



# 产品承认书 SPECIFICATION FOR APPROVAL

客户名称:  
CUSTOMER

我司料号:  
OUR PART NO.

XRNR4020-22uH/M

我司品名:  
OUR PART NAME

SMD Power Inductor

送样日期:  
DATE SAMPLES

数量:  
QUANTITY

## 制造确认 MANUFACTURER APPROVE

拟制 DRAWN	审核 CHECKED	确认 APPROVED
Hu Fangting	Rao Ping	Li Zhenxiong

## 客户确认 CUSTOMER APPROVE

客户名称 CUSTOMER NAME:

客户料号 CUSTOMER P/N:

规格型号 DESCRIPTION: XRNR4020 22uH ±20% 1.05A

检查结果:  合格  不合格

签名及盖章:

INSPECT RESULT ACCEPT REJECT

SIGNATURE AND STAMP

说明 REMARK:

如对本承认书内容有异议请提出或标记发送至我司, 本承认书在未收到异议回复时于本承认书提供一周后生效。

If you have any objection to the contents of this acknowledgment, please raise it or send the mark to us. The acknowledgment will become effective one week after the acknowledgment is provided in the absence of any objection.

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○ Features 特性

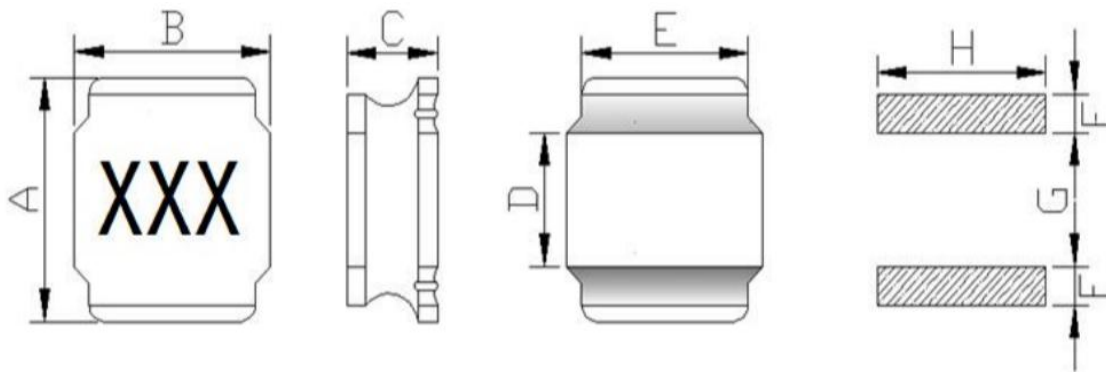
- ①Metallization on ferrite core results in excellent shock resistance and damage-free durability .  
铁氧体磁芯上的金属化带来了卓越的抗冲击性和无损伤的耐久性
- ②Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference(EMI) .  
闭合磁路设计可减少漏磁通和电磁干扰 (EMI)
- ③Takes up less PCB real estate and save more power.  
占用更少的PCB空间并节省更多的电力
- ④30%higher current rating than CD conventional inductors of equal size .  
额定电流比同等尺寸的传统CD 电感器高30%
- ⑤Halogen Free &ROHS compliant 无卤素且符合ROHS
- ⑥Magnetic-resin shielded construction reduces buzz noise to ultra-low levels .  
磁性树脂屏蔽结构将嗡嗡声降低到超低水平

◎Applications 用途

- ①Laptops and PCs .  
笔记本电脑和个人电脑
- ②Portable gaming devices, personal navigation systems, personal multimedia devices.  
便携式游戏设备、个人导航系统、个人多媒体设备
- ③Base stations .  
基站
- ④Flat-screen TVs, blue-ray disc recorders, set top box, movie cameras, smart phone .  
平板电视、蓝光光盘录像机、机顶盒、电影摄像机、智能手机
- ⑤VR, AR
- ⑥LED Lighting LED照明

◎Dimensions(unit:mm) 尺寸(单位);

Outline Dimensions 外形尺寸 & Recommended pad size 推荐焊盘尺寸;



Series	A	B	C	D	E	F	G	H
XRNR4020	4.0±0.2	4.0±0.2	2.0±0.2	1.6±0.2	3.2 Ref	1.35 Ref	1.3 Ref	3.7 Ref

注: ※由于喷码设备不断更新, 印字的大小及字体可能不同批次略有区别。 ※产品外形分为12边形和8边形, 可根据客户要求提供, 默认12边形。

Note: ※Due to continuous updates in coding equipment, print size and font may vary slightly between batches. ※Product shapes are available in 12-sided and 8-sided configurations, provided according to customer requirements; 12-sided is the default.



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我司物料编号 OUR PART NO	XRNR4020-22uH/M	我司品名 OUR PART NAME	SMD Power Inductor

### 电性参数

#### Electrical parameters:

Part Number 型号	LO(uH)@(0A) 100KHz/0.25V	精度 precision (±)	DCR(mΩ) 直流电阻 Max最大	Heat rating current Irms(A)温升电流 Max最大	Saturation current Isat(A)饱和电流 Max最大
XRNR4020-22uH/M	22.0	20%	420	0.62	1.05

#### ONotes注意事项:

1.All test data is referenced to 25°C ambient所有测试数据均参考25°C环境温度

2.Operating temperature range -55°C to+125°C工作温度范围-55°C至+125°C

3.Irms(A):DC current(A)that will cause an approximate  $\Delta T$  of 40°C(reference ambient temperature is 25 °C)

Irms(A):将导致大约40°CAT的直流电流(A)(参考环境温度为25°C)

4.Isat(A):DC current(A)that willcause LO to drop approximately 30 % Isat(A):将导致L0下降约30%的直流电流(A)

5.The part temperature(ambient +temp rise)should not exceed 125°C under worst case operating conditions.Circuit design,component placement,PWB trace size and thickness,airflow and other cooling provisions all affect the part temperature.Part temperature should be verified in the end application 在最坏的操作条件下,零件温度(环境温度+温升)不应超过125°C。电路设计、部件放置、PWB迹线尺寸和厚度、气流和其他冷却措施都会影响零件温度。应在最终应用中验证零件温度。

#### 6.测试仪器Testing Instruments:

CH2816、502BCOHM METER、CH2816+CH7210+THERMOMETER、CH2816+CH7210、

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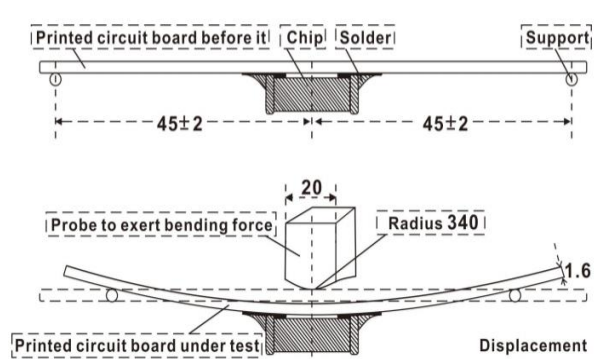
◎General specifications 一般规格:

Item 项目	Specification and Requirement 项目规范和要求	Test Method 试验方法								
Solderability 可焊性	1.No case deformation or change in appearance 无外壳变形或外观变化 2.New solder coverage More than 90% 新焊料覆盖率超过90%	1.Preheat 预热: 155℃±5℃,60S±2S 2.Tin:lead-free.锡: 无铅. 3.Temperature:245℃±5℃,flux:3.0S±0.5S. 温度: 245℃±5℃,通量: 3.0S±0.5S.								
Mechanical shock 机械冲击	1.No case deformation or change in appearance 无外壳变形或外观变化 2.ΔL/Lo≤±10%	1.Acceleration 加速: 100G 2.Pulse time 脉冲时间: 6ms 3.3 times in each positive and negative direction of 3 mutual perpendicular directions 在3个相互垂直的方向中的正方向和负方向各3次								
Mechanical vibration 机械振动	1.No case deformation or change in appearance 无外壳变形或外观变化 2.ΔL/Lo≤±10%	1.The test samples shall be soldered to the board.Then it shall be submitted to below test conditions. 测试样品应焊接在电路板上, 然后应将其提交至以下试验条件 <table border="1" data-bbox="901 967 1455 1115"> <tr> <td>Fre. Range 频率范围</td> <td>10~55Hz</td> </tr> <tr> <td>Total Amplitude 总振幅</td> <td>1.5mm</td> </tr> <tr> <td>Sweeping Method 扫频法</td> <td>10Hz to 55Hz to 10Hz</td> </tr> <tr> <td>Time 时间</td> <td>For 2 hours on each X,Y,Z axis.</td> </tr> </table> 2.Recovery:At least 2 hours of recovery under the standard condition after the test, followed by the measurement within 24 ±2 hours. 恢复: 试验后在标准条件下至少恢复2小时, 然后在24±2小时内进行测量	Fre. Range 频率范围	10~55Hz	Total Amplitude 总振幅	1.5mm	Sweeping Method 扫频法	10Hz to 55Hz to 10Hz	Time 时间	For 2 hours on each X,Y,Z axis.
Fre. Range 频率范围	10~55Hz									
Total Amplitude 总振幅	1.5mm									
Sweeping Method 扫频法	10Hz to 55Hz to 10Hz									
Time 时间	For 2 hours on each X,Y,Z axis.									
Thermal Shock 热冲击	Inductance change 电感变化: Within±10%Without distinct damage in appearance ±10%以内, 外观无明显损伤	1.First -55℃ for 30 minutes,last 125℃ for 30 minutes as 1 cycle.Go through1000 cycles.第一次-55℃持续30分钟, 最后125℃持续30分为1个循环. 经历1000个循环。 2.Max transfer time is 2 minutes.最长传输时间为2分钟 3.Measured at room temperature after placing for 24±2 hours 放置24±2小时后在室温下测量								
Humidity Resistance 耐湿性	Inductance change 电感变化: Within±10%Without distinct damage in appearance ±10%以内, 外观无明显损伤	1.Reflow 2 times回流2次, 2.85℃,85%RH,1000 hours 85℃,85%相对湿度, 1000小时 3.Measured at room temperature after placing for 24±2 hours 放置24±2小时后在室温下测量								
Low temperature 低温	Inductance change 电感变化: Within±10%Without distinct damage in appearance ±10%以内, 外观无明显损伤	1.Temperature 温度: -55±2℃ 2.Time 时间: 1000 hours 小时 3.Measured at room temperature after placing for 24±2 hours 放置24±2小时后在室温下测量								
High temperature storage 高温贮存	Inductance change: Within±10%Without distinct damage in appearance ±10%以内, 外观无明显损伤	1.Temperature 温度: +125±2℃ 2.Time 时间: 1000 hours 小时 3.Measured at room temperature after placing for 24±2 hours 放置24±2小时后在室温下测量								
Terminal Strength 贴片端强度	No removal or split of the termination or other defects shall occur. 不得移除或分割终端或其他缺陷	1、 The test samples shall be soldered to the board 试样应焊接在板上 2、 Push the product vertically from the side of the sample using the thrust tester. 使用推力测试仪从样品侧面垂直推动产品 3、 Automotive electronics:17.7N,60S±1s,X,Y direct. 汽车电子: 17.7N,60S±1s,X,Y direct 								

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◎General specifications 一般规格:

Item 项目	Specification and Requirement 项目规范和要求	Test Method 试验方法
Board Flex 电路板柔性	Inductance change: Within ±10% Without distinct damage in appearance ±10% 以内, 外观无明显损伤	<p>1、Run through IR reflow for 2 times. 通过IR回流2次 2、Place the 100mm X 40mm board into a fixture similar to the one shown in below Figure with the component facing down. 将100mm X 40mm的板放入类似下图所示的夹具中, 使组件朝下. 3、The apparatus shall consist of mechanical means to apply a force which will bend the board(D)x =2 mm minimum. 该装置应包括施加力的机械装置, 该力将使板(D)x=2 mm最小弯曲. 4、The duration of the applied forces shall be 60±5 sec. The force is to be applied only once to the board. 施加的力的持续时间应为 60±5 秒。该力只能施加在板上一次。</p> 

◎Recommended Soldering Technologies 推荐的焊接技术:

1、Re-flowing Profile 回流焊接:

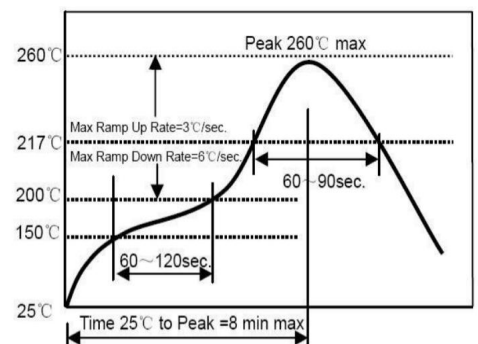
※Preheat condition 预热条件: 150~200℃/60~180sec.

※Allowed time above 217℃ 允许217℃时间以上: 80~120sec.

※Max temp 最高温度: 260℃

※Max time at max temp 最高温度下的最长时间: 10 sec. ※Solder paste 焊膏: Sn/3.0Ag/0.5Cu

※Allowed Reflow time: 2x max 允许回流时间: 最大2倍



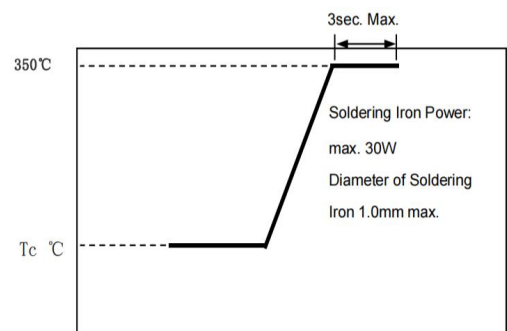
2、Iron Soldering Profile 烙铁焊接

※Iron soldering power: Max. 30W 烙铁焊接功率: 最大30W

※Pre-heating 预热: 150℃/60sec.

※Soldering time 焊接时间: 3sec. Max. ※Solder paste 焊膏: Sn/3.0Ag/0.5Cu

※Max. 1 times for iron soldering 烙铁焊最多1次

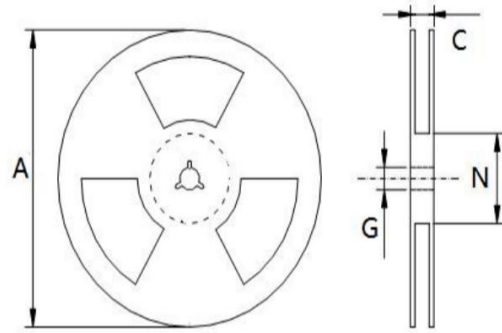


ODimension of plastic taping 塑料胶带尺寸 (Unit 单位: mm):

Tape Carrier Packaging 胶带载体包装:

Series 系列	Standard Quantity (pcs/reel) 标准数量 (个/卷)
XRNR4020	3000

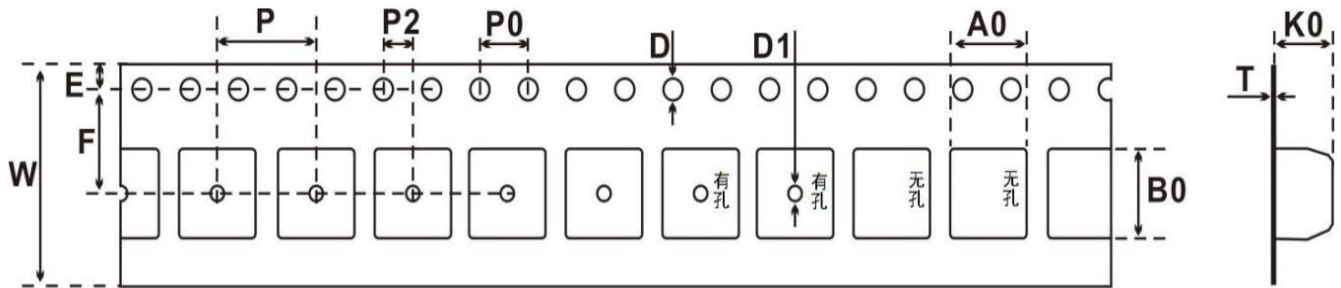
STYLE	A(mm)	C(mm)
13"	330±1.5	17.5±0.5
G(mm)	N(mm)	
13.5±0.5	100±1	



字头朝孔

字尾朝孔

Series 系列	W	A0	B0	D	E	F	K0	P0	P2	P	T
XRNR4020	12.00±0.3	4.2±0.10	4.2±0.10	1.5±0.10	1.75±0.10	5.5±0.10	2.3±0.10	4.0±0.10	2.0±0.10	8.0±0.10	0.4±0.05



OPeel force of top cover tape 顶盖胶带剥离力:

The peel speed shall be about 300mm/minute 剥离速度约为300mm/分钟

F Force magnitude F力大小: 20~100g

Stripping angle of facial tape 面带剥离角度: 165°~180°.

