

**TO :**

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2015年11月15日

## 承认规格书

种类： Power Inductor系列号： HXNR3012B-Series

客户料号： \_\_\_\_\_

### 客户承认栏

承认日期

年 月 日

(贵司承认后请签署一份返回华信安电子, 谢谢!)

厦门华信安电子科技有限公司技术质量部

| 承认 | 确认 | 作成 |
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# Power Inductor

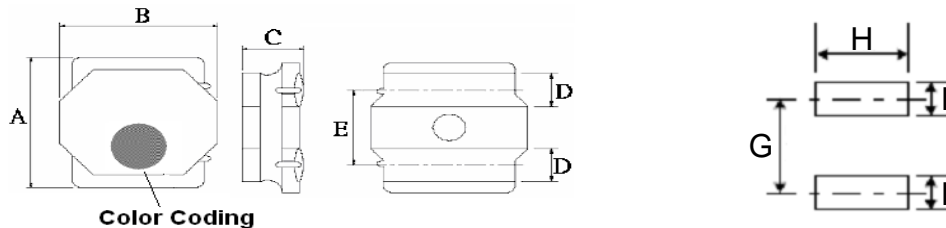
HXNR3012B-SERIES

## 1. Features

1. This specification applies Low Profile Power Inductors.
2. 100% Lead(Pb) & Halogen-Free and RoHS compliant.



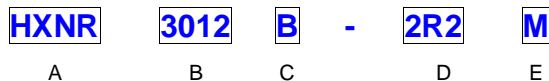
## 2. Dimension



| Series    | A(mm)   | B(mm)   | C(mm)    | D(mm)   | E(mm)   | G(mm)    | H(mm)    | I(mm)    |
|-----------|---------|---------|----------|---------|---------|----------|----------|----------|
| HXNR3012B | 3.0±0.1 | 3.0±0.1 | 1.2 max. | 0.9±0.2 | 1.9±0.2 | 2.2 ref. | 2.7 ref. | 0.8 ref. |

Units: mm

## 3. Part Numbering



A: Series

B: Dimension

C: Control S/N

D: Inductance

2R2=2.2uH

E: Inductance Tolerance

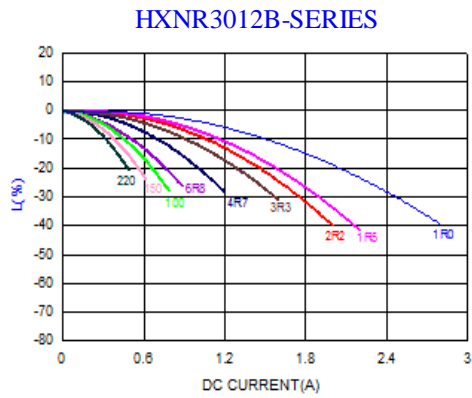
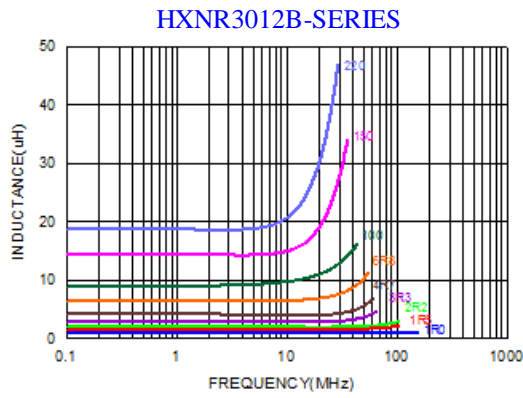
M=±20% ; Y=±30%

## 4. Specification

| ISND Part Number | Inductance (uH) | Tolerance (%) | Test Frequency (Hz) | SRF (MHz) min. | DCR (Ω) ±20% | I sat (A) | I rms (A) | Color Coding |
|------------------|-----------------|---------------|---------------------|----------------|--------------|-----------|-----------|--------------|
| HXNR3012B-1R0Y   | 1.0             | ±30%          | 1V100K              | 111            | 0.048        | 2.20      | 1.71      | Silver       |
| HXNR3012B-1R5Y   | 1.5             | ±30%          | 1V100K              | 95             | 0.055        | 1.70      | 1.60      | Silver       |
| HXNR3012B-2R2M   | 2.2             | ±20%          | 1V100K              | 78             | 0.075        | 1.50      | 1.37      | Silver       |
| HXNR3012B-3R3M   | 3.3             | ±20%          | 1V100K              | 61             | 0.100        | 1.20      | 1.21      | Silver       |
| HXNR3012B-4R7M   | 4.7             | ±20%          | 1V100K              | 50             | 0.130        | 1.00      | 1.06      | Silver       |
| HXNR3012B-6R8M   | 6.8             | ±20%          | 1V100K              | 43             | 0.190        | 0.85      | 0.89      | Silver       |
| HXNR3012B-100M   | 10              | ±20%          | 1V100K              | 32             | 0.270        | 0.73      | 0.72      | Silver       |
| HXNR3012B-150M   | 15              | ±20%          | 1V100K              | 26             | 0.450        | 0.53      | 0.57      | Silver       |
| HXNR3012B-220M   | 22              | ±20%          | 1V100K              | 22             | 0.630        | 0.50      | 0.50      | Silver       |

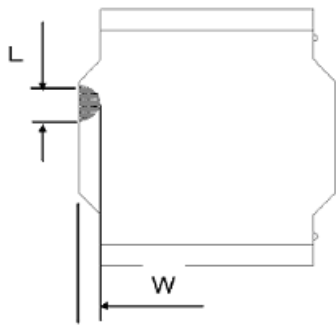
Note:

Isat : Based on inductance change ( $\Delta L/L0 : \leq -30\%$ ) @ ambient temp. 25°CI rms : Based on temperature rise ( $\Delta T : 40^\circ\text{C typ.}$ )



Core chipping

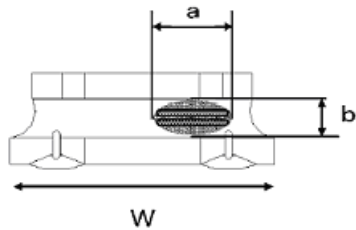
The appearance standard of the chipping size in top side, of bottom side ferrite core is following dimension.



| Type      | L          | W          |
|-----------|------------|------------|
| HXNR3012B | 0.6mm Max. | 0.6mm Max. |

Void appearance tolerance Limit

Size of voids occurring to coating resin is specified below.



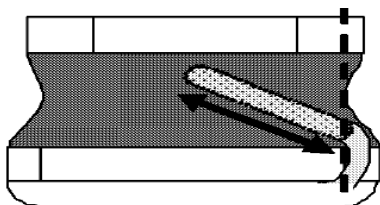
Exposed wire tolerance limit of coating resin part on product side.

Size of exposed wire occurring to coating resin is specified below.

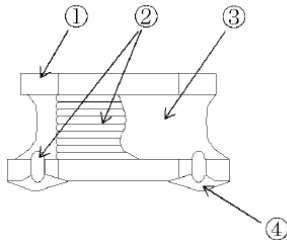
1. Width direction ( dimension a ) : Acceptable when  $a \leq w/2$   
Nonconforming when  $a > w/2$
2. Length direction ( dimension b ) : Dimension b is not specified.
3. When total area of exposed wire occurring to each sides is not greater than 50% of coating resin area, that is acceptable.

External appearance criterion for exposed wire

Exposed end of the winding wire at the secondary side should be 2mm and below.

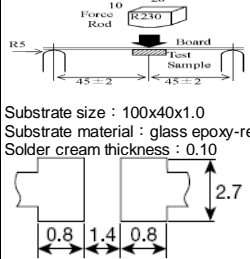
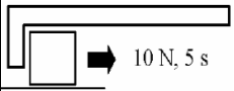


## 5. Material List



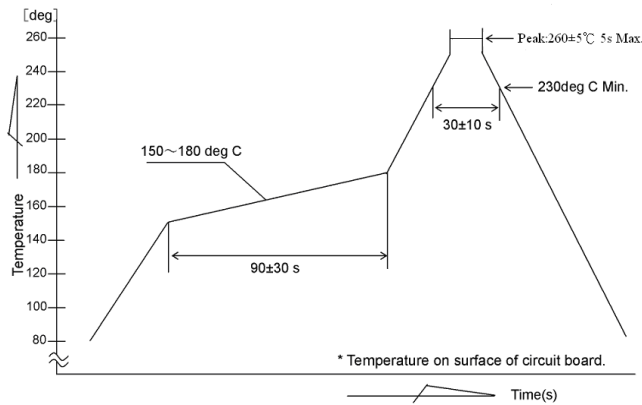
| No. | Item    | Material      |
|-----|---------|---------------|
| 1   | Core    | Ni-Zn ferrite |
| 2   | Wire    | Copper Wire   |
| 3   | Coating | Epoxy         |
| 4   | Solder  | Lead free     |

## 6. Reliability and Test Condition

| Item                            | Performance  | Test Condition   |
|---------------------------------|--|--|
| Operating Temperature           | - 25 ~ +120°C.   | Including self-generated heat  |
| Storage Temperature             | - 40 ~ +85°C.<br>- 5 to 40°C for the product with taping.                |  |
| Rated current                   |  |  |
| Inductance (L)                  | Within the specified tolerance   | LCR Meter: HP 4285A or equivalent, 100kHz, 1V  |
| DC Resistance                   |  | DC Ohmmeter: HIOKI3227 or equivalent   |
| Temperature characteristics     | Inductance change : Within±20%   | Measurement of inductance shall be taken at temperature rang within - 25°C to +85°C.<br>With reference to inductance value at+20 °C,change rate shall be calculated.<br>Measurement of inductance shall be taken at temperature rang within - 40°C to +125°C.<br>With reference to inductance value at+20 °C,change rate shall be calculated.  |
| Resistance to flexure substrate | No damage.   | The test samples shall be soldered to the testing board by the reflow.<br>As illustrated below, apply force in the direction of the arrow indicating until deflection of the test board reaches to 2mm.<br><br>Substrate size : 100x40x1.0<br>Substrate material : glass epoxy-resin<br>Solder cream thickness : 0.10  |
| Adhesion of Terminal electrode  | Shall not come off PC board.   | The test samples shall be soldered to the testing board and by the reflow.<br><br>Applied force : 10 N to X and Y directions.<br>Duration : 5s<br>Solder cream thickness : 0.10  |
| Resistance to Vibration         | Inductance change : Within±10%<br>No abnormality observed in appearance. | The test samples shall be soldered to the test board by the reflow.<br>Then it shall be submitted to below test conditions.<br>Frequency: 10-55Hz<br>Total Amplitude: 1.5mm (May not exceed acceleration 196m/S <sup>2</sup> )<br>Sweeping Method:10Hz to 55Hz to 10Hz for 1min.<br>Time : 2 hours each in X,Y, and Z Direction.<br>Recovery: At least 2hrs of recovery under the standard condition after the test, followed by the measurement within 48hrs. |
| Solderability                   | At least 90% of surface of terminal electrode is covered by new solder.  | The test samples shall be dipped in flux, and then immersed in molten solder as shown in below.<br>Flux : methanol solution containing rosin 25%<br>Solder temperature: 245±5°C<br>Time: 5±1.0 sec.<br>Immersion depth: All sides of mounting terminal shall be immersed.  |
| Resistance to soldering         | Inductance change : Within±10%<br>No abnormality observed in appearance. | The test sample shall be exposed to reflow oven at 230±5°C for 40 seconds, with peak temperature at 260±5°C for 5 seconds,2 times.<br>Test board thickness: 1.0mm<br>Test board material: glass epoxy-resin  |

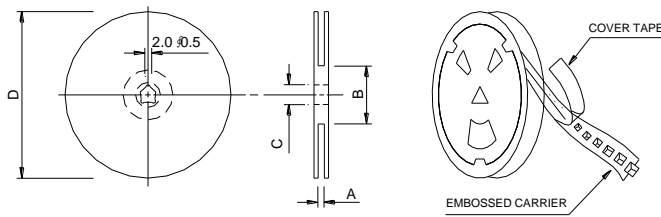
| Item                                  | Performance  | Test Condition  |       |                 |            |   |         |      |   |           |          |   |        |      |   |           |          |
|---------------------------------------|--|---|-------|-----------------|------------|---|---------|------|---|-----------|----------|---|--------|------|---|-----------|----------|
| Thermal shock                         |  | The test samples shall be soldered to the test board by the reflow.<br>The test samples shall be placed at specified temperature for specified time by step 1 to step 4 as shown below in sequence.<br>The temperature cycles shall be repeated 100 cycles . <table border="1" data-bbox="991 309 1370 427"> <thead> <tr> <th>Phase</th> <th>Temperature(°C)</th> <th>Time(min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±3°C</td> <td>30±3</td> </tr> <tr> <td>2</td> <td>Room Temp</td> <td>Within 3</td> </tr> <tr> <td>3</td> <td>85±2°C</td> <td>30±3</td> </tr> <tr> <td>4</td> <td>Room Temp</td> <td>Within 3</td> </tr> </tbody> </table> | Phase | Temperature(°C) | Time(min.) | 1 | -40±3°C | 30±3 | 2 | Room Temp | Within 3 | 3 | 85±2°C | 30±3 | 4 | Room Temp | Within 3 |
| Phase                                 | Temperature(°C)  | Time(min.)  |       |                 |            |   |         |      |   |           |          |   |        |      |   |           |          |
| 1                                     | -40±3°C  | 30±3  |       |                 |            |   |         |      |   |           |          |   |        |      |   |           |          |
| 2                                     | Room Temp  | Within 3  |       |                 |            |   |         |      |   |           |          |   |        |      |   |           |          |
| 3                                     | 85±2°C   | 30±3  |       |                 |            |   |         |      |   |           |          |   |        |      |   |           |          |
| 4                                     | Room Temp  | Within 3  |       |                 |            |   |         |      |   |           |          |   |        |      |   |           |          |
| Damp heat life test                   |  | Test Method and Remarks The test samples shall be soldered to the test board by the reflow.<br>The test samples shall be placed in thermostatic oven set at specified temperature and humidity as shown in below.<br>Temperature: 60±2°C<br>Humidity: 90~95%RH<br>Time: 500+24/-0 hrs   |       |                 |            |   |         |      |   |           |          |   |        |      |   |           |          |
| Loading under damp heat life test     | Inductance change : Within±10%<br>No abnormality observed in appearance. | The test samples shall be soldered to the test board by the reflow.<br>The test samples shall be placed in thermostatic oven set at specified temperature and humidity and applied the rated current continuously as shown in below.<br>Temperature: 60±2°C<br>Humidity: 90~95%RH<br>Applied current: Rated current<br>Time: 500+24/-0 hrs  |       |                 |            |   |         |      |   |           |          |   |        |      |   |           |          |
| Low temperature life test             |  | The test samples shall be soldered to the test board by the reflow.<br>After that, the test samples shall be placed at test conditions as shown in below.<br>Temperature: -40±2°C<br>Time: 500+24/-0 hrs  |       |                 |            |   |         |      |   |           |          |   |        |      |   |           |          |
| Loading at high temperature life test |  | The test samples shall be soldered to the test board by the reflow.<br>Temperature: 85±2°C .<br>Applied current: Rated current<br>Time: 500+24/-0 hrs.  |       |                 |            |   |         |      |   |           |          |   |        |      |   |           |          |

## 7. Soldering



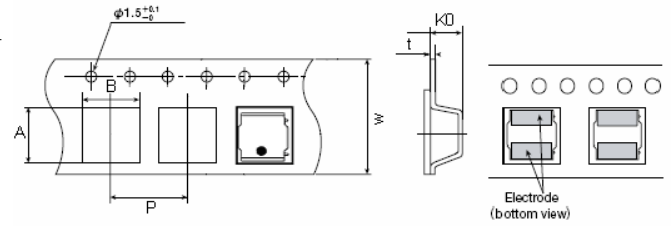
## 8. Packaging Information

### (1) Reel Dimension



| Type      | A(mm)  | B(mm)  | C(mm)  | D(mm)   |
|-----------|--------|--------|--------|---------|
| HXNR3012B | 10±1.5 | 60±1.0 | 13±0.5 | 180±0.5 |

### (2) Tape Dimension



| Type      | A(mm)   | B(mm)   | Ko(mm)  | P(mm)   | W(mm)   | t(mm)     |
|-----------|---------|---------|---------|---------|---------|-----------|
| HXNR3012B | 3.2±0.1 | 3.2±0.1 | 1.6±0.1 | 4.0±0.1 | 8.0±0.2 | 0.30±0.05 |

### (3) Packaging Quantity

| Type      | Chip / Reel |
|-----------|-------------|
| HXNR3012B | 2000        |

#### Application Notice

- Storage Conditions
  - To maintain the solderability of terminal electrodes:
    1. ISND products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
    2. Temperature and humidity conditions: Less than 40°C and 60% RH.
    3. Recommended products should be used within 12 months from the time of delivery.
    4. The packaging material should be kept where no chlorine or sulfur exists in the air.
- Transportation
  1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
  2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
  3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

单击下面可查看定价，库存，交付和生命周期等信息

[>>ISND\(华信安\)](#)