SMD 天线规格书

OverAir® SMD 天线系列
符合 RoHS 规范

PN: OA-W01

2.4G/5G WIFI 频段天线

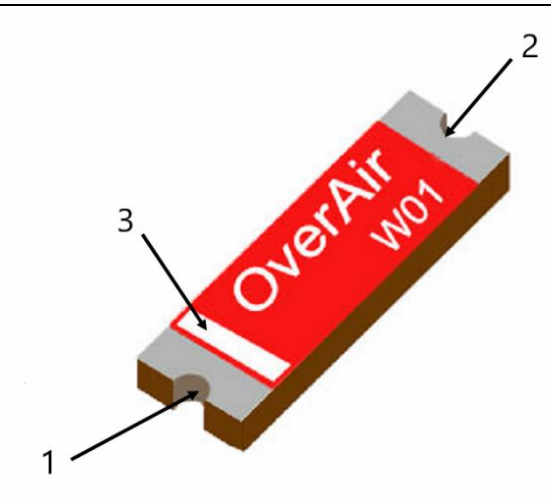
特点

1. 尺寸仅 8.0 X 3.0 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. 在温度湿度变化的情况下具有高稳定性。

应用

1. 2.4G/5G WIFI 频段的天线应用。
2. 其他工作在 2.4G 或 5G 频段的天线应用。

结构

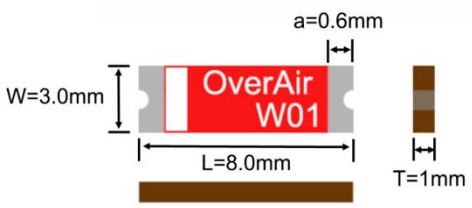


1、天线信号馈电端

2、天线焊接固定端

3、天线馈电端标记

尺寸

三视图	符号	尺寸(mm)
	**L**	**8.0**±0.1
	w	**3.0**±0.1
	T	**1.0**±0.1
	a	**0.6**±0.1

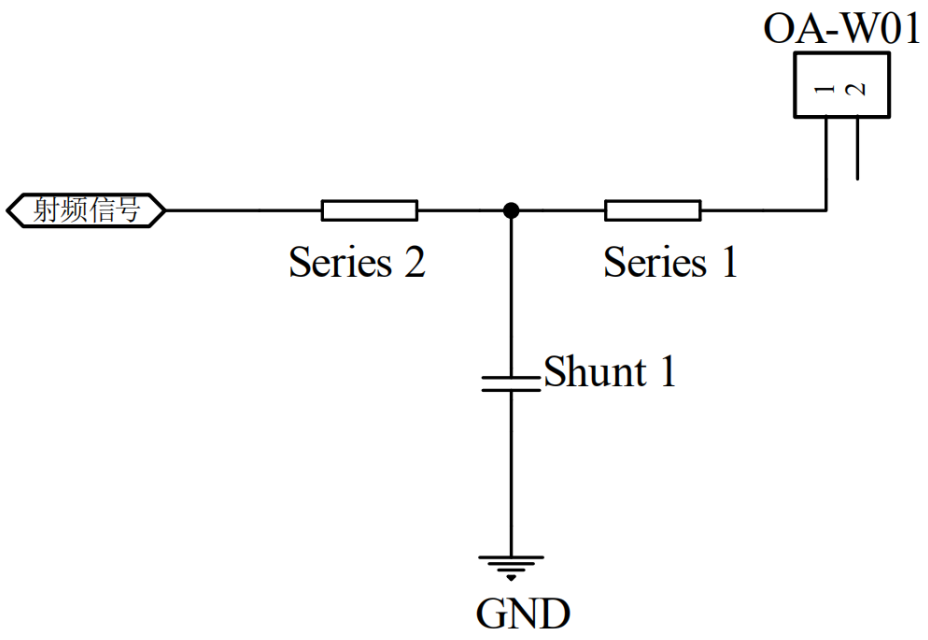
电气特性

OA-W01	Specification
工作频率范围 Working Frequency	2400-2500MHz，5200-6000MHz
阻抗 Impedance	50Ω
增益 Gain(dBi)	6.1dBi（2.45GHz），3.5dBi（5.5Ghz）
驻波比 VSWR	<2
工作温度 Operation Temperature	-40℃~+85℃
可承受功率 Power Capacity	3W

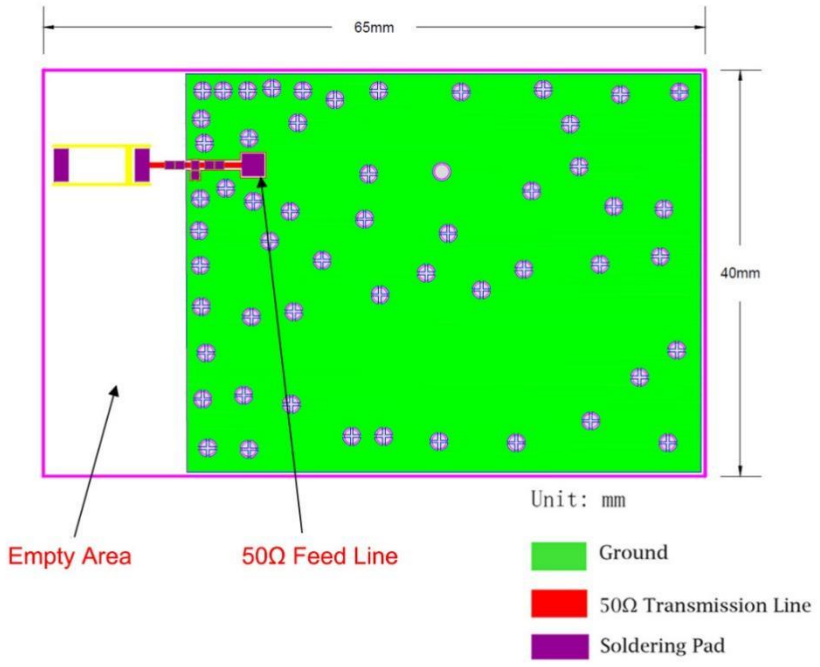
天线工作频率需要通过阻抗匹配器件调试来实现.

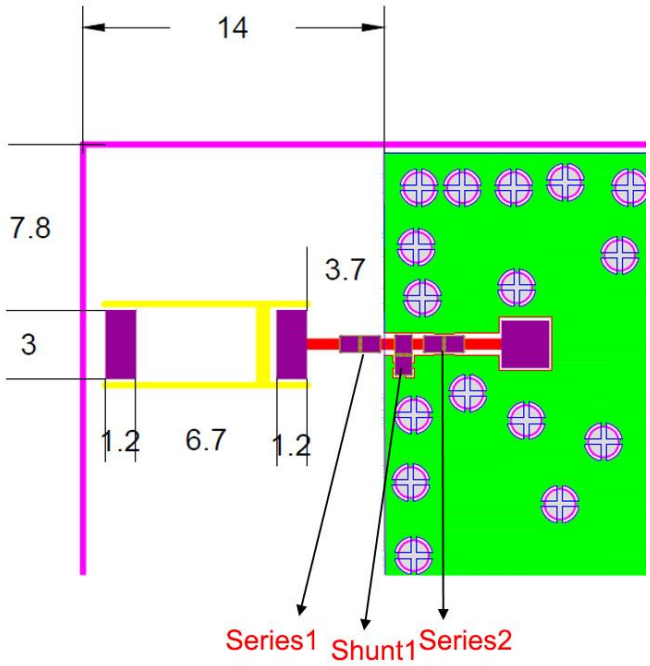
天线焊盘和走线设计

PCB 原理图



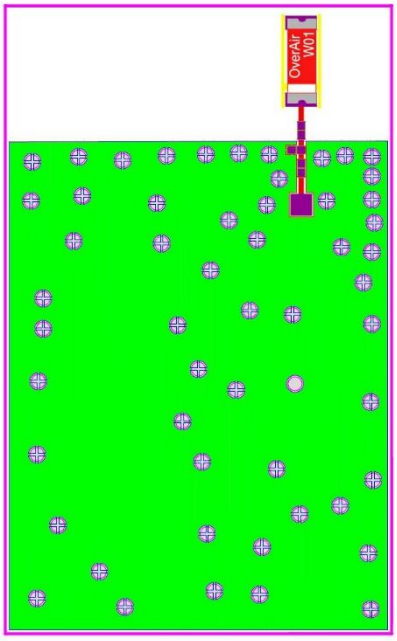
PCB 设计尺寸图



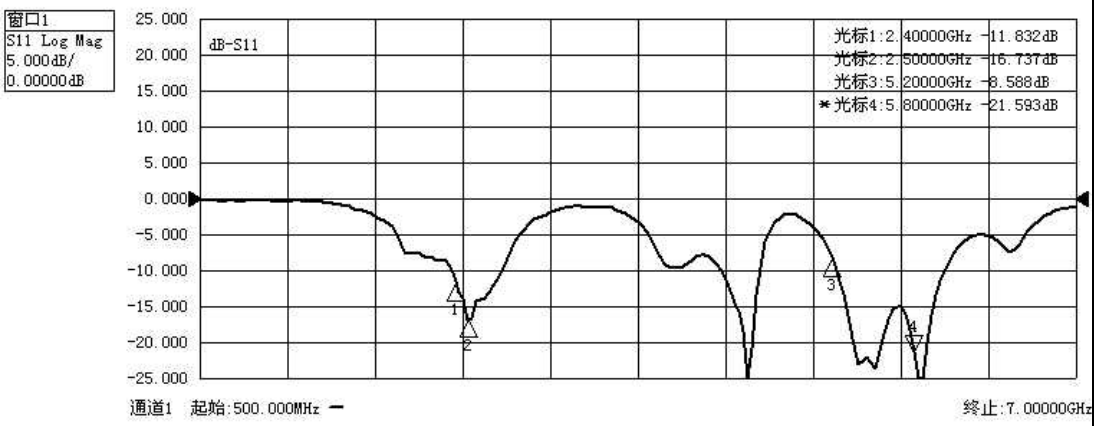


匹配器件值	串联器件 Series 1	电阻 0Ω
	并联器件 Shunt 1	空置 NC
	串联器件 Series 2	电阻 0Ω

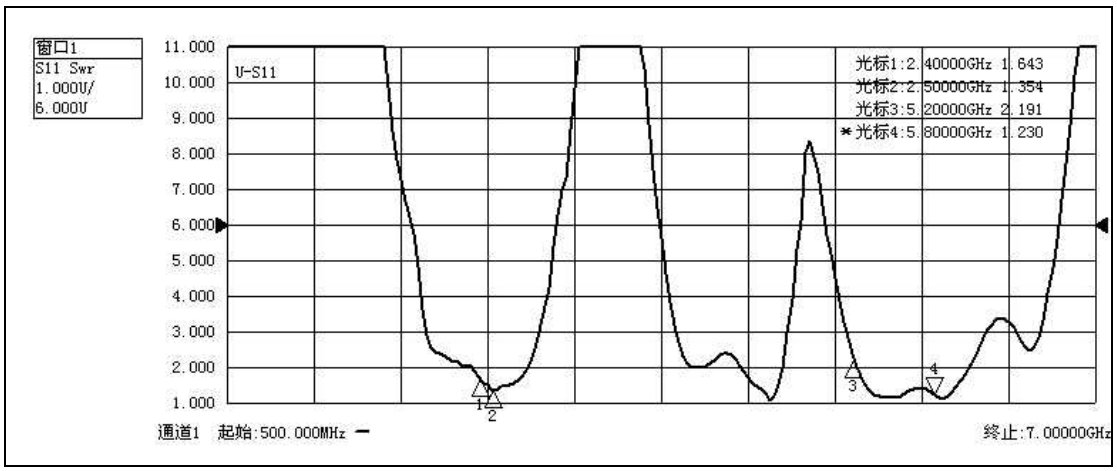
测试板上天线测试 (板厚 1.0mm)



天线 **S11** 特性

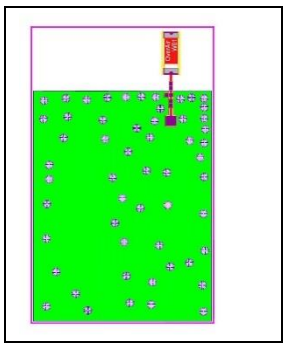


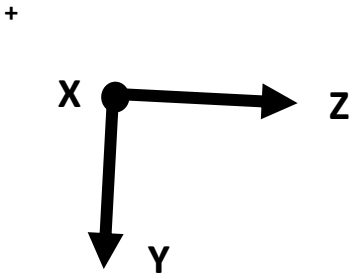
天线 **VSWR** 特性



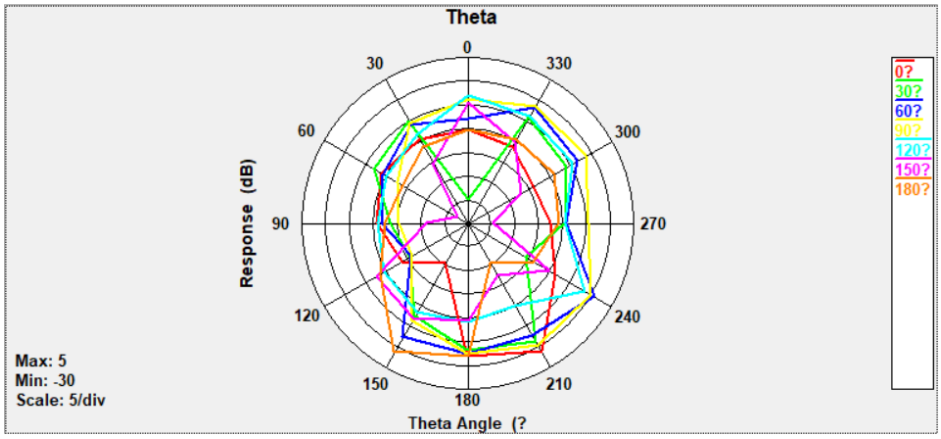
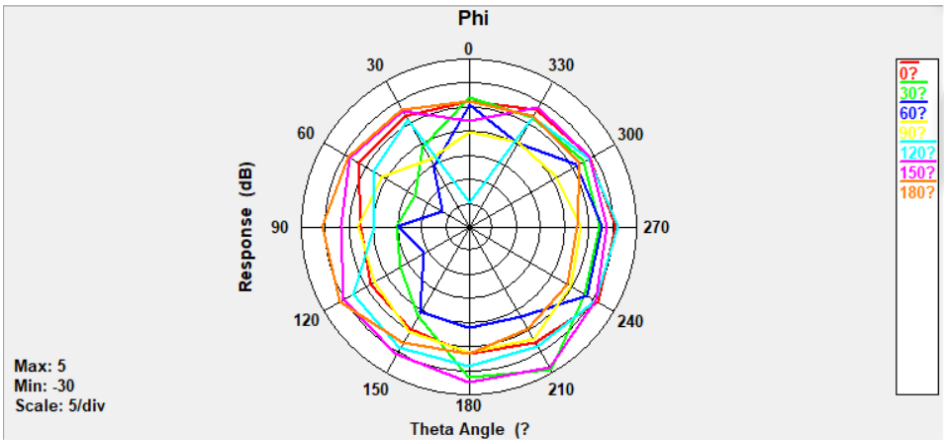
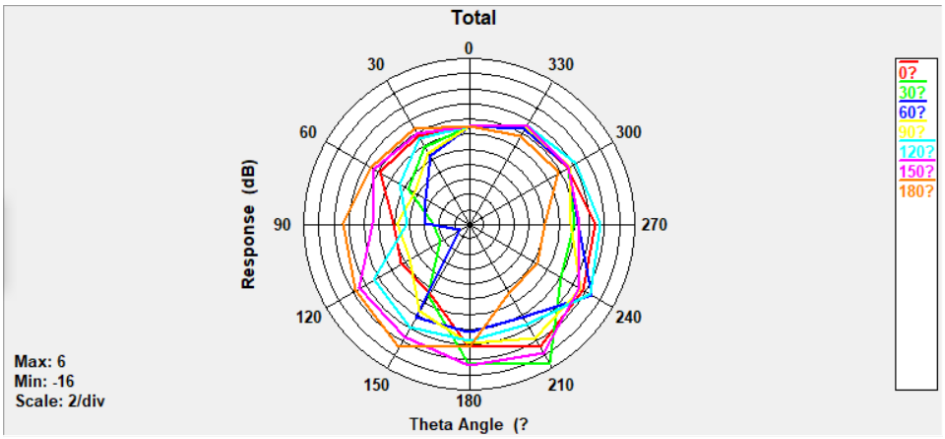
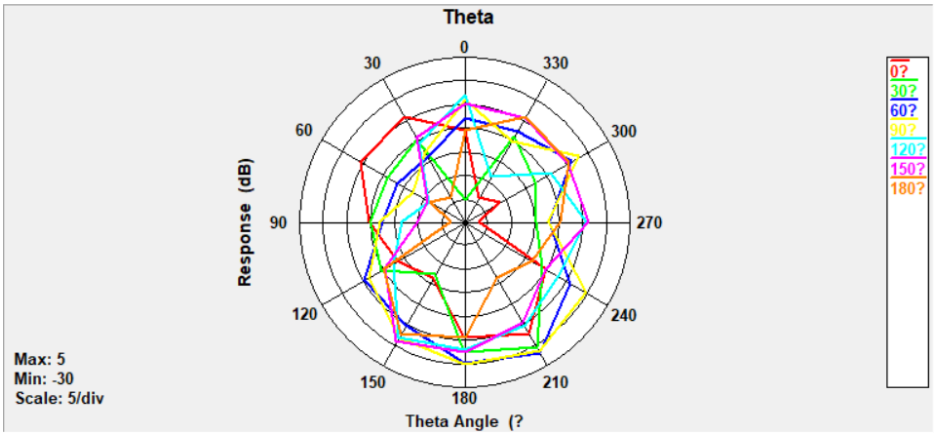
效率和辐射图

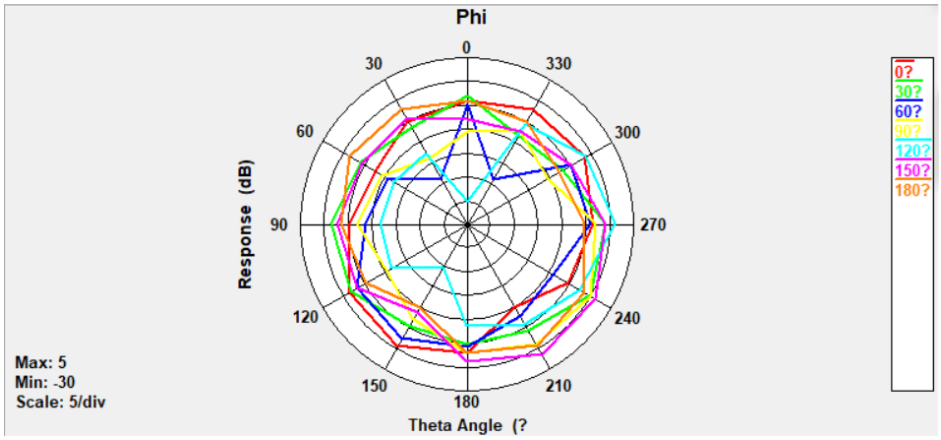
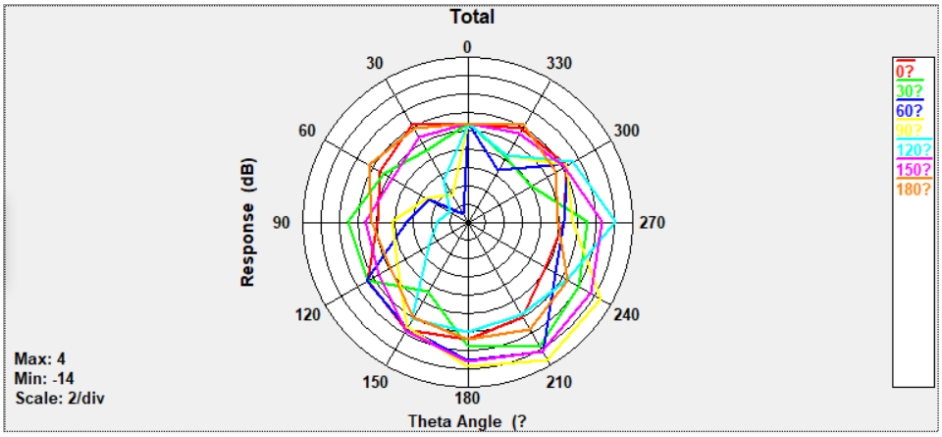
效率、辐射图、增益等性能是基于测试板设计得到的。 OA-W01 天线的规格特性测试数据是基于测试 PCB 板尺寸以及下图所示的测试方向所得到的。以下数据是在 ETS 3D 微波暗室测试完成的.





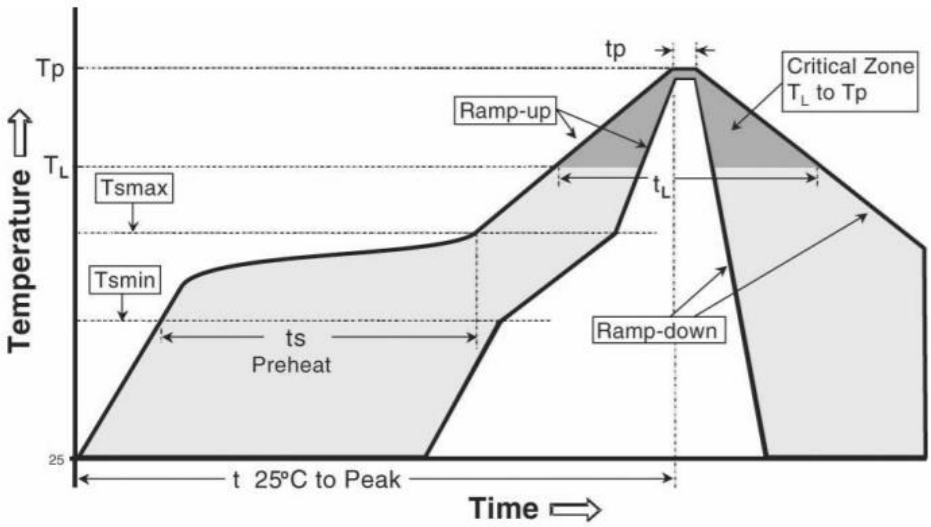
增益和效率	带宽 2.4G-2.5GHz	带宽 5.2G-5.8GHz
峰值增益 Peak Gain	6.1dBi	3.67dBi
带内平均增益 Average Gain across the band	5.7dBi	2.63dBi
带内增益范围 Gain Range across the band	5.5dBi~6.1dBi	1.33dBi~3.67dBi
峰值效率 Peak Efficiency	82.5%	62.4%
带内平均效率 Average Efficiency across the band	79%	51%
带内效率范围 Efficiency Range across the band	74.8%~82.5%	30.77%~62.4%

Theta @2.45 GHz	
Phi @2.45 GHz	
Total @2.45 GHz	
Theta @5.5 GHz	

Phi @5.5 GHz	
Total @5.5 GHz	

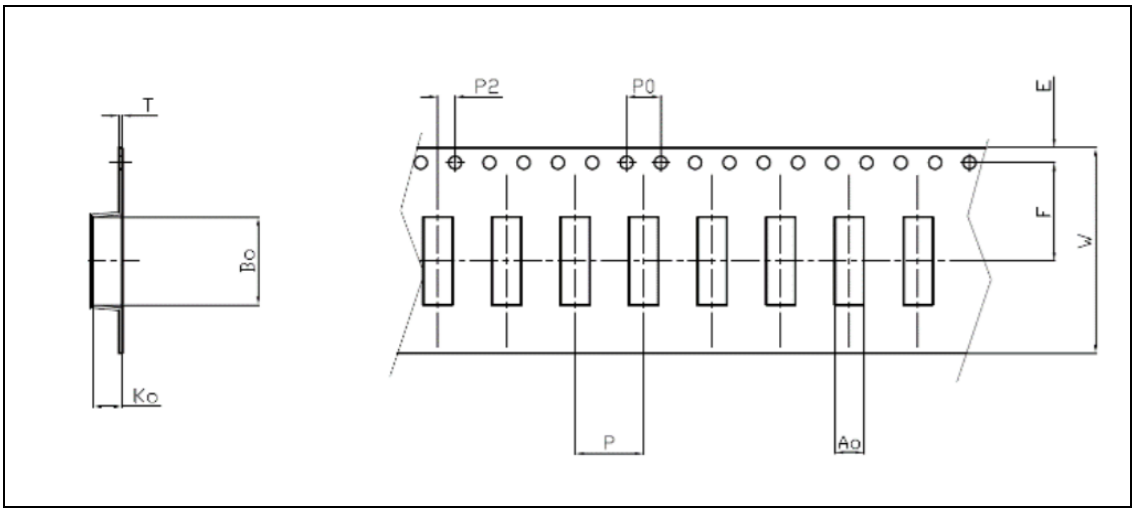
焊接条件

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

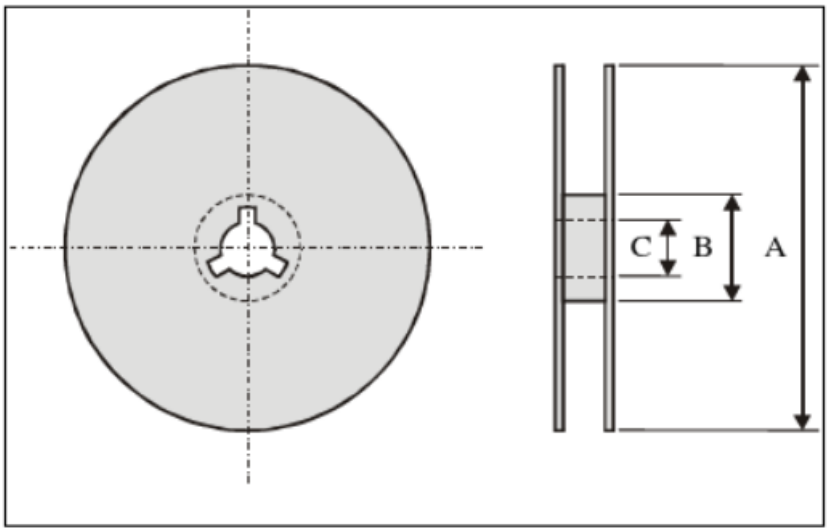
包装



塑胶载带规格 (单位:mm)

Index	Ao	Bo	Ko	T	W
Dimension (mm)	3.3±0.1	8.4±0.1	1.3±0.1	0.3±0.05	16.0±0.3
Index	E	F	P	P0	P2
Dimension (mm)	1.75±0.1	7.0±0.1	8.0±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: 2000 PCS/盘.

存储环境

产品存储时应满足下列条件：

料盘存储温度 ： -10℃~+40℃ （非天线工作温度）

料盘存储湿度 ： 30% 至 70% 相对湿度 （非天线工作湿度）

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。