

## PRODUCT IDENTIFICATION

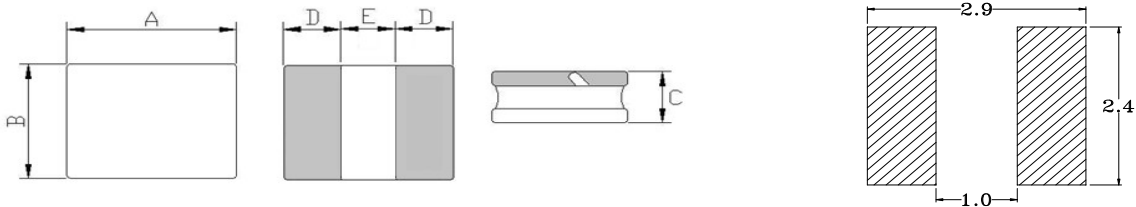
|      |        |           |   |            |      |
|------|--------|-----------|---|------------|------|
| JNR  | 252010 | P         | - | 2R2        | M    |
|      |        |           |   |            |      |
| Type | Size   | Lead Free |   | Inductance | Tol. |

## FEATURES

1. This specification applies Low Profile Power Inductors.
2. 100% Lead (Pb)-Free and RoHS compliant.
3. Operating temperature :-40~+125°C  
(Including self - temperature rise)

## DIMENSIONS (mm)

Recommend PC Board Pattern



| Part No.    | Size (mm)     |               |         |          |          |
|-------------|---------------|---------------|---------|----------|----------|
|             | A             | B             | C       | D        | E        |
| JNR 252010P | 2.5 -0.1/+0.2 | 2.0 -0.1/+0.2 | 1.0 Max | 0.75 ref | 1.00 ref |

## SERIES LIST

| No. | Part No.         | L<br>( $\mu$ H) | RDC<br>(m $\Omega$ ) |       | Isat<br>(A) |      | Irms<br>(A)          |                      |      |      |
|-----|------------------|-----------------|----------------------|-------|-------------|------|----------------------|----------------------|------|------|
|     |                  | $\pm 20\%$      | Typ.                 | Max.  | Typ.        | Max. | Typ.                 | Max.                 | Typ. | Max. |
| 1   | JNR 252010P-R16M | 0.16            | 0.015                | 0.020 | 8.50        | 7.50 | 6.00 (1)<br>6.50 (2) | 5.50 (1)<br>6.00 (2) |      |      |
| 2   | JNR 252010P-R24M | 0.24            | 0.022                | 0.028 | 7.20        | 6.70 | 5.50 (1)<br>6.00 (2) | 5.00 (1)<br>5.50 (2) |      |      |
| 3   | JNR 252010P-R33M | 0.33            | 0.023                | 0.029 | 6.00        | 5.50 | 4.80 (1)<br>5.00 (2) | 4.30 (1)<br>4.50 (2) |      |      |
| 4   | JNR 252010P-R47M | 0.47            | 0.029                | 0.035 | 5.50        | 4.90 | 4.50 (1)<br>4.70 (2) | 3.90 (1)<br>4.20 (2) |      |      |
| 5   | JNR 252010P-R56M | 0.56            | 0.035                | 0.042 | 4.50        | 4.00 | 3.90 (1)<br>4.10 (2) | 3.50 (1)<br>3.70 (2) |      |      |
| 6   | JNR 252010P-R68M | 0.68            | 0.036                | 0.043 | 4.40        | 3.80 | 3.80 (1)<br>4.00 (2) | 3.40 (1)<br>3.60 (2) |      |      |
| 7   | JNR 252010P-R82M | 0.82            | 0.043                | 0.052 | 3.80        | 3.20 | 3.60 (1)<br>3.80 (2) | 3.10 (1)<br>3.30 (2) |      |      |
| 8   | JNR 252010P-1R0M | 1.00            | 0.044                | 0.053 | 3.60        | 3.10 | 3.50 (1)<br>3.70 (2) | 3.00 (1)<br>3.20 (2) |      |      |
| 9   | JNR 252010P-1R2M | 1.20            | 0.070                | 0.084 | 3.50        | 3.00 | 2.60 (1)<br>2.90 (2) | 2.30 (1)<br>2.50 (2) |      |      |
| 10  | JNR 252010P-1R5M | 1.50            | 0.072                | 0.086 | 3.20        | 2.70 | 2.50 (1)<br>2.80 (2) | 2.20 (1)<br>2.40 (2) |      |      |
| 11  | JNR 252010P-1R8M | 1.80            | 0.088                | 0.106 | 2.00        | 2.30 | 2.50 (1)<br>2.70 (2) | 2.20 (1)<br>2.40 (2) |      |      |
| 12  | JNR 252010P-2R2M | 2.20            | 0.090                | 0.108 | 2.50        | 2.10 | 2.40 (1)<br>2.60 (2) | 2.10 (1)<br>2.30 (2) |      |      |
| 13  | JNR 252010P-3R3M | 3.30            | 0.190                | 0.230 | 2.00        | 1.70 | 1.50 (1)<br>1.70 (2) | 1.30 (1)<br>1.50 (2) |      |      |
| 14  | JNR 252010P-4R7M | 4.70            | 0.220                | 0.264 | 1.70        | 1.40 | 1.40 (1)<br>1.60 (2) | 1.20 (1)<br>1.40 (2) |      |      |

Note:

1. Test frequency : 1MHz /1V
2. Isat : Saturation Current (Isat) will cause L0 to drop approximately 30%.
3. Irms : Heat Rated Current (Irms) will cause the coil temperature rise approximately  $\Delta T$  of 40°C.
4. Rated DC current: The lower value of Irms and Isat.

Measurement board data

Irms1

Material : FR4

Board dimensions : 100 X 50 X 1.6t mm

Pattern dimensions: 45 X 30 mm (Double side board)

Pattern thickness : 50  $\mu$ m

Irms2

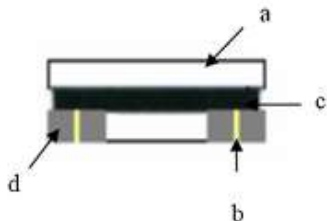
Material : FR4

Board dimensions : 100 X 50 X 1.6t mm

Pattern dimensions: 45 X 45 mm (Double side board)

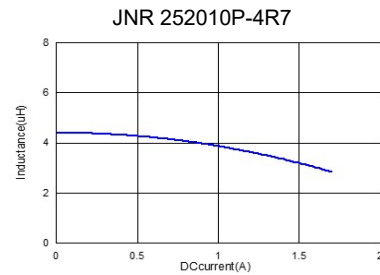
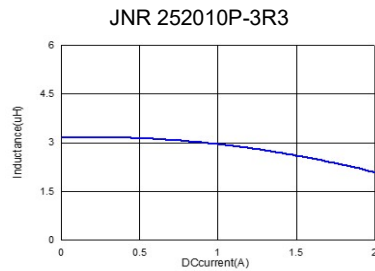
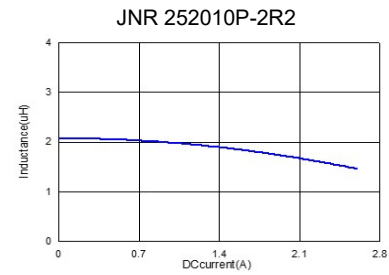
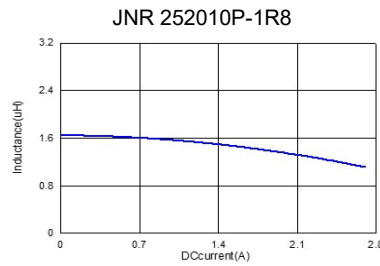
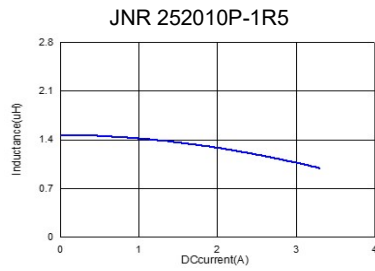
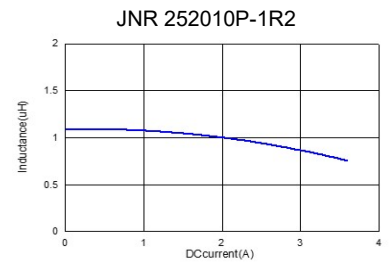
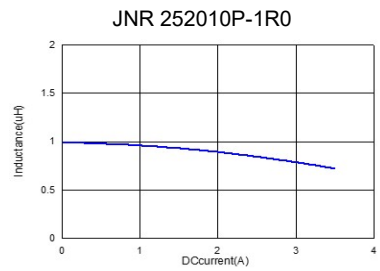
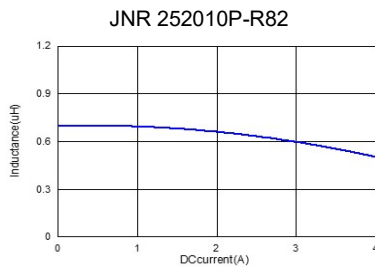
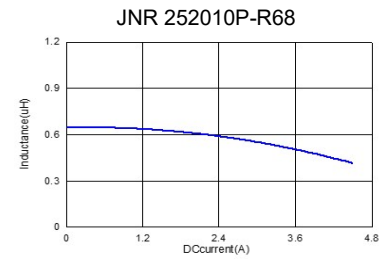
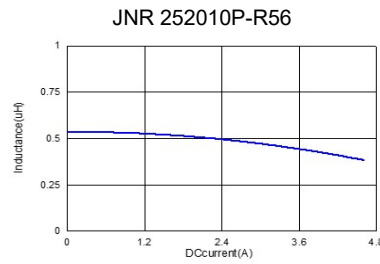
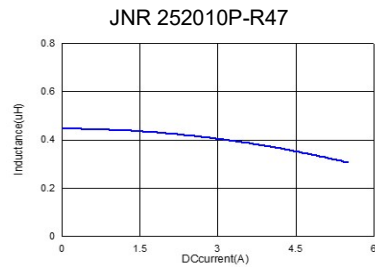
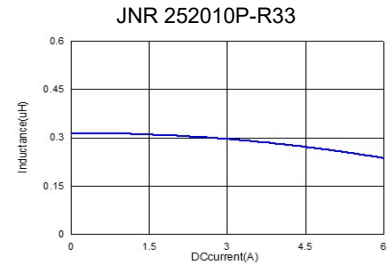
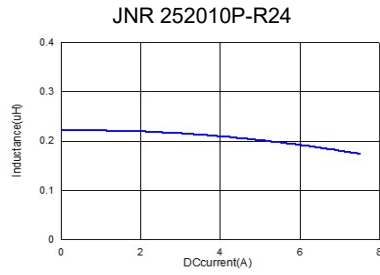
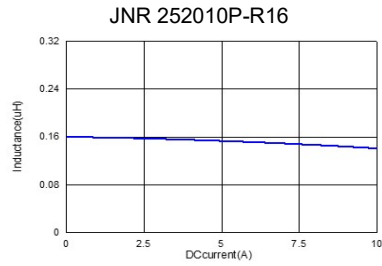
Pattern thickness : 70  $\mu$ m

## Materials



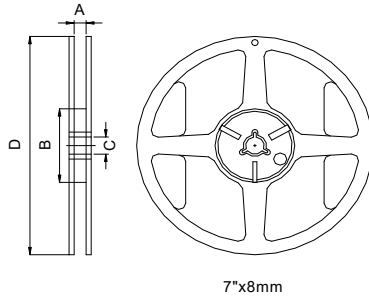
| NO | Items    | Materials                           |
|----|----------|-------------------------------------|
| a  | Core     | Ferrite Core                        |
| b  | Wire     | Enameled Copper Wire                |
| c  | Glue     | Epoxy or Epoxy with magnetic powder |
| d  | Terminal | Ag/Ni/Sn                            |

## Typical Performance Curves



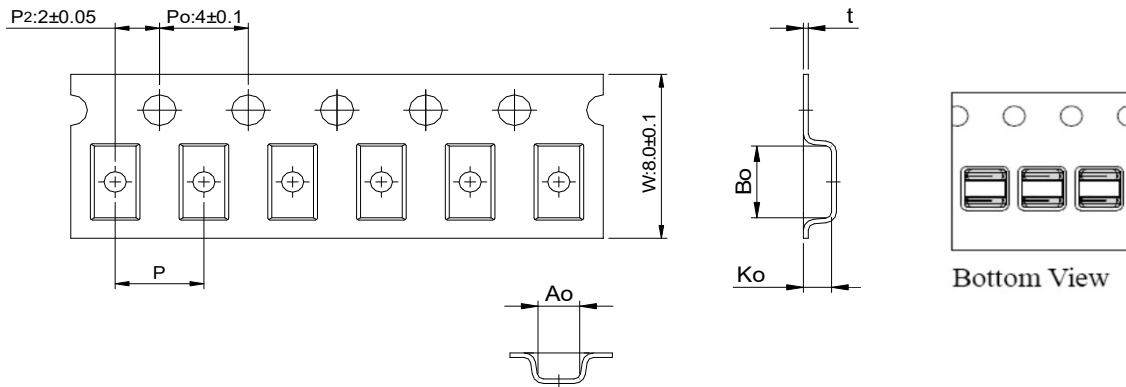
## Packaging Information

### (1) Reel Dimension



| Type   | A(mm)         | B(mm)  | C(mm)        | D(mm)       |
|--------|---------------|--------|--------------|-------------|
| 7"x8mm | $8.4 \pm 1.0$ | 50 min | $13 \pm 0.8$ | $178 \pm 2$ |

### (2) Tape Dimension

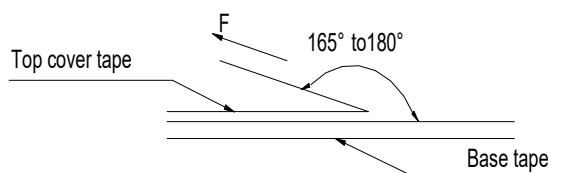


| Ao(mm)         | Bo(mm)         | Ko(mm)         | P(mm)         | t(mm)           |
|----------------|----------------|----------------|---------------|-----------------|
| $2.45 \pm 0.1$ | $3.10 \pm 0.1$ | $1.40 \pm 0.1$ | $4.0 \pm 0.1$ | $0.23 \pm 0.05$ |

### (3) Packaging Quantity

| Size        | Reel |
|-------------|------|
| JNR 252010P | 3000 |

### (4) Tearing Off Force



The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions (referenced ANSI/EIA-481-D-2008 of 4.11 standard)

| Tearing Speed<br>mm | Room Temp.<br>(°C) | Room Humidity<br>(%) | Room atm<br>(hPa) |
|---------------------|--------------------|----------------------|-------------------|
| $300 \pm 10\%$      | 5~35               | 45~85                | 860~1060          |

## Appearance criterion

### 1. Core chipping

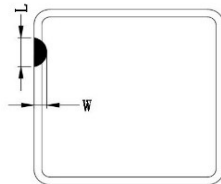
The appearance standard of the chipping size on top side, and bottom side ferrite core is listed below.

Chip off is generated during molding and manufacturing process.

Chip off acceptance limits subjected to the product size.

Our current Defect limit is based on the IPC-A-610.

Some chip off does not impact the product function, see the IPC standard 1 & 2.

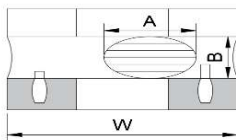


|   |                           |
|---|---------------------------|
| L | $\leq 50\%$ of the length |
| W | $\leq 25\%$ of the width  |

Defects usually occur at the corners and edges of the product, There will be a slight defect black and rough, but not exposed copper, and does not affect the product performance and reliability.

### 2. 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.

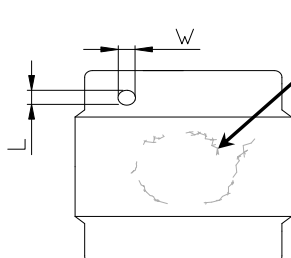
1. Width direction ( dimension a ) : Acceptable when  $a \leq w/2$ .
2. Length direction ( dimension b ) : Dimension b is not specified.
3. The total area of exposed wire occurring to each sides is not greater than 50% of coating resin area, and is acceptable.

### 3. External appearance criterion for exposed wire

Exposed winding wire at the secondary side is regarded as qualified product.



### 4. Electrode appearance criterion for exposed wire



Visual check on core surface with no crack means pass.

Only top side of wire is exposed.  
(regardless of whole top side of wire exposed)

Conforming

Wire is soldered insufficiently and less than half of outer diameter is covered with solder.  
Less than 1/2 of joint side length.  
(More than 1/2 is selected as defect)

|                                              |
|----------------------------------------------|
| L&W                                          |
| $\leq 20\%$ of the area<br>on one single pad |

Foreign materials on the product body is inevitable and accepted.

Electrodes with foreign body (dirt) appearance standards

Foreign materials (dirt) will not affect the coplanarity of PAD,

below the example of foreign materials (dirt) quantity  $\leq 2$ PCS on single PAD.

Dimensions range as shown in the table.