



深圳市佑驰电子有限公司

Specification for Approval

产品名称: 大电流塑封片式电感

规格型号: HC453232- SERIES

产品编号:

日 期: 2026-06-24

- 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，我司有权以此承认书标准生产，并表示购买方默认许可。

核准	审核	制作
	Aaron	Ada

■ 特性 Features

- 本产品电极引脚表面采用无铅镀层。
Lead-free materials is used for the plating on the terminals.
- 产品使用的金属引脚电极，具有可靠的连接性能。
The product uses metal terminals, which realize excellent connection reliability.
- 具有很高的抗热抗湿性、抗机械振动和挤压，适用于表面贴装。
High resistance to heat, humidity, mechanical shocks and presser. Accurate dimensions for automatically surface mounted.
- 对于无铅化回流焊接条件，具有高度的耐热性。
The product has good heat durability that withstands lead-free compatible reflow soldering conditions.

■ 用途 Application

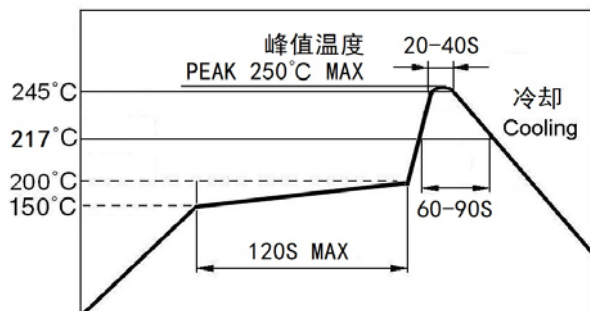
- 可用于计算机、电源、通讯设备、仪器仪表、电视音响等领域的电子电路中。
EM series high reliable wire wound chip inductors for communication, equipment, instrument, video & audio have been developen in response to the trend toward higher density mounting of parts in electric circuits.

■ 使用温度 Operating temperature

温度范围 Range $-40 \sim +125^{\circ}\text{C}$ [包括自身温度上升]

■ 推荐的回流焊接条件

Recommended soldering conditions reflow soldering



■ 产品的型号及尺寸

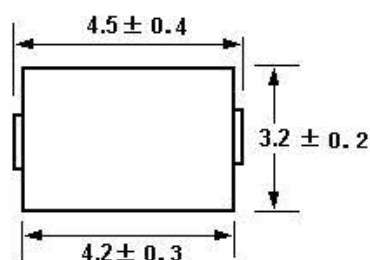
Type Designation & Outer dimensions

(1) 产品系列型号 Type Designation

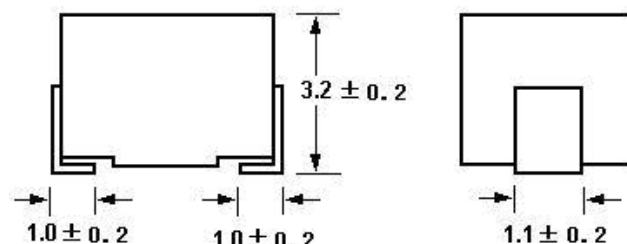
HC	453232	-	1R0	M
(1)	(2)		(3)	(4)

(2) 外形尺寸 Outer dimensions L×W×T

453232	(1812)	公制 4.5×3.2×3.2mm
		英制 0.180×0.125 inch



单位: mm



(4) 电感值 Inductance value

1R0	1μH
330	33μH
331	330μH

(5) 电感公差 Inductance tolerance

K	±10%
M	±20%

■ 包装类型与数量 Packing style and Quantity

盘式编带 Reel Taping	500 支/盘 pieces/ reel 2000 支/盘 pieces/ reel
单重 Piece weight	125mg/支 mg/piece

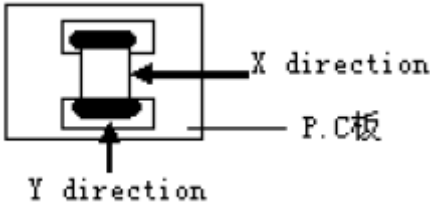
■ 锡膏与清洗 Soldering paste and Cleaning

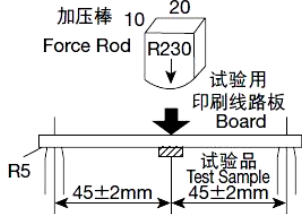
- 推荐使用松香锡膏。 Recommended soldering paste is blended with colophony.
- 清洗条件：选择环保的清洗剂，应避免使用强酸和强碱，时间不超过2分钟。
Cleaning: Avoid strong acid and alkali, 2 minutes Max.

■ 电气特性 Electrical characteristics

电感值 Inductance (μ H)	电感允差 Inductance tolerance	Q 值 min.	测试频率 Test frequency L, Q (MHz)	自谐频率 Self-resonant frequency (MHz)min.	直流电阻 DC resistance (Ω) max.	额定电流 Rated current. (mA)max.	产品规格型号 Part No.
1.0	$\pm 10\%$	10	7.96	180	0.11	1050	HC453232-1R0K
1.2	$\pm 10\%$	10	7.96	160	0.12	1000	HC453232-1R2K
1.5	$\pm 10\%$	10	7.96	130	0.15	950	HC453232-1R5K
1.8	$\pm 10\%$	10	7.96	100	0.16	900	HC453232-1R8K
2.2	$\pm 10\%$	10	7.96	80	0.18	850	HC453232-2R2K
2.7	$\pm 10\%$	10	7.96	60	0.20	800	HC453232-2R7K
3.3	$\pm 10\%$	10	7.96	45	0.22	750	HC453232-3R3K
3.9	$\pm 10\%$	10	7.96	40	0.24	700	HC453232-3R9K
4.7	$\pm 10\%$	10	7.96	35	0.27	650	HC453232-4R7K
5.6	$\pm 10\%$	10	7.96	30	0.30	650	HC453232-5R6K
6.8	$\pm 10\%$	10	7.96	28	0.35	600	HC453232-6R8K
8.2	$\pm 10\%$	10	7.96	25	0.40	600	HC453232-8R2K
10	$\pm 10\%$	10	2.52	22	0.50	550	HC453232-100K
12	$\pm 10\%$	10	2.52	21	0.60	500	HC453232-120K
15	$\pm 10\%$	10	2.52	20	0.70	450	HC453232-150K
18	$\pm 10\%$	10	2.52	19	0.80	400	HC453232-180K
22	$\pm 10\%$	10	2.52	18	0.9	370	HC453232-220K
27	$\pm 10\%$	10	2.52	16	1.2	330	HC453232-270K
33	$\pm 10\%$	10	2.52	14	1.4	300	HC453232-330K
39	$\pm 10\%$	10	2.52	12	1.6	280	HC453232-390K
47	$\pm 10\%$	10	2.52	11.5	1.9	260	HC453232-470K
56	$\pm 10\%$	10	2.52	11	2.2	240	HC453232-560K
68	$\pm 10\%$	10	2.52	10	2.6	220	HC453232-680K
82	$\pm 10\%$	10	2.52	9	3.5	200	HC453232-820K
100	$\pm 10\%$	20	0.796	8	4.0	180	HC453232-101K
120	$\pm 10\%$	20	0.796	7.5	4.5	160	HC453232-121K
150	$\pm 10\%$	20	0.796	7	6.5	140	HC453232-151K
180	$\pm 10\%$	20	0.796	6.5	7.5	120	HC453232-181K
220	$\pm 10\%$	20	0.796	5.5	9.0	120	HC453232-221K
270	$\pm 10\%$	20	0.796	5	11	100	HC453232-271K
330	$\pm 10\%$	20	0.796	4	13	90	HC453232-331K

- 额定电流：是指施加此电流使电感值变化率比初值低10%或因自身发热而温度上升20℃时两者中的较小者。。
Rated current: Value obtained when current flows and the temperature has risen to 20℃ or when DC current flows and the initial value of inductance has fallen by 10%, whichever is smaller
- L, Q 测试设备：HP4285A +16034E, 或 同等设备。 Test equipment L, Q: HP4285A +16034E, or equivalent.
- 自谐频率：HP8753C 网络分析仪。 SRF: HP8753C NETWORK ANALYZER, or equivalent.
- 直流电阻：AX-111A 数字毫欧表, 或同等设备。 DC resistance: AX-111A DIGITAL MILLIOHM METER, or equivalent.

■ 性能 Performance																				
项目 Requirements	试验条件 Test method	性能要求 Characteristics																		
高温试验 High TEMP life test	温度: $125\pm 3^{\circ}\text{C}$; 放置时间: $1000\pm 6\text{Hrs}$; TEMP. $125\pm 3^{\circ}\text{C}$, Load $1000\pm 6\text{Hrs}$.	外观无显著异常; 电感值变化率: $\pm 10\%$ 以内; Inductance change : Within $\pm 10\%$; No significant abnormality in appearance.																		
低温试验 Low TEMP life test	温度: $-40\pm 2^{\circ}\text{C}$; 放置时间: $1000\pm 6\text{Hrs}$; TEMP. $-40\pm 2^{\circ}\text{C}$, Load $1000\pm 6\text{Hrs}$	外观无显著异常; 电感值变化率: $\pm 10\%$ 以内; Inductance change : Within $\pm 10\%$; No significant abnormality in appearance.																		
高湿试验 Damp heat	温度: $40\pm 2^{\circ}\text{C}$, 相对湿度 $90\sim 95\%\text{RH}$; 放置时间: $1000\pm 6\text{Hrs}$; TEMP. $40\pm 2^{\circ}\text{C}$, Humidity. $90 \sim 95\%\text{RH}$, Load $1000\pm 6\text{Hrs}$	外观无显著异常; 电感值变化率: $\pm 10\%$ 以内; Inductance change : Within $\pm 10\%$; No significant abnormality in appearance.																		
热冲击试验 Thermal shock	将试验品焊接到印刷电路板上, 按下表所示循环步骤, 10个循环 <table border="1"> <thead> <tr> <th colspan="3">1个循环条件Conditions of 1 cycle</th></tr> <tr> <th>步骤 Step</th><th>温度 ($^{\circ}\text{C}$) TEMP</th><th>时间 (min) Duration</th></tr> </thead> <tbody> <tr> <td>1</td><td>-40 ± 3</td><td>30 ± 3</td></tr> <tr> <td>2</td><td>常温 Room TEMP</td><td>3以下 Within 3</td></tr> <tr> <td>3</td><td>$+125\pm 2$</td><td>30 ± 3</td></tr> <tr> <td>4</td><td>常温 Room TEMP</td><td>3以下 Within 3</td></tr> </tbody> </table>	1个循环条件Conditions of 1 cycle			步骤 Step	温度 ($^{\circ}\text{C}$) TEMP	时间 (min) Duration	1	-40 ± 3	30 ± 3	2	常温 Room TEMP	3以下 Within 3	3	$+125\pm 2$	30 ± 3	4	常温 Room TEMP	3以下 Within 3	外观无显著异常; 电感值变化率: $\pm 10\%$ 以内; Inductance change : Within $\pm 10\%$; No significant abnormality in appearance.
1个循环条件Conditions of 1 cycle																				
步骤 Step	温度 ($^{\circ}\text{C}$) TEMP	时间 (min) Duration																		
1	-40 ± 3	30 ± 3																		
2	常温 Room TEMP	3以下 Within 3																		
3	$+125\pm 2$	30 ± 3																		
4	常温 Room TEMP	3以下 Within 3																		
端子强度试验 Adhesion of terminal electrode	试验品焊接到试验用印刷电路板上, 施加力$9.8\text{N}(1\text{kg})$, 施加时间$10\pm 2\text{sec}$, 方向: X、Y The test samples shall be soldered to the test board by the reflow. 	外观无显著异常; 电感值变化率: $\pm 10\%$ 以内; Inductance change : Within $\pm 10\%$; No significant abnormality in appearance.																		
耐振性 Resistance to vibration	将产品焊接到印刷电路板上, 按下示条件进行测试: 振动频率范围: $10\sim 55\text{Hz}$; 振幅: 1.5mm (但加速度不能超过196m/s^2); 1个循环: 1分钟 ($10\rightarrow 55\rightarrow 10\text{Hz}$); 时间: X、Y、Z方向各2小时 The test samples shall be soldered to the test board by the reflow. Then it shall be submitted to below conditions. Frequency Range:$10\sim 55\text{Hz}$; Total Amplitude :1.5mm (May not exceed acceleration 196m/s^2); Sweeping Method: $10\rightarrow 55\rightarrow 10\text{Hz}$ for 1min Time: For 2 hours on each X, Y, and Z axis.	外观无显著异常; 电感值变化率: $\pm 10\%$ 以内; Inductance change : Within $\pm 10\%$; No significant abnormality in appearance.																		

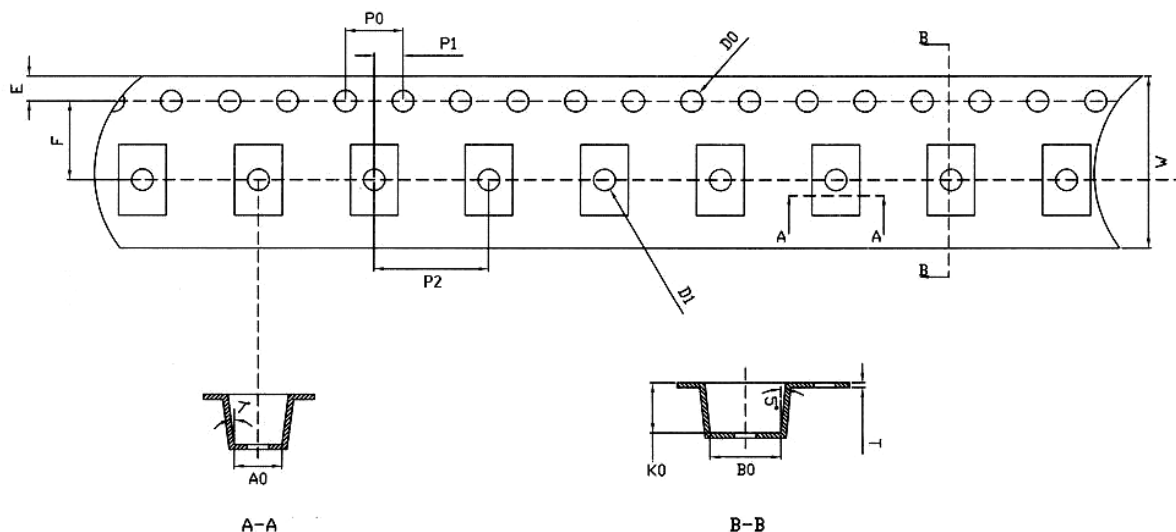
抗弯强度试验 Resistance to flexure of substrate	将试验品焊接到试验用印刷线路板上，如图所示在印刷线路板上按箭头方向施加荷重，使其弯曲 2mm 为止。 The test samples shall be soldered to the test board by the reflow. Then apply a force in the direction shown below, flexure: 2mm. 	外观无显著异常，无破损； 电感值变化率：±10%以内； Inductance change : Within ±10%; No significant abnormality in appearance, No damage.
可焊性试验 Solderability	焊锡温度：250±5℃ 浸渍时间：5±0.5ses 浸渍深度：安装端子面浸入。 Solder Temperature:250±5℃ Time: 5±0.5ses All sides of mounting terminal shall be immersed.	端电极新锡覆盖面达95%以上 At least 95% of surface of terminal electrode is covered by new solder.
耐焊接热试验 Resistance to soldering heat	方法1: 将端子在250±5℃的焊液中浸入10±1秒后常温放置2小时以上 Method 1: Immerse in the solder of 250±10℃ for 10±1sec, load in room Temperature 2 hours. 方法2: 峰值温度 250℃保持 20-40 秒回流焊接两遍试验，放置 30 分钟后检测 (Per MIL-STD-202F) Method 2: The test sample shall be exposed to reflow with peak temperature at 250℃ for 20 to 40 seconds, 2 times. Load in room Temperature 30 min. (Per MIL-STD-202F)	外观无显著异常； 电感值变化率：±10%以内； Inductance change : Within ±10%; No significant abnormality in appearance.
温度特性 Temperature characteristic	在-40℃～+125℃环境温度范围内测试，并以20℃时的值为基准计算得出。 步骤1～5中最大电感值偏差变化率： 步骤1的温度：20℃ 步骤2的温度：最低使用温度 步骤3的温度：20℃（基准温度） 步骤4的温度：最高使用温度 步骤5的温度：20℃ Measurement of inductance shall be taken at temperature range within -40℃～+125℃. With reference to inductance value at +20℃., change rate shall be calculated. Change of maximum inductance deviation in step 1 to 5: Temperature at step 1: 20℃ Temperature at step 2: Minimum operating temperature Temperature at step 3: 20℃ (Standard temperature) Temperature at step 4 :Maximum operating temperature Temperature at step 5 :20℃	外观无显著异常； 电感值变化率：±20%以内； Inductance change : Within ±20%; No significant abnormality in appearance.
跌落试验 Dropping	包装 OK 的产品，1m 高/木质地板或水泥地板，三次。 Packing ok product, Dropping 1m over the ground of concrete or cement, 3 times.	外观无显著异常，无破损； 电感值变化率：±10%以内； Inductance change : Within ±10%; No significant abnormality in appearance, No damage.

* 测定条件：如无特别指定时，其温度为 20±15℃，湿度为 65±20%。如在判定上如出现疑问时，可变更为 20±2℃，湿度为 65±5%。如无特别指定时，试验后在常温、常湿中放置 1 小时以上，2 小时内测定。

■ 包装方式 Packaging

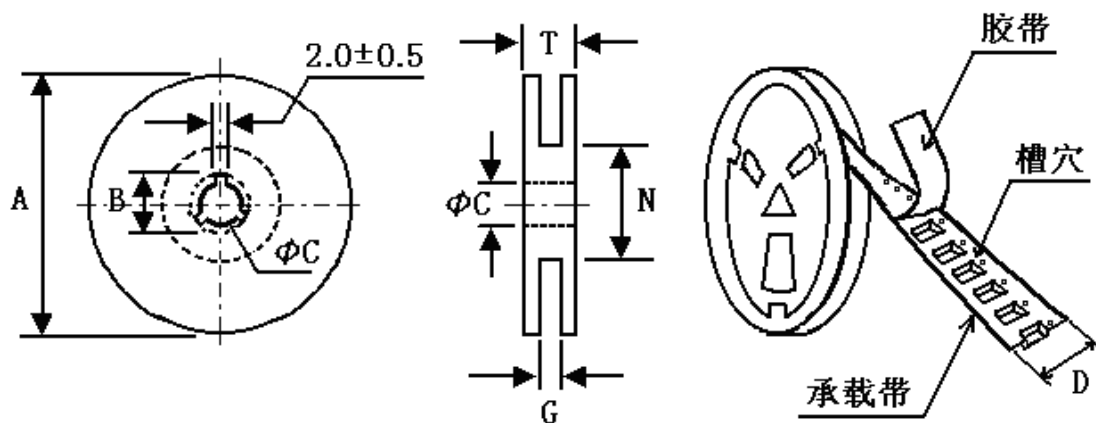
1. 编带尺寸: Taping dimensions (mm)

* 前带空 50 格 (400mm), 延长加 100mm 胶带; 后带空 25 格 (200mm)。



E	F	P1	D0	D1	P0	W	P2	A0	B0	K0	T
1.75	5.50	2.0	1.5	1.0	4.0	12.0	8.0	3.31	4.95	3.50	0.35

2. 卷轮尺寸图 Reel dimensions (mm):



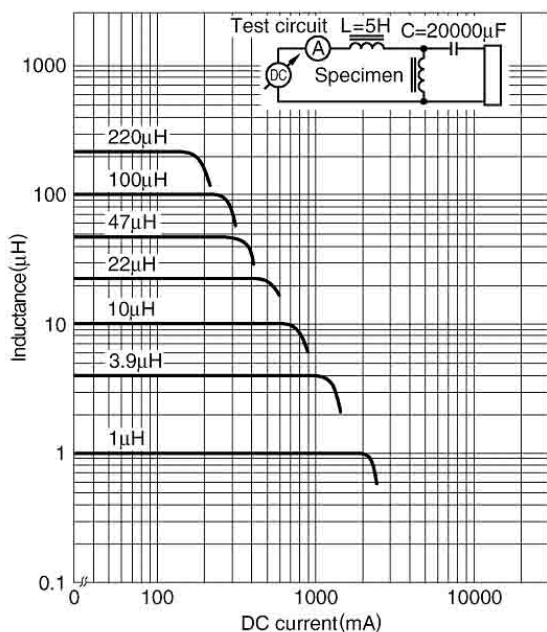
规格 Type	A	B	C	D	G	N	T
7"	178	21	13	12	14 Max	50 Min	18.4 Max
13"	330	21	13	12	14 Max	100 Min	18.4 Max

3. 包装数量及尺寸 Packing Quantity and dimensions:

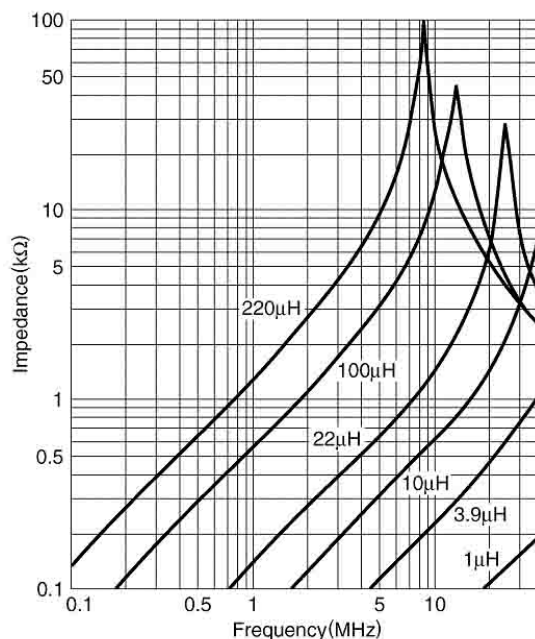
盘包装 Reel	内盒 Inner Box (mm)	外箱 Outer Box (mm)
500 支 pieces 7"	2000 支 pieces 185×185×70	20000/40000 支 pieces 380×205×380/380×380×380
2000 支 pieces 13"	8000 支 pieces 350×350×60	24000 支 pieces 360×360×215

■ 特性图 Characteristics

直流叠加特性图



阻抗频率特性图



■ 储存 Storage

储存温度 storage temperature: $-10 \sim 40^{\circ}\text{C}$

相对湿度 humidity: 0-80%

最佳保存期 Optimal storage period: 6 个月内 within 6 months

注 Note:

1. 为保证端子电极的可焊性, 请保证产品的包装处于良好状态, 并将本产品贮存于温度 $-10 \sim 40^{\circ}\text{C}$ 之间且湿度为 80% 以下的环境中 (推荐环境温度为 30°C 以下)。注意, 即使处于良好的保存环境下, 可焊性也会随时间改变。因此, 请于本公司发货后 6 个月内使用。同时, 如果贮存时间超过 6 个月, 请首先确认其可焊性后再行安装使用。

1. To maintain the solderability of terminal electrodes and to keep the packing material in good condition, temperature and humidity in the storage area should be controlled.

• Recommended conditions

Ambient temperature : $-10 \sim 40^{\circ}\text{C}$

Humidity : Below 80% RH

The ambient temperature must be kept below 30°C . Even under ideal storage conditions, solderability of products electrodes may decrease as time passes.

For this reason, product should be used within 6 months from the time of delivery.

In case of storage over 6 months, solderability shall be checked before actual usage.

2. 保存于高温环境下的产品, 会加速产生因电极端子发生氧化作用而导致可焊性下降。

2. Under a high temperature and humidity environment, problems such as reduced solderability caused by oxidation of terminal electrodes and deterioration of taping/packaging materials may take place.

3. 存储环境不应有酸性或碱性或其他化学腐蚀气体, 且不允许阳光直射。

3. Keep the product away from all acidity or alkalescence or other corrosive gases, and do not allow direct sunlight.