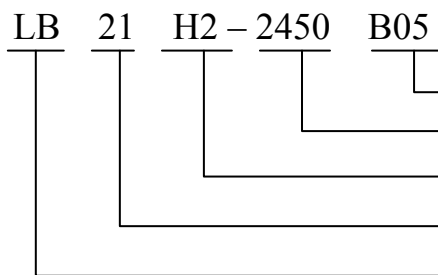


## 1. 概述 INTRODUCTION

微波阻抗转换器 LB 系列产品设计用于 WLAN、GSM、Bluetooth、DVD 和无绳电话机中，具有低的插入损耗和小体积 SMD 片式设计，能减少复杂的调校工作，可以简化电路设计。

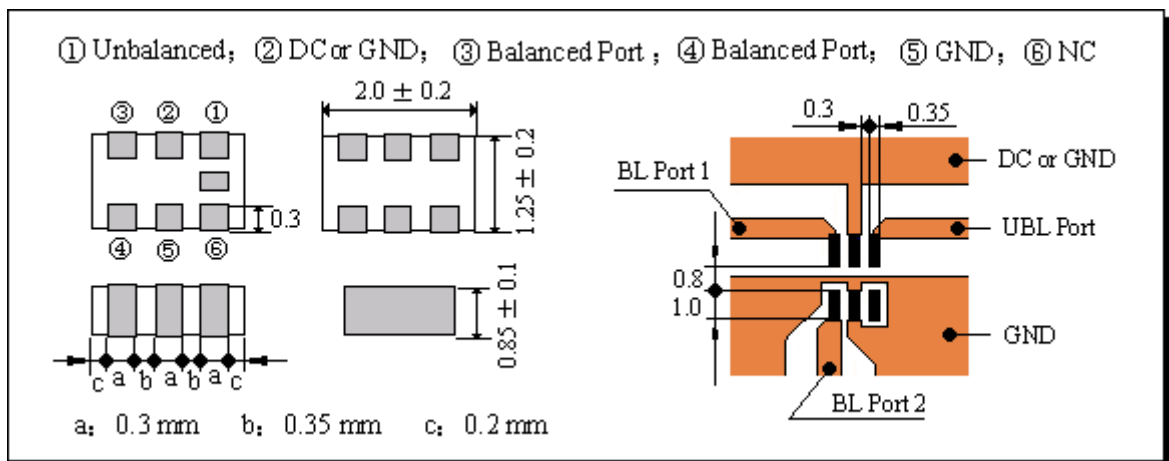
Microwave Balun LB series are designed to be used in WLAN、GSM、Bluetooth、DVD & cordless phones with low insertion loss and small size SMD chip design, which can simplify your complex tuning and circuit design.

## 2. 型号 Part Number

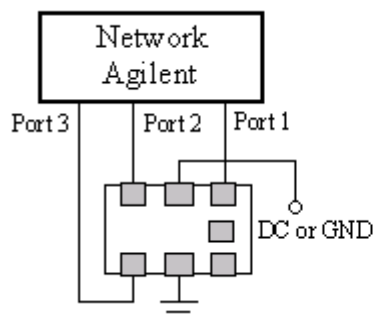


标准规格, 编号 B05/Normaling Type: B05  
 中心频率/ Center Frequency: 2450MHz  
 阻抗转换/ Impedance Conversion:  $50\ \Omega : 100\ \Omega$   
 产品尺寸/Size:  $2.0 \times 1.25 \times 0.85$   
 多层结构阻抗转换器/Multi-layer Balun

## 3. 外型尺寸 Dimensions (Unit: mm)



## 4. 测试电路 Test Circuit



Port 1: Unbalanced  $50\ \Omega$   
 Port 2: Balanced  $50\ \Omega$   
 Port 3: Balanced  $50\ \Omega$   
 IL=Sds21  
 Amp\_Balance=dB S21/S31  
 Phase\_Balance=Phase S21/S31

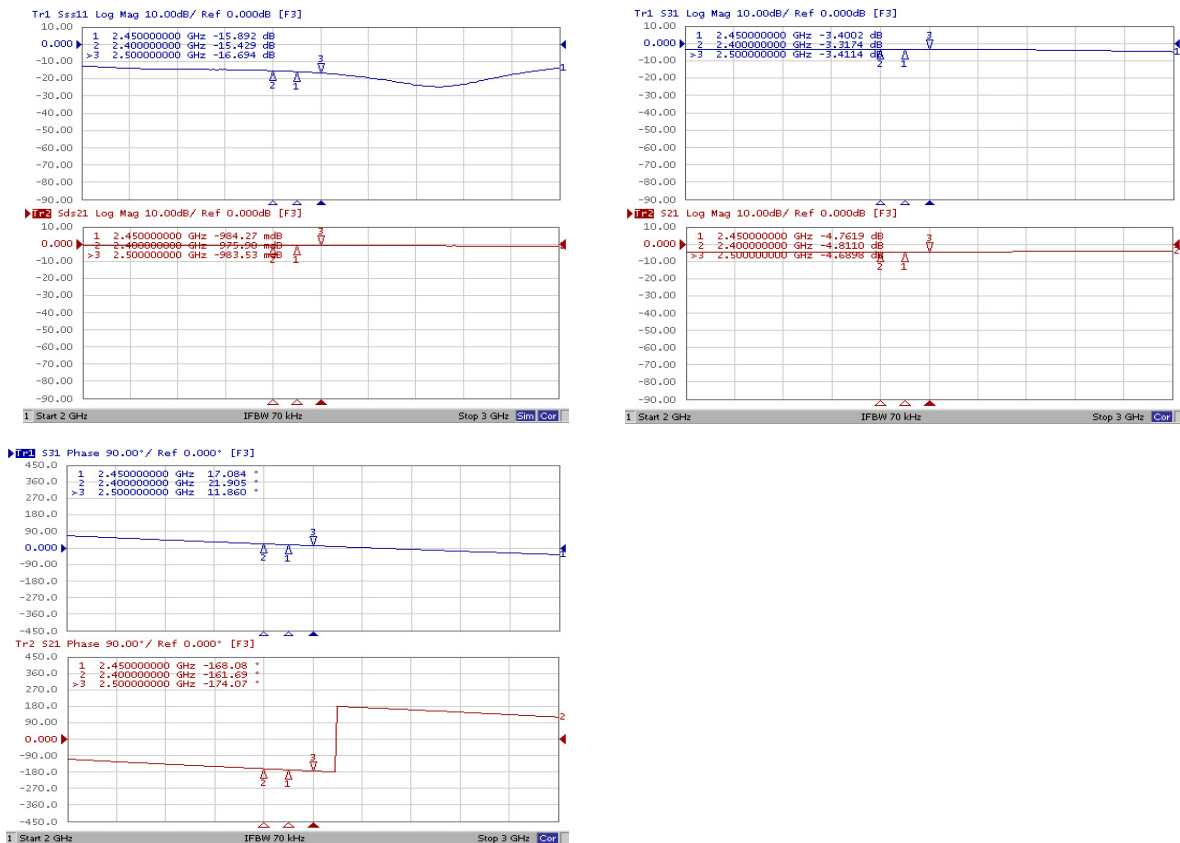
5. 电气性能

Electrical Characteristics

No.	Item (项目)	Specifications (特性)
5.1	Frequency Range 频率范围	2400~2500 MHz
5.2	Insertion Loss 插入损耗	$\leq 1.0\text{dB}$ (at $25^\circ\text{C} \pm 5^\circ\text{C}$ )
		$\leq 1.3\text{dB}$ (at $-40^\circ\text{C} \sim 85^\circ\text{C}$ )
5.3	Unbalanced Impedance 不平衡端阻抗	50 $\Omega$
5.4	Balanced Impedance 平衡端阻抗	100 $\Omega$ (50 $\Omega$ +50 $\Omega$ )
5.5	V.S.W.R (in BW) 驻波比	$\leq 2.0$
5.6	Amplitude Difference 平衡输出差	$\leq 2.0$ dB
5.7	Phase Difference 相位差	180 $\pm$ 10 Deg

6. 特性曲线

Characteristic curve



## 7 环境试验后允许误差 Post Environmental Tolerance

经环境试验后允许比起始读数偏差见下表

No.	Item (项目)	Post Environmental Tolerance (环境试验后允许附加误差)
7.1	Center Frequency 中心频率 $f_0$	$\pm 5.0$ MHz
7.2	Insertion Loss 插入衰耗	$\pm 0.5$ dB
7.3	Band Width 通带宽度	$\pm 5.0$ MHz
7.4	V.S.W.R (in BW) 驻波比	$\pm 0.2$
7.5	Amplitude Difference 平衡输出差	$\pm 1.0$ dB
7.6	Phase difference 相位差	$\pm 5$ Deg

Post Environmental Tolerance (Refer to the table)

## 8 环境试验 Environmental Test

基准条件：温度范围	Temperature range	$25 \pm 5^\circ\text{C}$
相对湿度范围	Relative Humidity range	55~75%RH
工作温度	Operating Temperature range	$-40^\circ\text{C} \sim +85^\circ\text{C}$
贮藏温度	Storage Temperature range	$-40^\circ\text{C} \sim +85^\circ\text{C}$

## 8.1 耐振动 Vibration Resist

在振动频率为 10~55Hz 振幅为 1.5mm 沿 X.Y.Z 方向各振动 2 小时后测试符合表 7.1~7.6 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.6 after applied to the vibration of 10 to 55Hz with amplitude of 1.5mm for 2 hours each in X, Y and Z directions.

## 8.2 耐跌落冲击 Drop Shock

在 100cm 高度处按 X, Y, Z 三个面分别自由跌落在木制地板上共 3 次后测试符合表 7.1~7.6 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.6 after dropping onto the hard wooden board from the height of 100cm for 3 times each facet of the 3 dimensions of the device.

## 8.3 耐焊接热 Solder Heat Proof

能承受经 120~150°C 的温度预热 120 秒后, 在 255°C+10°C 的焊锡浸 5±0.5 秒。

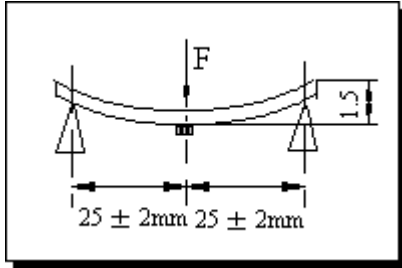
The device should be satisfied after preheating at 120°C~150°C for 120 seconds and dipping in soldering Sn at 255°C+10°C for 5±0.5 seconds.

## 8.4 结合力试验 Tensile Strength of Terminal

在产品电极端子上或表面上应能承受 1kg 垂直拉力 10±1 秒。

The device should not be broken after tensile force of 1.0kg is slowly applied to pull a lead pin of the fixed device in the lead axis direction for 10±1 seconds.

8.5 耐弯曲试验 **Bending Resist Test**



将产品按图焊在  $1.6 \pm 0.2\text{mm}$  的 PCB 板中间, 由箭头方向施力:  $1\text{mm/S}$ , 弯曲距离:  $1.5\text{mm}$ , 保持  $5 \pm 1\text{S}$ , 产品金属层无脱落。

Weld the product to the center part of the PCB with the thickness  $1.6 \pm 0.2\text{mm}$  as the illustration shows, and keep exerting force arrow-ward on it at speed of  $1\text{mm/S}$ , and hold for  $5 \pm 1\text{S}$  at the position of  $1.5\text{mm}$  bending distance, so far, any peeling off of the

product metal coating should not be detected.

8.6 耐湿热特性 **Moisture Proof**

在温度为  $60 \pm 2^\circ\text{C}$  相对湿度  $90\sim 95\%$  的恒温湿箱中放置 96 小时, 在常温中恢复 1~2 小时后测试, 符合表 7.1~7.6 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.6 after exposed to the temperature  $60 \pm 2^\circ\text{C}$  and the relative humidity  $90\sim 95\% \text{ RH}$  for 96 hours and 1~2 hours recovery time under normal condition.

8.7 高温特性 **High Temperature Endurance**

在温度为  $85 \pm 5^\circ\text{C}$  的恒温箱中放置  $96 \pm 2$  小时, 在常温中恢复 1~2 小时后测试。符合表 7.1~7.6 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.6 after exposed to temperature  $85 \pm 5^\circ\text{C}$  for  $96 \pm 2$  hours and 1~2 hours recovery time under normal temperature.

8.8 低温特性 **Low Temperature Endurance**

在温度为  $-40^\circ\text{C} \pm 5^\circ\text{C}$  低温箱中放置  $96 \pm 2$  小时后恢复 1~2 小时测试符合表 7.1~7.6 规定。

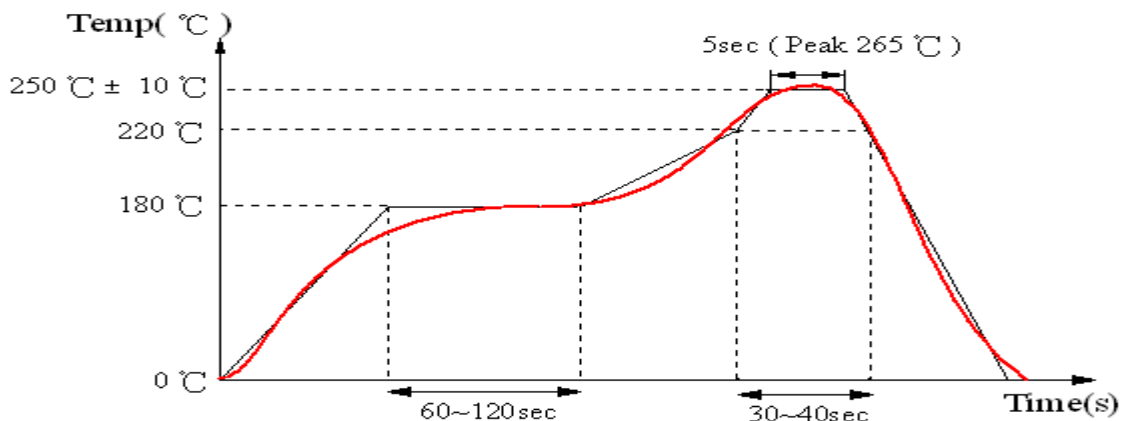
The device should also satisfy the electrical characteristics specified in paragraph 7.1~7.6 after exposed to the temperature  $-40^\circ\text{C} \pm 5^\circ\text{C}$  for  $96 \pm 2$  hours and to 2 hours recovery time under normal temperature.

8.9 温度循环 **Temperature Cycle Test**

在  $-40^\circ\text{C}$  温度中保持 30 分钟, 再在  $+85^\circ\text{C}$  温度中保持 30 分钟, 共循环 5 次后在常温中恢复 1~2 小时后测试符合表 7.1~7.6 规定。

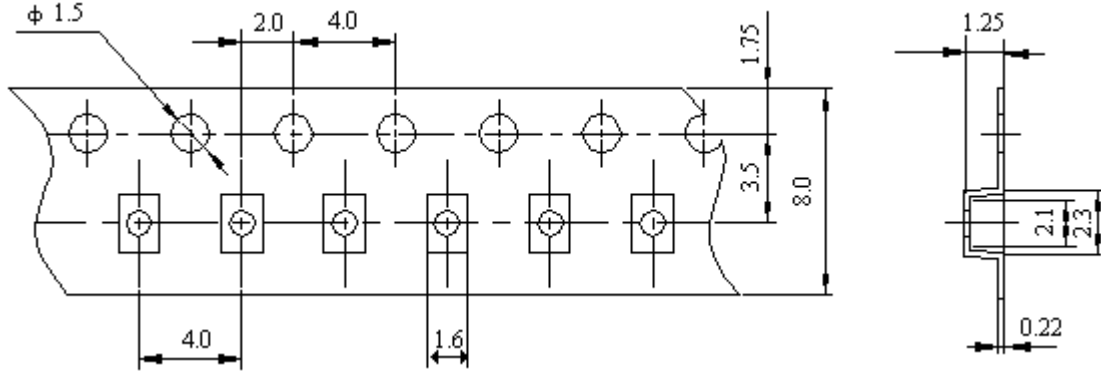
The device should also satisfy the electrical characteristics specified in paragraph 7.1~7.6 after exposed to the low temperature  $-40^\circ\text{C}$  and high temperature  $+85^\circ\text{C}$  for  $30 \pm 2$  min each by 5 cycles and 1 to 2 hours recovery time under normal temperature.

9 回流焊温度 **Reflow Soldering Standard Condition**



10 包装尺寸 (2012) Packaging and Dimensions

10.1 Plastic Tape



包装说明：Remarks for Package

载带尾部空穴长度 150~200mm，载带头部空穴长度 250~300mm，头部的盖带加长 250mm。

Reserve a length of 150~200mm for the trailer of the carrier and 250~300 mm for the leader of the carrier and further 250mm of cover tape at the leading part of the carrier.

10.2 Reel (3000 pcs/Reel)

