



深圳市佑驰电子有限公司

Specification for Approval

产品名称: 功率电感

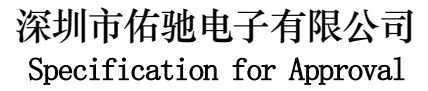
规格型号: HCMA-0840-4R7-M

产品编号:

日 期: 2025-06-17

- 1、本承诺书的内容更改需经过双方确认，任一方单独的修改均视为无效。
- 2、本承诺书在送达客户后，请给予承认并即签回，如无签回下订单的，我司有权以此承诺书标准生产，并表示购买方默认许可。

核准	审核	制作
	Aaron	Ada



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APPEARANCE AND DIMENSION 外观图

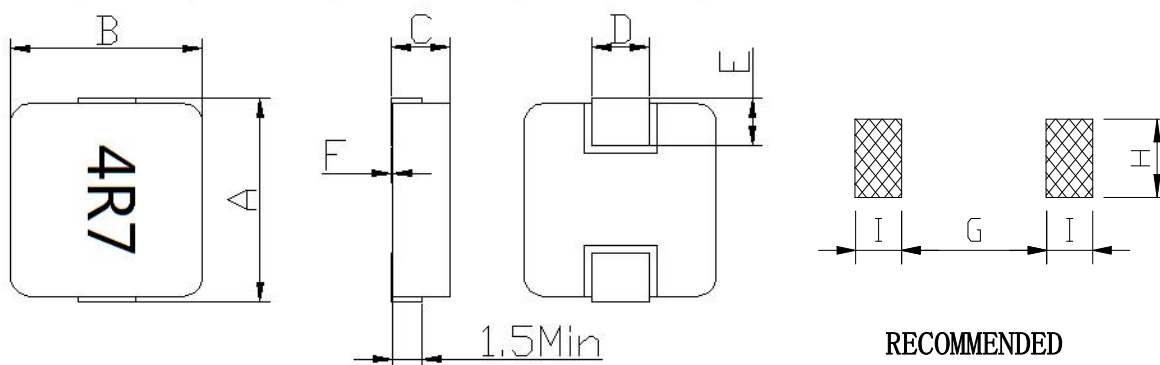
1. 型号规格表示办法 How To Order

HCMA 0840 - 4R7 M
① ② ③ ④

- ① 产品代号, Product symbol
- ② 尺寸规格, Dimension
- ③ 电感量标称值, Inductance
- ④ 电感量公差, Tolerance

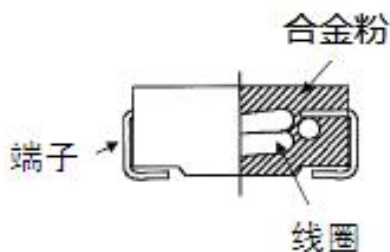
2. 结构及尺寸 Structure And Dimensions

单位 Unit: mm

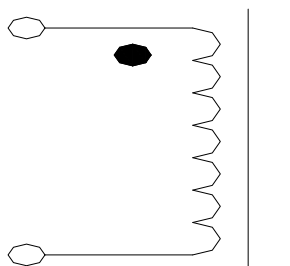


RECOMMENDED
LAND PATTERNS

型号 Part No.	A	B	C	D	E	F TYP	G TYP	H TYP	I TYP
0840	9.0±0.5	8.2±0.3	4.0MAX	3.0±0.2	1.8±0.3	0.15	5.0	3.5	2.4



产品结构示意图



电路示意图

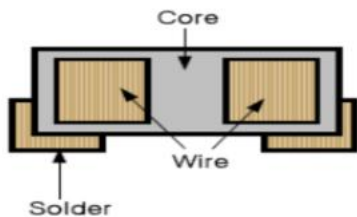
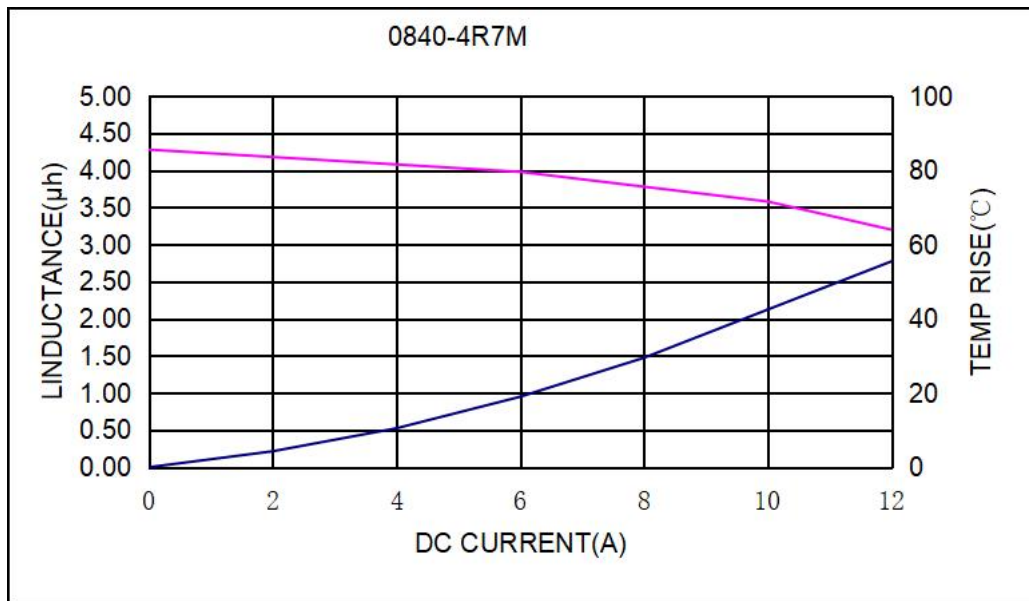
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3. ELECTRICAL CHARACTERISTICS / 电气特性

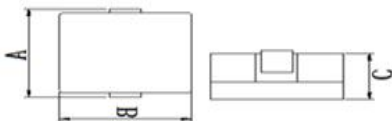
ITEM / 项目	PIN NO. / 测定端子	SPEC. / 规格	CONDITION · EQUIPMENT / 测定器 · 条件
INDUCTANCE 电感	S--F	$4.7 \mu H \pm 20\%$	YH-6377 or YH-6220 Bias (f=100kHz, 1V) TEMP25℃
DC RESISTANCE 直流电阻	S--F	20mΩ MAX	TM-8088 (TEMP25℃)
RATED CURRENT 额定电流	S--F	$L11A \geq L0A * 70\%$	Microtest YH-6377&YH-6220 Bias (f=100kHz, 1V AT=11A) TEMP25℃
		$\Delta T=40^\circ C$ MAX	Microtest YH-6377&YH-6220 Bias (f=100kHz, 1V, AT=8.0A)
OPERATING TEMPERATURE RANGE 使用温度范围	————	-40℃ ~ +125℃	INCLUDING SELF-RESONANCE HEAT / 包含自身的发热温度
STORAGE TEMPERATURE RANGE 保存温度范围	————	-40℃ ~ +125℃	————

电流曲线图 Current Curve

INTERNAL CONSTRUCTION & MATERIAL LIST



No.	Component Name	Material
1	Core	Alloy Powder
2	WIRE	Insulating Coated Wire
3	Solder	lead free solder

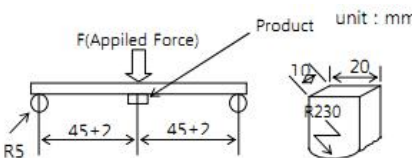
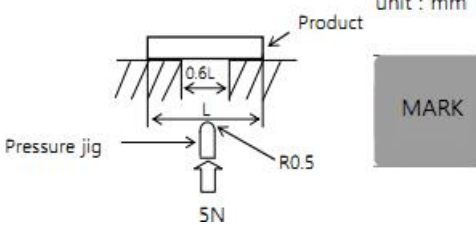
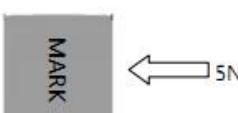
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5. TEST REPORT 测试报告										
测试项目 Test project										
尺寸 Dimension (mm) 				电气特性 Electrical character					层间短路测试 Short circuit test between the layers	
项目 Item	A	B	C	Ls (uH)	RDC (mΩ)	IDC LOA	I1 LBIAS	A ΔL/L	Irms	波形面积差
额定值 Nominal	9.0	8.2	4.00	4.7	20				8A	100V/±30%
公差 Tolerance	±0.5	±0.3	Max	20%	Max			≤30%	ΔT≦40℃	
1	9.09	8.13	3.78	4.28	16.8	4.28	3.08	28.04%	OK	6%
2	9.07	8.15	3.76	4.35	16.9	4.35	3.08	28.92%		3%
3	9.08	8.14	3.77	4.52	16.8	4.52	3.22	28.76%		5%
4	9.06	8.15	3.78	4.47	16.9	4.47	3.18	28.86%		-7%
5	9.03	8.12	3.77	4.38	16.8	4.38	3.13	28.54%		-5%
6	9.07	8.13	3.78	4.52	16.9	4.52	3.22	28.76%		8%
7	8.97	8.13	3.76	4.51	16.9	4.51	3.22	28.60%		5%
8	9.06	8.13	3.78	4.38	16.9	4.38	3.13	28.54%		-6%
9	9.03	8.12	3.78	4.26	16.9	4.26	3.07	27.93%		-4%
10	9.05	8.13	3.79	4.47	16.9	4.47	3.18	28.86%		6%

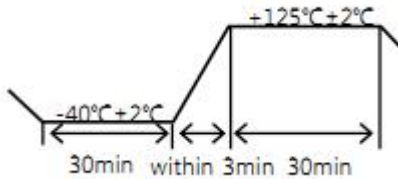
CUSTOMER

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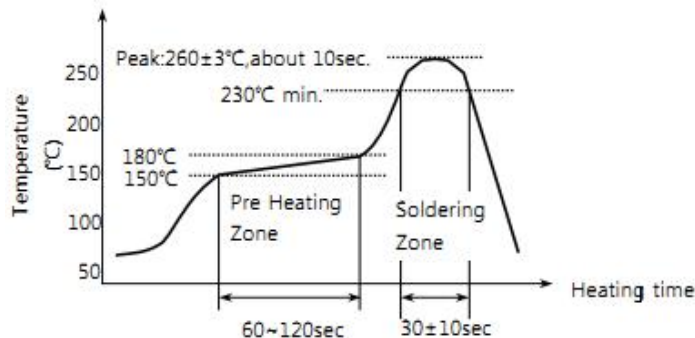
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6. 可靠性试验项目 Reliability Testing Items

No.	Items	Requirements	Test Methods and Remarks
1	Bending Substrate	1. There shall be no mechanical Damage. 2. $\Delta L/L \leq \pm 10\%$.	The product shall be soldered onto the printed circuit board in figure and the load is applied until the bending in the arrow direction is not less than 2mm (keep time 4 ± 1 seconds) The test shall be performed totally 3 times. The PCB is 0840 type standard test board. 
2	Product Strength	1. There shall be no mechanical damage. 2. $\Delta L/L \leq \pm 10\%$.	The center of product shall be loaded with a pressure jig (5 ± 0.5 N) during 10 ± 1 seconds. 
3	Terminal Pull Strength	1. There shall be no mechanical Damage. 2. $\Delta L/L \leq \pm 10\%$.	The product shall be soldered onto the PCB and as below pictures force a product to 5 ± 0.5 N in 10 ± 1 seconds. 
4	Vibration Test	1. There shall be no mechanical Damage. 2. $\Delta L/L \leq \pm 10\%$.	Being soldered on PCB board, a product shall be had a vibration test on an amplitude of 0.7mm P-P or 5G, vibration frequency shall be 10 to 500Hz, the sweeping shall be at 1 octave/min. and these tests will be kept on each direction (X,Y,Z) for 2 hours. (Total 6 hours).
5	Drop Test	1. There shall be no mechanical Damage. 2. $\Delta L/L \leq \pm 10\%$.	There shall be dropped on a concrete floor from 1 meter height. The test shall be performed totally 3 times. At first, drop test will be performed to measure electrical characteristics once. Then, inspection for appearance damage after 2 times of drop.

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可靠性试验项目 Reliability Testing Items				
No.	Items	Requirements	Test Methods and Remarks	
6	Temperature Characteristics	$\Delta L/L_o(20^{\circ}\text{C})\leq\pm 10\%$	The test is performed after the product has stabilized in an ambient temperature ranging from -40°C to $+125^{\circ}\text{C}$ and the inductance change is calculated based on the value in normal temperature and humidity.	
7	High Temperature Storage	1.There shall be no mechanical damage. 2. $\Delta L/L_o\leq\pm 10\%$.	There shall be left in a temperature of $+125\pm 2^{\circ}\text{C}$ for 96 hours. Upon completion of the test, the measurement shall be made after the product has been left in a normal temperature and humidity more than 1 hour.	
8	Low Temperature Storage	1.There shall be no mechanical damage. 2. $\Delta L/L_o\leq\pm 10\%$.	There shall be left in a temperature of $-40\pm 2^{\circ}\text{C}$ for 96 hours. Upon completion of the test, the measurement shall be made after the product has been left in a normal temperature and humidity more than 1 hour.	
9	Damp Heat	1.There shall be no mechanical damage. 2. $\Delta L/L_o\leq\pm 10\%$.	There shall be left in a temperature of $40\pm 2^{\circ}\text{C}$,and humidity of 90~95% for 96 hours. Upon completion of the test, the measurement shall be made after the product has been left in a normal temperature and humidity more than 1 hour.	
10	Thermal Shock	1.There shall be no mechanical damage. 2. $\Delta L/L_o\leq\pm 10\%$.	This test shall be performed upon completion of 10 cycles in accordance with the condition of 1 cycle in the figure below. Upon completion of the test, the measurement shall be made after the product has been left in a normal temperature and humidity more than 1 hour. 	

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可靠性试验项目 Reliability Testing Items				
No.	Items	Requirements	Test Methods and Remarks	
11	Short Time Over Load	Their shall be no damage such as smoke or spark.	Applied 5 minutes to 1.2 times of DC current.	
12	Insulation Resistance	1.There shall be no damage. 2.Insulation Resistance > 1×10 ⁸ Ω	DC 100V voltage shall be applied for 1 min. between across top surface of the body and the terminal. The insulation resistance shall be more than 1×10 ⁸ Ω.	
13	Dielectric Withstanding Voltage	There shall be no damage.	DC 100V voltage shall be applied for 1 min. across the top surface of the body and the terminal. Trip current : 2mA	
14	Solderability Test	Over 90% of the electro sections should be covered with new solder.	Before test : temp. 80℃ humidity 95% 16 hours. Test : Flux shall be coated over the whole of the product before test, the product shall then be preheated for about 2 minutes in temperature of 150~180℃ and after it has been immersed to a depth 1.0mm. below for 5±1 seconds fully in molten solder with a temperature 245±5℃ More than 90% of the terminal electrode sections shall be smoothly covered with new solder when the product is taken out of the solder bath. Remark solder : 96.5Sn/3.0Ag/0.5Cu.	

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可靠性试验项目 Reliability Testing Items				
NO.	Items	Requirements	Test Methods and Remarks	
15	Resistance to Soldering Heat (Reflow Soldering)	1. There shall be no damage. 2. $\Delta L/L \leq \pm 10\%$.	 There shall be passed through the reflow oven with the condition shown in the above profile for twice. The product shall be stored at standard atmospheric conditions for 24 hours, after which the measurement shall be made. Test board : 0840ype Standard Test Board Above profiles were measured at the solder paste part. Solder paste : 96.5Sn/3.0Ag/0.5Cu or equiv.	

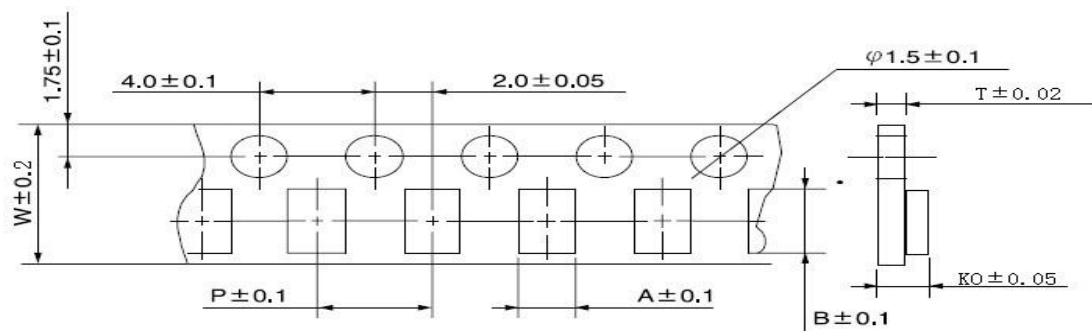
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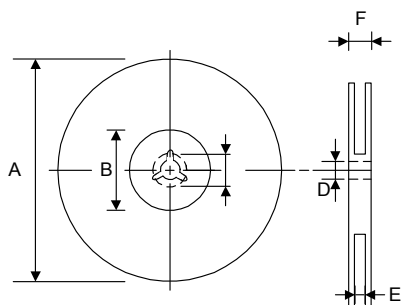
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7. 包装 Package

7.1 载带尺寸 Tape Dimension (单位: 毫米 Unit:mm)



A	B	KO	W	P	T
9.2	8.4	5.2	16	12	0.4



TYPE	A	B	C	D	E	F
16mm	330	100	21.0 ±0.8	13.0 ±1.0	16.0 ±0.5	20.0 ±2.0

7.2 包装数量 Packing quantity

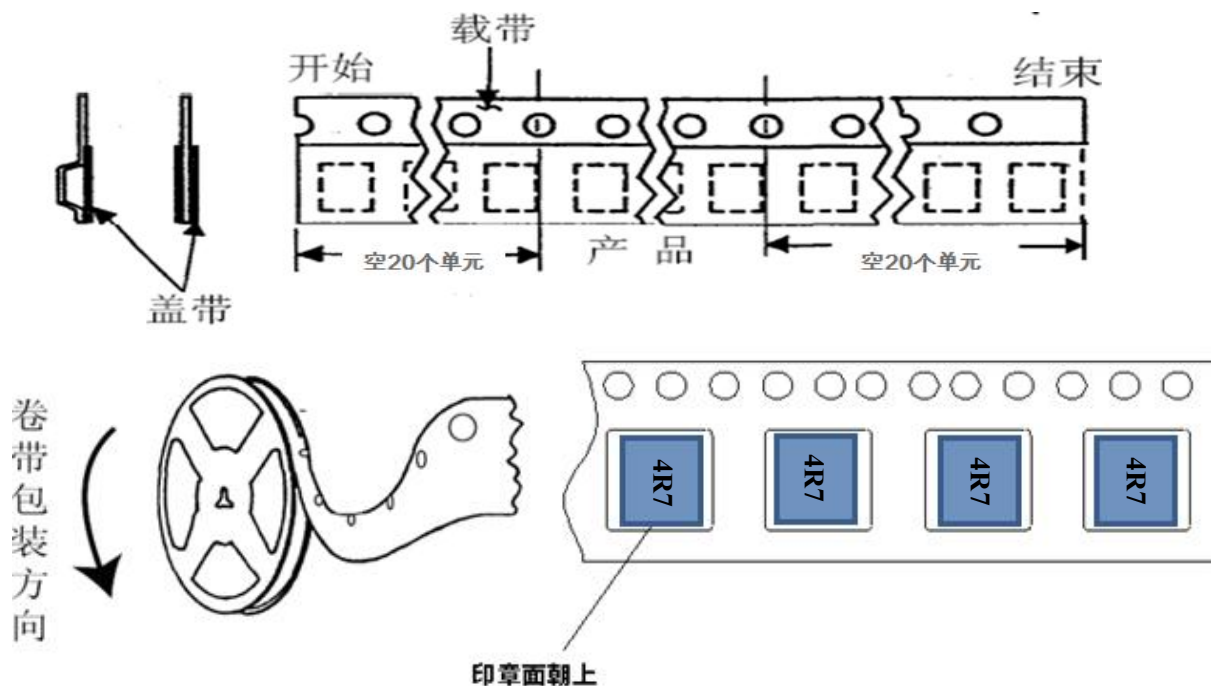
Series	卷盘 REEL (PCS)	纸盒 BOX (PCS)	纸箱 Carton (PCS) (Size: 35.5*35.5*21.5cm)
0840	1000	3000	9000

7.3 包装标准 package standard

7.3.1 每个卷轴开始包装前至少要包装 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。

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7.3.2 每个内盒装两个卷轴，每个外箱装三个内盒。



8. 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.

8.1 焊接材料 Soldering Materials

①焊料: Sn-3.0Ag-0.5Cu

Solder: Sn-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.

8.2 焊接曲线 Soldering Profile

