



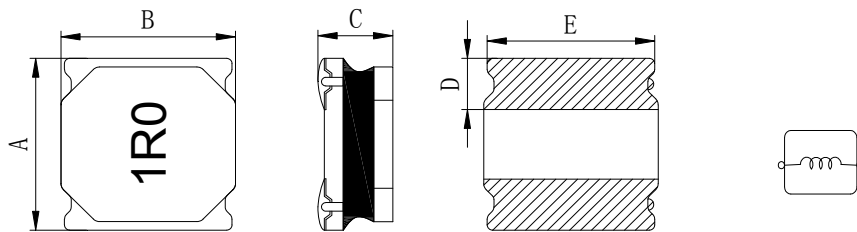
## PRODUCT IDENTIFICATION

JNR	5020	H	-	1R0	N
Type	Size				Tol.
		Lead Free		Inductance	

## FEATURES

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

## DIMENSIONS (mm)

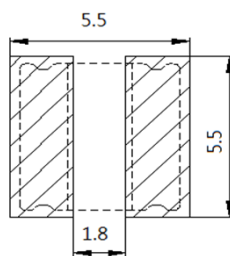


Part No.	Size (mm)				
	A	B	C	D	E
JNR 5020H	5.0 ± 0.2	5.0 ± 0.2	1.6 ± 0.2	1.8 ± 0.2	4.7 ± 0.2

\* Dimensions are not including the termination.

For maximum overall dimensions with termination, add 0.1mm.

## Recommended PC Board Pattern



Note:

1. The above PCB layout reference only.
2. Recommend solder paste thickness at 0.12mm and above.

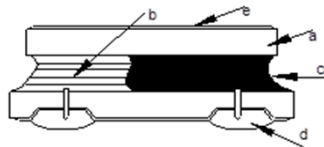
## ■ SERIES LIST

No.	Part No.	L ( $\mu$ H)	Tol.	RDC (m $\Omega$ ) $\pm 20\%$	Isat (A)	Irms (A)
1	JNR 5020H-1R0N	1.0	$\pm 30\%$	20	5.00	4.10
2	JNR 5020H-1R2N	1.2	$\pm 30\%$	20	4.80	3.80
3	JNR 5020H-1R5N	1.5	$\pm 30\%$	25	4.50	3.50
4	JNR 5020H-2R2M	2.2	$\pm 20\%$	32	4.10	3.30
5	JNR 5020H-2R7M	2.7	$\pm 20\%$	38	3.80	3.00
6	JNR 5020H-3R3M	3.3	$\pm 20\%$	43	3.50	2.80
7	JNR 5020H-4R7M	4.7	$\pm 20\%$	60	2.70	2.40
8	JNR 5020H-5R6M	5.6	$\pm 20\%$	69	2.40	2.10
9	JNR 5020H-6R8M	6.8	$\pm 20\%$	90	2.10	1.90
10	JNR 5020H-8R2M	8.2	$\pm 20\%$	98	1.90	1.75
11	JNR 5020H-100M	10	$\pm 20\%$	110	1.70	1.60
12	JNR 5020H-120M	12	$\pm 20\%$	135	1.40	1.40
13	JNR 5020H-150M	15	$\pm 20\%$	165	1.30	1.25
14	JNR 5020H-180M	18	$\pm 20\%$	190	1.20	1.17
15	JNR 5020H-220M	22	$\pm 20\%$	225	1.10	1.10
16	JNR 5020H-330M	33	$\pm 20\%$	335	0.80	0.80
17	JNR 5020H-470M	47	$\pm 20\%$	460	0.70	0.70

Note:

1. Test Frequency : 100KHz /1V
2. All test data referenced to 25°C ambient
3. Isat : Saturation Current (Isat) will cause L0 to drop approximately 30%.
4. Irms : 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. Special inquiries besides the above common used types can be met on your requirement.
7. Rated DC current: The lower value of Irms and Isat.

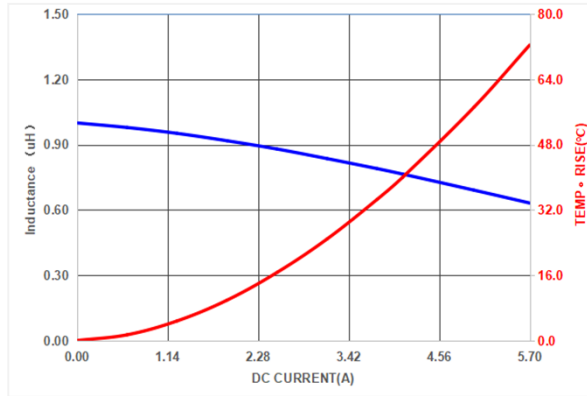
## ■ Materials



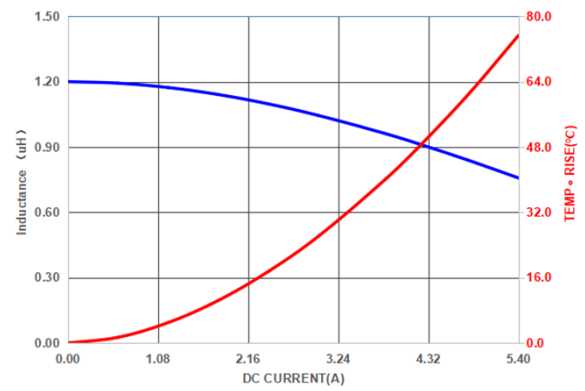
No.	Description	Specification
a	Core	Ferrite Core
b	Wire	Enameled Copper Wire
c	Glue	Epoxy with magnetic powder
d	Terminal	Ag/Ni/Sn+ Sn Solder
e	Ink	Halogen-free ketone

## TYPICAL PERFORMANCE CURVES

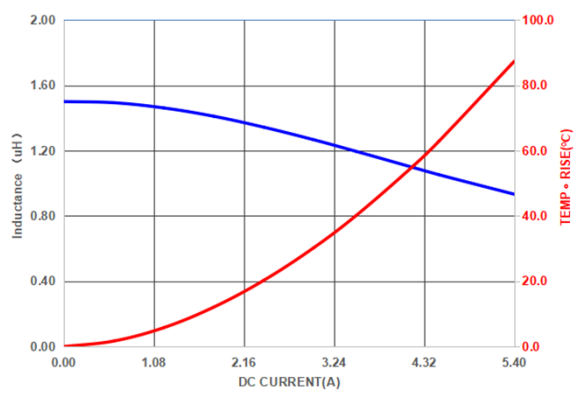
JNR 5020H-1R0



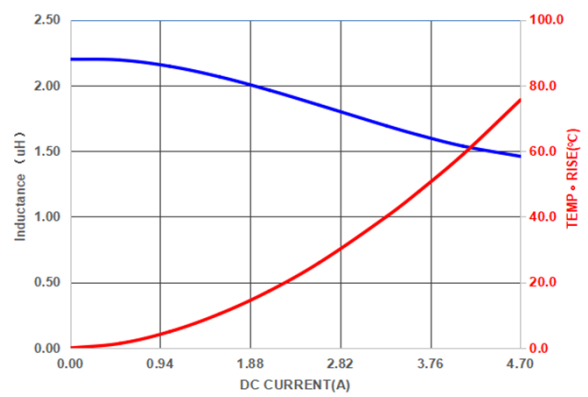
JNR 5020H-1R2



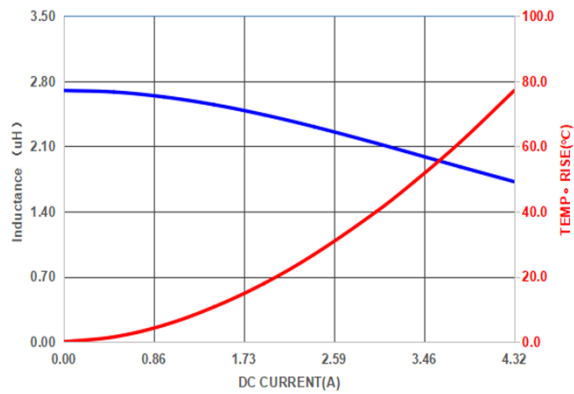
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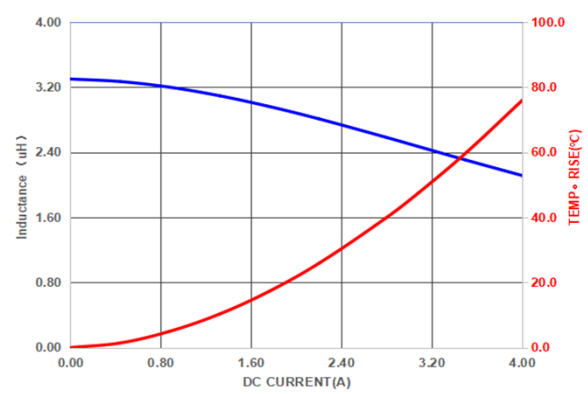
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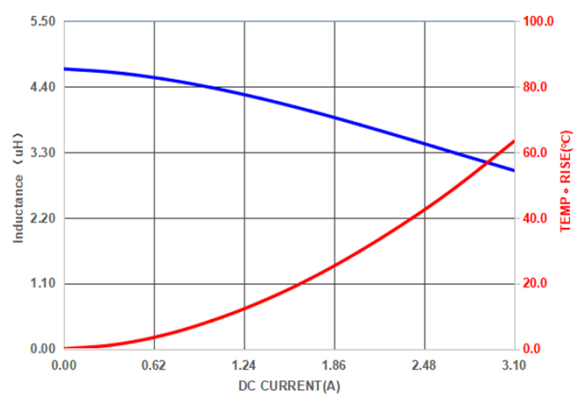
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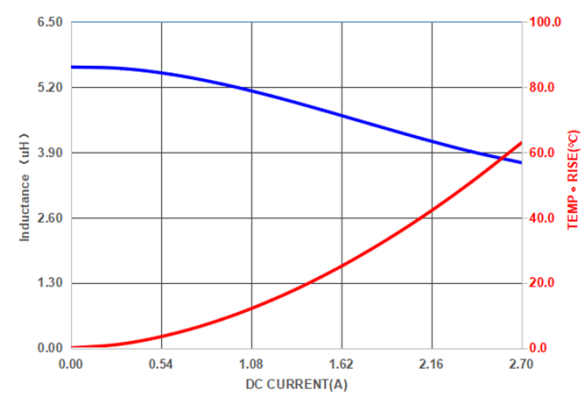
JNR 5020H-3R3



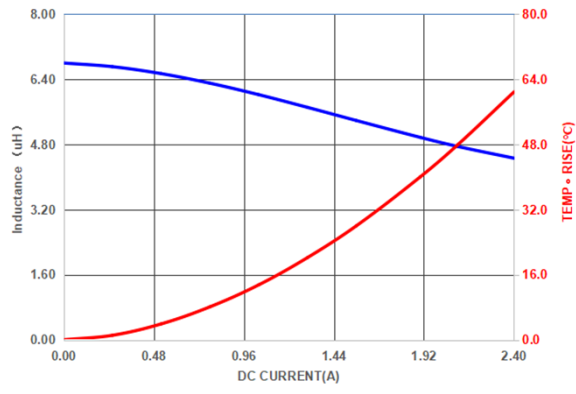
JNR 5020H-4R7



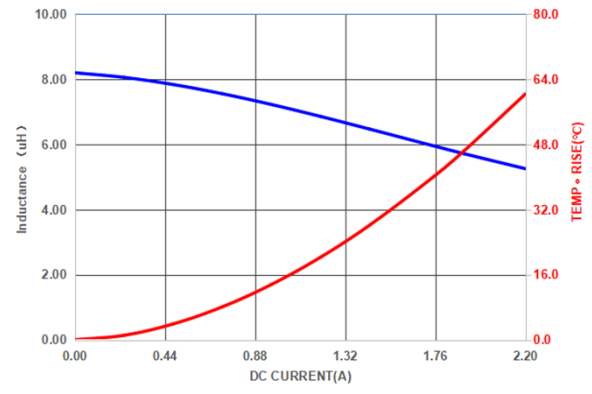
JNR 5020H-5R6



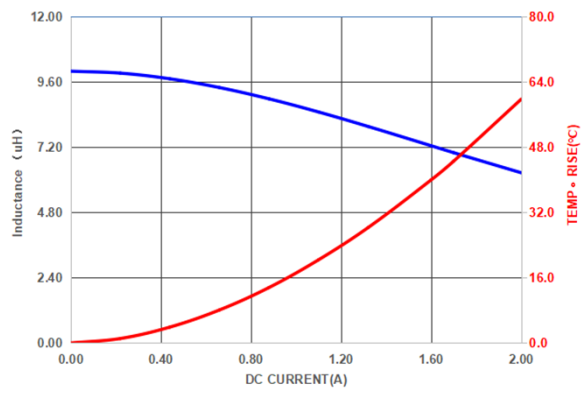
JNR 5020H-6R8



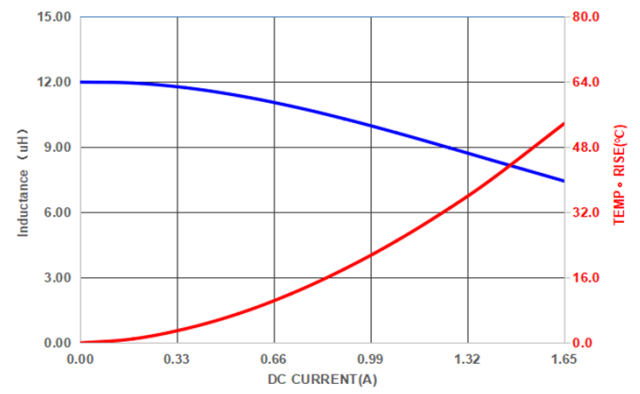
JNR 5020H-8R2



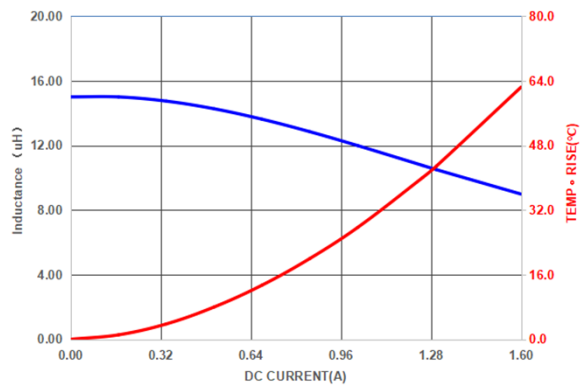
JNR 5020H-100



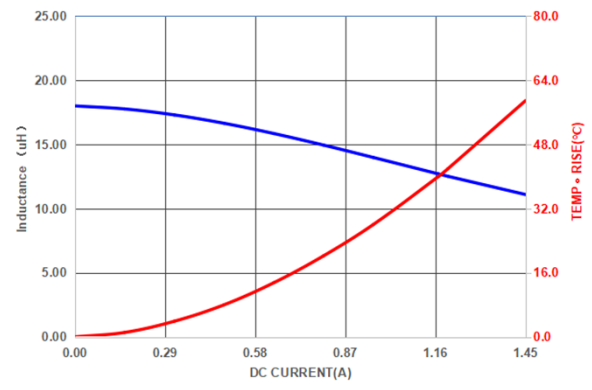
JNR 5020H-120



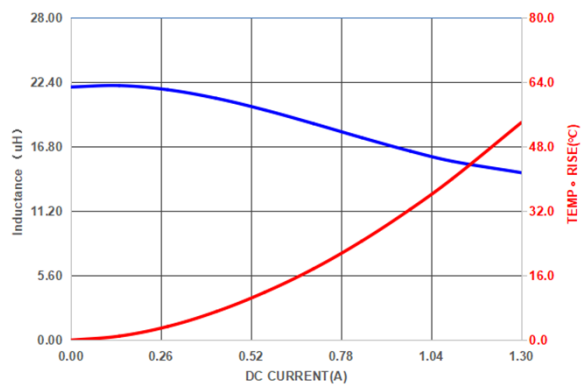
JNR 5020H-150



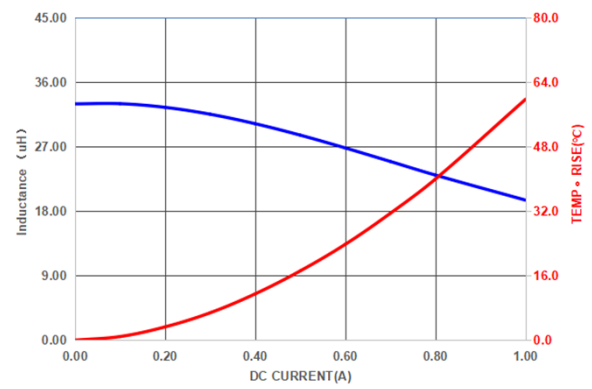
JNR 5020H-180



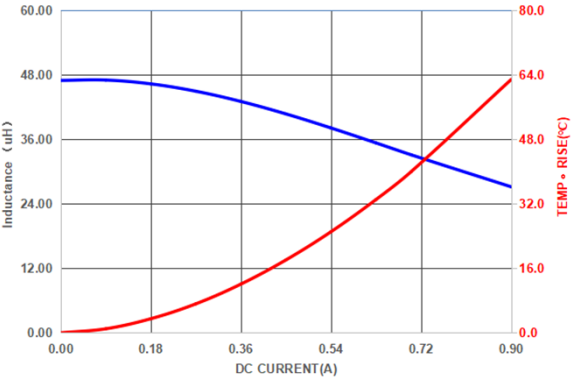
JNR 5020H-220



JNR 5020H-330



JNR 5020H-470



## ■ Appearance criterion

### 1・Core chipping

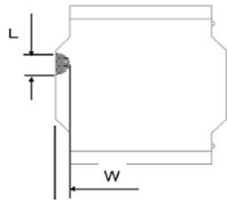
The appearance standard of the chipping size on top side, and bottom side ferrite core is listed below.

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.



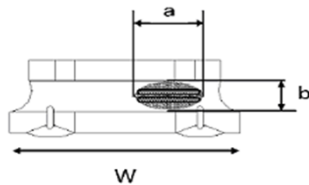
L	≤50 % of the length
W	≤25 % of the width

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.



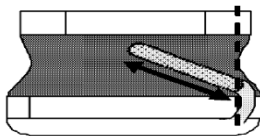
Exposed wire tolerance limit of coating resin part on product side.

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

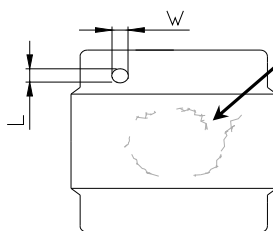
1. Width direction ( dimension a ) : Acceptable when  $a \leq w/2$ .
2. Length direction ( dimension b ) : Dimension b is not specified.
3. The total area of exposed wire occurring to each sides is not greater than 50% of coating resin area, and is acceptable.

### 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
≤20% of the area on one single pad

Foreign materials on the product body is inevitable and accepted.

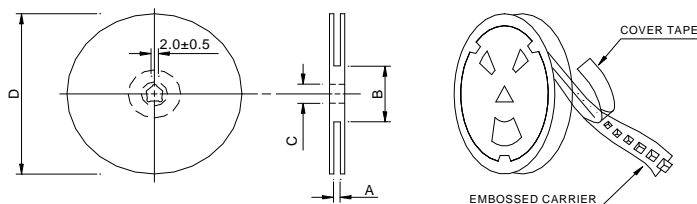
Electrodes with foreign body (dirt) appearance standards

Foreign materials (dirt) will not affect the coplanarity of PAD, below the example of foreign materials (dirt) quantity ≤2PCS on single PAD.

Dimensions range as shown in the table.

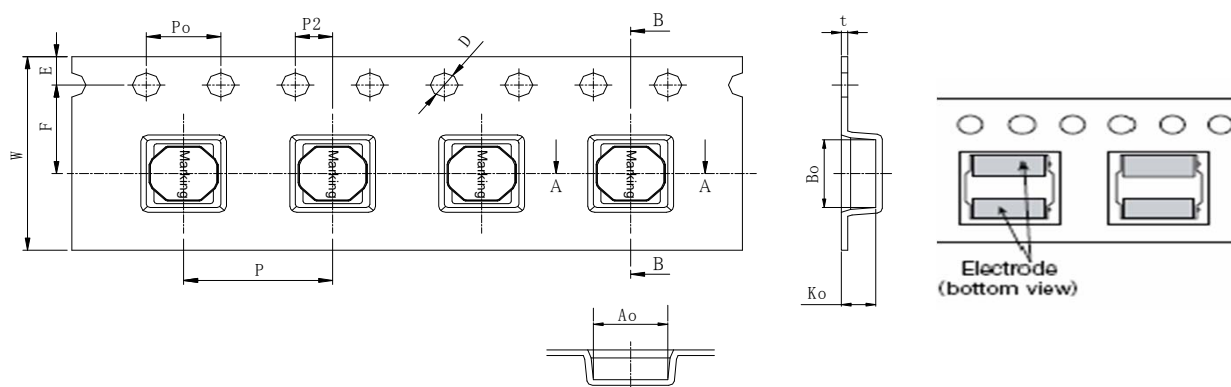
## Packaging Information

### • Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
13"x12mm	13.4+2-0	80±2.0	13+0.5/-0.2	330±3.0

### • Tape Dimension



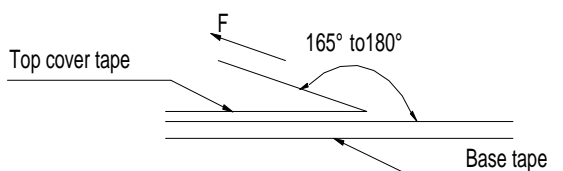
Ao(mm)	Bo(mm)	Ko(mm)	P(mm)	w(mm)	t(mm)	Emm	F(mm)	D(mm)	Po(mm)	P2(mm)
5.4±0.1	5.4±0.1	2.2±0.1	8.0±0.1	12±0.3	0.4±0.1	1.75±0.1	7.5±0.1	1.5±0.1	4.0±0.1	2.00±0.1

### • Packaging Quantity

Size	Reel
JNR 5020H	2500

### • 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 mm	Room Temp. (°C)	Room Humidity (%)	Room atm (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.