	A	B	C
Dimension(mm)	300	100	13.5

Denominator volume: 300PCS/dish

Storage environment

The following conditions should be met when the product is stored:

1. Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$.
2. Humidity: 30% ~ 70% relative humidity.
3. Do not contact corrosive gases, such as sulfur, where the product is placed. Chlorine or acid may cause the electrode oxidation of the product to cause the weldability to deteriorate.
4. The product should be placed in the toolbox and avoid the influence of moisture and dust.
5. The products should be stored in the warehouse and avoid heat, vibration and direct sunlight.
6. Products should be stored in closed conditions.