SMD antenna specifications

CrossAir™ SMD 天线系列
符合 RoHS 规范

PN: CA-C03

2.4 GHz ISM 频段天线

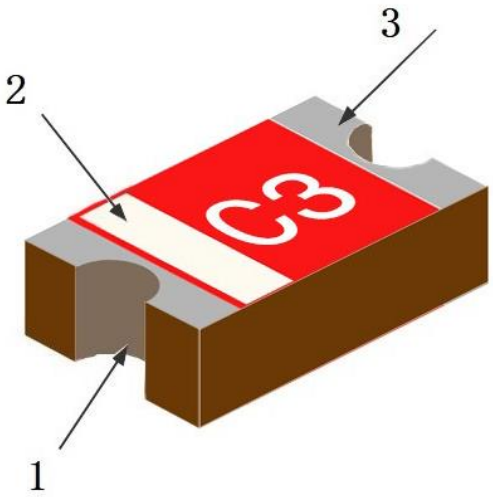
特点

1. 尺寸仅 5.5 X 2.0 X 1.0 mm^3 的小尺寸 SMD 贴片天线.
2. 低能量损耗，高天线效率。
3. 在温湿度变化的情况下具有高稳定性。

应用

1. 2.4GHz ISM 频段天线应用
2. 蓝牙、ZigBee、无线应用、智能家居应用等
3. WIFI（仅 2.4G）

结构

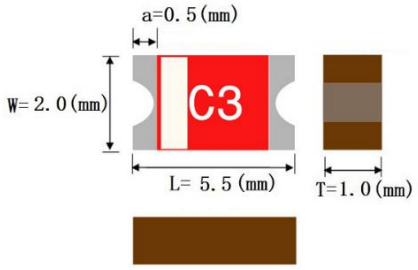


1、天线馈电端

2、馈电识别标志

3、天线焊接固定端

尺寸

三视图	符号	尺寸(mm)
	**L**	**5.5**±0.2
	w	**2.0**±0.1
	T	**1.0**±0.1
	a	**0.5**±0.1

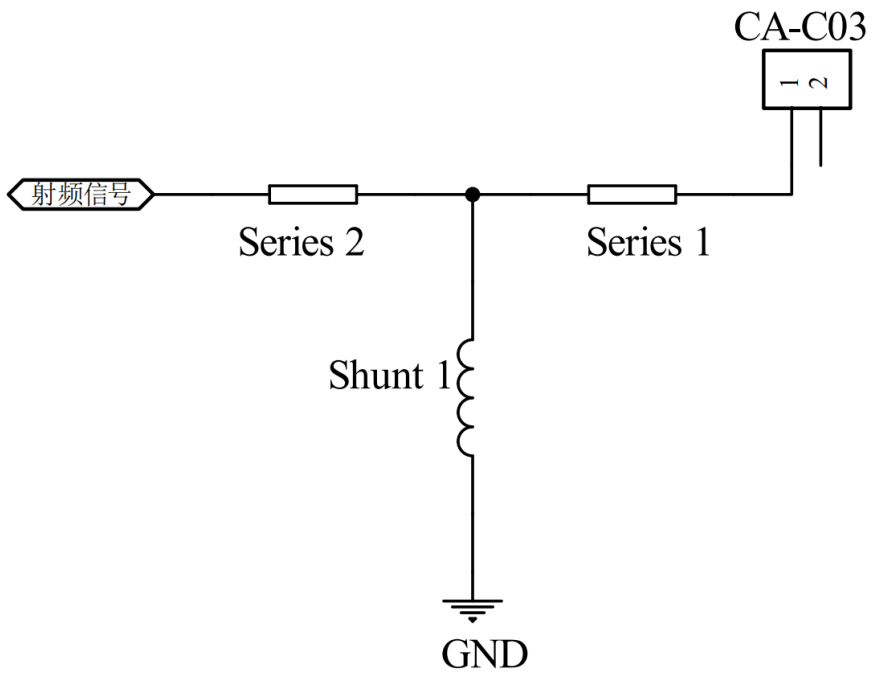
电气特性

CA-C03	Specification
工作频率范围 Working Frequency	2450±50MHz
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.

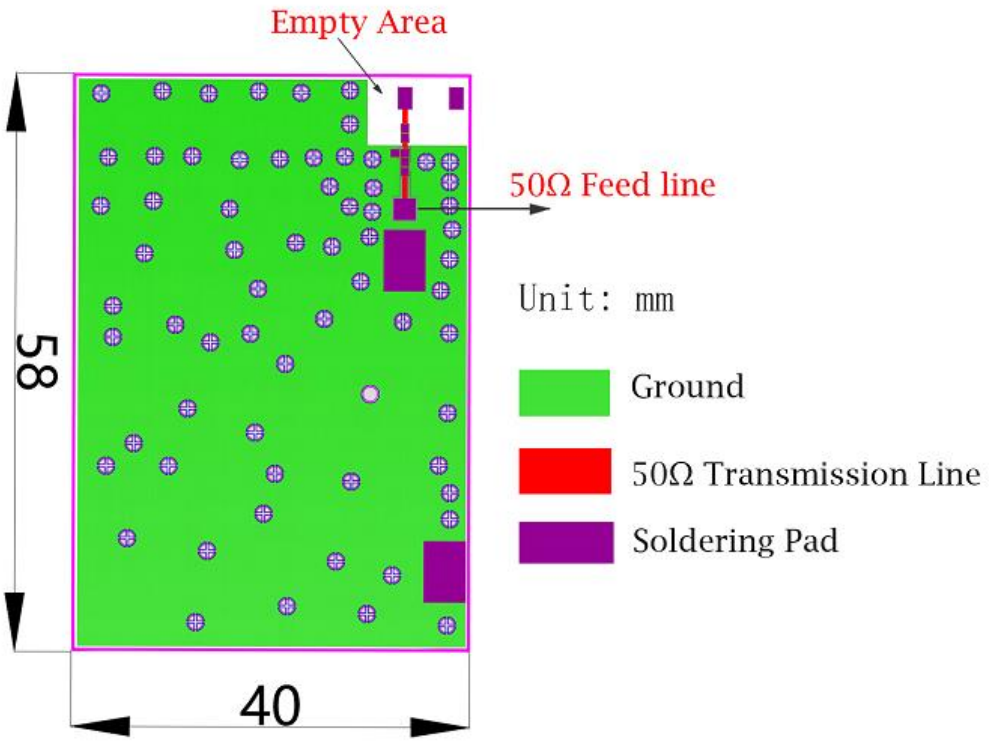
天线焊盘和走线设计

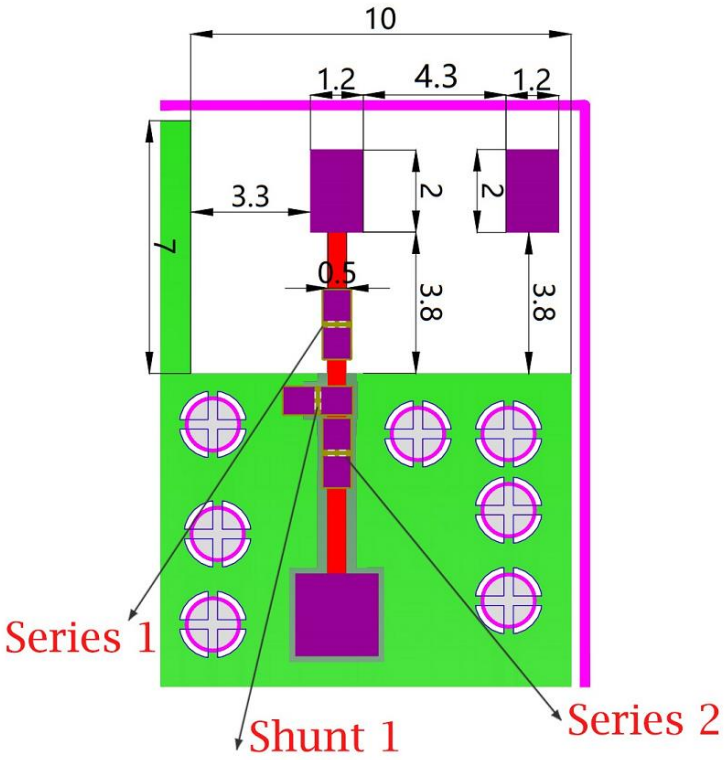
PCB 原理图



设计尺寸图

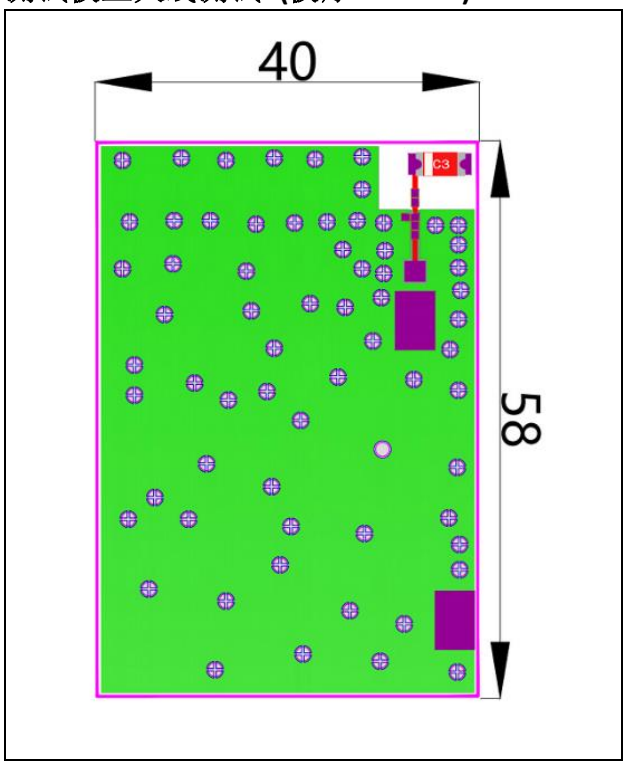
Manufacturer: Guangzhou Cambrian Electronic Technology Co., LTD
Address: Room 1119, Building 1, Hongda Business and Creative Park, No.96 Yuanxiang Road, Yunpu Street, Huangpu District, Guangzhou



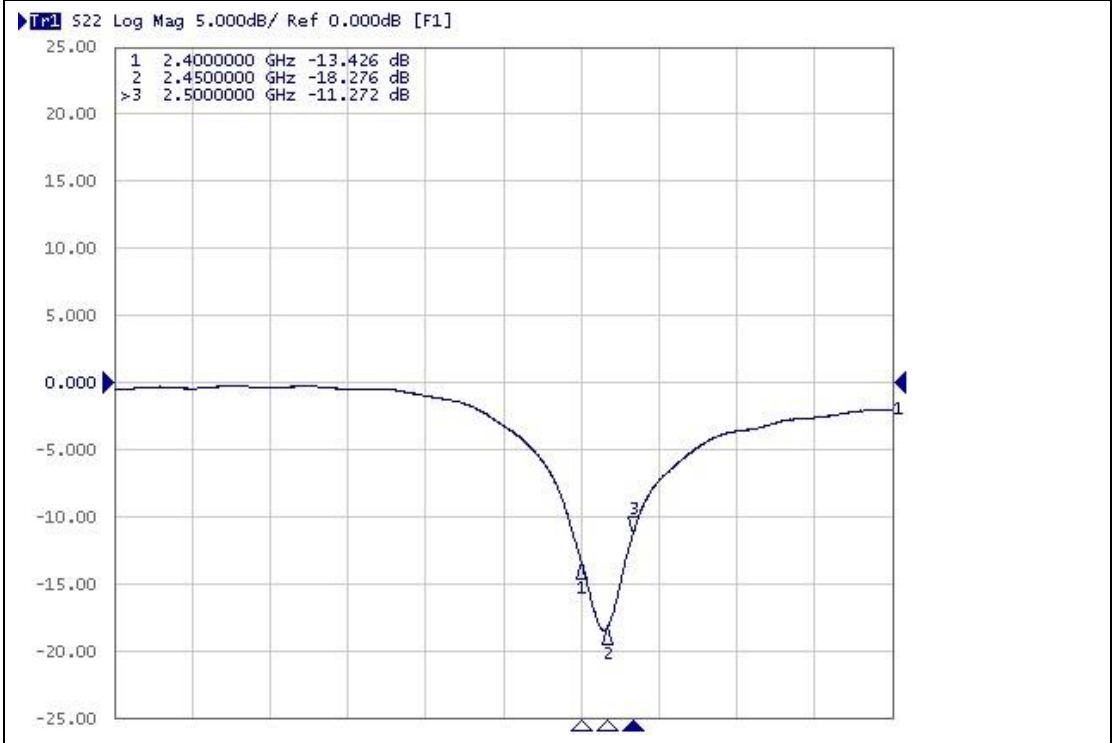


匹配器件值	串联器件 **Series 1**	电阻 0Ω
	并联器件 **Shunt 1**	高频电感 3nh
	串联器件 **Series 2**	电阻 0Ω

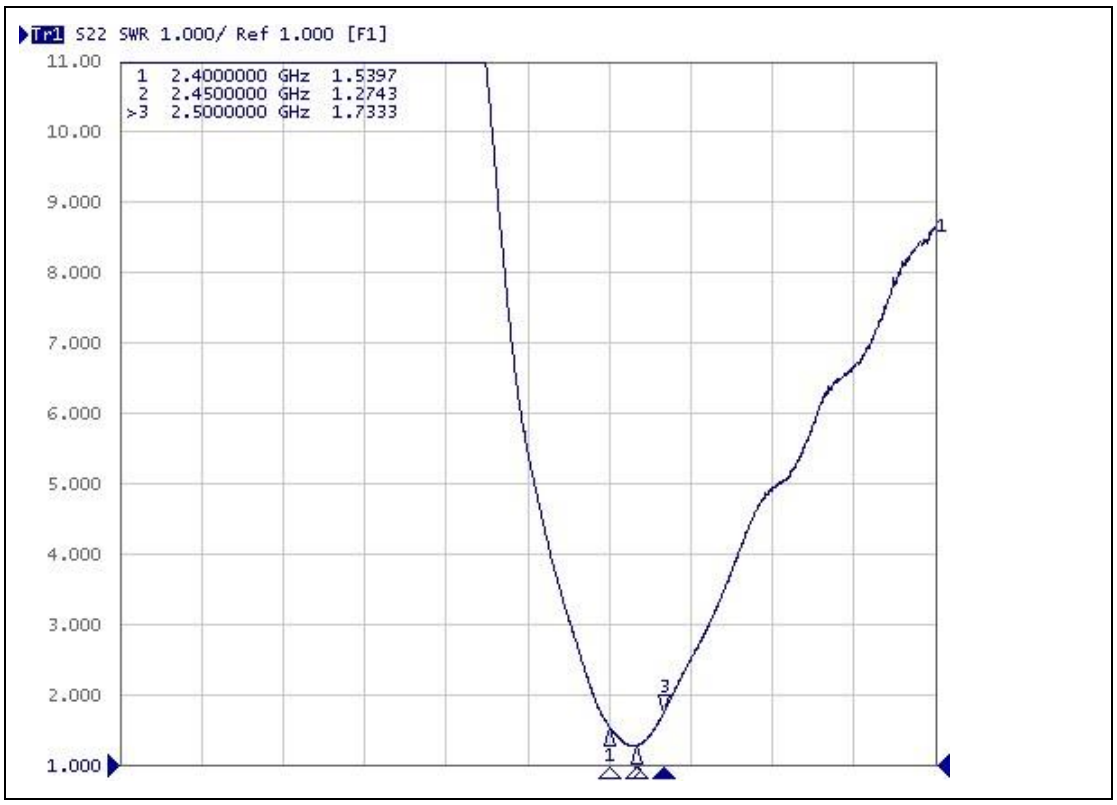
测试板上天线测试 (板厚 1.0mm)



天线 S11 特性

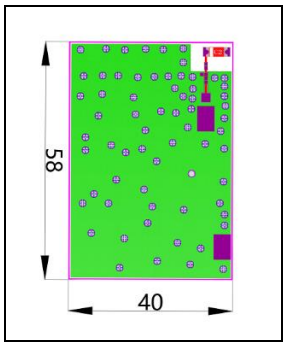


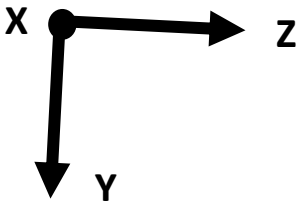
天线 VSWR 特性



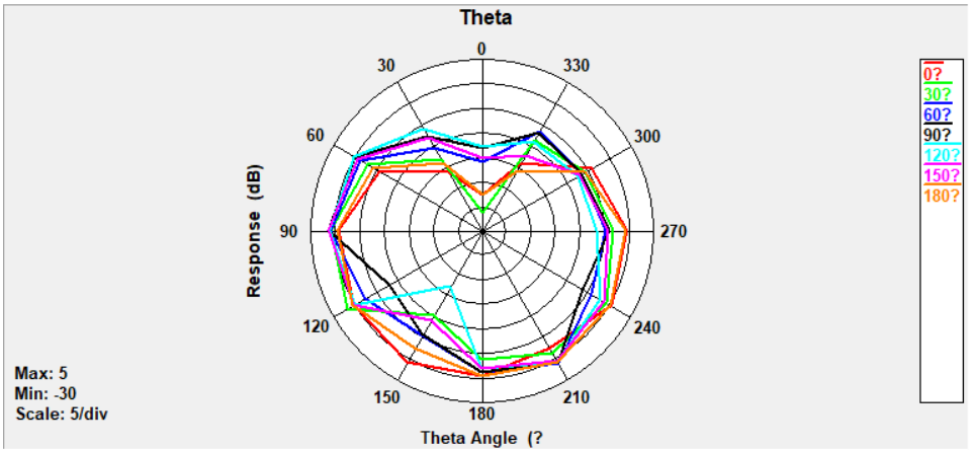
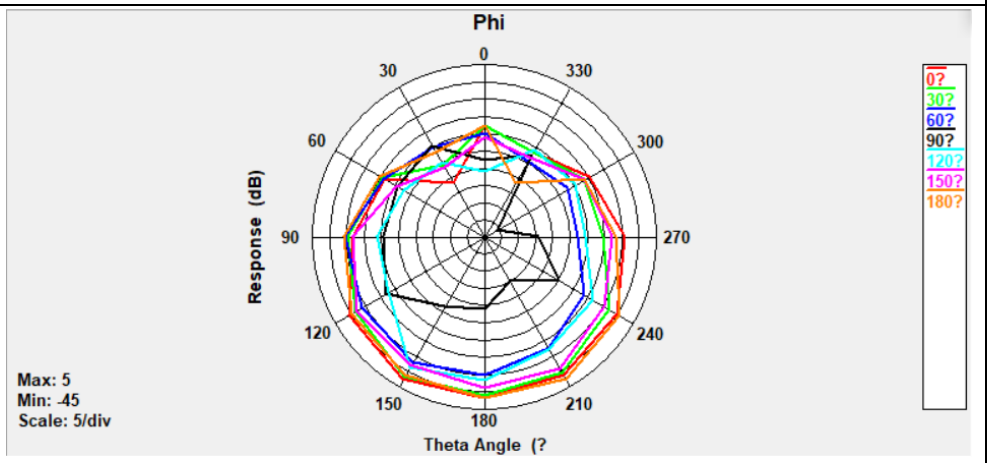
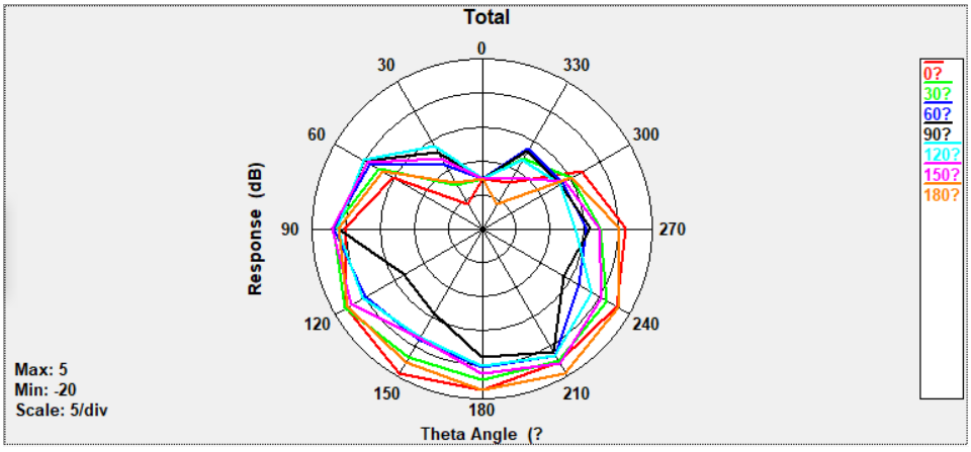
效率和辐射图

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.



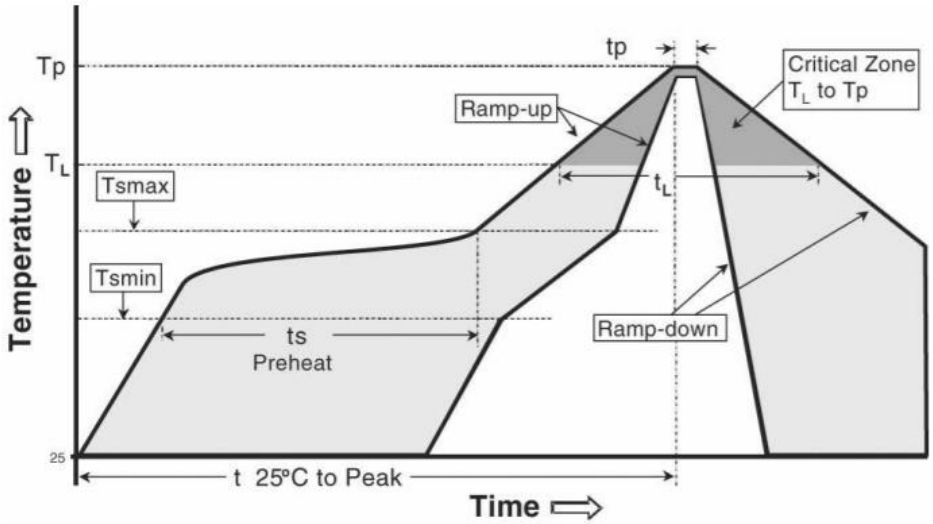


增益和效率	带宽 2.4G-2.5GHz
峰值增益 Peak Gain	4.3dBi
带内平均增益 Average Gain across the band	4.1dBi
带内增益范围 Gain Range across the band	3.9dBi~4.3dBi
峰值效率 Peak Efficiency	81.7%
带内平均效率 Average Efficiency across the band	80.2%
带内效率范围 Efficiency Range across the band	78.6%~81.7%

Theta @2.45 GHz	
Phi @2.45 GHz	
Total @2.45 GHz	

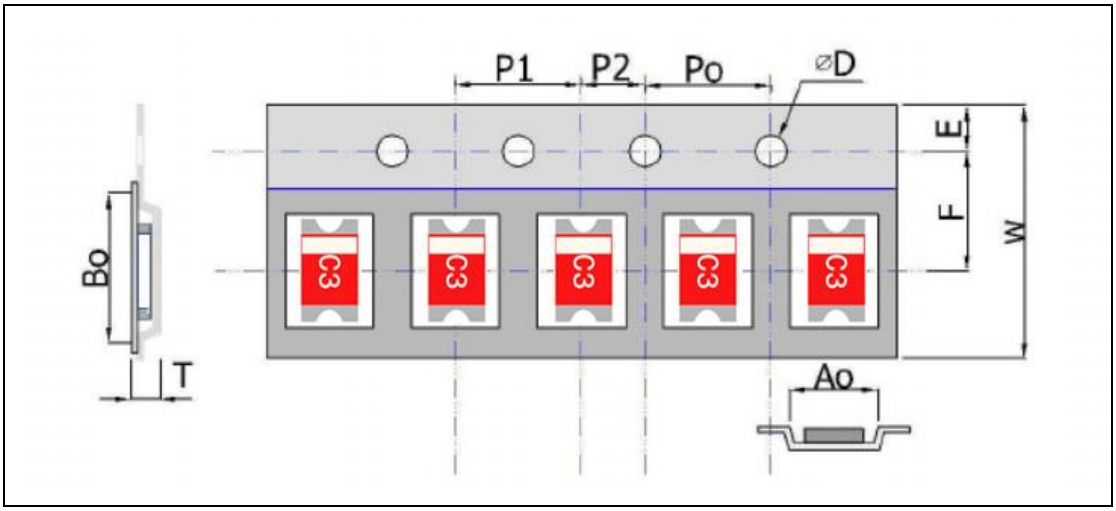
焊接条件

可靠无损的典型焊接规范如下图所示：



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

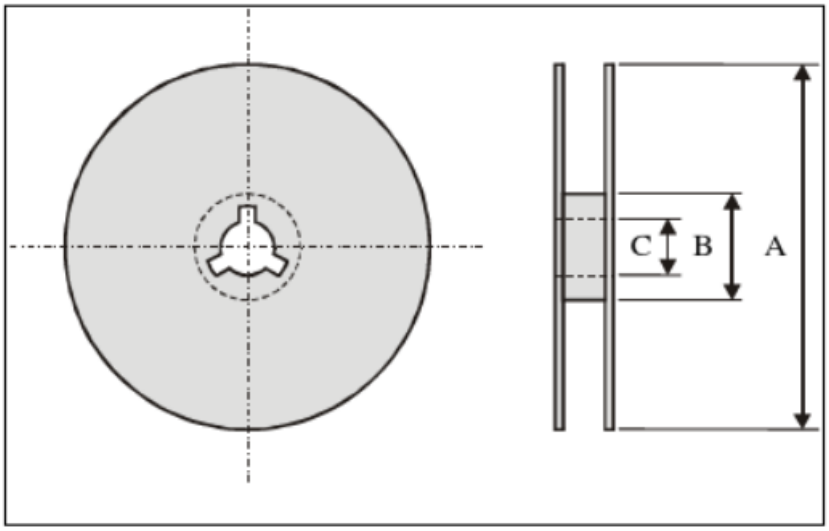
包装



塑胶载带规格（单位: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



Index	A	B	C
Dimension(mm)	330	100	13.5

标准数量： 3000 PCS/盘.

存储环境

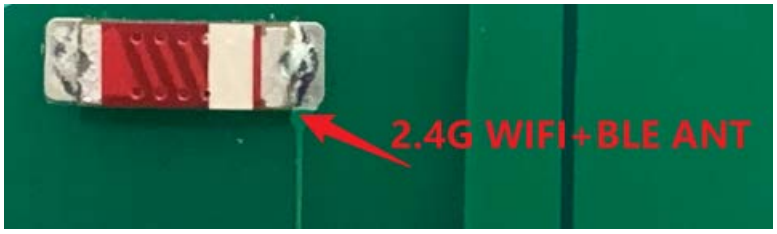
产品存储时应满足下列条件：

温度 ： -10℃~+40℃

湿度 ： 30% 至 70% 相对湿度

产品放置的位置不要接触腐蚀性气体，如硫磺等。氯气或酸可能导致产品电极氧化造成可焊接性变差。

产品应放置在工具箱里且避免受潮、灰尘的影响。

产品应存放在仓库中且避免热、振动、阳光直射。

产品应在密闭条件下储存。