

# 产品承认书

## SPECIFICATION FOR APPROVAL

版本: REV. A0

客户

Customer

:

客户料号

Customer's P/N

:

品名

Description

:

产品型号

CENKER P/N

:

图纸编号

Drawing No.

:

产品编号

Product code.

:

**AXIAL FIXED INDUCTOR**

**HXL0514 Series**

**SP-HXA006-S06**

出图

**DRAWING**

制表

审核

批准

Prepared By

Checked By

Approved By

王亮

龙梅

梁峰

DATE

2016-7-29

承认

**CUSTOMER APPROVAL**

DATE:

厦门华信安电子科技有限公司

XIAMEN SINO FAITH ELECTRONIC TECHNOLOGY CO.,LTD

地址:厦门市翔安区翔岳路25号东北栋

Address: Xiang'an District, Xiamen Xiang Yue Road on the 25th Northeast, China



TEL: 0592-6301603 FAX: 0592-5205265

**SPECIFICATION FOR APPROVAL****RoHS  
COMPLIANT**

|             |                      |              |               |               |
|-------------|----------------------|--------------|---------------|---------------|
| CUSTOMER    |                      | CUSTOMER P/N |               | PAGE          |
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| CENKER P/N  | HXL0514 Series       | ISSUE DATE   | 2016-7-29     | VERSION<br>A0 |

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## MODIFY RECORD

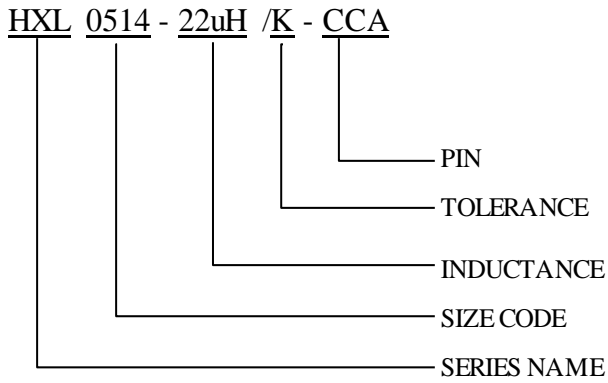
| Symbol | Version | Date      | Content | Prepared | Checked |
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|        | A0      | 2016-7-29 |         |          |         |
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# SPECIFICATION FOR APPROVAL

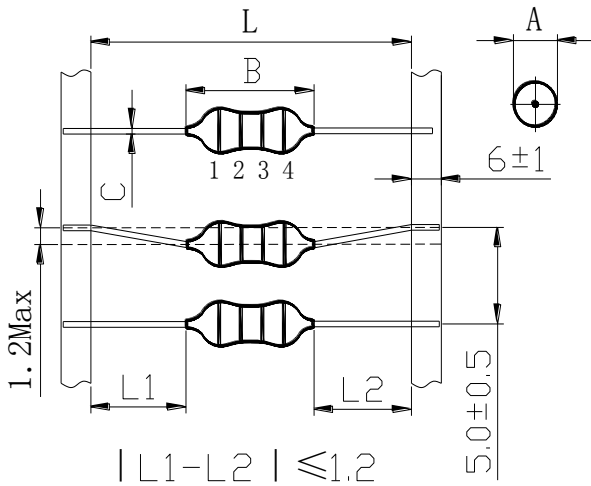
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| CUSTOMER    |                      | CUSTOMER P/N |               | PAGE    |
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## 1. PRODUCTS IDENTIFICATION



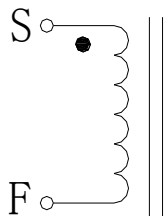
## 2. DIMENSIONS(UNIT: mm)



|   |                 |
|---|-----------------|
| A | Ø5.0 Max        |
|   | Ø5.5 Max(≤68uH) |
| B | 14.0 Max        |
|   | 15.0 Max(≤68uH) |
| C | Ø0.65 ±0.05     |
| L | 52.4 ±1.5       |

**\*Minimum insertion pitch: 17.5mm**

## 3. CIRCUIT



## 4. TEMPERATURE RANGE

Operating Temperature: -25°C ~ +85°C, Storage Temperature: -25°C ~ +85°C.

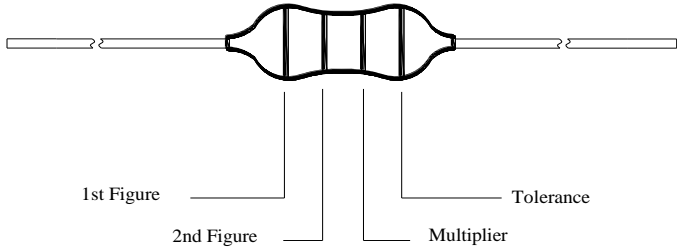
|   |          |         |          |
|---|----------|---------|----------|
| 厦门华信安电子科技有限公司<br>XIAMEN SINO FAITH ELECTRONIC TECHNOLOGY CO.,LTD<br>TEL: 0592-6301603 FAX: 0592-5205265<br>地址:厦门市翔安区翔岳路25号东北栋 | PREPARED | CHECKED | APPROVED |
|   | 王亮       | 龙梅      | 梁峰       |

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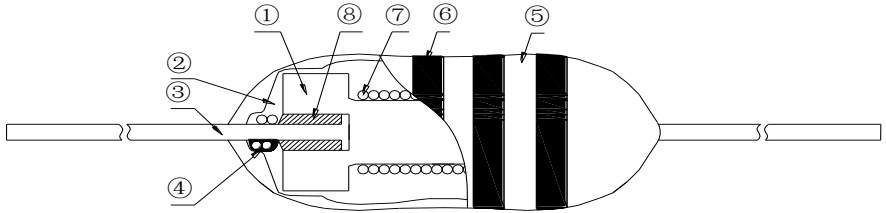
|             |                      |              |               |            |
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## 5. MARKING



| Color  | Nominal Inductance(uH) |            |            |           |
|--------|------------------------|------------|------------|-----------|
|        | 1st Figure             | 2nd Figure | Multiplier | Tolerance |
| Black  | 0                      |            | ×1         | ±20%      |
| Brown  | 1                      |            | ×10        | —         |
| Red    | 2                      |            | ×100       | —         |
| Orange | 3                      |            | ×1000      | —         |
| Yellow | 4                      |            | —          | —         |
| Green  | 5                      |            | —          | —         |
| Blue   | 6                      |            | —          | —         |
| Violet | 7                      |            | —          | —         |
| Gray   | 8                      |            | —          | —         |
| White  | 9                      |            | —          | —         |
| Gold   | —                      |            | ×0.1       | ±5%       |
| Silver | —                      |            | ×0.01      | ±10%      |

## 6. CONSTRUCTION



## 7. MATERIAL LIST

| No. | Material            | Specification               | Supply's name | Remark         |
|-----|---------------------|-----------------------------|---------------|----------------|
| 1   | Core                | Ferrite Core DR4.0*10       | 6001          |                |
| 2   | Under-Coating Resin | BUTADIENE RESIN UV          | 6051/6102     |                |
| 3   | Pin                 | CCA Ø0.64mm                 | 6029          |                |
| 4   | Solder              | Sn99.3-Cu0.7                | 6050          |                |
| 5   | Over-Coating Resin  | EPOXY RESIN                 | 6051/6102     |                |
| 6   | Color-Coating Resin | MELAMINE RESIN              | 6051/6102     |                |
| 7   | Wire                | COPPER WIRE PLATED TIN 100% | 6030          | UL No.:E344055 |
| 8   | Glue                | J-600                       | 5163          |                |

|  |  |                    |                   |                    |
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## 8. ELECTRICAL REQUIREMENTS

| Customer P/N | PART NO.        | Inductance (uH) | Inductance Test Freq. [MHz] | Q (Min) | Q Test Freq. [MHz] | DCR [ $\Omega$ ] (Max) | SRF [MHz] (Ref) | Isat. [mA] (Max) | Irms. [mA] (Max) |
|--------------|-----------------|-----------------|-----------------------------|---------|--------------------|------------------------|-----------------|------------------|------------------|
|              | HXL0514-1.0uH/M | 1.0 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.022                  | 300             | 5600             | 3800             |
|              | HXL0514-1.2uH/M | 1.2 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.024                  | 260             | 5500             | 3700             |
|              | HXL0514-1.5uH/M | 1.5 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.026                  | 250             | 5000             | 3600             |
|              | HXL0514-1.8uH/M | 1.8 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.029                  | 240             | 4700             | 3100             |
|              | HXL0514-2.2uH/M | 2.2 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.031                  | 220             | 4500             | 2900             |
|              | HXL0514-2.7uH/M | 2.7 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.034                  | 195             | 4000             | 2700             |
|              | HXL0514-3.3uH/M | 3.3 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.038                  | 155             | 3400             | 2600             |
|              | HXL0514-3.9uH/M | 3.9 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.040                  | 115             | 3100             | 2500             |
|              | HXL0514-4.7uH/M | 4.7 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.044                  | 85              | 2800             | 2400             |
|              | HXL0514-5.6uH/M | 5.6 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.048                  | 55              | 2600             | 2100             |
|              | HXL0514-6.8uH/M | 6.8 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.051                  | 50              | 2400             | 2000             |
|              | HXL0514-8.2uH/M | 8.2 $\pm$ 20%   | 7.96                        | 10      | 7.96               | 0.056                  | 38              | 2200             | 1950             |
|              | HXL0514-10uH/K  | 10 $\pm$ 10%    | 7.96                        | 10      | 7.96               | 0.062                  | 24              | 2100             | 1900             |
|              | HXL0514-12uH/K  | 12 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.076                  | 18              | 1800             | 1800             |
|              | HXL0514-15uH/K  | 15 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.088                  | 16              | 1700             | 1700             |
|              | HXL0514-18uH/K  | 18 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.11                   | 15              | 1600             | 1600             |
|              | HXL0514-22uH/K  | 22 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.13                   | 14              | 1400             | 1550             |
|              | HXL0514-27uH/K  | 27 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.14                   | 13              | 1300             | 1300             |
|              | HXL0514-33uH/K  | 33 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.20                   | 11              | 1200             | 1200             |
|              | HXL0514-39uH/K  | 39 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.22                   | 10              | 1100             | 1000             |
|              | HXL0514-43uH/K  | 43 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.28                   | 9.5             | 1000             | 950              |
|              | HXL0514-47uH/K  | 47 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.28                   | 9.5             | 1000             | 950              |
|              | HXL0514-56uH/K  | 56 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.30                   | 8               | 900              | 900              |
|              | HXL0514-68uH/K  | 68 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.34                   | 7.5             | 800              | 800              |
|              | HXL0514-82uH/K  | 82 $\pm$ 10%    | 2.52                        | 10      | 2.52               | 0.385                  | 7               | 700              | 750              |
|              | HXL0514-100uH/K | 100 $\pm$ 10%   | 2.52                        | 10      | 2.52               | 0.48                   | 6.5             | 700              | 700              |
|              | HXL0514-120uH/K | 120 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 0.595                  | 5               | 600              | 600              |
|              | HXL0514-150uH/K | 150 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 0.90                   | 4.5             | 550              | 500              |
|              | HXL0514-180uH/K | 180 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 1.10                   | 4               | 500              | 400              |
|              | HXL0514-220uH/K | 220 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 1.25                   | 3.8             | 440              | 390              |
|              | HXL0514-270uH/K | 270 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 1.85                   | 3.5             | 420              | 330              |
|              | HXL0514-330uH/K | 330 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 2.10                   | 3.0             | 380              | 310              |

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| DESCRIPTION | AXIAL FIXED INDUCTOR | DRAWING No.  | SP-HXA006-S06 | 6       |
| CENKER P/N  | HXL0514 Series       | ISSUE DATE   | 2016-7-29     | VERSION |
|             |                      |              |               | A0      |

## 8. ELECTRICAL REQUIREMENTS

| Customer P/N | PART NO.        | Inductance (uH) | Inductance Test Freq. [MHz] | Q (Min) | Q Test Freq. [MHz] | DCR [ $\Omega$ ] (Max) | SRF [MHz] (Ref) | Isat. [mA] (Max) | Irms. [mA] (Max) |
|--------------|-----------------|-----------------|-----------------------------|---------|--------------------|------------------------|-----------------|------------------|------------------|
|              | HXL0514-390uH/K | 390 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 2.28                   | 2.8             | 340              | 300              |
|              | HXL0514-470uH/K | 470 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 3.22                   | 2.5             | 320              | 280              |
|              | HXL0514-560uH/K | 560 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 3.85                   | 2.2             | 290              | 270              |
|              | HXL0514-680uH/K | 680 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 4.00                   | 2.1             | 260              | 240              |
|              | HXL0514-820uH/K | 820 $\pm$ 10%   | 0.796                       | 15      | 0.796              | 5.00                   | 2.0             | 250              | 230              |
|              | HXL0514-1.0mH/K | 1000 $\pm$ 10%  | 0.252                       | 15      | 0.252              | 5.80                   | 1.8             | 220              | 190              |
|              | HXL0514-1.2mH/K | 1200 $\pm$ 10%  | 0.252                       | 15      | 0.252              | 7.10                   | 1.6             | 200              | 180              |
|              | HXL0514-1.5mH/K | 1500 $\pm$ 10%  | 0.252                       | 15      | 0.252              | 7.80                   | 1.5             | 190              | 170              |
|              | HXL0514-2.2mH/K | 2200 $\pm$ 10%  | 0.252                       | 35      | 0.252              | 20.0                   | 1.0             | 140              | 140              |
|              | HXL0514-3.3mH/K | 3300 $\pm$ 10%  | 0.252                       | 35      | 0.252              | 27.0                   | 0.8             | 130              | 120              |
|              | HXL0514-4.7mH/K | 4700 $\pm$ 10%  | 0.252                       | 30      | 0.252              | 30.0                   | 0.7             | 120              | 100              |
|              | HXL0514-5.6mH/K | 5600 $\pm$ 10%  | 0.252                       | 15      | 0.252              | 30.0                   | 0.5             | 100              | 90               |
|              | HXL0514-6.8mH/K | 6800 $\pm$ 10%  | 0.252                       | 15      | 0.252              | 30.0                   | 0.4             | 90               | 80               |
|              | HXL0514-8.2mH/K | 8200 $\pm$ 10%  | 0.252                       | 15      | 0.252              | 37.5                   | 0.4             | 80               | 70               |
|              | HXL0514-10mH/K  | 10000 $\pm$ 10% | 79.6k                       | 15      | 79.6k              | 42.0                   | 0.4             | 70               | 60               |

- (1) Isat: DC current at which the inductance drops approximate 10% from its value without current;  
 (2) Irms: DC current that causes the temperature rise ( $\Delta T \leq 40^\circ\text{C}$ ) from  $25^\circ\text{C}$  ambient.

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| CENKER P/N  | HXL0514 Series       | ISSUE DATE   | 2016-7-29     | VERSION A0 |

## 9. TEST EQUIPMENT AND TEST CONDITION

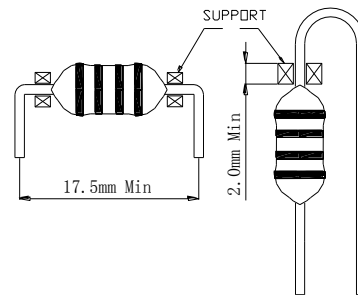
- (1) Inductance: HP 4284A/HM 9481;
- (2) Q: HP 4284A/HM 9481;
- (3) DCR: CH 502A/CH 502BC/E34420A;
- (4) SRF: HM 9461;
- (5) Isat./Irms.: HP 4284A+HP 42841A/CD 1068+CD 1320.
- (6) Test Condition: at 25°C,75%H.

## 10. WARNING FOR LEAD WIRE FORMING

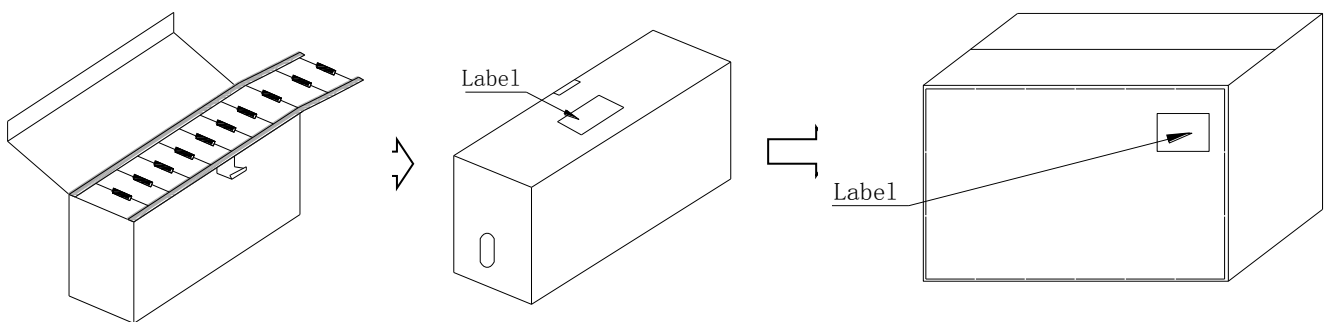
This Inductor is using drum type core and wrapping wire at the both ends of the core. An inadequate lead wire forming process may cause open circuit and/or damage the body. Please comply with the following instruction when you bend the lead wire. When you execute a lead wire forming process by yourself.

Please apply supporting jigs as below:

(Minimum insertion pitch: 17.5mm Min)



## 11. PACKING (UNIT: mm)



|        | Dimension   | Quantity(Pcs) |
|--------|-------------|---------------|
| Box    | 255*69*85   | 1,000         |
| Carton | 438*278*267 | 18,000        |

|   |          |         |          |
|---|----------|---------|----------|
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## 12. RELIABILITY

\* GENERAL CHARACTERISTICS

STANDARD TESTING CONDITIONS:

UNLESS OTHERWISE SPECIFIED, THE STANDARD RANGE OF ATMOSPHERIC CONDITIONS FOR MEASUREMENTS AND TESTS ARE AS FOLLOWS: AMBIENT TEMPERATURE: 15°C ~ 35°C. RELATIVE HUMIDITY: 25% ~ 85%. AIR PRESSURE: 86kPa ~ 106kPa.

| No. | Items                             | Test Methods  | Requirements   |
|-----|-----------------------------------|---|--|
| 1   | Lead terminal strength            | A static pulling force of 5N in a direction parallel to the lead terminals for 60±5 seconds.  | No terminal breakage or loosening.   |
| 2   | Resistance to soldering heat test | Fix the samples on a 1.6mm thickness PCB, then dip the sample leads into a soldering bath of 260±5°C up to the PCB for 5±1 seconds. | No significant abnormality in appearance. Deviation relative to initial value:<br>L: Within +10% |
| 3   | Solder ability test               | Immerse the terminal in flux for 5 seconds. Then dip the terminal into a soldering bath of 245±5°C for 2±0.5 seconds.               | At least 90% of terminal electrode is covered by new solder.                                     |
| 4   | Humidity test                     | Temperature : 40°C ±2°C<br>Humidity : 90% ~ 95% RH<br>Duration : 96±4 Hours   | No significant abnormality in appearance. Deviation relative to initial value:<br>L: Within ±10% |
| 5   | High temperature storage test     | Temperature : 85°C ±2°C<br>Duration : 96±4 Hours  |  |
| 6   | Low temperature storage test      | Temperature : -25°C ±2°C<br>Time : 96±4 Hours   |  |
| 7   | Thermal shock test                | First -25±5°C for 30±3 minutes, last 85±5°C 30±3 minutes as 1 cycles. Go through 10 cycles.   |  |

|   |  |                |               |                |
|---|--|----------------|---------------|----------------|
| 厦门华信安电子科技有限公司<br>XIAMEN SINO FAITH ELECTRONIC TECHNOLOGY CO.,LTD<br> TEL: 0592-6301603 FAX: 0592-5205265<br>地址: 厦门市翔安区翔岳路25号东北栋 |  | PREPARED<br>王亮 | CHECKED<br>龙梅 | APPROVED<br>梁峰 |
|---|--|----------------|---------------|----------------|

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