



SMD Antenna Specification

CrossAir™

SMD Antenna Series
RoHS Compliant

PN: CA-C03

2.4 GHz ISM Band Antenna

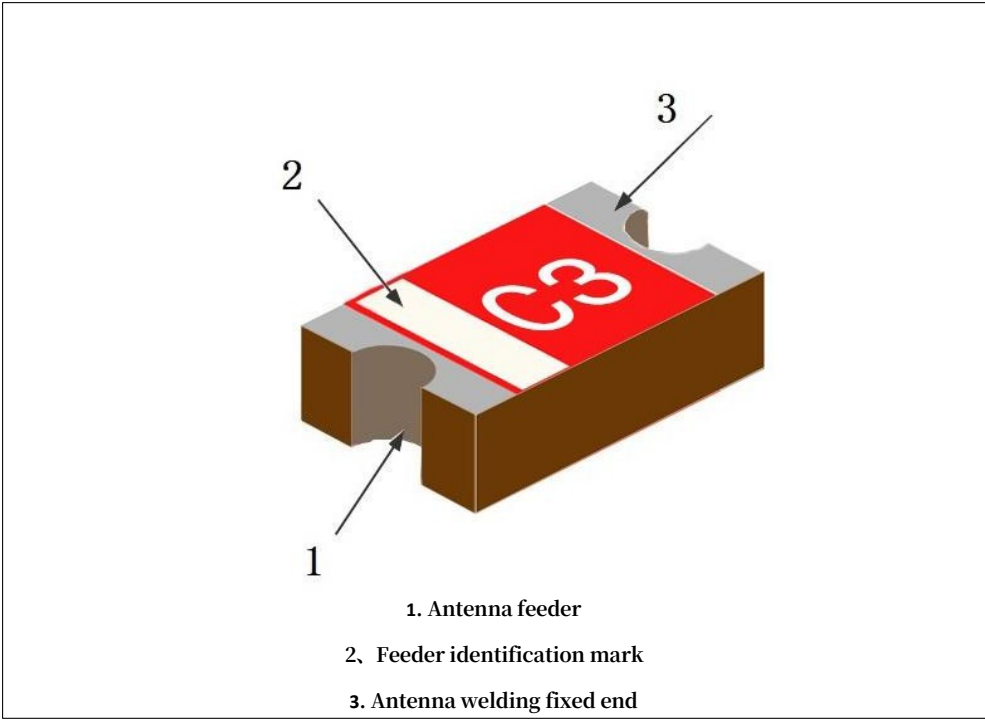
specificities

- 1. Small SMD antenna measuring only 5.5 X 2.0 X 1.0 mm³.
- 2. Low energy loss, high antenna efficiency.
- 3. High stability in case of temperature and humidity changes.

appliance

- 1. 2.4GHz ISM Band Antenna Applications
- 2. Bluetooth, ZigBee, wireless applications, smart home applications, etc.
- 3. WIFI (2.4G only)

framework



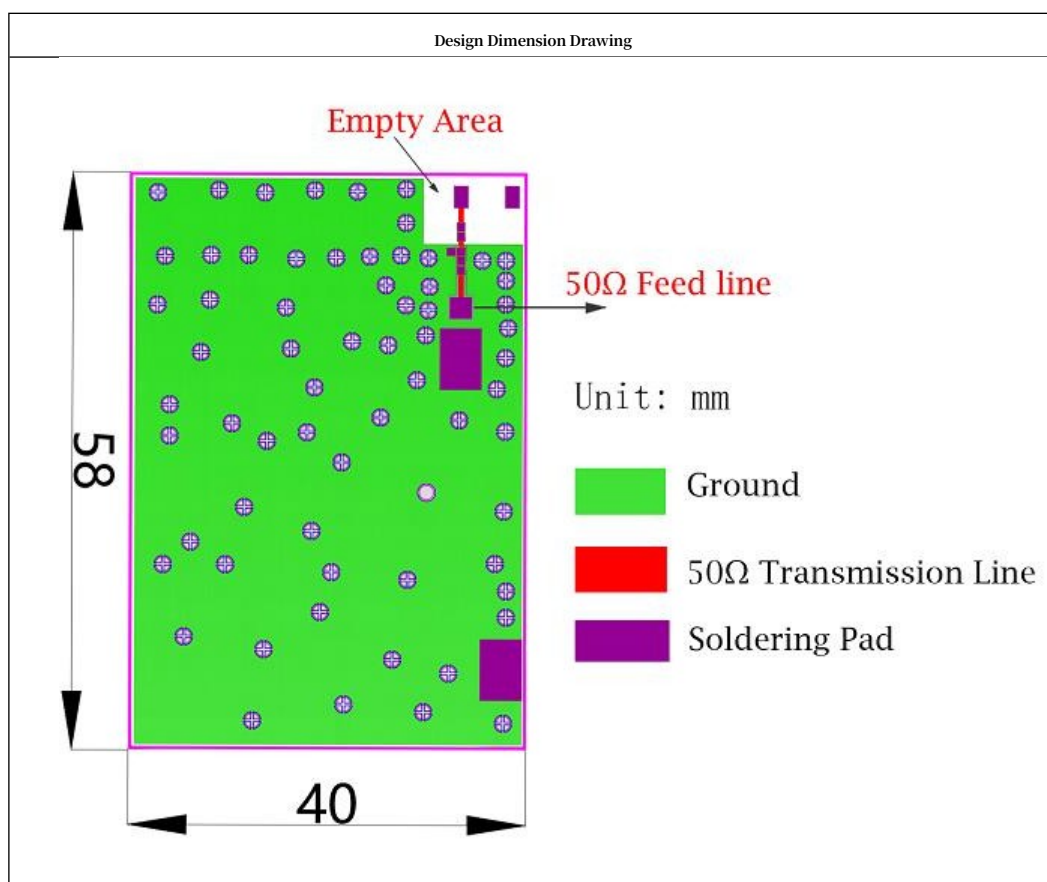
sizes

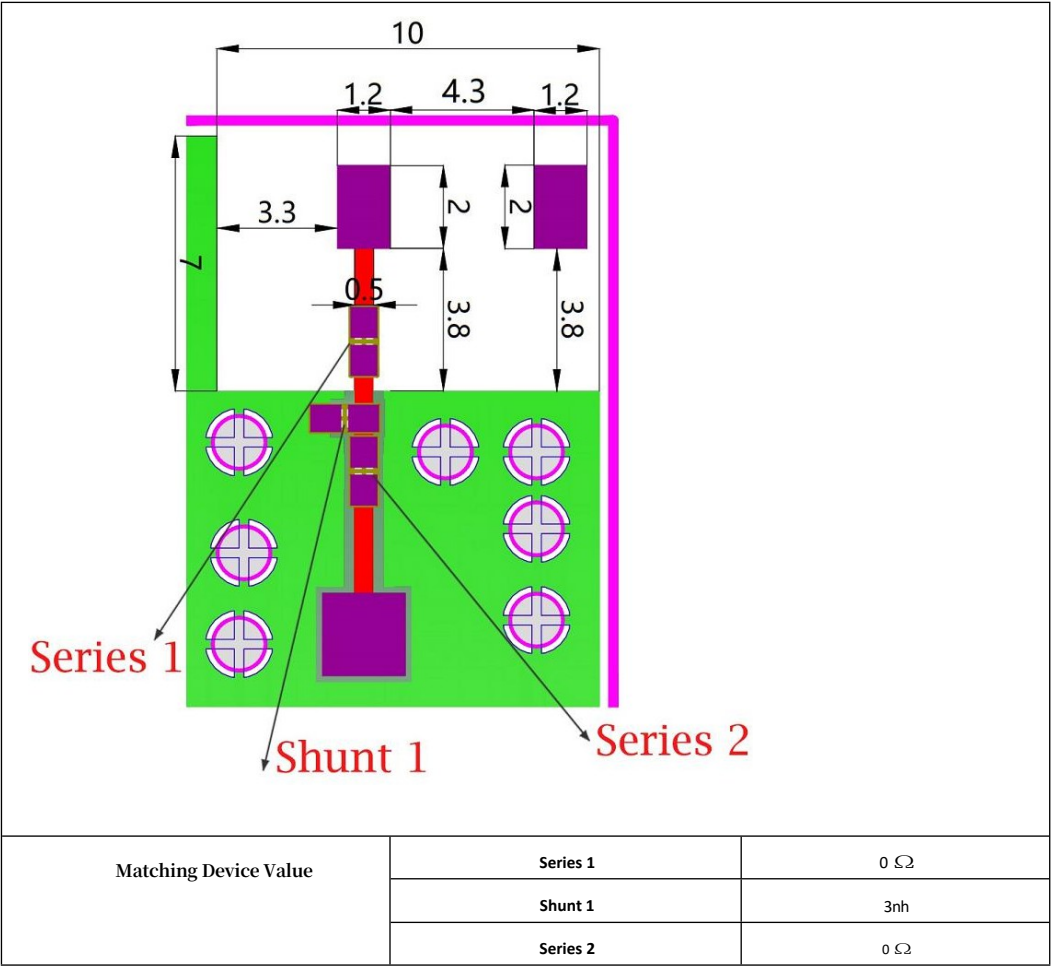
three views	notation	Dimension(mm)
	L	5.5± 0.2
	w	2.0± 0.1
	T	1.0± 0.1
	a	0.5± 0.1

Electrical Characteristics

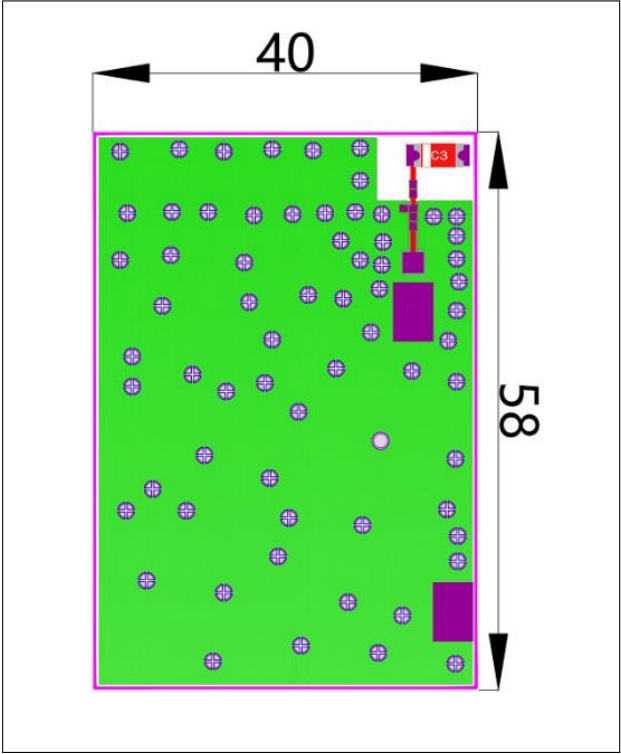
CA-C03	Specification
Working Frequency Range	2450±50MHz
Initial frequency band (GHz)	2.7GHz
Band Width	>100MHz
Impedance	50 Ω
Gain(dBi)	4.3 (peak)
VSWR	<2
Operation Temperature	-40°C ~+95°C
The antenna 2.4G operating frequency needs to be realized by impedance matching device debugging	
Power Capacity	3W

Antenna Pad and Alignment Design

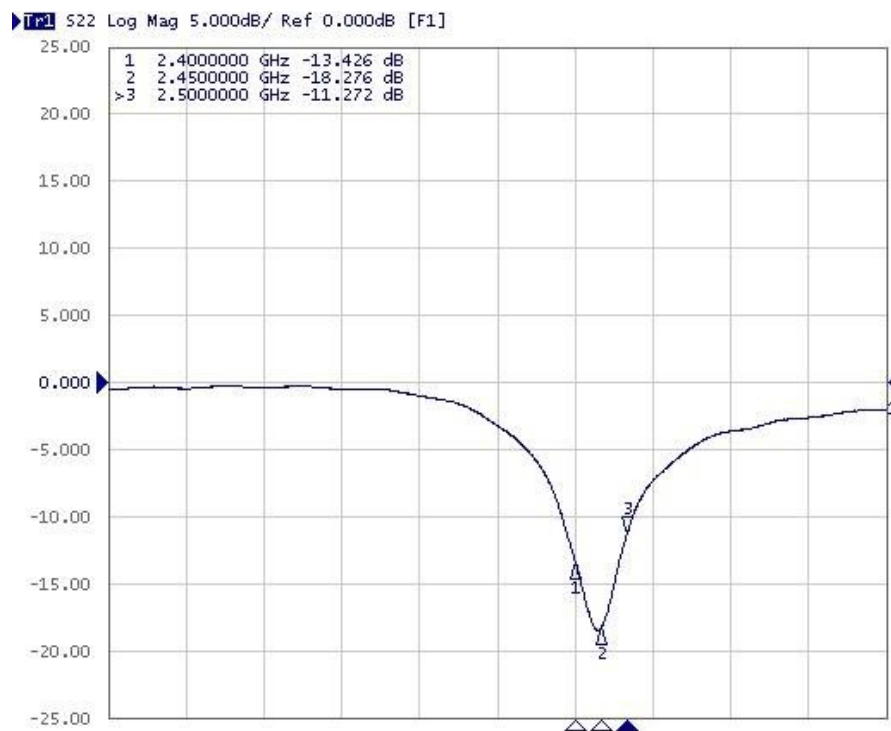




Antenna Test on Test Board (Board Thickness 1.0mm)



Antenna S11 Characteristics



Antenna VSWR Characteristics

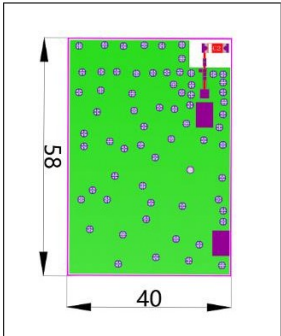


Efficiency and radiation maps

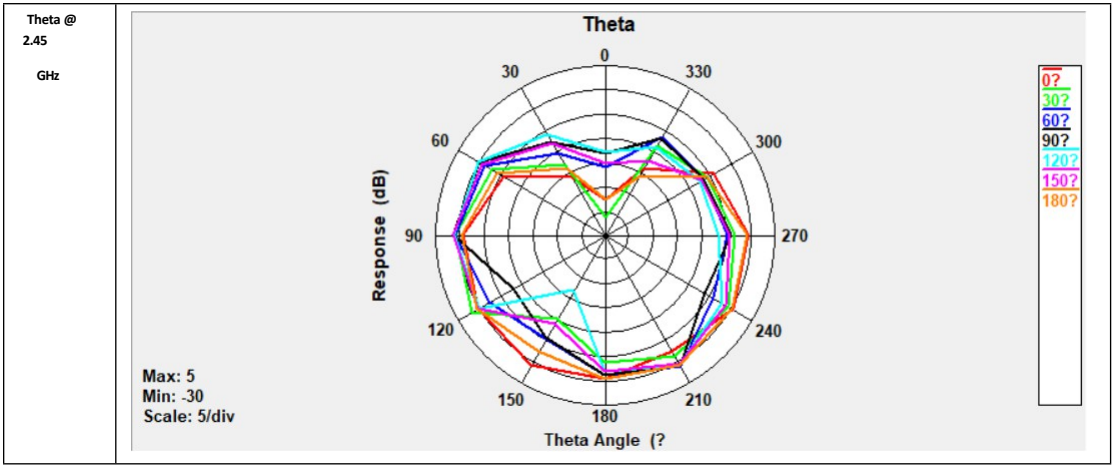
Efficiency, radiation pattern, gain and other properties are obtained based on the test board design. The specification characteristic test data of CA-C03 antenna

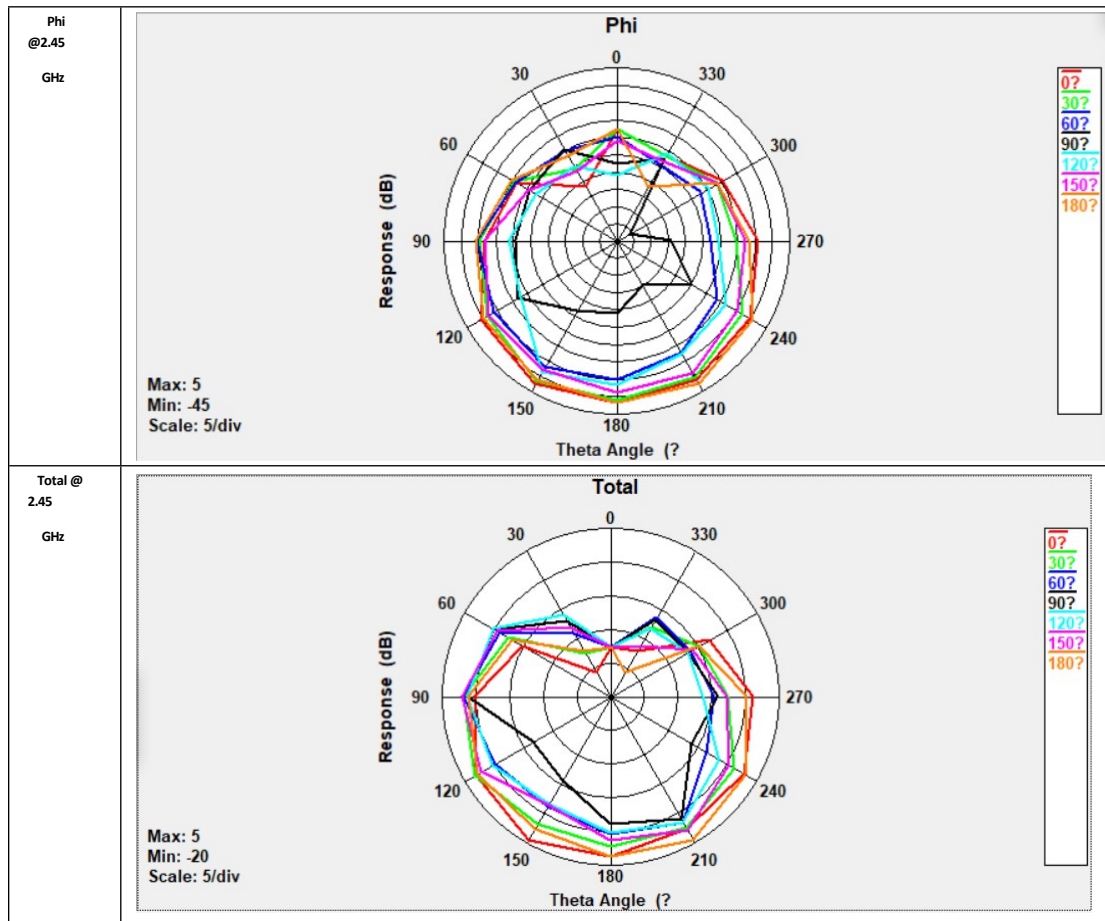
is

Based on test PCB board dimensions and test orientation shown below. The following data was tested in the ETS 3D microwave darkroom.



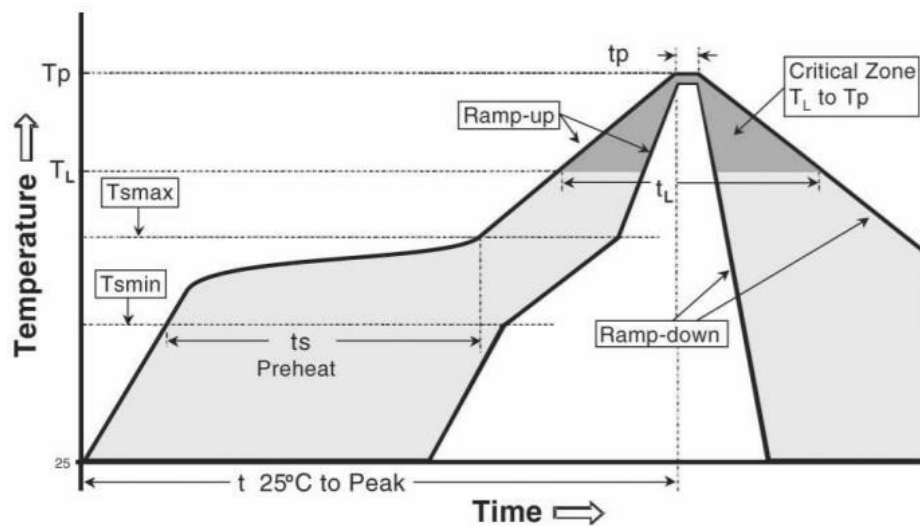
Gain and efficiency	Bandwidth 2.4G-2.5GHz
Peak Gain	4.3dBi
Average in-band gain	4.1dBi
Average Gain across the band	
In-band gain range	3.9dBi~4.3dBi
Gain Range across the band	
Peak Efficiency	81.7%
Average in-band efficiency	80.2%
Average Efficiency across the band	
In-band efficiency range	78.6%~81.7%
Efficiency Range across the band	





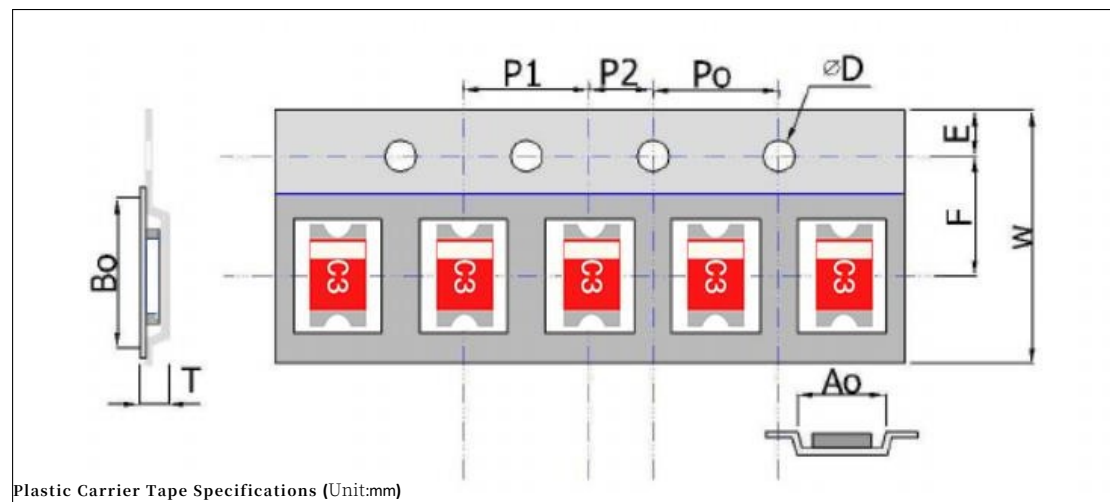
Welding conditions

Typical welding specifications for reliable and non-destructive welding are shown below:



Phase	Profile features	Pb-Free assembly (SnAgCu)
RAMP-UP	Avg. Ramp-up Rate (T _{smax} to T _p)	3 °C / second (max.)
PREHEAT	- Temperature Min (T _{smin})	150 °C
	- Temperature Max (T _{smax})	200 °C
	- Time (t _{smin} to t _{smax})	60-180 seconds
REFLOW	- Temperature (T _L)	217 °C
	- Total Time above T _L (t _L)	60-150 seconds
PEAK	- Temperature (T _p)	260 °C
	- Time (t _p)	20-40 seconds
RAMP-DOWN	Rate	6 °C/second max
Time from 25 °C to Peak Temperature		8 minutes max

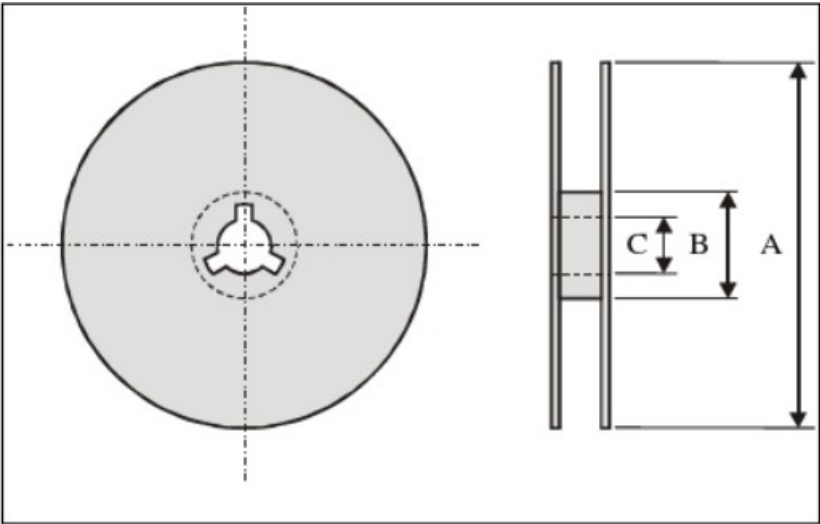
wrap



Plastic Carrier Tape Specifications (Unit:mm)

Index	Ao	Bo	ΦD	T	W
Dimension (mm)	3.0 ± 0.1	6.0 ± 0.1	1.55 ± 0.05	1.6 ± 0.1	16 ± 0.2
Index	E	F	Po	P1	P2
Dimension (mm)	1.75 ± 0.1	7.0 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.1

Reel Size



Index	A	B	C
Dimension(mm)	330	100	13.5

Standard quantity: 3000 PCS/disk.

Storage environment

The following conditions should be met when storing the product: Temperature : -10°C ~+40°C

Humidity : 30% to 70% relative humidity

Do not place the product in a location where it will come into contact with corrosive gases such as sulfur. Chlorine gas or acid may cause the product electrode to oxidize resulting in poor weldability.
The product should be placed in a toolbox and protected from moisture and dust. Products should be stored in a warehouse and protected from heat, vibration and direct sunlight.
The product should be stored under airtight conditions.