



系列规格承认书

Series Specification

CUSTOMER:

CUSTOMER'S P/S:

OUR P/N:

SHC0650 Series

DATE:

客户承认印鉴：

◎Features 特性

- ① High rated current 高额定电流
- ② Frequency up to 3 MHz 频率高达3MHz
- ③ 125°C maximum total temperature operation 125°C最高总温度运行
- ④ Low core loss 低堆芯损耗
- ⑤ Halogen Free & ROHS compliant 无卤素且符合ROHS
- ⑥ Ultra low buzz noise due to molding construction 成型结构带来的超低嗡嗡声

◎Applications 用途

- ① Laptops and PCs 笔记本电脑和个人电脑
- ② Switch and servers 交换机和服务端
- ③ Base stations 基站
- ④ DC/DC converters DC/DC转换器
- ⑤ SSD modules SSD模块
- ⑥ Battery powered devices 电池供电设备

◎Product Identification 产品标识

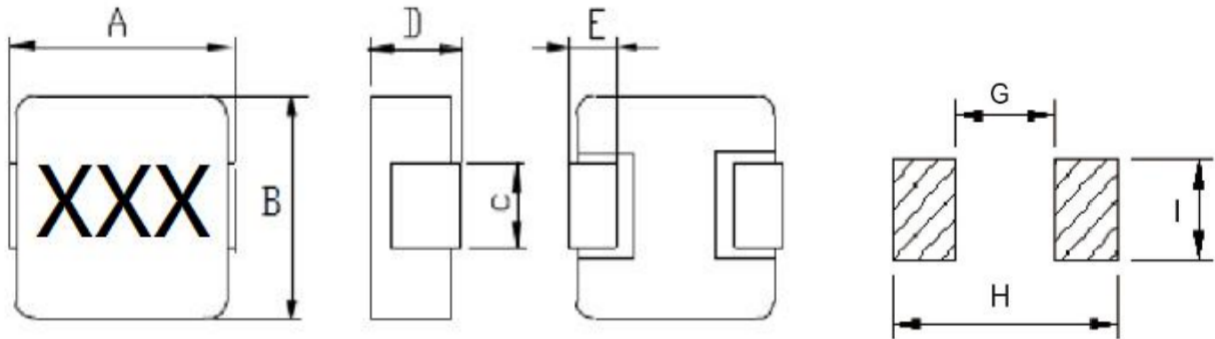
SHC 0650 - 220 M
① ② ③ ④

- ① Brand code (品牌代码,SHC一体成型)
- ② Specifications and models (规格型号)
- ③ Inductance value (感值) R47=0.47uH 2R2=2.2uH 220=22uH
- ④ Inductance Tolerance 电感公差: N=±30% M=±20% K=±10%

◎Dimensions (unit:mm) 尺寸(单位)

Outline Dimensions 外形尺寸

Recommended pad size 推荐焊盘尺寸



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。
※ 产品粉料分合金、还原及羰基，合金免喷漆，还原及羰基喷漆（根据客户要求定制提供），默认为合金系列。

Series	A	B	C	D	E	G	H	I
SHC0650	7.6 Max	6.6±0.3	3.0±0.3	5.0 Max	1.6±0.3	3.7	8.0	3.8

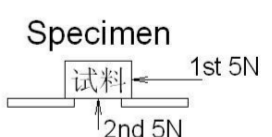
◎Electrical characteristics 电气特性

P/N	L0(μH)@(0A) MICROTEST6377 100KHz/1V	Rdc(mΩ) MICROTEST4210 /502BCOHM METER		Heat rating current Irms(A) 温升电流 MICROTEST6377&6220 + THERMOMTER	Saturation current Isat(A) 饱和电流 MICROTEST6377 MICROTEST6220
		Typical 实测	Max 最大	Max 最大	Max 最大
SHC0650-1R0M	1.0	5.6	7.3	9	16
SHC0650-1R5M	1.5	7.5	9.8	8.5	12
SHC0650-2R2M	2.2	10	13	6.5	11
SHC0650-3R3M	3.3	14	18	6.2	9
SHC0650-4R7M	4.7	22	29	6	7.5
SHC0650-5R6M	5.6	26	34	5.5	7
SHC0650-6R8M	6.8	29	38	5	6.5
SHC0650-100M	10	41	53	4	6
SHC0650-150M	15	62	81	3.5	5
SHC0650-220M	22	93	121	2.6	4
SHC0650-330M	33	156	203	2.3	3
SHC0650-470M	47	236	307	2	2.3
SHC0650-680M	68	283	368	1.5	1.8
SHC0650-101M	100	495	643	1	1.5

◎Notes 注意事项：

1. All test data is referenced to 25 °C ambient 所有测试数据均参考25℃环境温度
2. Operating temperature range - 55 °C to + 125 °C 工作温度范围-55℃至+125℃
3. Irms (A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25 °C) Irms (A)：将导致大约40℃ΔT的直流电流（A）（参考环境温度为25℃）
4. Isat(A):DC current (A) that will cause L0 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℃。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。

◎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
Solder ability 焊锡附着性	New solder shall cover 95% minimum of the surface immersed. 95%以上的面积要被覆盖。	Terminals shall be immersed for 5 to 10 seconds in flux at room temperature. Dip sample into solder bath containing molten solder at $260 \pm 5^\circ\text{C}$ for 3 ± 0.5 seconds. 试验品电极涂布松香后，在 5~10 秒内焊锡，焊锡槽温度 $260 \pm 5^\circ\text{C}$ ，时间： 10 ± 2 秒。
Reflow test 回流焊耐热试验	Inductance within $\pm 20\%$ of initial value. 电感值变化不超过 $\pm 20\%$ 。	Peak temp/ duration of stay. 峰值温度/停留时间： $260 \pm 5^\circ\text{C}/30 \pm 10\text{s}$. The specimen shall be subjected to the reflow process under the above condition 2 times. Test board shall be 0.8mm thick. Base material shall be glass epoxy resin. 试验板的厚度 0.8mm 以上，按上面条件通过两次热风炉。 Measurement: when it shall be stabilized under standard atmospheric conditions for 1h~2h before measurement. 测定：常温常湿中放置于 1 小时以上 2 小时以内测试。
Vibration 耐振性	Appearance no damage. 无外观破损。 Inductance within $\pm 20\%$ of initial value. 电感值变化不超过 $\pm 20\%$ 。	Vibration Frequency: 10 ~ 55 ~ 10Hz Amplitude: 1.5mm Sweep time: 1min Test Directions: X,Y,Z Test Time: 2 hours each direction 振动频率 10 ~ 55 ~ 10Hz, 振幅 1.5mm, 扫描时间 1 分钟, 分 X,Y,Z 方向各振动 2 小时。
Cold and hot cycle test 冷热冲击试验	Inductance within $\pm 20\%$ of initial value. 电感值变化不超过 $\pm 20\%$ 。	Placed at the temperature of $-40 \pm 3^\circ\text{C}$ for 30 minutes, placed at $125^\circ\text{C} \pm 3^\circ\text{C}$ for 30 minutes, the heat and cold conversion time of no more than 5 ± 2 minute for a cycle, after 20 cycles, Then it shall be stabilized under standard atmospheric conditions for 1h~2h before measurement. 在温度 $-40 \pm 3^\circ\text{C}$ 中放置 30 分钟，在 $125^\circ\text{C} \pm 3^\circ\text{C}$ 放置 30 分钟，中间转换时间不超过 5 ± 2 分钟为一个循环，试验 20 个循环后，常温常湿中放置 1 小时以上 2 小时以内测试。
Adhesion strength 固着强度	Appearance no damage. 无外观破损。 Inductance within $\pm 20\%$ of initial value. 电感值变化不超过 $\pm 20\%$ 。	A static load using a R0.5 pressing tool shall be applied the arrow and to the body of the specimen in the direction of the arrow and shall be hold for $60 \pm 5\text{s}$. Measure after removing pressure. 按箭头方向用 R0.5 的加压棒在试件中施加一定的静力并保持 60 ± 5 秒。 
Free fall test 自然落下试验	Appearance no damage. 无外观破损。 Inductance within $\pm 20\%$ of initial value. 电感值变化不超过 $\pm 20\%$ 。	The specimen must be fixed on test board. It must be equipped with instruments of which weight is 500g. Then it shall be fallen freely from 1m height to rigid wood 3 times in each of three axes. 试件安装在基板上，并固定在重 500 克的盒中，由 1 米高自由落体，3 个互相垂直的方向各 3 次。
Dump heat test 恒温恒湿试验	Inductance within $\pm 20\%$ of initial value. 电感值变化不超过 $\pm 20\%$ 。	The specimen shall be stored at a temperature of $40 \pm 5^\circ\text{C}$ with relative humidity of 90 ~ 95% for $96 \pm 4\text{h}$. Then it shall be stabilized under standard atmospheric conditions for 1h~2h before measurement. 在温度 $40 \pm 5^\circ\text{C}$ ，湿度 90~95% 中放置 96 ± 4 小时后，常温常湿中放置 1 小时以上 2 小时以内测试。
Low temperature preservation test 低温保存试验	Inductance within $\pm 20\%$ of initial value. 电感值变化不超过 $\pm 20\%$ 。	The specimen shall be stored at a temperature of $-40 \pm 3^\circ\text{C}$ for $96 \pm 4\text{h}$. Then it shall be stabilized under standard atmospheric conditions for 1h~2h before measurement. 在温度 $-40 \pm 3^\circ\text{C}$ 中放置 96 ± 4 小时后，标准大气条件下放置 1 小时以上 2 小时以内测试。

◎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
High temperature preservation test 高温保存试验	Inductance within±20% of initial value 电感值变化不超过±20%。	The specimen shall be stored at a temperature of 125±3℃ for 96 ± 4h. Then it shall be stabilized under standard atmospheric conditions for 1h~ 2h before measurement。在温度 125±3℃中放置 96±4 小时后，常温常湿中放置 1 小时以上 2 小时以内测试。
Operating temperature range 使用温度范围	-55 ~ + 125℃	Products heating tempratne. 包括制品的发热温度。
Storage temperature and humidity range 保存温湿度范围	temperature range 温度范围：： 5℃~35℃ humidity range 湿度范围：25%~80%	In packing state. 在包装的状态下。

Atmospheric conditions 标准大气条件： Unless otherwise specified, the standard range of atmospheric conditions in making measurements and test as follows 除另有规定外，大气条件进行测量和试验的标准范围如下：

Ambient temperature：5℃ to 35℃ 环境温度:5℃~ 35℃
relative humidity: 45% to 85% 相对湿度:45% ~ 85%
air pressure: 86kPa to 106kPa 气压:86kPa ~ 106kPa

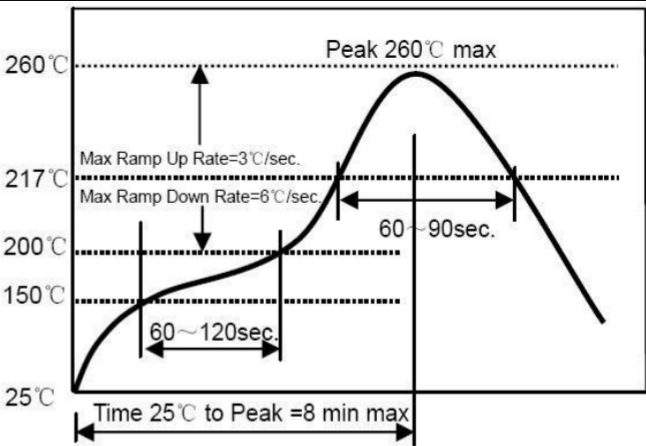
If more strict measurement is required, measurement shall be made within following limits
如果需要更严格的测量，应在下列范围内进行测量：

Ambient temperature：20±2℃ 环境温度:20±2℃
relative humidity: 65±5% 相对湿度:65±5%
air pressure: 86kPa to 106kPa 气压:86kPa ~ 106kPa

◎Recommended Soldering Technologies 推荐的焊接技术

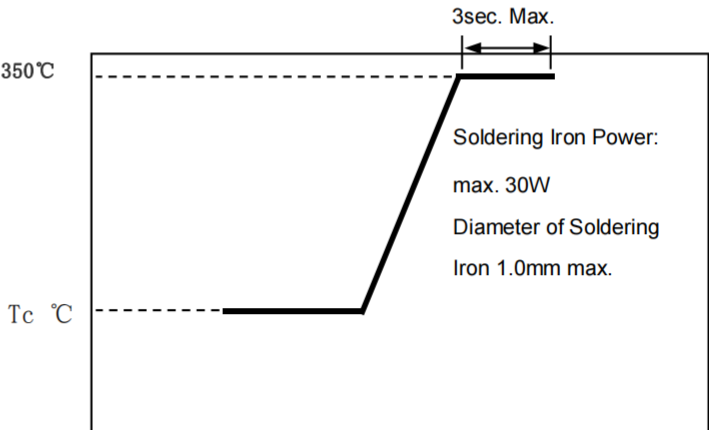
1、Re-flowing Profile 回流焊接:

- ※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

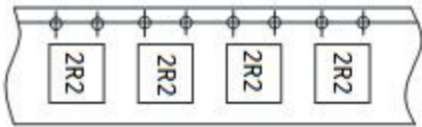
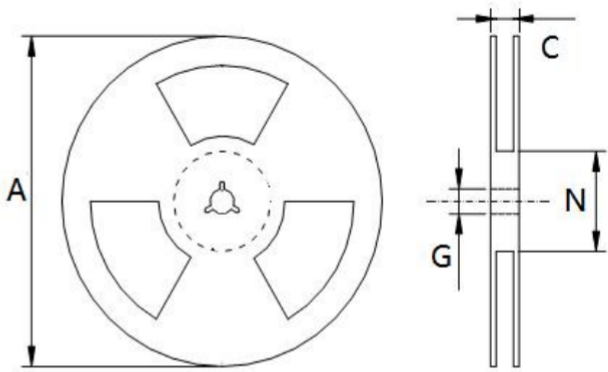


◎Dimension of plastic taping 塑料胶带尺寸 (Unit单位: mm) :

Tape Carrier Packaging 胶带载体包装:

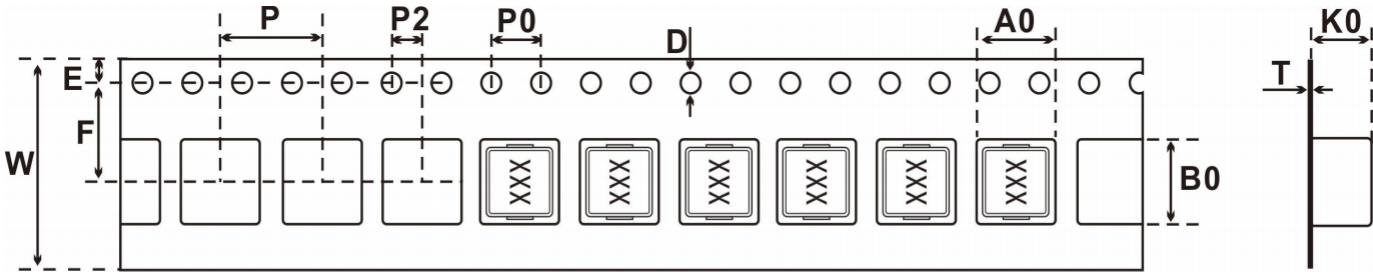
Series 系列	Standard Quantity (pcs/reel) 标准数量 (个/卷)
SHC0650	1000

STYLE	A(mm)	C(mm)
13"	330±1.5	21±0.5
G(mm)	N(mm)	
13±0.5	100±1	



字头朝孔(示例)

Series 系列	W	A0	B0	D	E	F	K0	P0	P2	P	T
	±0.30	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05
SHC0650	16.00	7.70	8.30	1.50	1.75	7.50	5.50	4.00	2.00	12.00	0.40



◎Peel 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°.

