

SMD 天线规格书

CrossAir™ SMD 天线系列
符合 RoHS 规范

PN: CA-C03

2.4 GHz ISM 频段天线

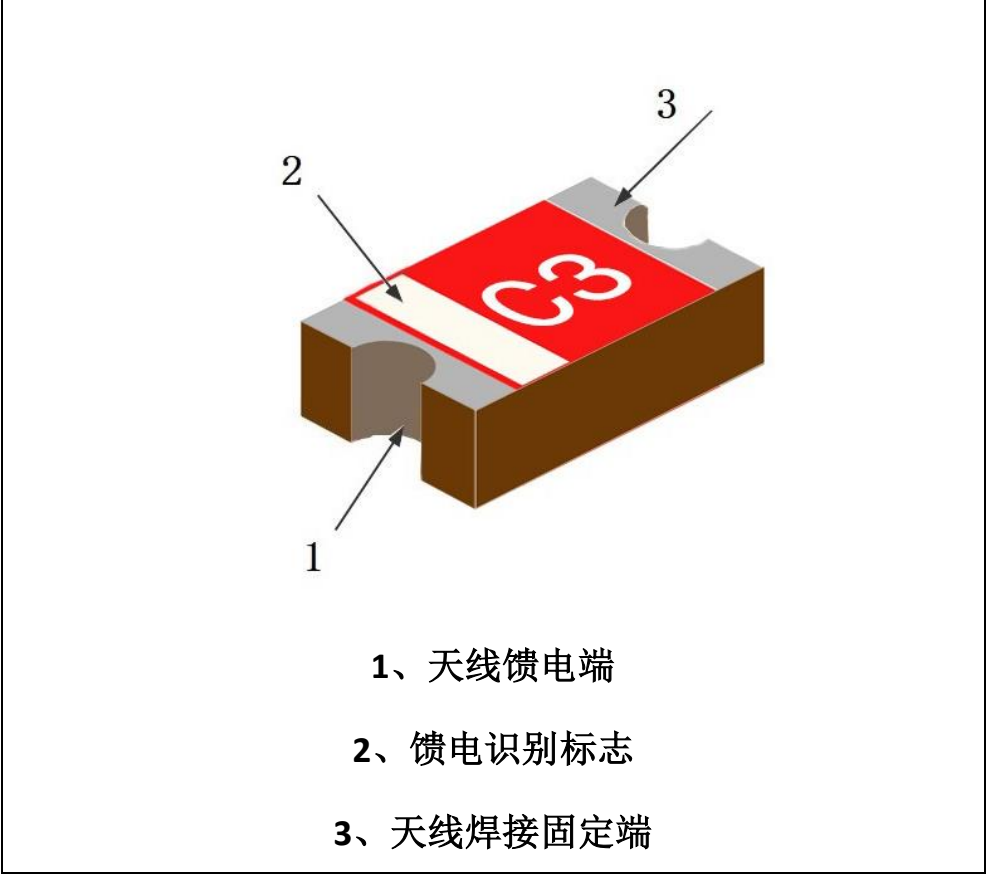
特点Peculiarity

- 1. 尺寸仅 5.5 X 2.0 X 1.0 mm³ 的小尺寸 SMD 贴片天线.
Small size SMD patch antenna measuring only 5.5X 2.0X 1.0mm3.
- 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。High stability in the case of temperature and humidity changes.

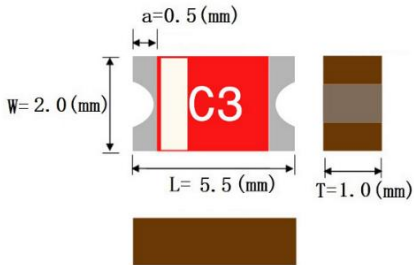
应用Apply

- 1. 2.4GHz ISM 频段天线应用。2.4GHz ISM band antenna applications.
- 2. 蓝牙、ZigBee、无线应用、智能家居应用等。Bluetooth, ZigBee, wireless applications, smart home applications, etc.
- 3. WIFI（仅 2.4G）。WIFI (2.4G only) ..

结构Structure



尺寸Dimension

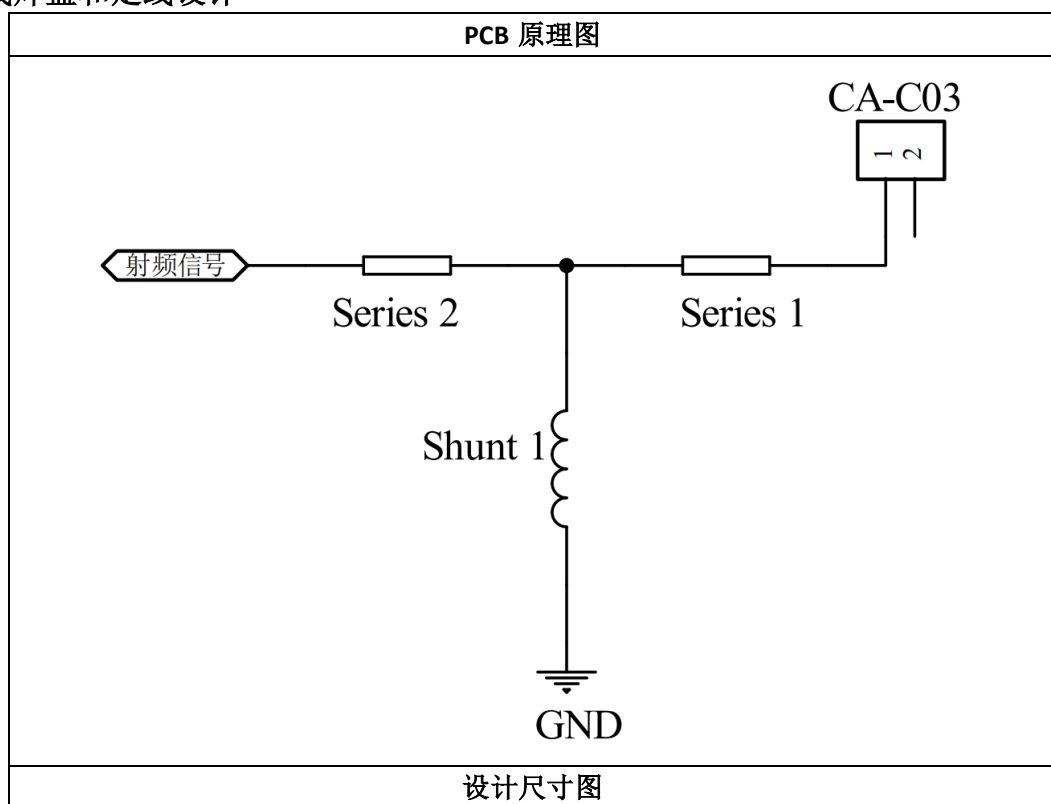
三视图Three views	符号Symbol	尺寸Dimension(mm)
	L	5.5±0.2
	w	2.0±0.1
	T	1.0±0.1
	a	0.5±0.1

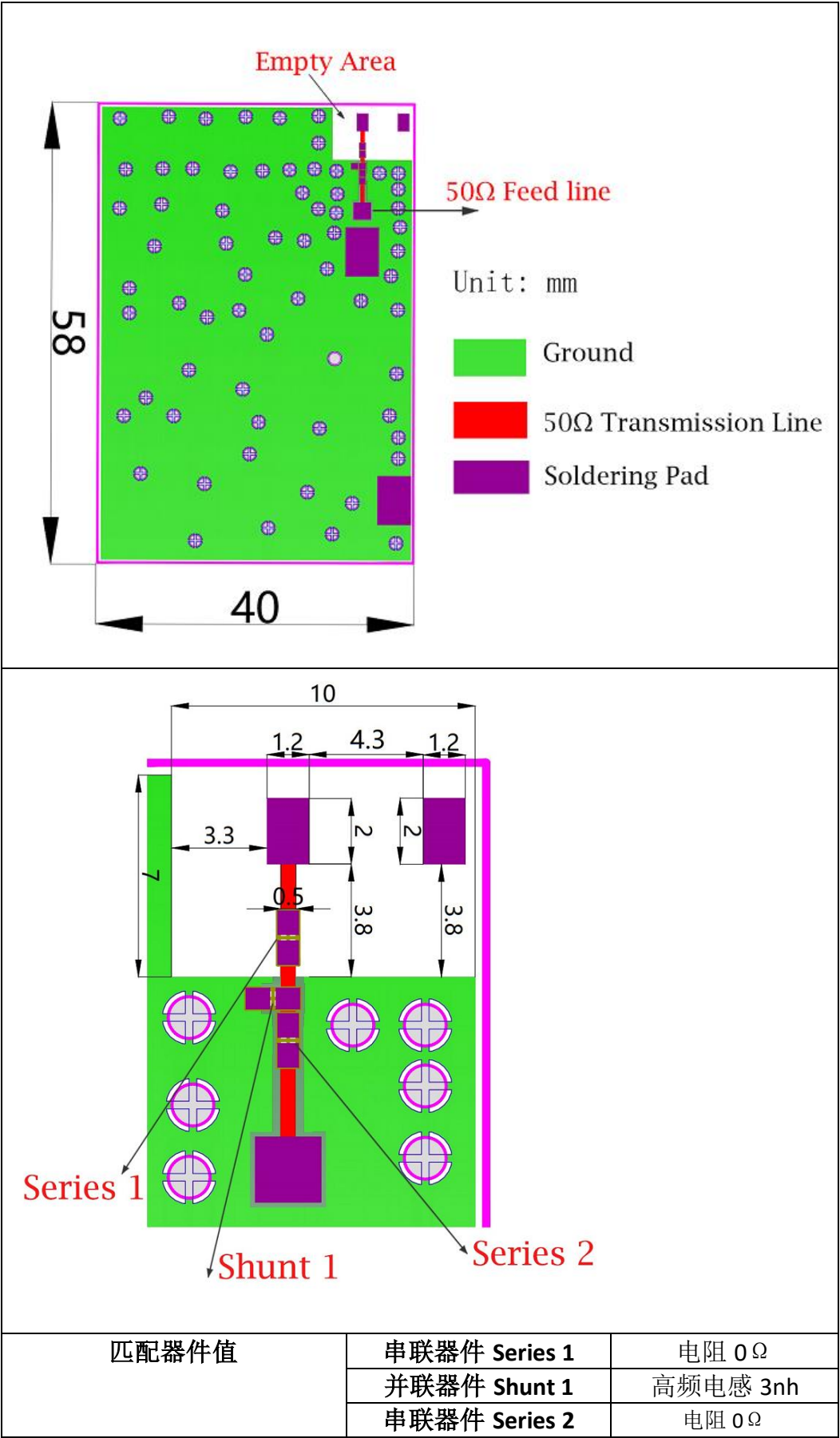
电气特性

CA-C03	Specification
工作频率范围 Working Frequency	2450±50MHz
带宽 Band Width	>100MHz
阻抗 Impedance	50 Ω
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

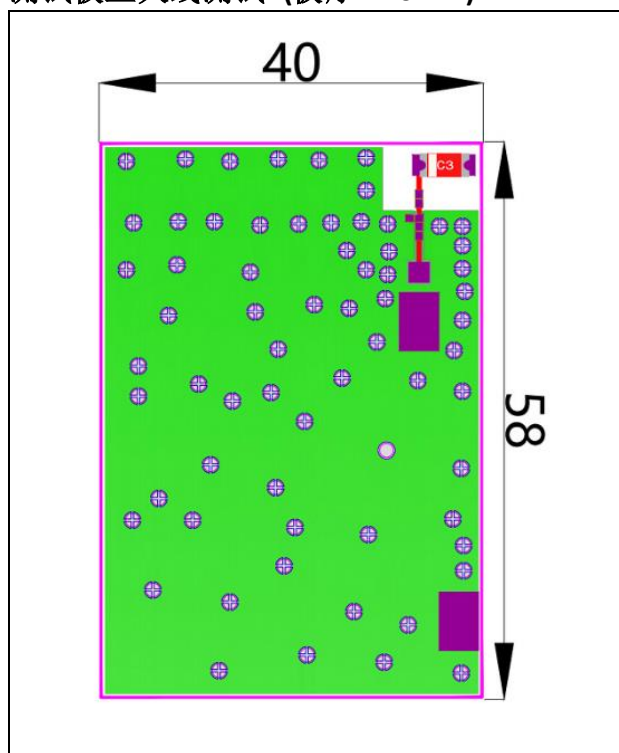
天线 2.4G 工作频率需要通过阻抗匹配器件调试来实现.

天线焊盘和走线设计



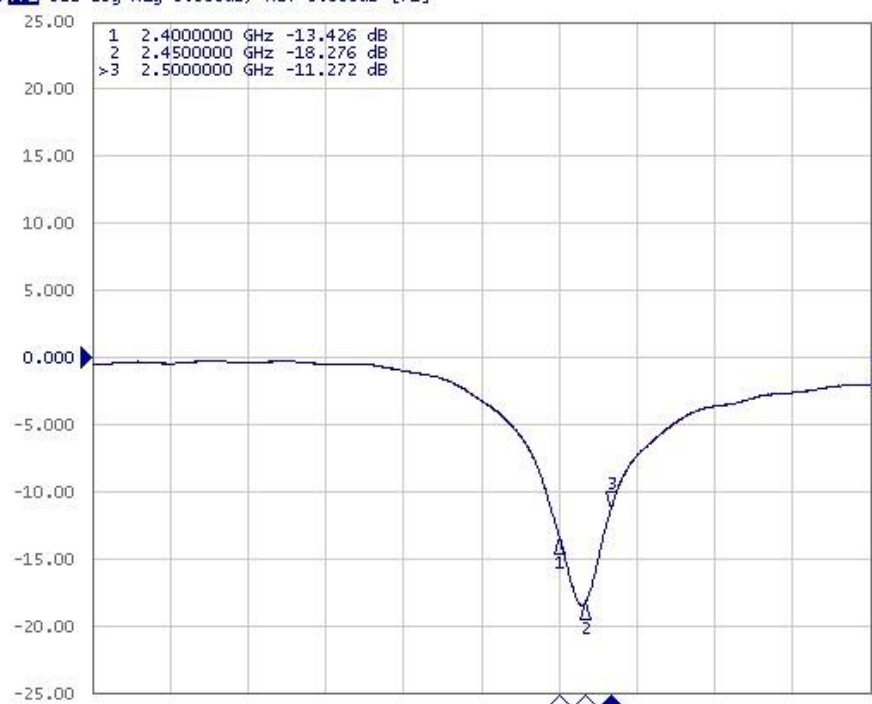


测试板上天线测试 (板厚 1.0mm)

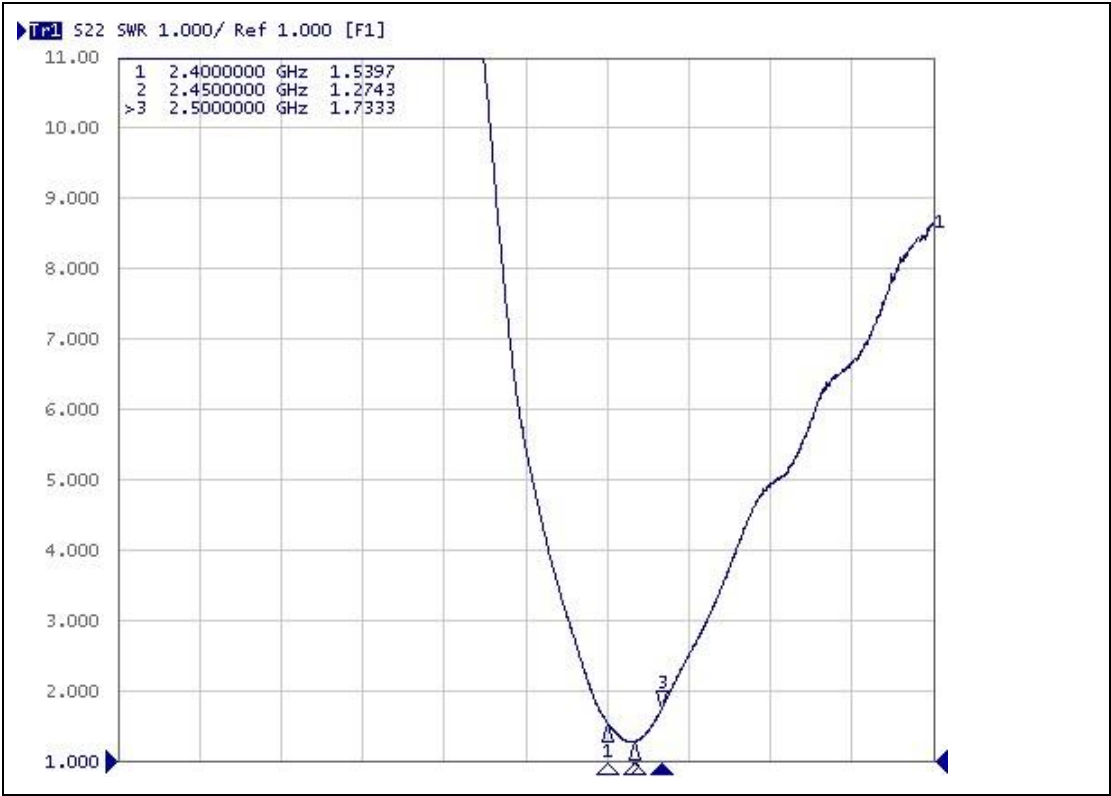


天线 S11 特性

▶ Tr1 S22 Log Mag 5.000dB/ Ref 0.000dB [F1]

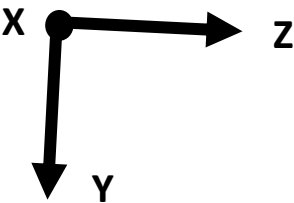
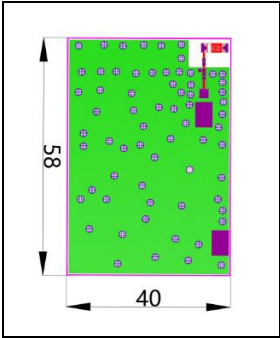


天线 VSWR 特性

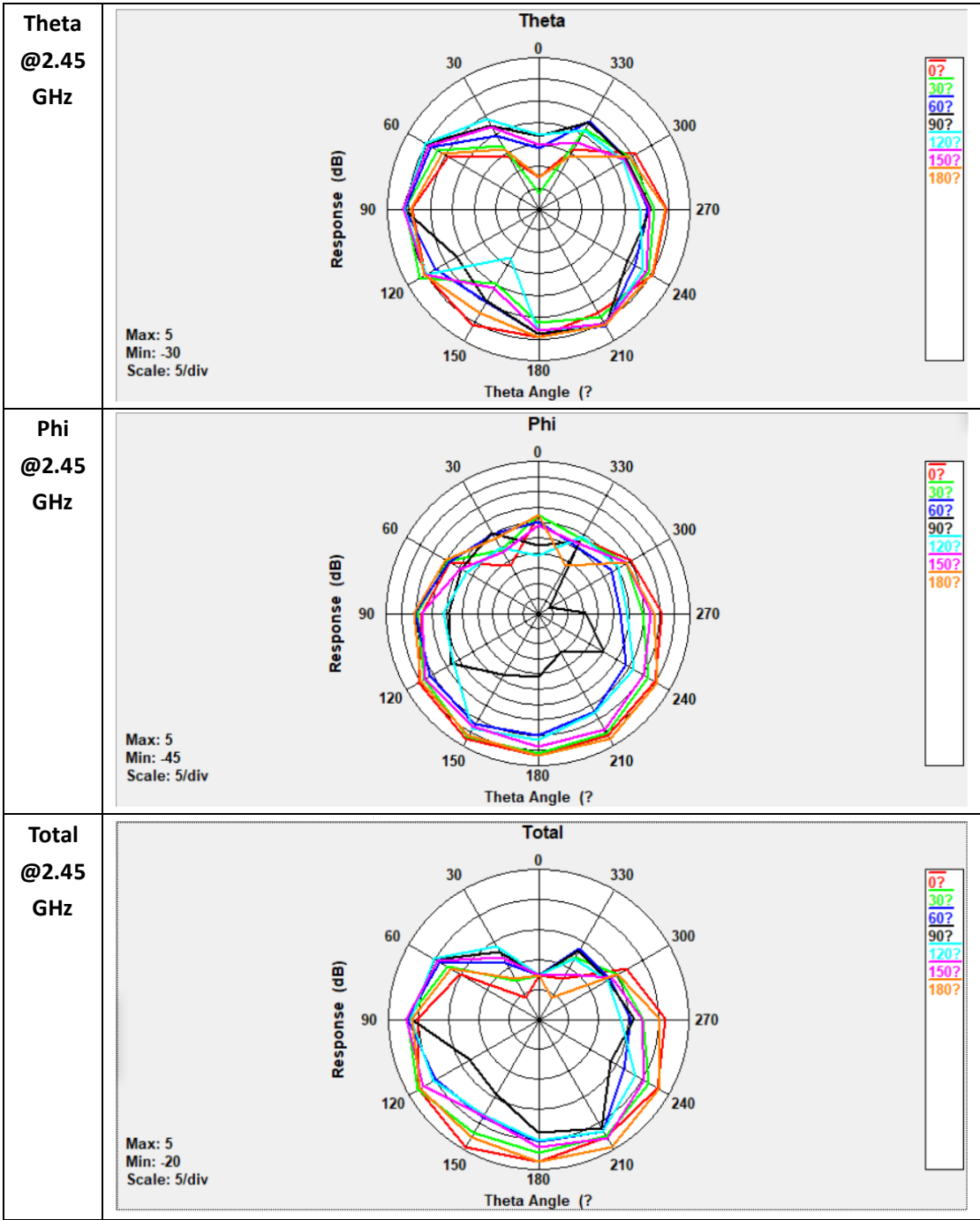


效率和辐射图

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。

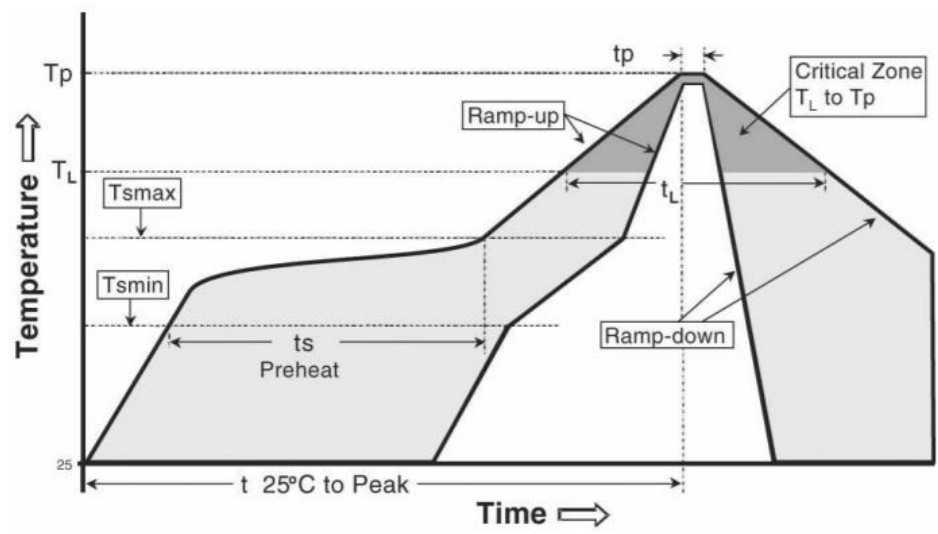


增益和效率	带宽 2.4G-2.5GHz
峰值增益 Peak Gain	4.3dBi
带内平均增益 Average Gain across the band	4.1dBi
带内增益范围 Gain Range across the band	3.9dBi~4.3dBi
峰值效率 Peak Efficiency	81.7%
带内平均效率 Average Efficiency across the band	80.2%
带内效率范围 Efficiency Range across the band	78.6%~81.7%



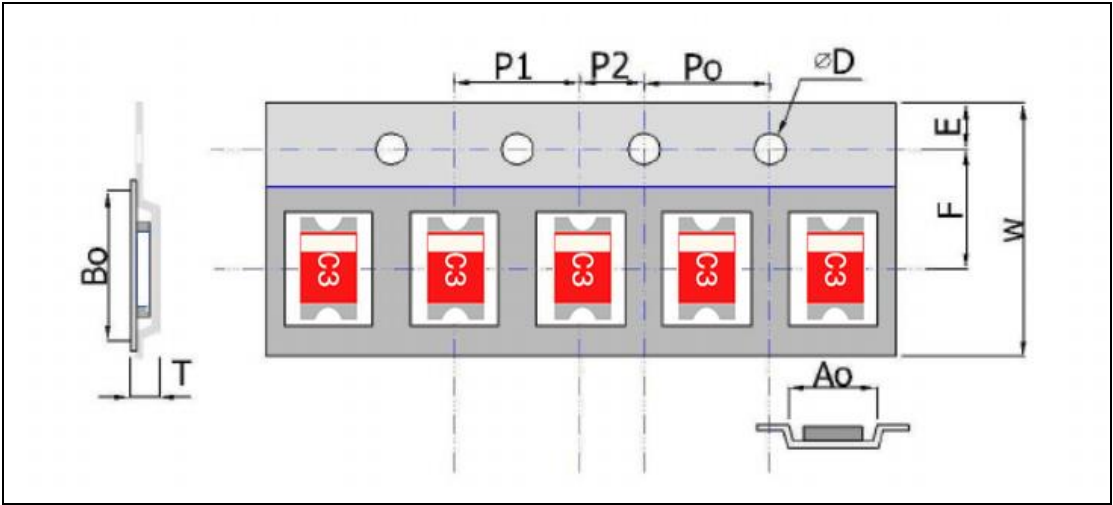
焊接条件

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 (Tsmmin) - 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

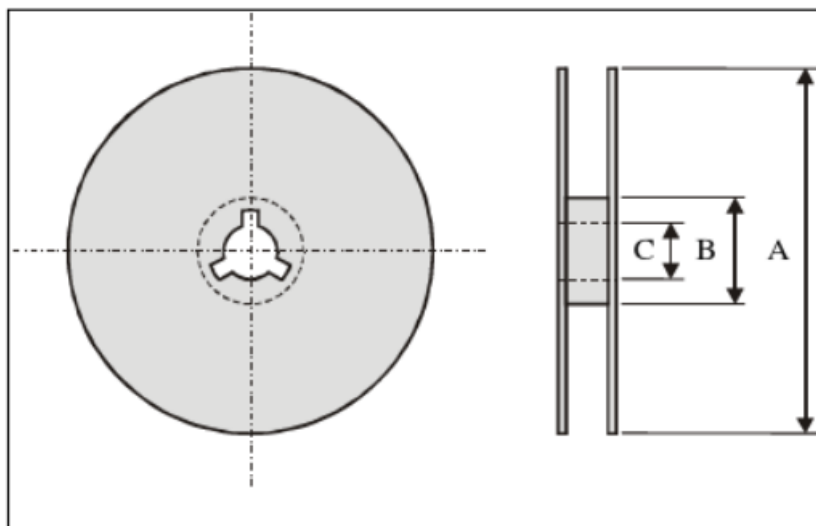
包装



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 ： $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$

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。