



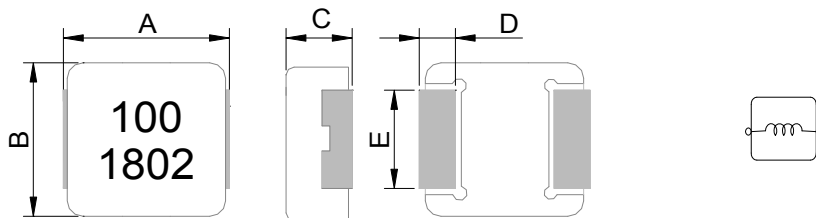
## FEATURES

1. Shielded construction.
2. Capable of corresponding high frequency
3. Low loss realized with low DCR.
4. High performance (Isat) realized by metal dust core.
5. Ultra low buzz noise, due to composite construction.
6. 100% Lead(Pb)-Free and RoHS compliant.
7. Operating temperature -40~+125°C  
(Including self - temperature rise)

## APPLICATIONS

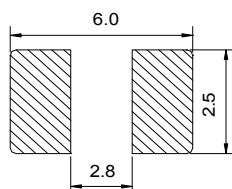
1. DC/DC converters in distributed power systems.
2. DC/DC converter for Field Programmable Gate Array(FPGA).
3. Battery powered devices.
4. Thin type on-board power supply module for exchanger.
5. VRM for server.
6. High current, low profile POL converters.
7. PDA/notebook/desktop/server and battery powered devices.

## DIMENSIONS (mm)



印字:黑色100及D/C 1802 (18年,02週期)(依實際生產日期而定)

### Recommend PC Board Pattern



Note:

1. PCB layout is referred to standard IPC-7351B
2. The above PCB layout reference only.
3. Recommend solder paste thickness at 0.12mm and above.

## PRODUCT IDENTIFICATION

**JRPI 0503 P - 100 M**  
 |                      |                      |                      |  
**Type**   **Size**                      **Material**                      **Inductance**                      **Tol.**

## Marking and Date code:

Marking ex: 10 (μH) → 100

Date code

18 02 → year and weekly

| Part No.   | Size (mm) |           |           |           |           |
|------------|-----------|-----------|-----------|-----------|-----------|
|            | A         | B         | C         | D         | E         |
| JRPI 0503P | 5.7 ± 0.3 | 5.2 ± 0.2 | 2.8 ± 0.2 | 1.0 ± 0.3 | 2.0 ± 0.2 |

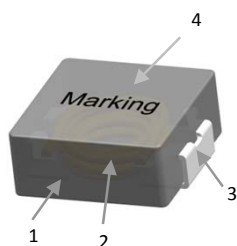
## ■ SERIES LIST

| No. | Part No.        | L              | RDC  |       | Isat       |            | Irms       |            |
|-----|-----------------|----------------|------|-------|------------|------------|------------|------------|
|     |                 | ( $\mu$ H)     | Typ. | Max.  | (A)<br>Typ | (A)<br>Max | (A)<br>Typ | (A)<br>Max |
| 1   | JRPI 0503P-R47M | 0.47 $\pm$ 20% | 5.2  | 6.0   | 10.0       | 9.0        | 13.5       | 12.0       |
| 2   | JRPI 0503P-R68M | 0.68 $\pm$ 20% | 7.4  | 8.5   | 9.0        | 8.0        | 12.5       | 11.0       |
| 3   | JRPI 0503P-R82M | 0.82 $\pm$ 20% | 8.0  | 9.2   | 8.8        | 7.7        | 10.0       | 9.0        |
| 4   | JRPI 0503P-1R0M | 1.0 $\pm$ 20%  | 10.5 | 12.0  | 8.5        | 7.5        | 9.0        | 8.0        |
| 5   | JRPI 0503P-1R5M | 1.5 $\pm$ 20%  | 13.6 | 15.7  | 7.5        | 6.5        | 8.0        | 7.0        |
| 6   | JRPI 0503P-2R2M | 2.2 $\pm$ 20%  | 21.6 | 25.0  | 6.5        | 5.8        | 7.0        | 6.5        |
| 7   | JRPI 0503P-3R3M | 3.3 $\pm$ 20%  | 28.0 | 33.0  | 6.0        | 5.3        | 6.3        | 5.8        |
| 8   | JRPI 0503P-4R7M | 4.7 $\pm$ 20%  | 38.0 | 44.0  | 5.3        | 4.6        | 5.5        | 4.8        |
| 9   | JRPI 0503P-5R6M | 5.6 $\pm$ 20%  | 50.0 | 58.0  | 4.6        | 4.0        | 5.0        | 4.3        |
| 10  | JRPI 0503P-6R8M | 6.8 $\pm$ 20%  | 57.0 | 66.0  | 3.5        | 3.1        | 4.3        | 3.7        |
| 11  | JRPI 0503P-100M | 10 $\pm$ 20%   | 88.0 | 103.0 | 2.5        | 2.1        | 3.8        | 3.4        |

Note:

1. Test Frequency: 100KHz /1V
2. All test data referenced to 25°C ambient
3. Saturation Current (Isat) will cause L0 to drop approximately 30%.
4. Heat Rated Current (Irms) will cause the coil temperature rise approximately  $\Delta T$  of 40°C
5. The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions.  
Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
6. Irms Testing : Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.
7. Rated DC Current : The less value which is Irms or Isat.

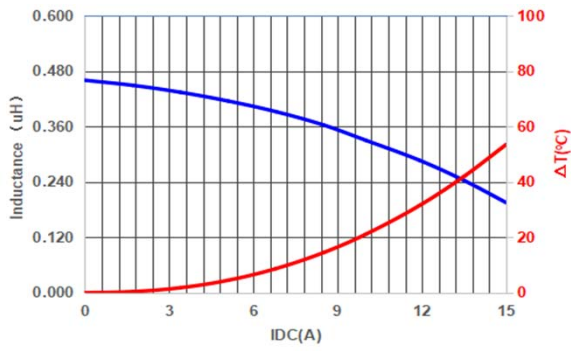
## ■ Materials



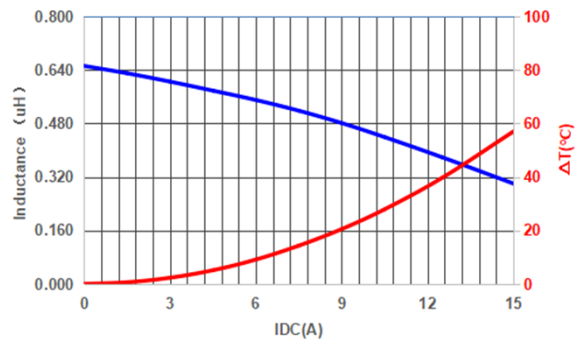
| NO | Items | Materials                            |
|----|-------|--------------------------------------|
| 1  | Core  | Alloy Powder                         |
| 2  | Wire  | Polyester Wire or equivalent         |
| 3  | Clip  | 100% Pb free solder(Ni+Sn---Plating) |
| 4  | Ink   | Halogen-free ketone                  |

# TYPICAL PERFORMANCE CURVES

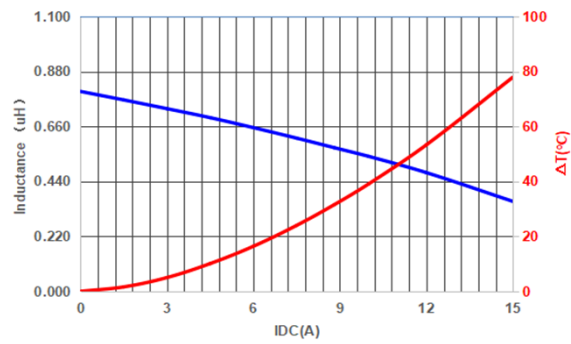
JRPI 0503P-R47



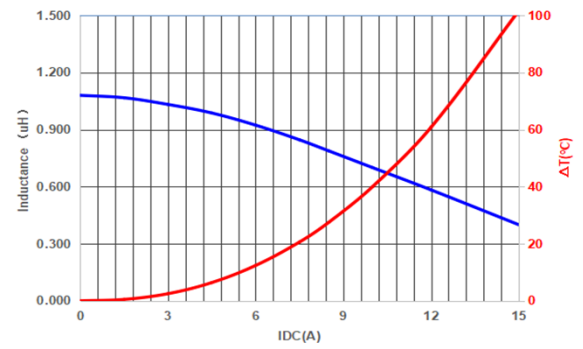
JRPI 0503P-R68



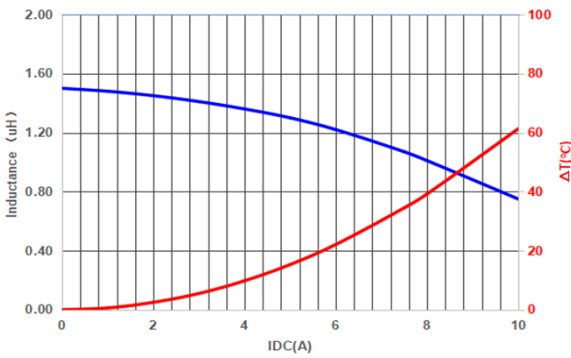
JRPI 0503P-R82



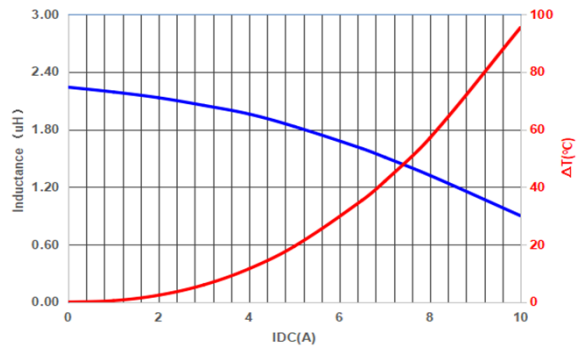
JRPI 0503P-1R0



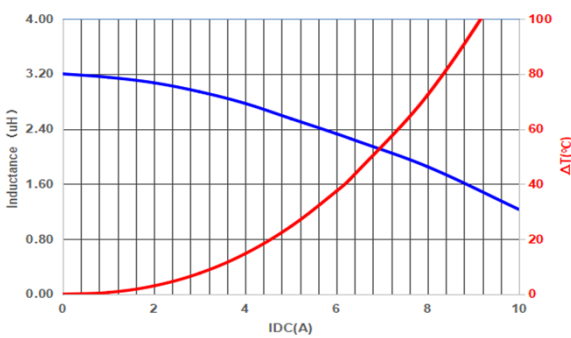
JRPI 0503P-1R5



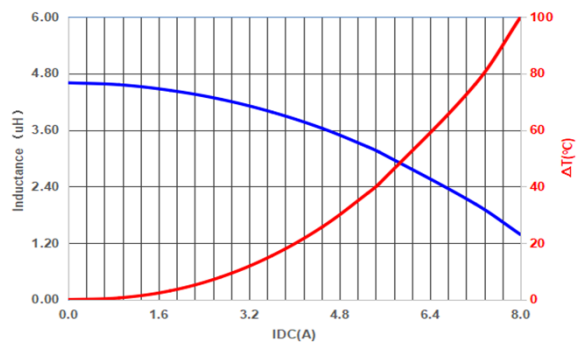
JRPI 0503P-2R2



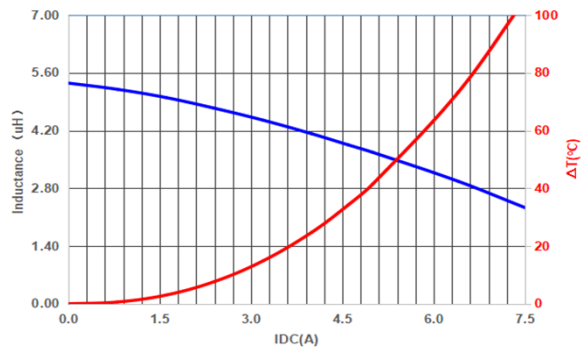
JRPI 0503P-3R3



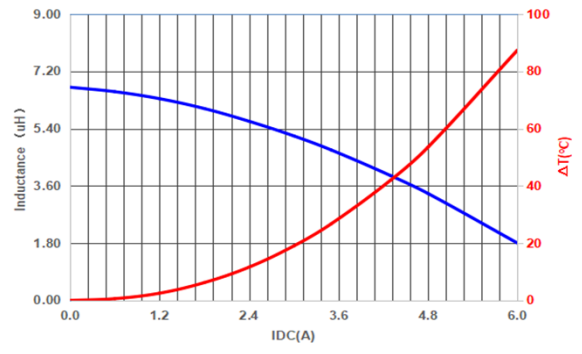
JRPI 0503P-4R7



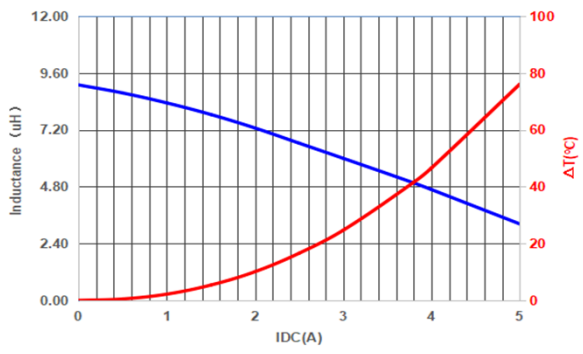
JRPI 0503P-5R6



JRPI 0503P-6R8

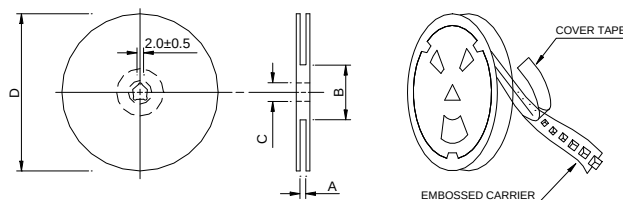


JRPI 0503P-100



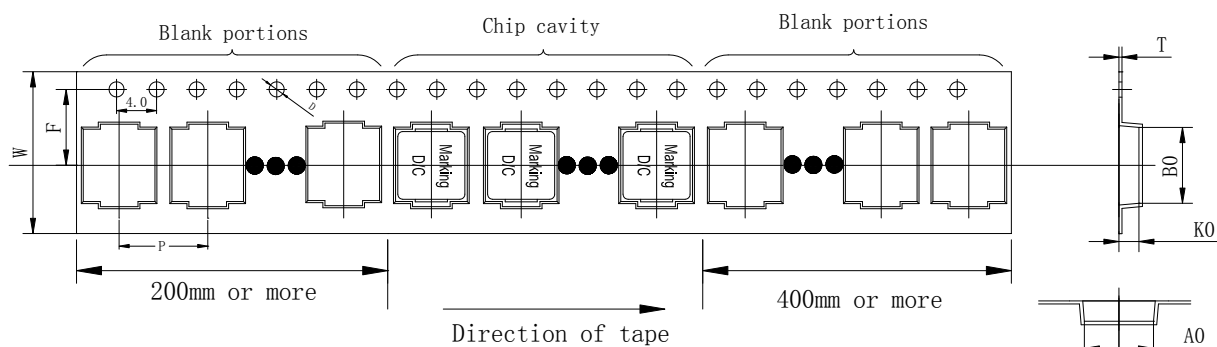
## Packaging Information

### • Reel Dimension



| Type     | A(mm)     | B(mm) | C(mm)       | D(mm) |
|----------|-----------|-------|-------------|-------|
| 13"x12mm | 12.4+2/-0 | 100±2 | 13+0.5/-0.2 | 330   |

### • Tape Dimension

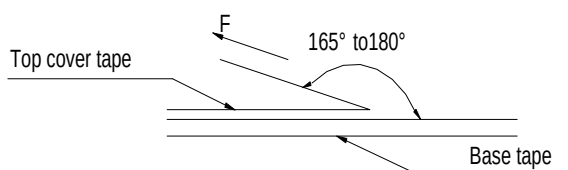


| Ao(mm)  | Bo(mm)  | Ko(mm)  | P(mm)   | W(mm)    | F(mm)   | t(mm)     | D(mm)   |
|---------|---------|---------|---------|----------|---------|-----------|---------|
| 5.6±0.1 | 6.2±0.1 | 3.3±0.1 | 8.0±0.1 | 12.0±0.3 | 5.5±0.1 | 0.35±0.05 | 1.5±0.1 |

### • Packaging Quantity

| Size       | Reel | Inner box | Carton |
|------------|------|-----------|--------|
| JRPI 0503P | 2000 | 4000      | 16000  |

### • 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 | Room Temp. | Room Humidity | Room atm |
|---------------|------------|---------------|----------|
| mm            | (°C)       | (%)           | (hPa)    |
| 300±10%       | 5~35       | 45~85         | 860~1060 |

## ■ Application Notice

- Storage Conditions(component level)

To maintain the solderability of terminal electrodes:

1. Products meet IPC/JEDEC J-STD-020E 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 form 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.