SMD 天线规格书
Antenna Specification Document

CrossAir™ SMD 天线系列

符合 RoHS 规范

PN: CA-C03

2.4 GHz ISM band antenna

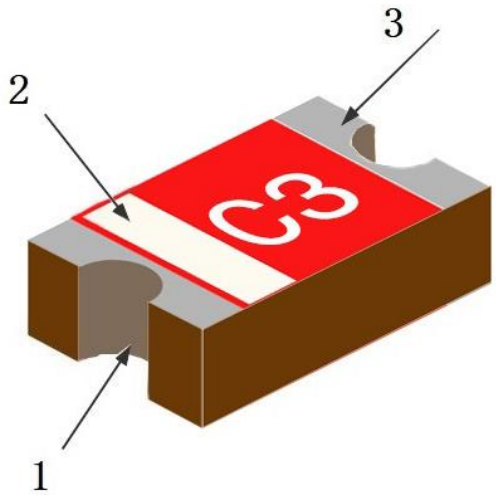
特点/Characteristics

1. 尺寸仅 5.5 X 2.0 X 1.0 mm³ 的小尺寸 SMD 贴片天线./A small-sized SMD surface mount antenna with a size of only 5.5 × 2.0 × 1.0 mm³.
2. 低能量损耗，高天线效率。/Low energy loss,high antenna efficiency.
3. 在温湿度变化的情况下具有高稳定性。/It has high stability under conditions of temperature and humidity changes.

应用/Application

1. 2.4GHz ISM Band Antenna Application
2. B T 、ZigBee、wieless applications, sma thome applications,etc.
3. WIFI（Only2.4G）

结构/Structure

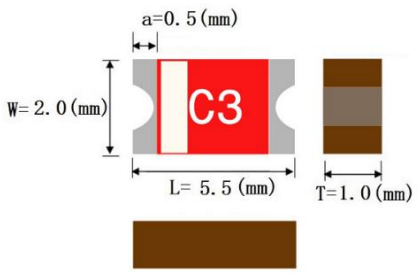


1、天线馈电端/Antenna feed end

2、馈电识别标志/Feed identification mark

3、天线焊接固定端/Antenna welding fixing end

尺寸/Size

三视图/Three-view drawing	符号/Symbol	尺寸/Size(mm)
	L	5.5±0.2
	w	2.0±0.1
	T	1.0±0.1
	a	0.5±0.1

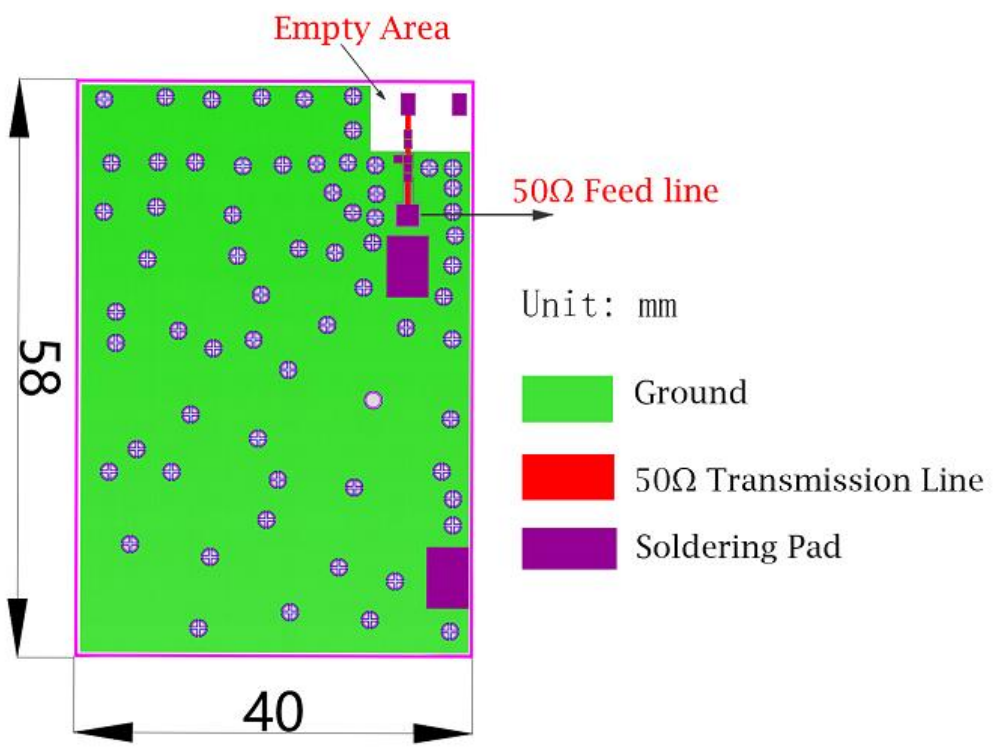
电气特性/Electrical characteristics

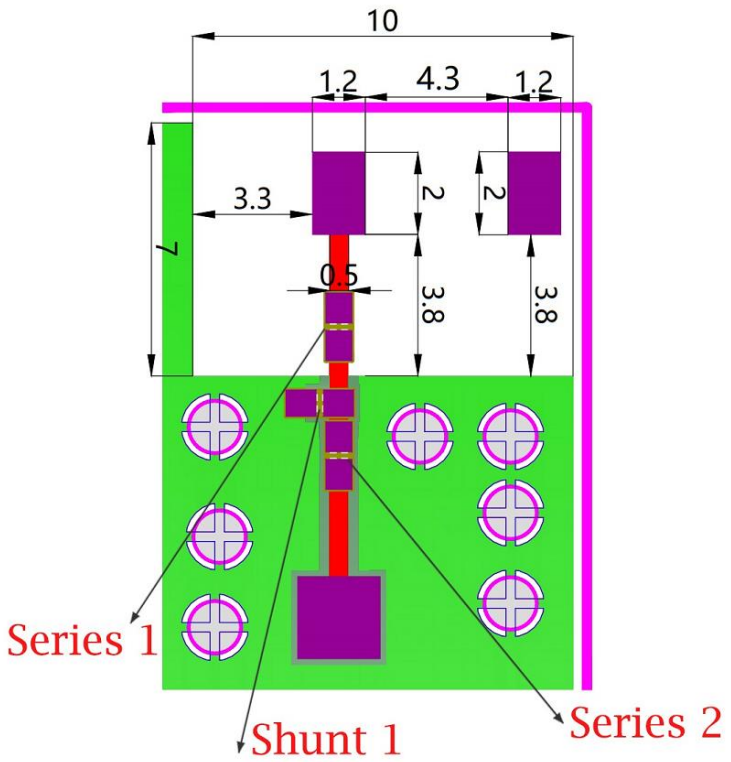
CA-C03	Specification
工作频率范围 Working Frequency	2450±50MHz
初始频段(GHz)	2.7GHz
带宽 Band Width	>100MHz
阻抗 Impedance	50Ω
增益 Gain(dBi)	4.3（peak）
驻波比 VSWR	<2
工作温度 Operation Temperature	-40℃~+95℃
可承受功率 Power Capacity	3W

天线 2.4G 工作频率需要通过阻抗匹配器件调试来实现.
The 2.4G wor king fr equency of the antenna needs to be adjusted thr ough impedance matching devices.

天线焊盘和走线设计/Antenna pads and trace design

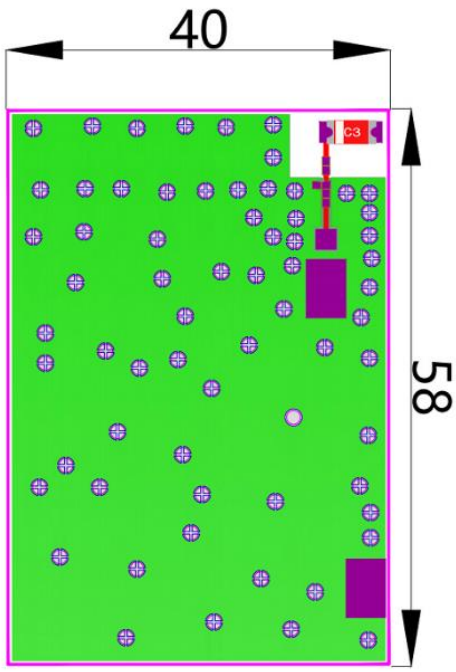
设计尺寸图/Design dimension drawing



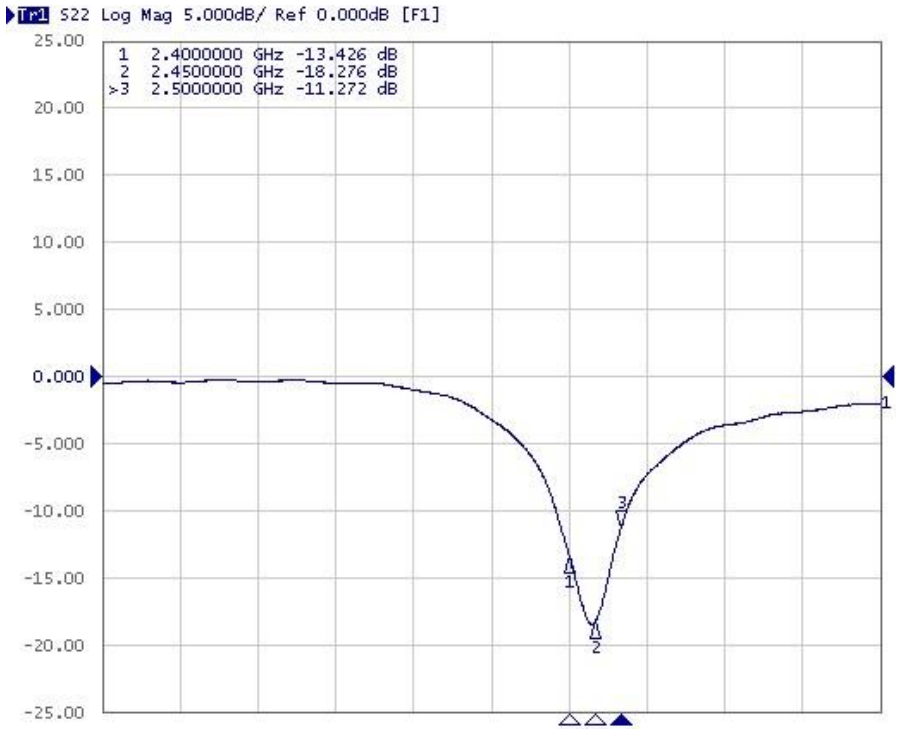


匹配器件值/ Match the device values	串联器件 **Series 1**	0Ω
	并联器件 **Shunt 1**	3nh
	串联器件 **Series 2**	0Ω

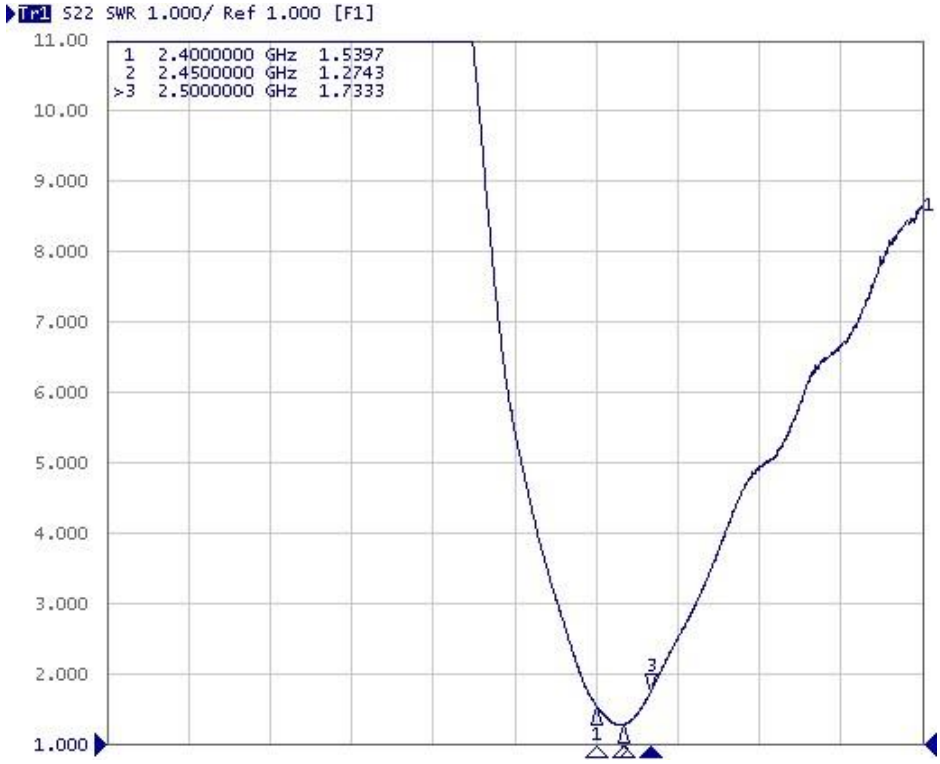
测试板上天线测试 **(板厚 1.0mm)**/Antenna test on the test board (board thickness 1.0mm)



天线 S11 特性/Antenna S11 characteristics



天线 VSWR 特性/Antenna VSWR characteristics

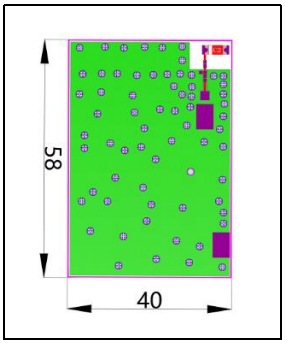


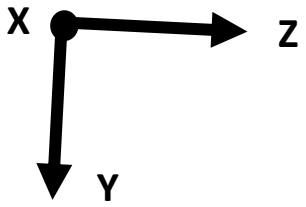
效率和辐射图/Efficiency and radiation map

效率、辐射图、增益等性能是基于测试板设计得到的。 CA-C03 天线的规格特性测试数据是

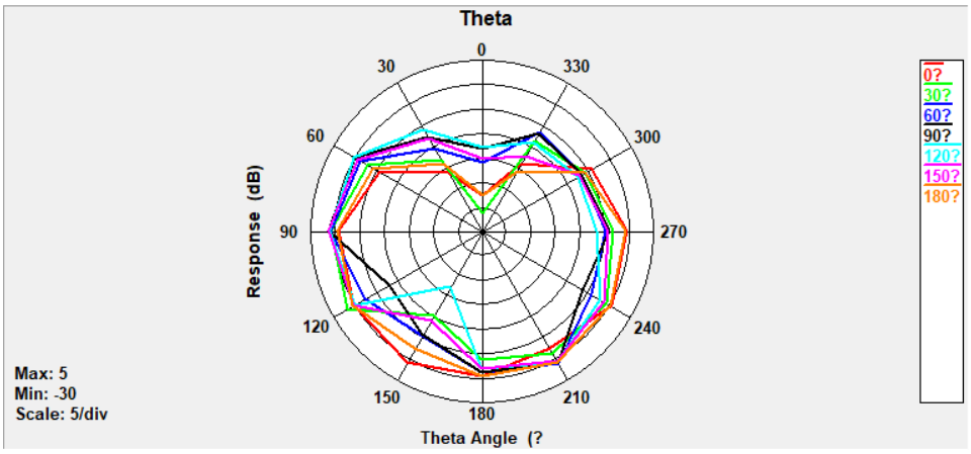
基于测试 PCB 板尺寸以及下图所示的测试方向所得到的。以下数据是在 ETS 3D 微波暗室测试完成的.

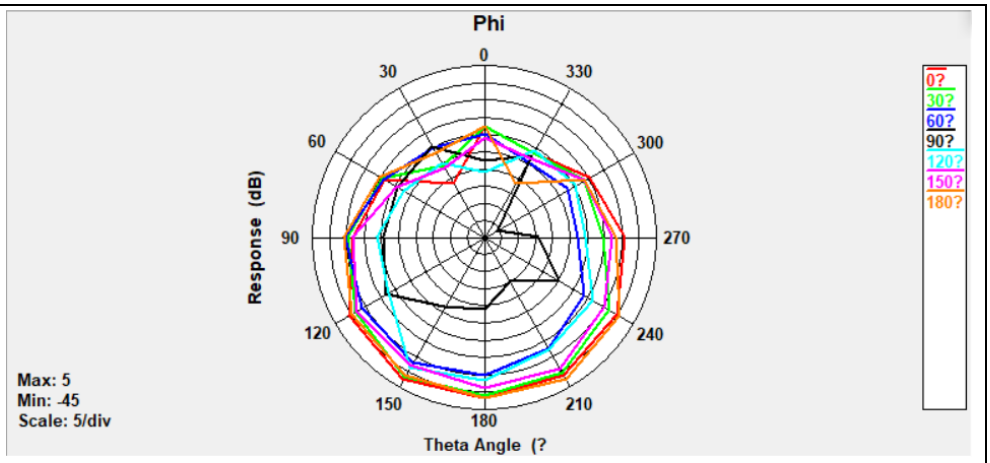
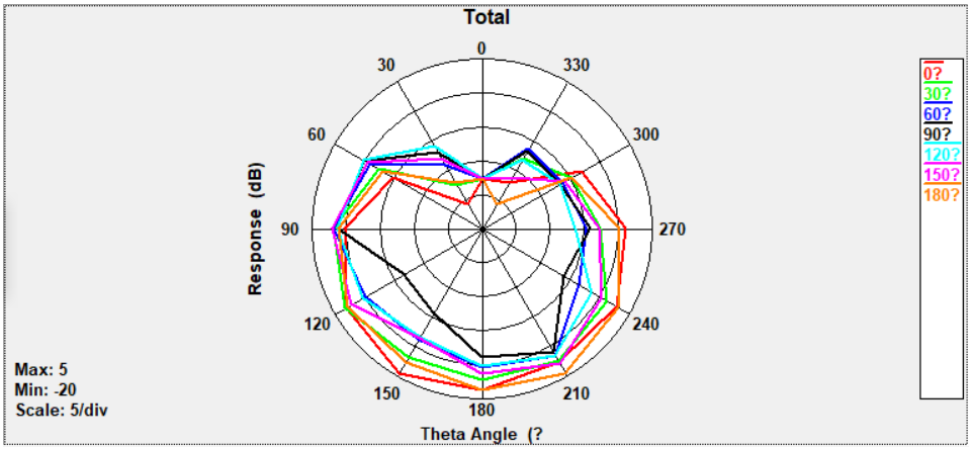
The performance parameters such as efficiency, radiation pattern, gain, etc. were obtained based on the design of the test board. The specification and characteristic test data of the CA-C03 antenna were obtained based on the test PCB board dimensions and the test direction as shown in the figure. The following data were obtained after the completion of the ETS 3D microwave anechoic chamber test.





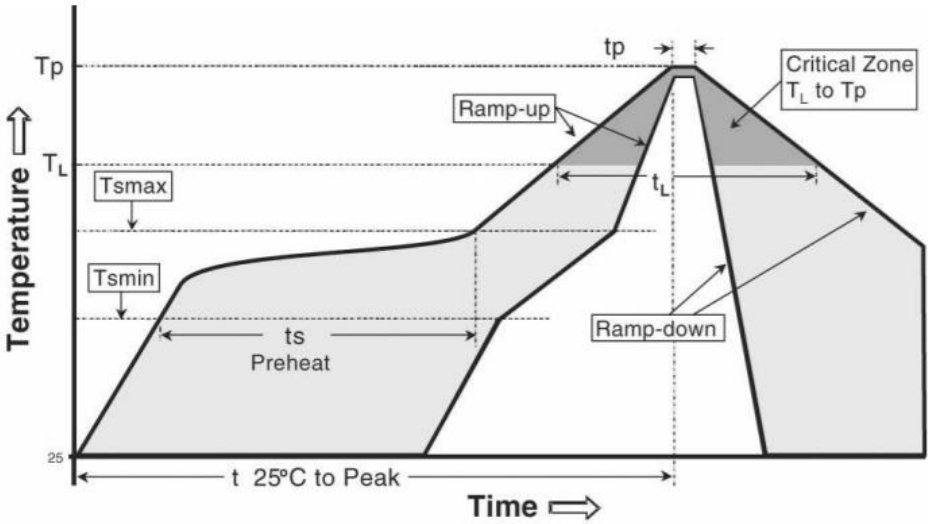
增益和效率/Gain and efficiency	2.4G-2.5GHz
峰值增益 Peak Gain	4.3dBi
带内平均增益 Average Gain across the band	4.1dBi
带内增益范围 Gain Range across the band	3.9dBi~4.3dBi
峰值效率 Peak Efficiency	81.7%
带内平均效率 Average Efficiency across the band	80.2%
带内效率范围 Efficiency Range across the band	78.6%~81.7%

Theta @2.45 GHz	

Phi @2.45 GHz	
Total @2.45 GHz	

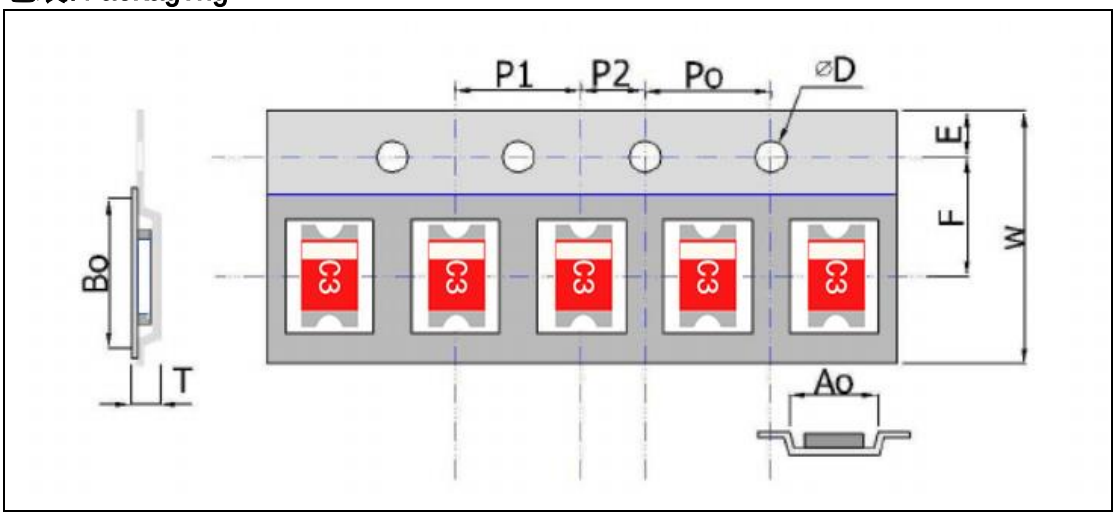
焊接条件/Welding conditions

可靠无损的典型焊接规范如下图所示/The typical welding specifications for reliable and undamaged results are shown in the following figure.:



Phase	Profile features	Pb-Free assembly (SnAgCu)
RAMP-UP	Avg. Ramp-up Rate (Tsmax to Tp)	3 °C / second (max.)
PREHEAT	- Temperature Min (Tsmin) - Temperature Max (Tsmax) - Time (tsmin to tsmax)	150 °C 200 °C 60-180 seconds
REFLOW	- Temperature (TL) - Total Time above TL (tL)	217 °C 60-150 seconds
PEAK	- Temperature (Tp) - Time (tp)	260 °C 20-40 seconds
RAMP-DOWN	Rate	6 °C/second max
Time from 25 °C to Peak Temperature		8 minutes max

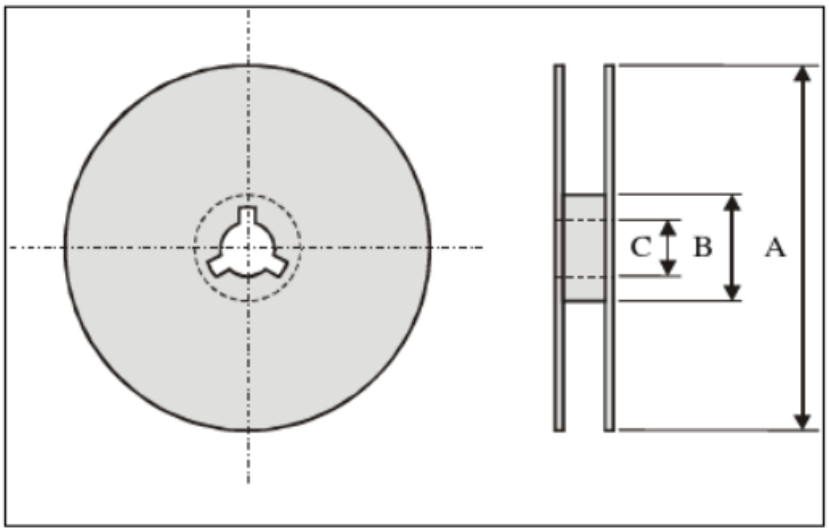
包装/Packaging



塑胶载带规格 (单位:mm)/Plastic tape specification (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

卷盘尺寸/Roll diameter size



Index	A	B	C
Dimension(mm)	**330**	**100**	**13.5**

标准数量： 3000 PCS/盘.
Standar d quantity: 3000 PCS per tr ay.