规 格 书

SPECIFICATION FOR APPROVAL

客户名称: CUSTOMER:	/
日 期: DATE:	2017.1.12
产品名称: PART NAME:	红外接收头 INFRARED RECEIVER MODULE
产品型号: PART NO. :	SIRAB39
客户型号: CUSTOMER PART NO. :	/
文件编号: DOCUMENT NO. :	SD-GGT-264
版 本: REVISION:	A/1

拟 制 DRAFTER	审 核 CHECK	批 准 APPROVER
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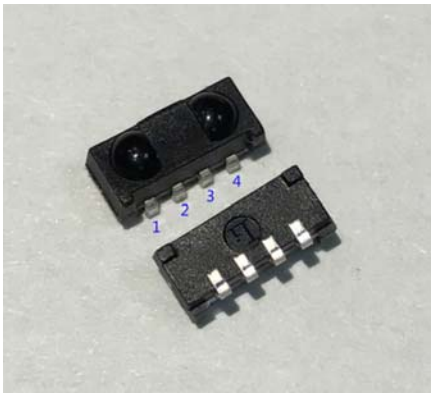
Revision History

版 本 Rev.	更改日期 Date	更改内容描述 Description	更改页面 Page	更改 Modify	批准 Approve
A/0	2016-5-31	初版 Original	--	--	--
A/1	2017-1-12	修改包装方案 Modify the packaging scheme 修改外观图 Modify appearance	12 4	沈昭宗	刘堃

红外接收模块
INFRARED RECEIVER MODULE



1, 4 = GND, 2 = VS, 3 = OUT

■概述 DESCRIPTION

SIRAB39是用于红外遥控系统的双镜头小型接收模块，内置PIN光敏二极管和前置放大器IC，实现红外遥控信号的拾取、放大和解调，检波输出信号可以直接由微处理器解码。

The SIRAB39 are two lens miniaturized receiver modules for infrared remote control systems. The PIN diode and preamplifier IC are assembled on the lead frame, in order to realize the infrared remote signal's pick-up 、 amplification and demodulation. The demodulated output signal can directly be decoded by a microprocessor.

SIRAB39 采用可滤除可见光干扰的环氧树脂封装，不易受环境光干扰，并能够抑制非控制信号的脉冲输出。

The SIRAB39 adopts epoxy package which can filter out the interference of the visible light. This module has excellent performance even in disturbed ambient light applications and provides protection against uncontrolled output pulses.

■主要特点 FEATURES

* TTL和CMOS 兼容
  TTL and CMOS compatibility
* 双透镜结构，高灵敏度、宽接收角度。
  Two lenses for high sensitivity and widereceiving angle
* 内置PCM频率滤波器
  Built-in PCM frequency filter
* 抗光抗电磁波干扰
  Improved shielding against electrical field disturbance and ambient light
* 集成光检测和前置放大，无需外围元器件
  Photo detector and preamplifier in one package，no external components necessary
* 可兼容顶部或侧面进光
  Capable of side or top view.
* 低功率消耗
  Lower power consumption
* 抗WiFi干扰
  Anti-WiFi interference

■应用 APPLICATIONS

各种红外遥控系统：电视机、3D眼镜、空调、音响、仪器仪表、VCD、DVD、DVB、VCR等。

Remote control for TV, 3D glasses, Air conditioner, Audio, Instrumentation, VCD, DVD, DVB, VCR etc.

■采购信息Order Information (Taping type)

P/N	Taping type
SIRAB39R1	R1
SIRAB39R2	R2

注：具体编带规格参考“包装规格”部分。

Note: Please refer to “Packing Specification” for details.

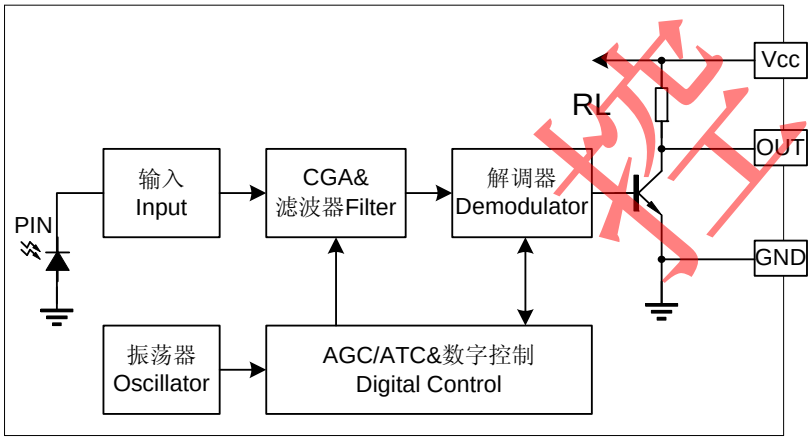
■ 适用码型 SUITABLE DATA FORMAT

DATA FORMAT	Suitable	DATA FORMAT	Suitable
NEC	YES	R-step	YES
RC5	YES	R-map	NO
RC6	YES	XMP	NO
SONY Code	NO	SHARP	YES
RCMM	NO	Continues Code	NO
Panasonic	YES	RECS-80	NO

注：R-step 只适用于38KHz。

NOTE：R-step is only suitable for 38KHz.

■内部框图 BLOCK DIAGRAM



■极限参数ABSOLUTE MAXIMUM RATINGS（除非特别指定unless otherwise specified, T_{amb}=25°C）

参 数 Parameter	符 号 Symbol	测 试 条 件 Test Condition	参 数 范 围 Value	单 位 Unit
工作电压 Supply Voltage	Vcc	--	-0.3~+6.0	V
静态电流 Supply Current	Icc	--	3	mA
输出电压 Output Voltage	Vout	--	-0.3~+6.0	V
输出电流 Output Current	Iout	--	5	mA
工作温度 Operating temperature	Topr	--	-25~+85	°C
贮存温度 Storage temperature	Tstg	--	-25~+85	°C
功率消耗 Power Dissipation	Ptot	(T_{amb}≤85°C)	10	mW

注：在使用中，如超出上述的极限参数值，可能导致器件的损坏。

Note: Stress above those listed under Absolute Maximum Rating may cause permanent damage of device.

■电气参数DC ELECTRICAL CHARACTERISTICS(除非特别指定unless otherwise specified, Tamb=25°C)

参数 Parameter	符号 Symbol	测试条件 Test condition		最小值 Min.	典型值 Typ.	最大值 Max.	单位 Unit
工作电压 Supply Voltage	Vcc			2.7	--	5.5	V
静态电流 Supply Current	Icc	无信号输入 no signal input.	Vcc=3.3V	--	0.4	0.9	mA
			Vcc=5.0V	--	0.53	0.9	
高电平输出脉宽 High Level Output Pulse Width	Tpwh	Fin=f0, burst wave Vin=600us, see Fig.4		400	600	800	μs
低电平输出脉宽 Low Level Output Pulse Width	Tpwl			400	600	800	μs
高电平输出电压 High Level Output Voltage	Voh	see Fig.4		Vcc-0.3	--	Vcc	V
低电平输出电压 Low Level Output Voltage	Vol	see Fig.4		0	--	200	mV
接收距离 Transmission Distance	D	EV=200±50Lx，测试信号见图3，红外二极管SED113，IF=400mA EV=200±50Lx, test signal see fig.3, IR diode SED113, IF=400mA		--	40	--	m
入射角度 Directivity	Θ	半程接收距离 Angle of half transmission distance		--	±50	--	deg
响应峰值波长 Peak Wavelength	λp			--	940	--	nm
中心频率 Center Frequency	F_0			--	37.9	--	Khz

■测试方法 TEST METHOD

A. 标准发射器 Standard transmitter

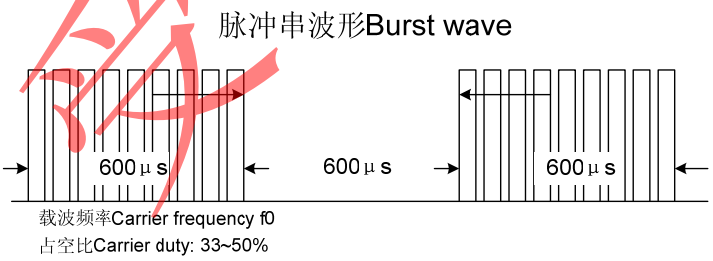
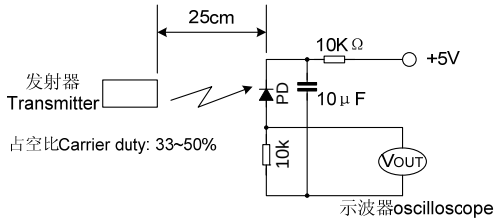


Fig.1

标准发射器标定方法

Standard transmitter measurement circuit



标准发射器需设定在输出电压VOUT 为50mV时

The transmitter shall be set as the output VOUT will be 50 mV

Fig.2

B.接收距离、入射角度测试 Receive distance and incidence angle test

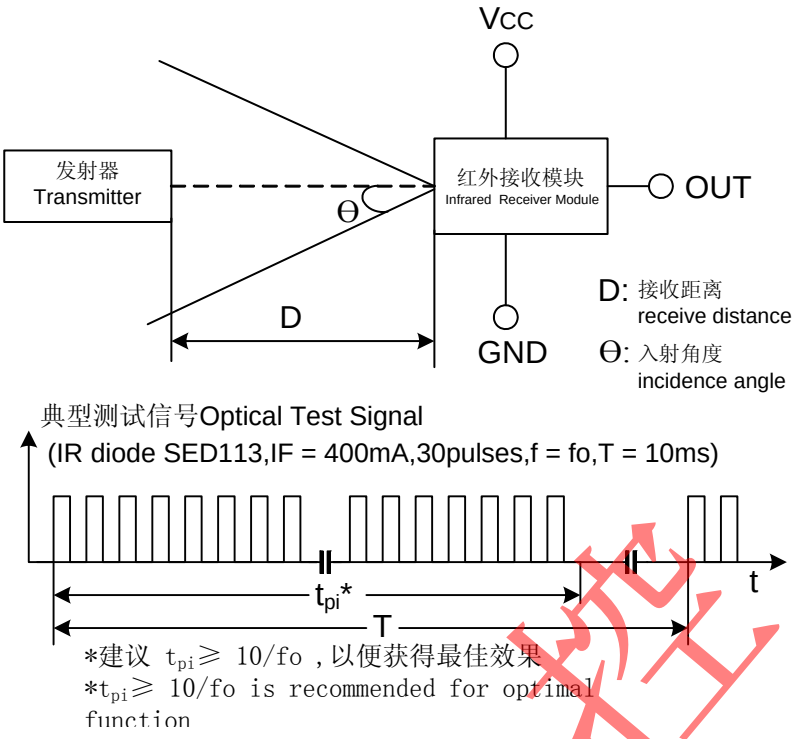


Fig.3

注：发射器和红外接收模块之间的最大接收距离，是对于标准发射器而言，测试条件如下：

NOTE：The distance between emitter & infrared receiver module specifies the maximum distance that the output wave form satisfies the standard under the conditions below against the standard transmitter.

(1) 测量位置 …… 室内，没有太多干扰光

Measuring place …… Indoor，without extreme reflection of light.

(2) 周围光源…..... 普通荧光灯下测试；待测器件表面照度在200±50Lux之内。

Ambient light source…Detecting surface illumination shall be 200±50Lux under ordinary fluorescent lamp of no high frequency lighting

(3) 标准发射…… 标准发射器所发射的脉冲串为50mVp-p。

Standard transmitter…Burst wave of standard transmitter shall be arranged to 50mVp-p under the measurement circuit.

C.脉冲宽度测试 Pulse width test

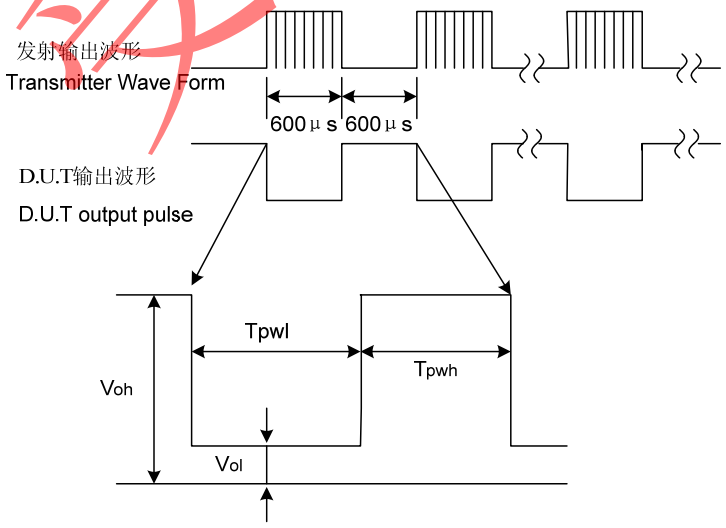


Fig.4

■典型应用电路图 APPLICATION CIRCUIT

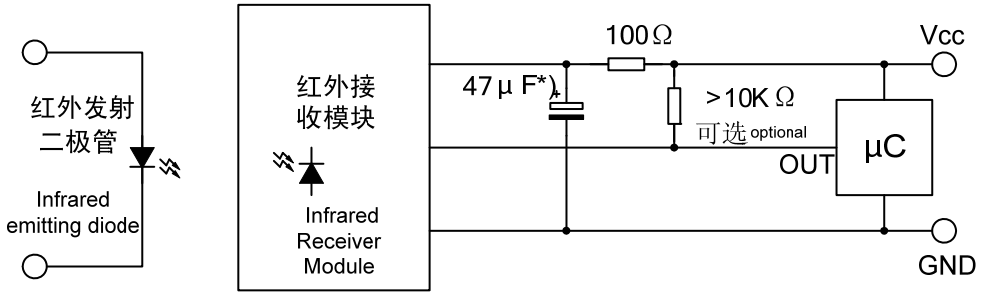


Fig.5

*)在需要抑制电源干扰的场合使用，推荐≥47uF，如果不使用将影响产品性能.

Used to suppress power supply disturbances, typical value is ≥47uF. It is necessary, if not, maybe cause poor performance.

■典型电气特性曲线TYPICAL CHARACTERISTICS(除非特别指定unless otherwise specified, Tamb = 25°C)

Fig6. 典型带通曲线

Typical band pass curve

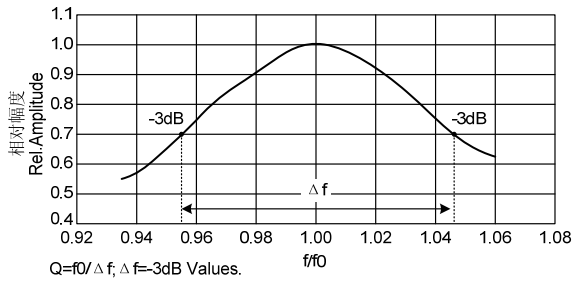


Fig7. 中心频率 vs 温度(eg.f0=37.9kHz)

Center frequency VS Temperature

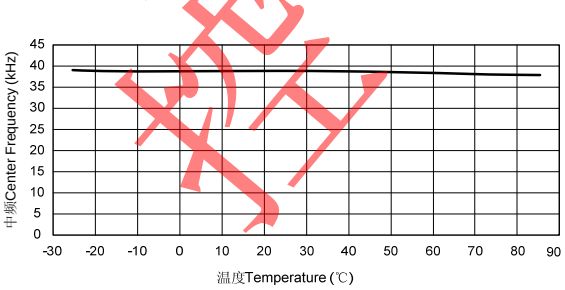


Fig8. 相对频谱灵敏度vs波长

Relative Spectral Sensitivity VS Wavelength

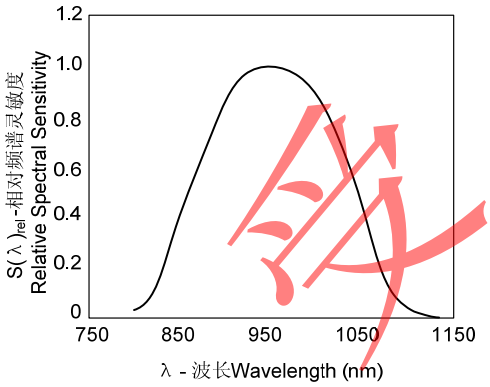
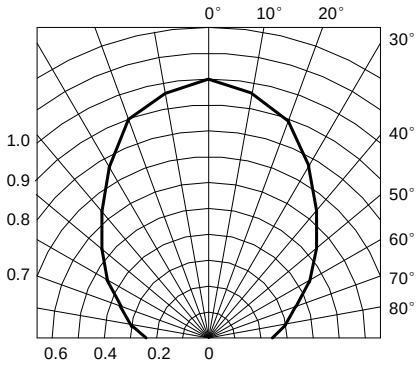


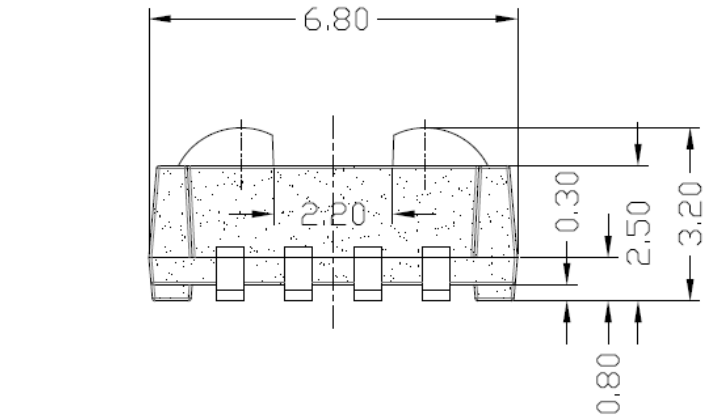
Fig9. 入射角度 vs 相对接收距离

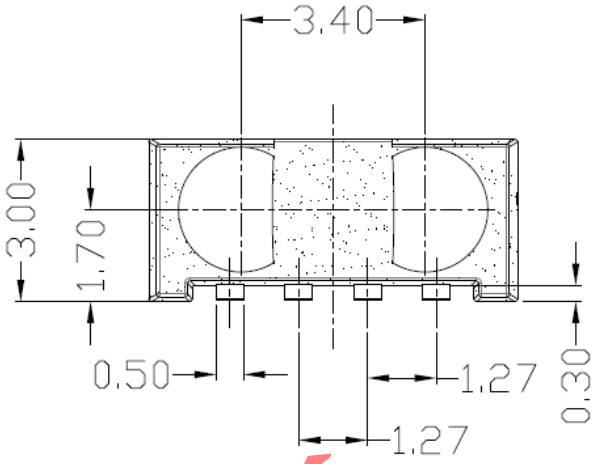
Incidence angle VS Relative Transmission Distance

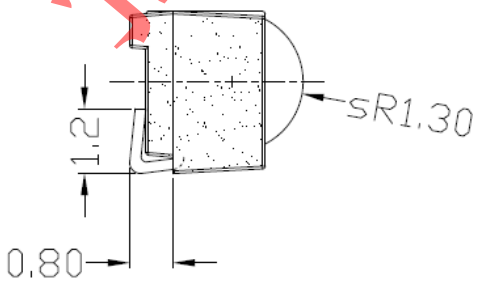


■外形尺寸图 PACKAGE OUTLINE（单位：㎜ 未标注公差±0.3mm Unit：㎜ Not indicated tolerance±0.3mm）

SIRAB39 Unit: mm

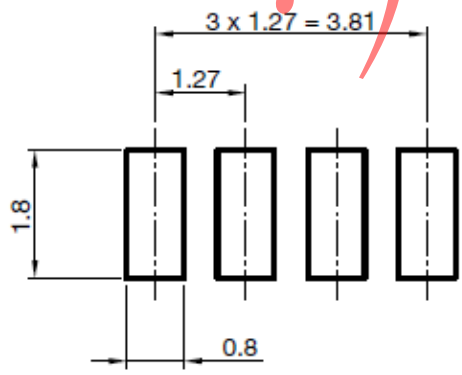






建议焊盘布局(仅供参考)

Proposed pad layout(For reference only)



存储条件

RECOMMENDED METHOD OF STORAGE

打开铝箔袋以后请放入干燥箱存储，以防止产品水分吸收。存储条件如下：

Dry box storage is recommended as soon as the aluminum bag has been opened to prevent moisture absorption. The following conditions should be observed, if dry boxes are not available:

- 存储温度：10℃~30摄氏度
  Storage temperature 10 °C to 30 °C
- 存储湿度：60%RH以下
  Storage humidity 60 % RH max

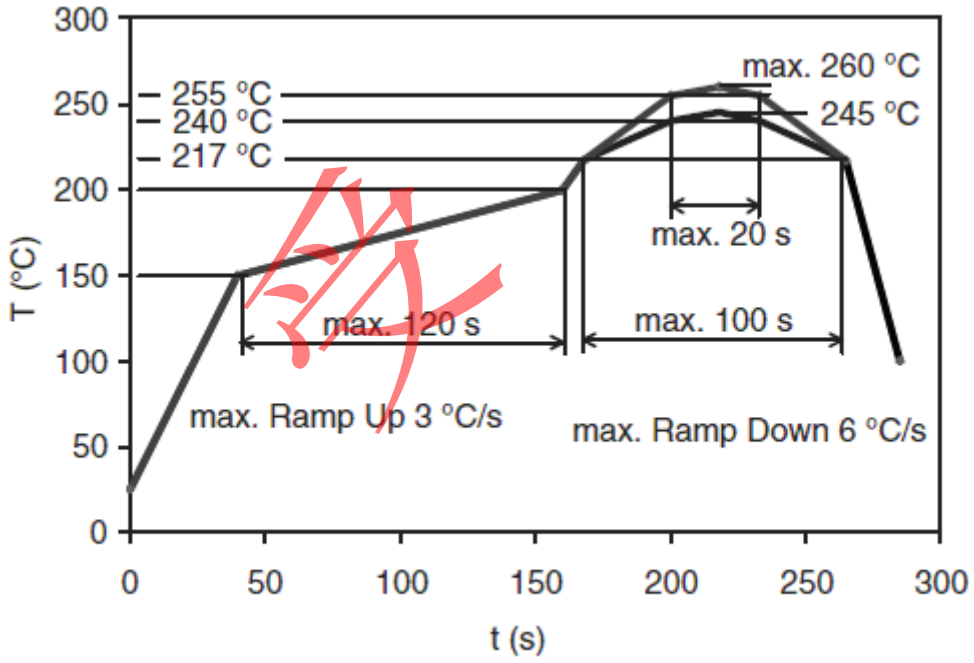
如果超过上述存储条件下放置72小时以上，产品吸湿过多会影响回流焊能力，为防止产品失效，可在回流焊前进行如下预处理：

After more than 72 h under these conditions moisture content will be too high for reflow soldering. In case of moisture absorption, the devices will recover to the former condition by drying under the following condition:

- 40℃+5℃/-0℃，＜5%RH，192小时
  192 h at 40℃ + 5 ℃ / - 0 °C and < 5 % RH
  或60℃+5℃，＜5%RH，96小时
  Or 96 h at 60℃ + 5 ℃and < 5 % RH for all device containers
  或125℃+5℃，24小时（不能放置卷盘）
  Or 24 h at 125 ℃+ 5 ℃（not suitable for reel）

回流焊建议焊接条件

Recommended soldering conditions of reflow



- 回流焊最大次数：2次。

Maximum number of reflow process : 2 time

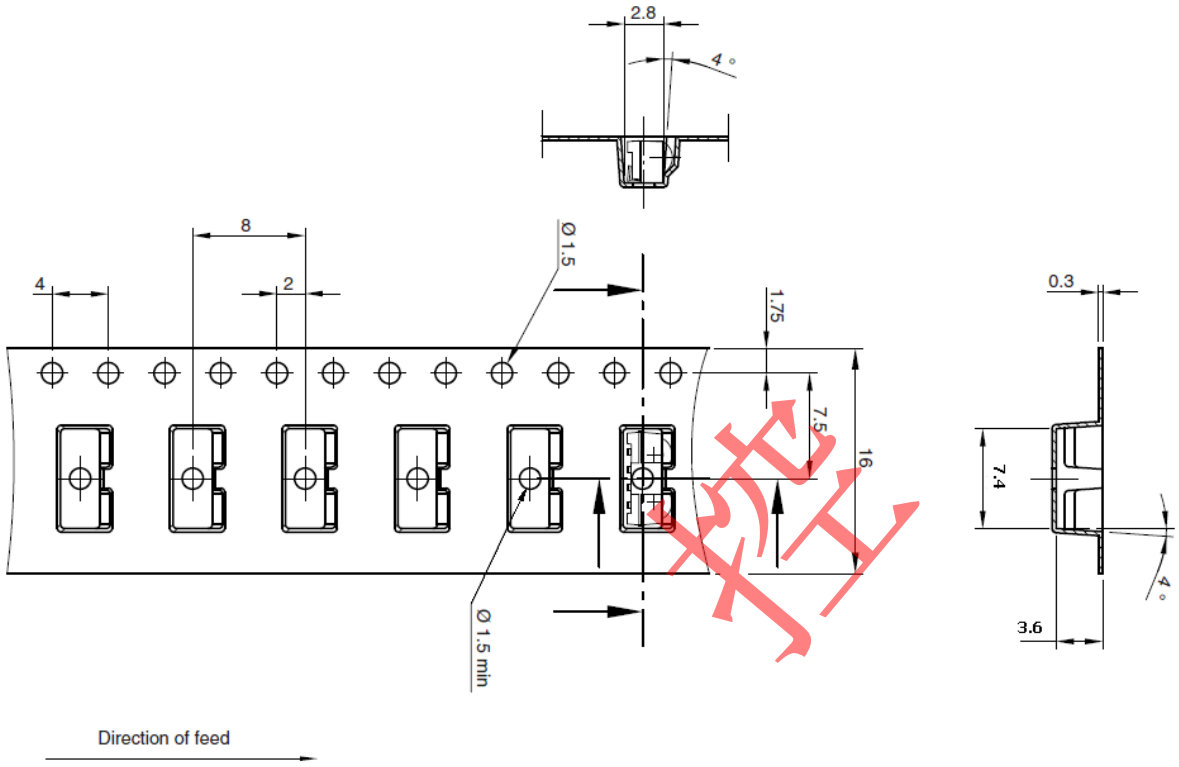
- 助焊剂中最大氯含量：0.2%以下（以重量计）

Maximum chlorine content of rosin flux （weight percent） : 0.2wt% or less

包装规格PACKAGING SPECIFICATION

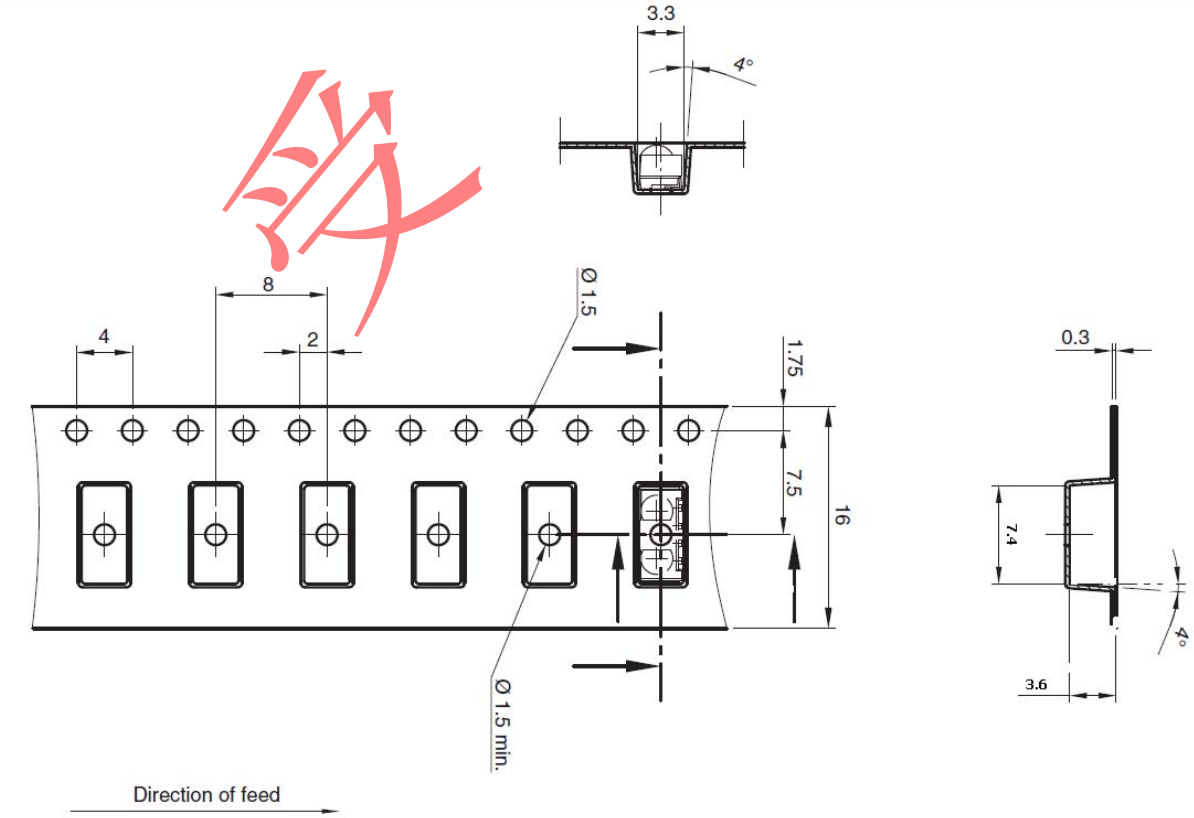
编带方式R1

Taping Version R1

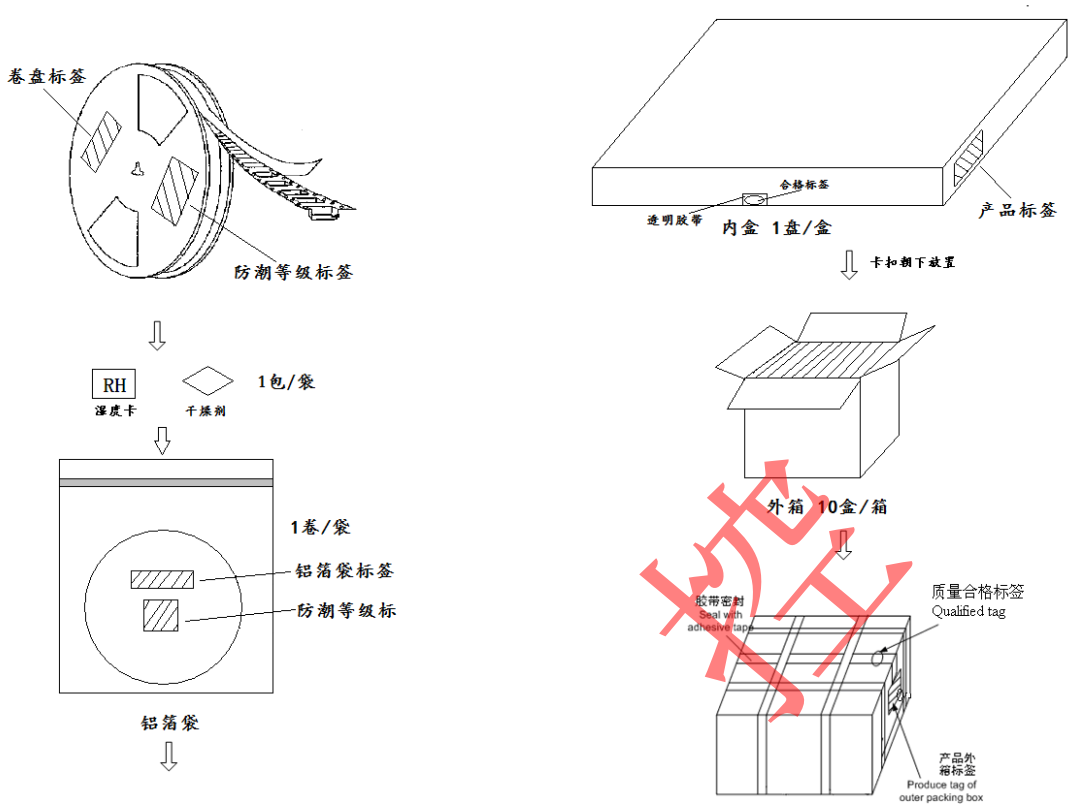


编带方式R2

Taping type R2

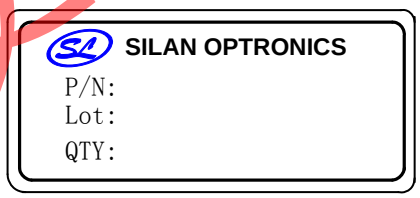


外包装 Final packing



Note:

1. 外箱尺寸：380*370*280mm
   The size of packing box after folding and shaping should be subject to 380*370*280mm.
2. 产品内盒标签
   Produce tag of inner packing box



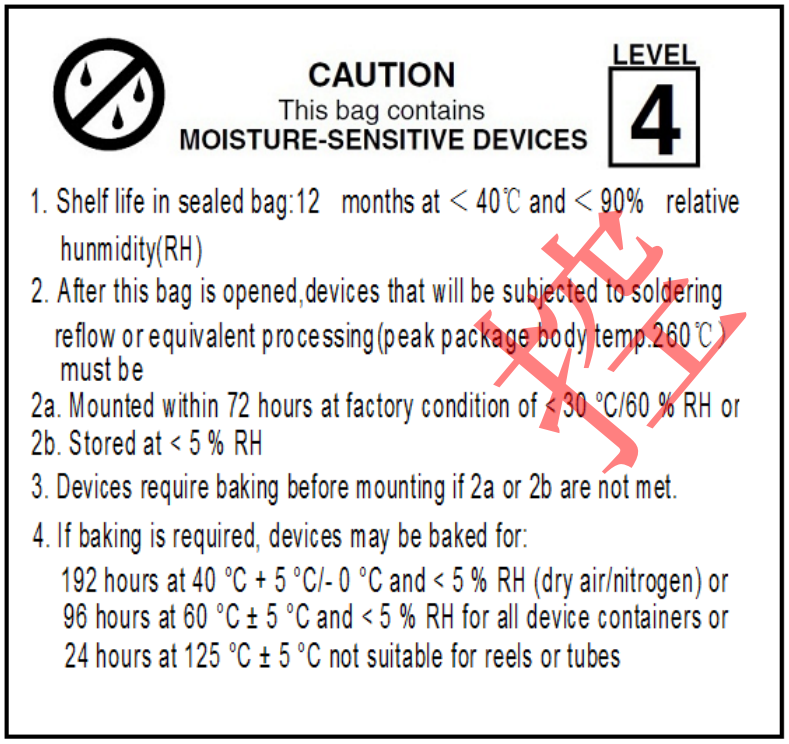
4 产品外箱标签
Produce tag of outer packing box

5 质量合格标签

Qualified tag

6 防潮等级标签

Moisture Level tag



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