

零件承认书

SPECIFICATION FOR APPROVAL

客户名称: 0001

规格描述: ZEMS1045一体成型电感规格书

日期: 2023/10/10

增益签核:

制订	审核	核准
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客户签核:

工程	审核	核准



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物料类型: 一体成型电感

日期: 2023/10/10

版本: A

1. 适用范围 Scope

本规格书适用于 ZEMS1045系列贴片功率电感器。
This specification applies to the ZEMS1045series of Molded SMD Power Inductor.

2. 工作温度范围 Operating Temperature Range

-40℃~+125℃, 包括自身发热。 Including self-heating

3. 型号规格表示办法 How To Order

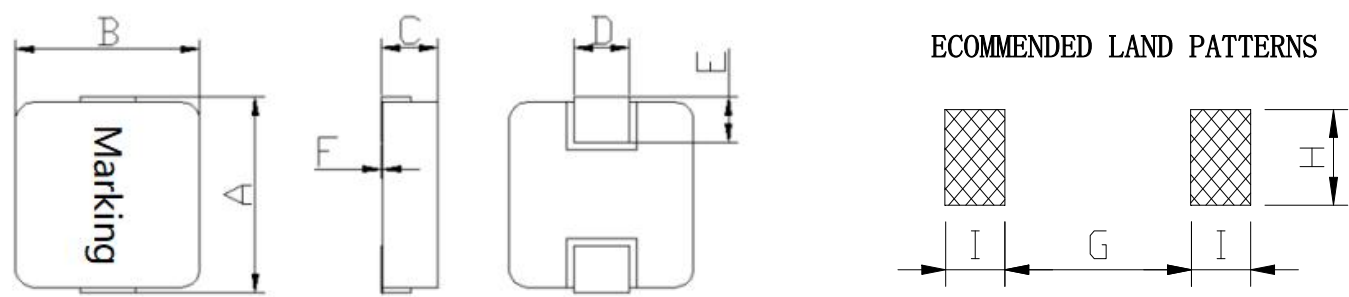
ZEMS 1045-6R8 M

1 2 3 4

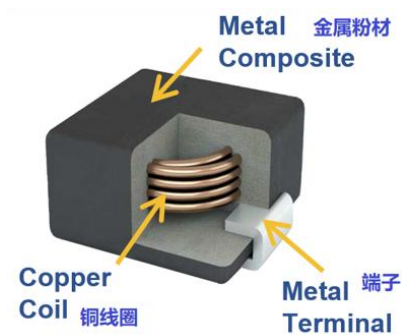
- 1：产品代号 Product symbol 一体成型电感 ZEMS
- 2：规格尺寸Dimension L*W*T(mm) 1045 11*10.2*4.5
- 3：电感量Inductance(uH) 6R8: 6.8 220: 22 331: 330
- 4：精度 Tolerance M: ±20%

4. 结构及尺寸 Structure And Dimensions

单位 Unit: mm

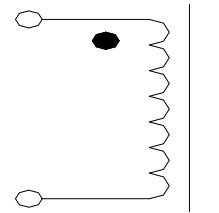


型号 Part No.	A	B	C	D	E	F TYP	G TYP	H TYP	I TYP
ZEMS1045	11.0±0.5	10.2±0.3	4.5±0.2	3.0±0.3	2.0±0.5	0.15	6.0	4.0	3.25



产品结构图

Product structure



电路示意图

Circuit schematic

5. 测试条件 Testing condition

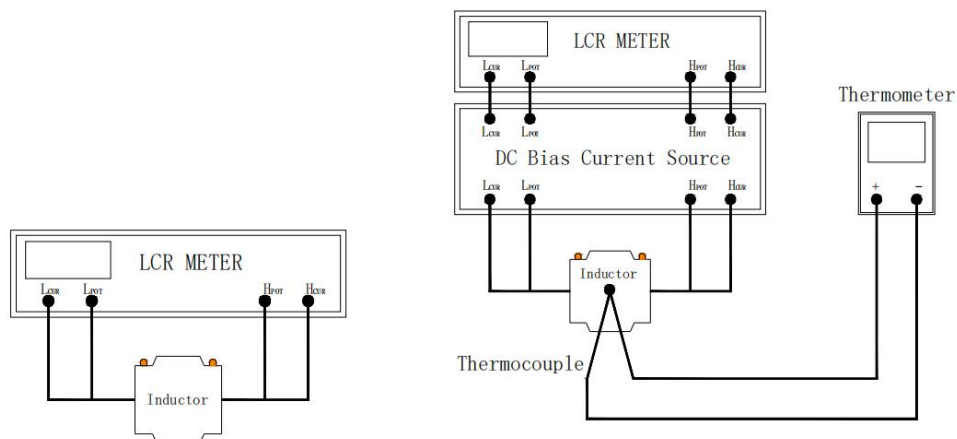
5.1 除非另有规定，否则在以下条件下测试. Unless otherwise specified

温度：常温 Temperature : Ordinary Temperature	20±15 °C
湿度：常湿 Humidity: Ordinary Humidity	65±20 % RH
大气压 Atmospheric Pressure	86 to 106 kPa

5.2 测试条件与仪器 Test condition & equipment

项目 Item	测试条件 Test condition	测试仪器 Test equipment
电感量 Ls	100KHz/1V	TH2827C/502BC or equivalent
直流电阻 DCR	直流电 direct-current	TH2827C/502BC or equivalent
饱和电流 Isat	100KHz/1V	TH2827C Precision LCR Meter & TH1778 BIAS
温升电流 Irms	环境温度 25℃ ambient temperature 25℃	TH2827C Precision LCR Meter & TH1778 BIAS

5.3 测试示意图 Test schematic diagram



Ls & RDC test schematic diagram

Isat & Irms test schematic diagram

6. 电气性能 Performance Specification

客户料号 Customers Part No.	规格型号 Part No.	电感量 Inductance Ls (μH) ±20%	直流电阻 DCR (mΩ) Max	饱和电流 Isat (A)	温升电流 Irms (A)
	ZEMS1045-6R8M	6.8	18.5	13.0	9.0

饱和电流：指使电感量比初始值下降 30% 的电流值。

Isat: The DC current is that which cause a 30% inductance reduction from the initial value.

温升电流：指使电感器表面温度上升 40℃ 的电流值（参考周围环境温度 25℃）。

Irms: The DC current is inductor surface temperature to rise by 40℃ (Reference ambient temperature 25℃).

7. 可靠性 Reliability Data

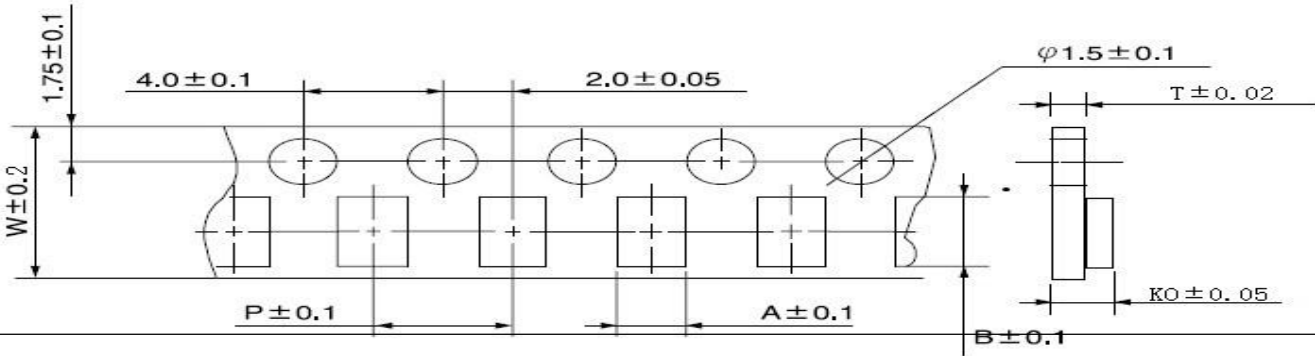
项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
工作温度范围 Operating Temperature Range	-40℃ ~ +125℃	包括自身发热的上升温度。 Including self-heating temperature rise.
可焊性 Solderability	电极面 90% 以上覆盖新的焊料。 90% or more of electrode area shall be coated by new solder.	在 245℃ ± 5℃ 熔融的焊锡 (96.5Sn/3.0Ag/0.5Cu) 中浸 5 s ± 1 s。 Dip pads in flux and dip in solder pot (96.5Sn/3.0Ag/0.5Cu) at 245℃ ± 5℃ for (5 ± 1) seconds.

耐焊接热 Resistance to Soldering Heat	外观无可见机械损伤； 电感量变化率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	在 260 °C±5 °C 熔融的焊锡 (96.5Sn/3.0Ag/0.5Cu) 中浸 10 s±1 s。 Dip pads in flux and dip in solder pot (96.5Sn/3.0Ag/0.5Cu) at 260°C±5 °C for (10±1) seconds.
耐低温 Low temperature	外观无可见机械损伤； 电感量变化率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	温度-40 °C±2°C，时间 1000 小时 Temperature-40±2°C for total 1000hr.
耐高温 High temperature	外观无可见机械损伤；电感量变化 率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	温度 125 °C±2°C，时间 1000 小时 Temperature 125±2°C for total 1000hr.
恒定湿热 Static Humidity	外观无可见机械损伤；电感量变化 率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	将电感器放置在于湿度 (93±3)%RH, 温度 40 °C±2 °C 的环境中存放 96 h±2 h，在 室温下放置 2 小时后、48 小时内测试。 Inductors shall be subjected to (93±3)%RH . at 40 °C±2 °C for 96 h±2 h . Inductors are to be tested after having air dried for 2 hours.
温度变化 Thermal shock	外观无可见机械损伤；电感量变化 率：±10%以内。 No visible mechanical damage. Inductance change: Within ±10%	-40±3°C/30±3min↔85°C±2°C/30±3min 转换时间 2~3min, 循环 5 次； 在室温下放置 2 小时后、48 小时内测试。 The test sample shall be placed at -40±3°C/30±3min and 85±2°C/30±3min different temperature conversion time is 2~3 minutes. The temperature cycle shall be repeated 5 cycles.

机械冲击 Mechanical Shock	 电感无出现电极脱落、断线现象。 No evidence of terminal peel off and wire broken.	把电感焊在厚度为 1.0mm 的基板上, 并固定在黄铜制 15cm 大, 重 1.4Kg 的立方体内, 然后从 0.5m 高度往地板自然下落 (X, Y, Z 方向各一回) Inductors shall be Soldering on the PCB with 1.0mm thick and fixed them in a 15cm big., 1.4Kg weight cube with brass base, let it nature fallen form 0.5m height (X, Y, Z three axes)
端子强度 Adhesion of terminal electrode	端子与本体结合无松动、脱落。 Strong bond between the pad and the core, without come off PC board.	将电感器用 $260\pm5^{\circ}\text{C}/20\pm5\text{s}$ 焊在带有 0.3 mm 厚锡膏的基板上, 然后用冶具垂直电极面方向加压 10 N, $10\pm1\text{s}$。 Inductors shall be subjected to $260\pm5^{\circ}\text{C}$ for $20\pm5\text{s}$ Soldering in the base whit 0.3mm solder. And then aplomb electrode way plus tax 10 N for $10\pm1\text{s}$ seconds.

8. 包装 Package

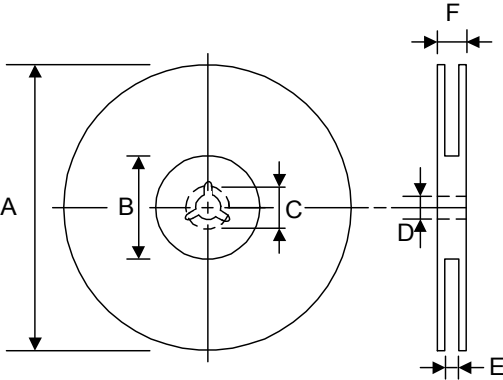
8.1 载带及卷盘尺寸 Tape Dimension(单位：毫米 Unit:mm)



Series	A	B	W	K0	P	T
ZEMS1045	10.3 ± 0.1	10.3 ± 0.1	24.0 ± 0.2	5.2 ± 0.1	16.0 ± 0.1	0.4 ± 0.05

TYPE	A	B	C	D	E	F
13*24	330 ± 1.0	100.5 ± 0.5	21.6 ± 0.2	13.5 ± 0.2	25.0 ± 0.5	29.0 ± 0.5

8.2 包装数量 Packing quantity

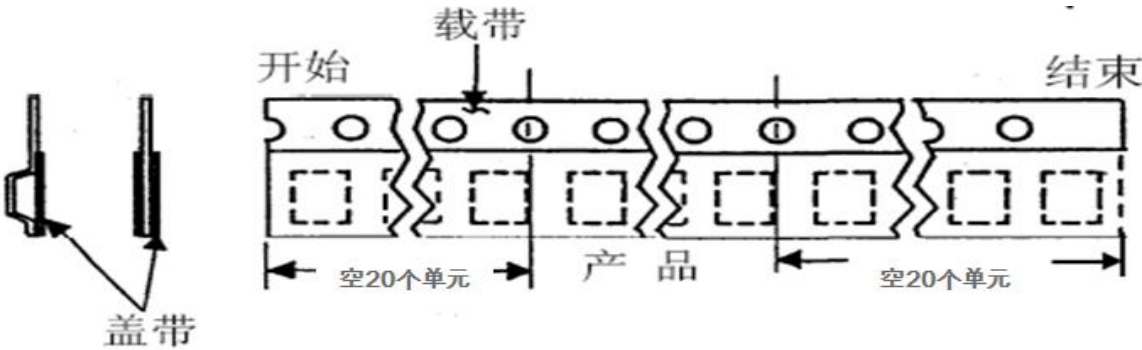


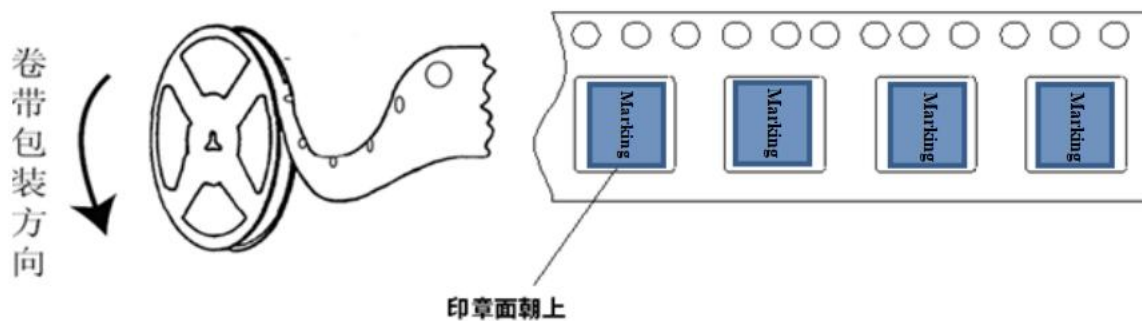
8.3 包装标准 package standard

8.3.1 每个卷轴开始包装前至少要留 20 个空单元。产品包装结束后还要继续包装至少 20 个空单元。

2 每盒装个外三个	Series	卷盘 REEL (PCS)	纸盒 BOX (PCS)	纸箱 Carton (PCS) (Size: 36.5*36.5*22.5cm)
	ZEMS1045	800	1600	4800

8.3. 个内两个轴,每箱装内盒。





9. 环保情况说明 Environmental Protection Statement

RoHS 指令：本公司产品符合 RoHS 指令。

Response to RoHS directive: Our products are RoHS compliance.

10. 推荐使用的焊接曲线 Recommended soldering profile

本产品建议使用回流焊接法。

Applicable soldering process to the products is reflow soldering.

10.1 焊接材料 Soldering Materials

①焊料：96.5Sn-3.0Ag-0.5Cu

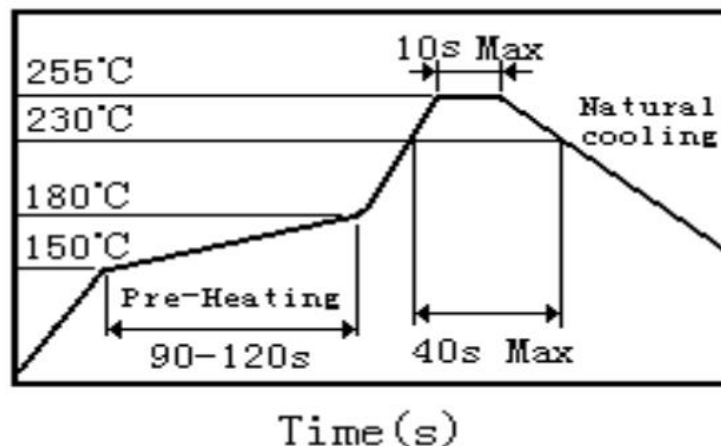
Solder: 96.5Sn-3.0Ag-0.5Cu

②助焊剂：使用松香基助焊剂，禁止使用卤化物含量超过 0.2wt% 的强酸性助焊剂和水溶性助焊剂。

Flux: Use rosin-based flux, but not strongly acidic flux (with chlorine exceeding 0.2 wt%).

Do not use water-soluble flux.

10.2 焊接曲线 Soldering Profile



11. 验收规则 Inspection Rules

11.1 产品的验收按 GB/T2828.1-2012 规定进行, 其检查水平: CR(致命缺陷): 0.01, MA(严重缺陷): 0.04, MI(次要缺陷): 1.0。

The inspection must be performed per GB/T2828.1-2012, with its examination level:
CR(Critical Defect): 0.01, MA(Major defects): 0.04, MI(Minor defect): 1.0 .

11.2 客户收到产品后一个月内须验收完毕, 并将验收结果书面通知供货方, 否则视为已验收合格。

The customer shall complete the acceptance inspection within one month after receiving the product, and notify the supplier of the acceptance result in writing; otherwise the product shall be deemed to have passed the acceptance inspection.

12. 贮存方法 Storage Methods

12.1 存储期限 Storage Period

为保证端子电极的焊接特性和包装材料处于良好状态, 请于本公司发货后 6 个月内使用本产品。同时, 由于端子电极的焊接特性会随时间发生变化, 如果贮存时间超过 6 个月, 请首先确认其焊接特性后再安装使用。

To maintain the solderability of terminal electrodes and to keep the packing material in good condition, product should be used within 6 months from the time of delivery. And the solderability of products electrodes may decrease as time passes, so in case of storage over 6 months, solderability shall be checked before actual usage.

12.2 存储条件 Storage Conditions

①存放货物的仓库应满足以下条件:

温度: $-10 \sim +40^{\circ}\text{C}$ 相对湿度: 30~70%RH

Store products in a warehouse in compliance with the following condition:

Temperature: -10 to $+40^{\circ}\text{C}$ Humidity: 30~70%RH

②不要使产品遭受温度和湿度的快速变化。

Do not subject products to rapid changes in temperature and humidity.

③不要将产品存放在化学环境中，如硫酸气体或碱性气体中，否则会降低电极端子的焊接特性和使电感器腐蚀。

Do not store the products in chemical atmosphere such as one containing sulfurous acid gas or alkaline gas, that will causes poor solderability and corrosion of inductors.

④不要以散包装的形式存放产品以防止电感器间的相互碰撞造成磁芯破裂或断线。

Do not store products in bulk packaging to prevent collision among inductors which causes core chipping and wire breakage.

⑤为了避免受潮气、灰尘等物质的影响，产品应保管于货架上。

Store products on pallets to protect from humidity, dust, etc.

⑥产品应避免热冲击、振动以及直接光照等等。

Avoid heat shock, vibration, direct sunlight, etc.

13. 说明 NOTE

13.1 本承认书的数据更改需经双方确认，任何一方单独修改无效。

Any revision to the specification Approval must be confirmed by both the supplier and the customer, otherwise the revision is invalid.

13.2 当本公司的产品使用在一般电子设备以外的领域时，对于此所引发的设备失效我司将不承担任何法律责任。

In case of using the product for the purpose other than general electronics devices, we shall not be held liable for any dysfunctions in or damage to the equipment with which the product is used.

13.3 本承认书只保证我司产品作为一个单体时的质量情况，当我司产品被安装到贵司产品上时，请贵司对使用在贵司电路上的产品情况进行了有效评价和确认。

Our specification limits the quality of the component as a single unit. Please ensure the component is thoroughly evaluated in your application circuit.

13.4 本承认书在客户收到 7 天之内，必须签章返回，逾期视为默认。

The specification Approval should be sent back to the supplier with customer' s chop on it within 7 days after receiving it, or we will take it as approved by customer.