

Product Specification

Number: RNP18-NR5040-XXXX

Name: Inductance

Specification: _____

Customer: _____

Date: 2023-11-30

Customer Signature:



Compile	Check	Review	Approval
Jenny	Jack.C		

Version of Changed Record

1. Scope

This specification applies to the NR5040 Series of wire wound SMD power inductor.

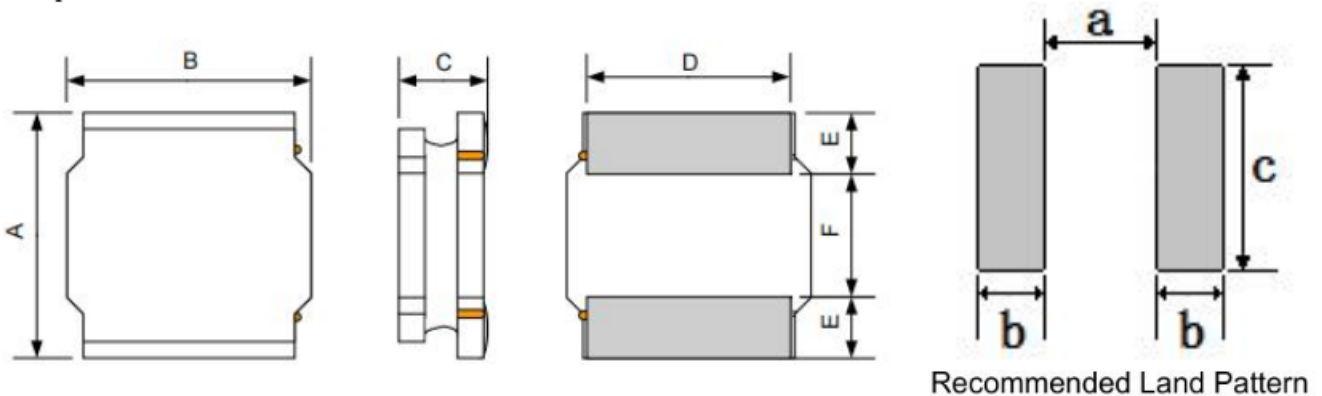
2. Electrical Characteristics

Please refer to Item 5.

- 1). Operating temperature range (individual chip without packing): $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$.
- 2). Storage temperature range (packaging conditions): $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ and RH 70% (Max.).
- 3). Rating DC current: Temperature rise(ΔT) is 40°C approximately at Irms.
- 4). Saturation DC current: Inductance drop approximately 30% of L_0 at Isat.

3. Shape and Dimensions (Unit:mm)

shape: A

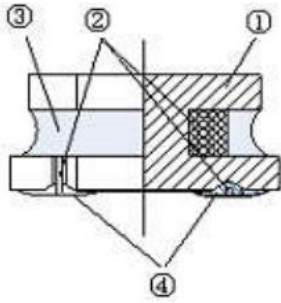


Series	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
NR5040	5.0±0.2	5.0±0.2	4.0 Max.	4.0±0.2	1.6 Typ.	1.8 Typ.	1.6	1.8	4.2

4. Electrical Characteristics

NO.	Part Number	Inductance	DC Resistance		Isat(A)		Irms(A)		Marking
		100KHz/1.0V	Max.	Typ.	Max.	Typ.	Max.	Typ.	
	Units	(uH)	Ω	Ω	A	A	A	A	
1	□ NR5040-R47N	0.47±30%	0.013	0.010	10.00	11.50	6.60	7.60	R47
2	□ NR5040-1R0N	1.00±30%	0.016	0.014	7.35	8.00	4.90	5.00	1R0
3	□ NR5040-1R5N	1.50±30%	0.020	0.016	6.30	6.80	4.30	4.80	1R5
4	□ NR5040-2R2M	2.20±20%	0.027	0.021	4.90	5.50	3.80	4.20	2R2
5	□ NR5040-3R3M	3.30±20%	0.031	0.025	3.95	4.45	3.40	3.90	3R3
6	□ NR5040-4R7M	4.70±20%	0.041	0.035	3.50	3.90	3.00	3.30	4R7
7	□ NR5040-5R6M	5.60±20%	0.046	0.040	3.00	3.50	2.80	3.10	5R6
8	□ NR5040-6R8M	6.80±20%	0.056	0.045	2.90	3.50	2.50	2.80	6R8
9	□ NR5040-8R2M	8.20±20%	0.062	0.059	2.70	3.00	2.30	2.60	8R2
10	□ NR5040-100M	10.0±20%	0.083	0.069	2.35	2.90	2.10	2.40	100
11	□ NR5040-150M	15.0±20%	0.112	0.096	2.00	2.20	2.00	2.05	150
12	□ NR5040-220M	22.0±20%	0.168	0.151	1.60	1.90	1.50	1.60	220
13	□ NR5040-270M	27.0±20%	0.234	0.180	1.52	1.75	1.40	1.50	270
14	□ NR5040-330M	33.0±20%	0.244	0.213	1.30	1.50	1.20	1.40	330
15	□ NR5040-470M	47.0±20%	0.354	0.313	1.10	1.30	1.00	1.10	470
16	□ NR5040-680M	68.0±20%	0.520	0.430	0.90	1.10	0.80	0.90	680
17	□ NR5040-820M	82.0±20%	0.690	0.552	0.80	0.90	0.70	0.78	820
18	□ NR5040-101M	100.0±20%	0.728	0.645	0.75	0.85	0.70	0.80	101
19	□ NR5040-151M	150.0±20%	0.975	0.840	0.65	0.67	0.60	0.70	151
20	□ NR5040-221M	220.0±20%	1.820	1.460	0.48	0.55	0.40	0.50	221
21	□ NR5040-331M	330.0±20%	2.600	2.340	0.50	0.58	0.35	0.40	331
22	□ NR5040-391M	390.0±20%	3.250	2.590	0.35	0.45	0.32	0.32	391
23	□ NR5040-471M	470.0±20%	3.900	3.150	0.37	0.43	0.35	0.40	471
24	□ NR5040-561M	560.0±20%	4.914	3.670	0.31	0.36	0.31	0.35	561
25	□ NR5040-681M	680.0±20%	5.070	3.830	0.30	0.35	0.25	0.30	681
26	□ NR5040-102M	1000.0±20%	7.800	6.030	0.25	0.30	0.30	0.32	102
27	□ NR5040-222M	2200.0±20%	20.5	15.8	0.18	0.2	0.15	0.18	222

5. Structure (The structure of product.)



NO	Components	Material
①	Core	Ni-Zn Ferrite
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Plating	AgNiSn or FeNiCu + Sn Alloy

6. PACKAGING(unit: mm)

1.包装类型: 编带装

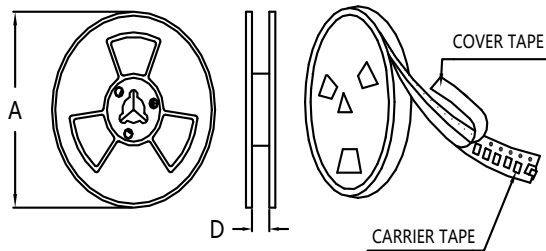
2.包装尺寸:



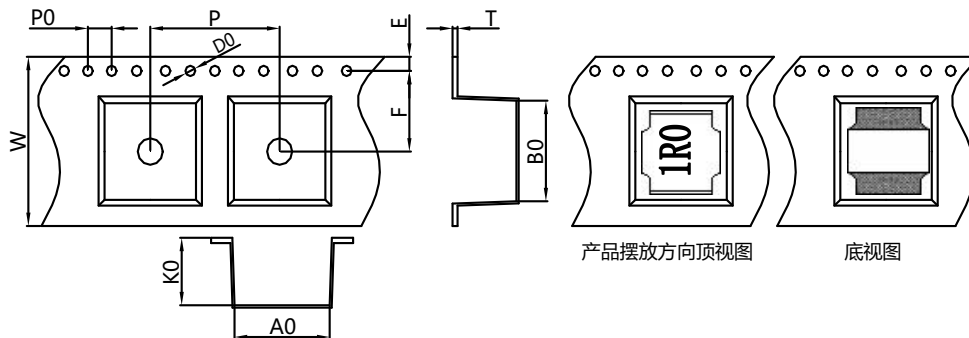
13" 盘



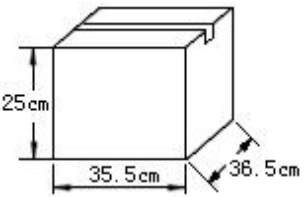
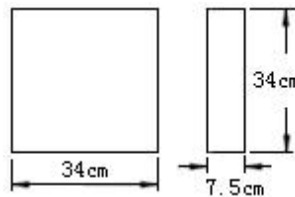
7" 盘



	13" 盘	7" 盘
A	$\Phi 330 \pm 2.0$	$\Phi 178 \pm 2.0$
D	12.5	



Size	Item	W	A0	B0	K0	P	T	E	F	D0	P0
5040	(mm)	12.0 ± 0.3	5.5 ± 0.3	5.5 ± 0.3	4.4 ± 0.2	8.0 ± 0.3	0.4 ± 0.1	1.75 ± 0.1	5.5 ± 0.1	1.5 ± 0.1	4.0 ± 0.2



每卷	1500	Pcs
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每盒	4卷,共	6000	Pcs
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每箱	3盒,共	18000	Pcs
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7. RELIABILITY TEST

No.	TEST ITEM	SPECIFICATION	TEST CONDITION
1	High temperature Storage test	1. No significant defects in appearance. 2. $\Delta L/L \leq 10\%$ 3. $\Delta DCR/DCR \leq 10\%$	Temperature: $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ (N: Follow the product specification for the setting.) Time : 96 ± 2 hours Place the samples for one hour at room temperature and test them within two hours
2	Low temperature Storage test	1. No significant defects in appearance. 2. $\Delta L/L \leq 10\%$ 3. $\Delta DCR/DCR \leq 10\%$	Temperature: $-40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ (M: Follow the product specification for the setting) Time : 96 ± 2 hours Place the samples for one hour at room temperature and test them within two hours.
3	Humidity test	1. No significant defects in appearance. 2. $\Delta L/L \leq 10\%$ 3. $\Delta DCR/DCR \leq 10\%$	Temperature: $40 \pm 2^{\circ}\text{C}$, Humidity: $93 \pm 3\% \text{RH}$ Time : 96 ± 2 hours Place the samples for one hour at room temperature and test them within two hours
4	Solderability test	Terminals must have 95% minimum solder coverage	1. Dip pads in flux then dip in solder pot at $245 \pm 5^{\circ}\text{C}$ for 5 second. 2. Solder: lead free 3. Flux: rosin flux
5	Heat endurance of flow soldering	1. No significant defects in appearance. 2. $\Delta L/L \leq 10\%$ 3. $\Delta DCR/DCR \leq 10\%$	1. Refer to the above reflow curve and go through the reflow for twice. 2. The peak temperature : $260 + 0/-5^{\circ}\text{C}$
6	Vibration test	1. No significant defects in appearance. 2. No short and no open.	Apply frequency 10~55~10Hz and amplitude 1.5mm, 1 min/cycle in X Y and Z direction for 2 hours each. (total 6 hours)
7	Terminal strength push test	1. Applied force: 10N Duration: 10sec 2. Solder paste thickness: 0.12mm 3. Meet the above requirements without any loose termina	Solder the test samples to the PCB through 245°C reflow, apply a standard force on the side of the test samples for 10 seconds. 