

History Record

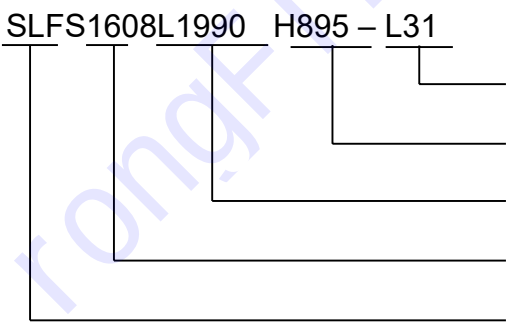
Date	Part No.	SPEC No.	Description.	Remarks.
				
ISO9001:2000	ISO14001:2004	Approved by	Check by	Design by
		July-31-2015	July-20-2015	July-31-2015
Version	Total Page	<i>Xu gang dong</i>	<i>Liu jun</i>	<i>Wang hon</i>

概述 INTRODUCTION

"思硕"微波低通滤波器 LF 系列产品设计用于 WLAN、DSTV、Bluetooth、卫星电视、PHS 和无绳电话机中，具有低的插入损耗、高的衰减和小体积 SMD 片式设计，能减少复杂的调校工作，可以简化电路设计。

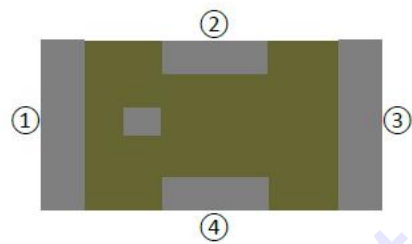
"StrongFirst" Microwave Low-Pass filter LF series are designed to be used in WLAN、DSTV、Bluetooth、LNB、PHS & cordless phones with low insertion loss and high attenuation as well as small size SMD chip design , which can simplifyour complex tuning and circuit design .

2. 型号 Part Number

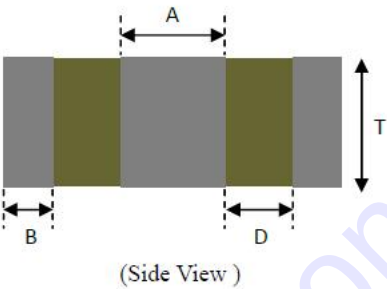
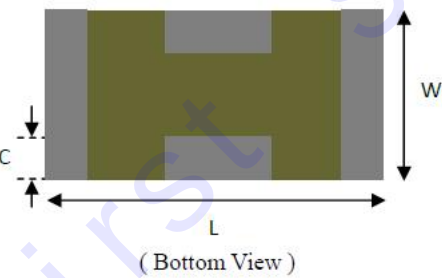


- Normal Type: L31
- Planar Design Series: H895
- Low Pass Filter: 1990MHz
- Size: 1.6×0.8×0.6
- StrongFirst Logo Multi-layer Filter

3. 外型尺寸 Dimensions (Unit: mm)

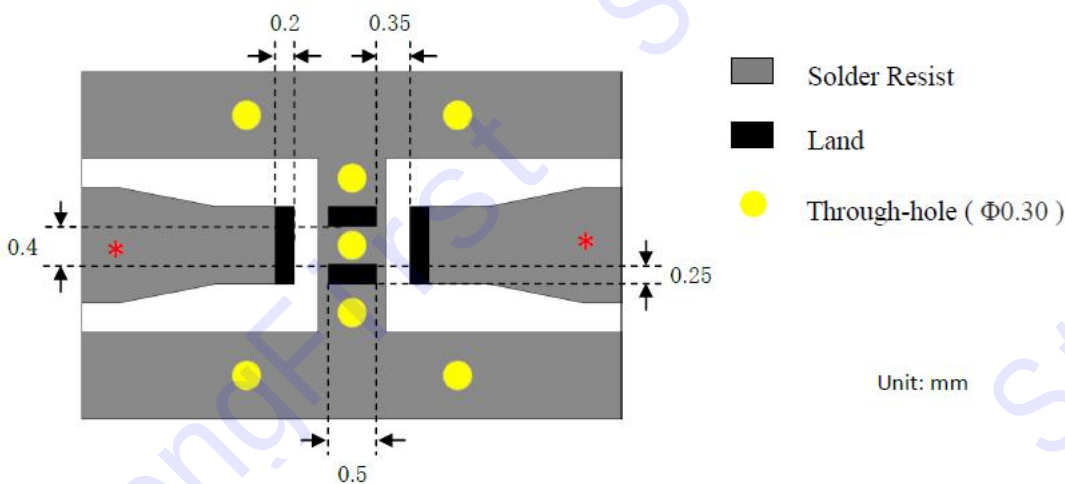


Number	Terminal Name	Number	Terminal Name
①	INPUT	③	OUTPUT
②	GND	④	GND



Symbols	L	W	T	A	B	C	D
Dimensions	1.6+/-0.1	0.8+/-0.1	0.6+/-0.1	0.7+/-0.1	0.15+/-0.1	0.25+/-0.1	0.30+/-0.1

建议的 PCB 布局 (Recommended PCB Layout)



*Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness

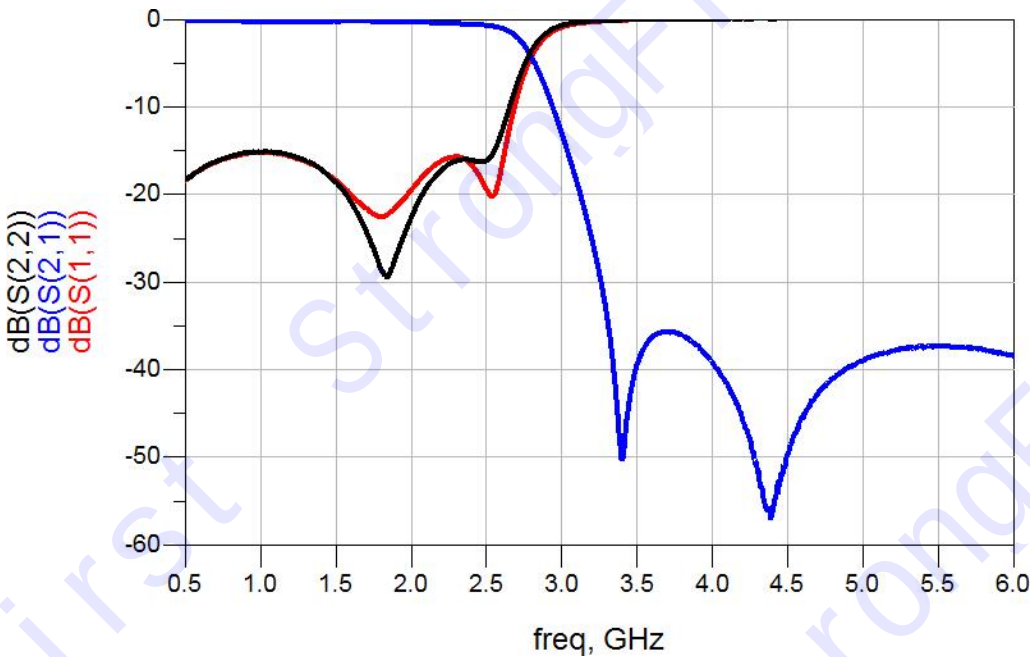
4. 结构及材料 Structure and Material

No	Part Name 名称	Structure and Material 结构及材料
4.1	Resonator 谐振体	Dielectric Material LTCC 介质材料
4.2	In/Output Terminals 输入/输出	Ag 银
4.3	Ground Base 接地面	Ag 银

5. 电气性能 Electrical Characteristics

No.	Item （项目）	Specifications （特性）
5.1	Frequency Range 通带范围	1710~1990MHz
5.2	Insertion Loss 插入损耗	0.7dB max
5.3	V.S.W.R (in BW) 驻波比	≤2.0
5.4	Attenuation 阻带衰减	30 dB min @ 3700 ~ 3980 MHz 25 dB min @ 5550 ~ 5970 MHz
5.5	Operation Temperature Range 温度范围	-40℃~85℃
5.6	In/Output Impedance 输入/输出阻抗	50 Ω

6. 特性曲线 Characteristic curve



7. 可靠性试验后允许误差 Post Dependability Tolerance

经可靠性试验后允许比起始读数偏差见下表

Post Dependability Tolerance (Refer to the table)

No.	Item (项目)	Post Dependability Tolerance (可靠性试验后允许附加误差)
7.1	Center Frequency 中心频率 f_0	± 2.0 MHz
7.2	Insertion Loss 插入损耗	± 0.1 dB
7.3	Band Width 通带宽度	± 2.0 MHz
7.4	V.S.W.R (in BW) 驻波比	± 1 dB
7.5	Attenuation 阻带衰减	± 2.0 MHz

8. 可靠性试验 Dependability 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%R

H

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 7.1~7.5 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.5 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 7.1~7.5 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.5 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 $120 \sim 150^\circ\text{C}$ 的温度预热 120 秒后, 在 $255^\circ\text{C} + 10^\circ\text{C}$ 的焊锡浸 5 ± 0.5 秒, 或 $300^\circ\text{C} - 10^\circ\text{C}$ 的电烙铁焊接 3 ± 0.5 秒, 焊接面无损伤。

The device should be satisfied after preheating at $120^\circ\text{C} \sim 150^\circ\text{C}$ for 120 seconds and dipping in soldering Sn at $255^\circ\text{C} + 10^\circ\text{C}$ for 5 ± 0.5 seconds , or electric iron $300^\circ\text{C} - 10^\circ\text{C}$ for 3 ± 0.5 seconds,

without damnify.

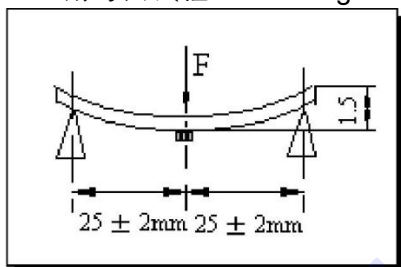
8.4 结合力试验 Tensile Strength of Terminal

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： 1mm/S ，弯曲距离： 1.5mm ，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 1mm/S , and hold for $5 \pm 1\text{S}$ at the

position of 1.5mm 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 $1 \sim 2$ 小时后测试，符合表 7.1~7.5 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.5 after exposed to the temperature $60 \pm 2^\circ\text{C}$ and the relative humidity $90 \sim 95\%$ RH for 96 hours and $1 \sim 2$ 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 ± 2 小时，在常温中恢复 $1 \sim 2$ 小时后测试。符合表 7.1~7.5 规定。

The device should satisfy the electrical characteristics specified in paragraph 7.1~7.5 after exposed to temperature $85 \pm 5^\circ\text{C}$ for 96 ± 2 hours and $1 \sim 2$ 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 ± 2 小时后恢复 $1 \sim 2$ 小时测试符合表 7.1~7.5 规定。

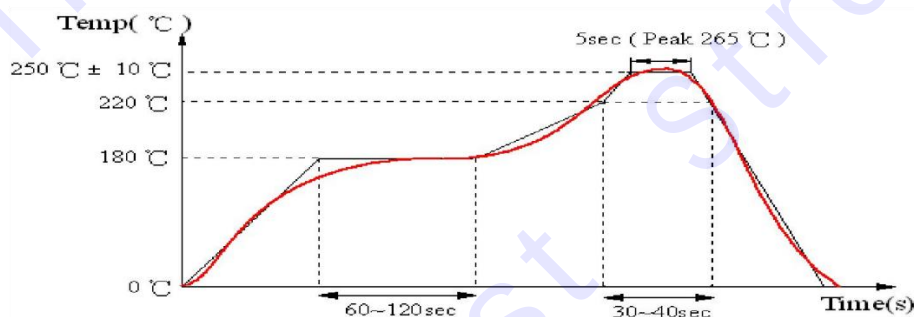
The device should also satisfy the electrical characteristics specified in paragraph 7.1~7.5 after exposed to the temperature $-40^\circ\text{C} \pm 5^\circ\text{C}$ for 96 ± 2 hours and to 2 hours recovery time under normal temperature.

8.9 温度循环 Temperature Cycle Test

在 -40°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 $1 \sim 2$ 小时后测试符合表 7.1~7.5 规定。

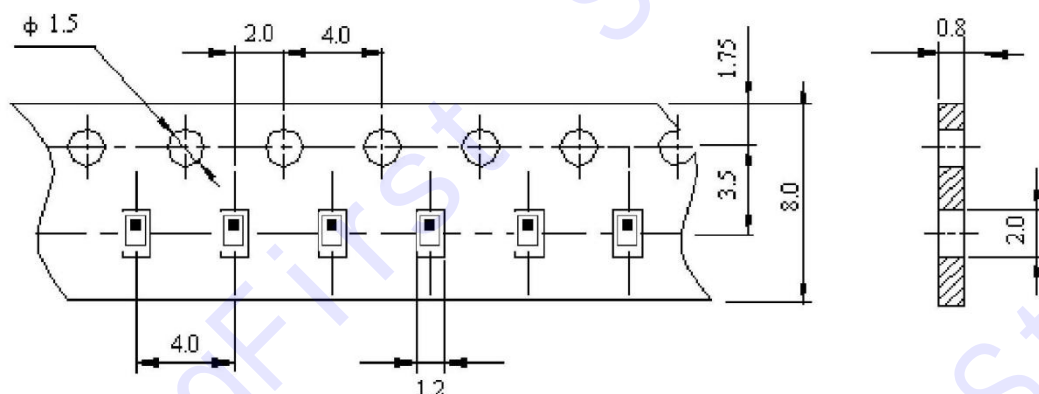
The device should also satisfy the electrical characteristics specified in paragraph 7.1~7.5 after exposed to the low temperature -40°C and high temperature $+85^\circ\text{C}$ for 30 ± 2 min each by 5 cycles and 1 to 2 hours recovery time under normal temperature.

9 回流焊温度 Reflow Soldering Standard Condition



10 包装尺寸(1608) Packaging and Dimensions

10.1 Plastic Tape

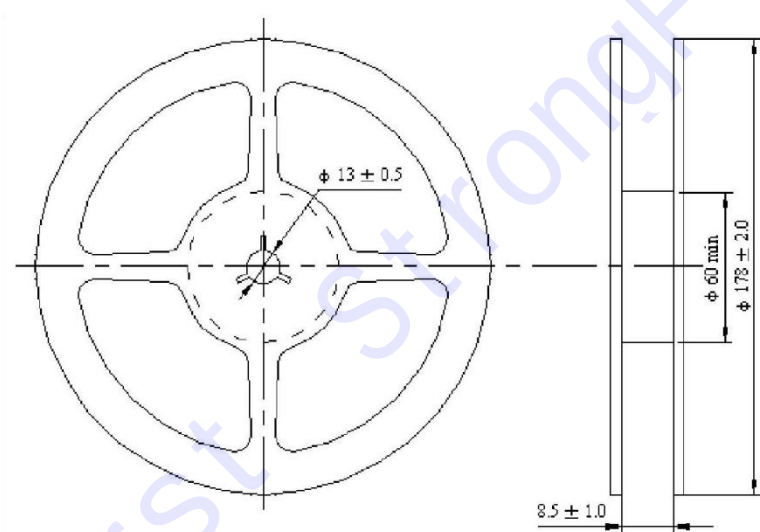


包装说明: Remarks for Package

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

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

10.2 Reel (6000 pcs/Reel)



10.3 储存条件 Storage Period

易氧化产品，真空状态储存一年. 产品拆封后请于168 小时内用完或重新密封包装！

Oxidizable, 12 months in vacuum sealed bag . Material, please repack within 168 hours by re-seal the package treatment after use them!

储存温度与湿度:

Storage Temperature Range : <30 degree C, Humidity : <60%RH

© Copyright 2017 StrongFirst. All Rights Reserved.