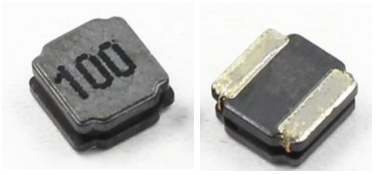
MetalLions

MNR4030 Series

Wire Wound SMD Power Inductors

FEATURES

- Magnetic-resin shielded construction reduces buzz noise to ultra-low levels
- Metallization on ferrite core results in excellent shock resistance and damage-free durability
- Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI)
- 30% higher current rating than conventional inductors of equal size
- Takes up less PCB real estate and save more power
- Operate temperature range .... −40℃～+125℃(Including self temp. rise)
- RoHS compliant



APPLICATIONS

- Smart phone, smart TV, set top box, notebook
- Car navigation systems, telecomm base stations
- VR, AR
- LED lighting

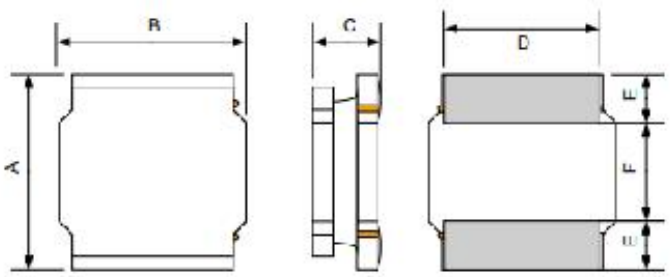
Explanation of Part Number

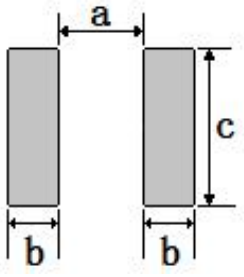
MNR 4030T 1R0 M T

1 2 3 4 5

- 1:Product Series:Wire Wound SMD Power Inductors
- 2:Dimensions:
- 3: Initial inductance value: 1R0 = 1.0uH
- 4:Tolerance of Inductance:M:±20%
- 5.Packing:Tape Carrier Package

Dimensions: [mm]





Recommended Land Pattern

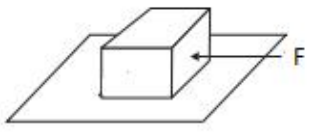
Series	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
MNR4030	4.0±0.2	4.0±0.2	3.0 Max.	3.3±0.2	0.95±0.2	2.1±0.2	1.9	1.1	3.7

Electrical Characteristics List

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	
MNR4030TR47NT	0.47±30%	0.016	0.011	7.80	9.80	5.20	5.90	R47
MNR4030TR68NT	0.68±30%	0.017	0.013	6.80	8.00	4.56	5.10	R68
MNR4030T1R0MT	1.00±20%	0.018	0.016	5.26	5.70	4.15	4.70	1R0
MNR4030T1R2MT	1.20±20%	0.021	0.016	5.80	6.30	3.82	4.20	1R2
MNR4030T1R5MT	1.50±20%	0.026	0.021	4.84	5.30	3.34	3.60	1R5
MNR4030T2R2MT	2.20±20%	0.039	0.034	4.90	5.80	2.95	3.20	2R2
MNR4030T3R3MT	3.30±20%	0.052	0.043	3.30	3.60	2.40	2.60	3R3
MNR4030T4R7MT	4.70±20%	0.078	0.067	2.90	3.20	2.00	2.30	4R7
MNR4030T5R6MT	5.60±20%	0.085	0.077	2.60	2.80	1.95	2.10	5R6
MNR4030T6R8MT	6.80±20%	0.117	0.082	2.40	2.50	1.60	1.70	6R8
MNR4030T8R2MT	8.20±20%	0.117	0.109	2.10	2.30	1.60	1.70	8R2
MNR4030T100MT	10.0±20%	0.130	0.118	1.95	2.40	1.50	1.60	100
MNR4030T150MT	15.0±20%	0.247	0.213	1.65	1.80	1.11	1.20	150
MNR4030T220MT	22.0±20%	0.292	0.250	1.30	1.40	1.00	1.20	220
MNR4030T330MT	33.0±20%	0.429	0.320	1.10	1.20	0.84	0.92	330
MNR4030T470MT	47.0±20%	0.579	0.495	0.95	1.00	0.72	0.80	470
MNR4030T560MT	56.0±20%	0.722	0.556	0.85	0.94	0.65	0.71	560
MNR4030T680MT	68.0±20%	1.128	0.895	0.72	0.80	0.52	0.57	680
MNR4030T820MT	82.0±20%	1.378	1.060	0.66	0.72	0.47	0.52	820
MNR4030T101MT	100.0±20%	1.495	1.250	0.60	0.73	0.45	0.49	101
MNR4030T121MT	120.0±20%	1.755	1.361	0.55	0.60	0.42	0.46	121
MNR4030T151MT	150.0±20%	2.340	2.100	0.50	0.55	0.30	0.35	151
MNR4030T221MT	220.0±20%	3.500	2.930	0.35	0.40	0.30	0.35	221
MNR4030T331MT	330.0±20%	5.500	4.520	0.30	0.35	0.25	0.30	331
MNR4030T471MT	470.0±20%	7.200	5.700	0.28	0.30	0.20	0.25	471

※1: All test data is referenced to 20°C ambient;

※2: Rated current: Isat or Irms, whichever is smaller;
※*3: Isat: DC current at which the inductance drops approximate 30% from its value without current;
※*4: Irms: DC current that causes the temperature rise (△T =40°C) from 20°C ambient.

RELIABILITY TEST			
No.	TEST ITEM	SPECIFICATION	TEST CONDITION
1	High temperature Storage test	1. No significant defects in appearance. 2.ΔL/L ≦ 10% 3.ΔDCR/DCR ≦ 10%	Temperature: 125℃±5℃ (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.ΔL/L ≦ 10% 3.ΔDCR/DCR ≦ 10%	Temperature: -40℃±5℃ (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.ΔL/L ≦ 10% 3.ΔDCR/DCR ≦ 10%	Temperature: 40±2℃ , Humidity: 93±3%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±5°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.ΔL/L ≦ 10% 3.ΔDCR/DCR ≦ 10%	1.Refer to the above reflow curve and go through the reflow for twice. 2.The peak temperature : 260+0/-5℃
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 ㄱY 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 through245 ℃ reflow, apply a standard force on the side of the test samples for 10 seconds. 

We have suggested the storage period of lead-free product should not over 6 months.

SOLDERING CONDITIONS

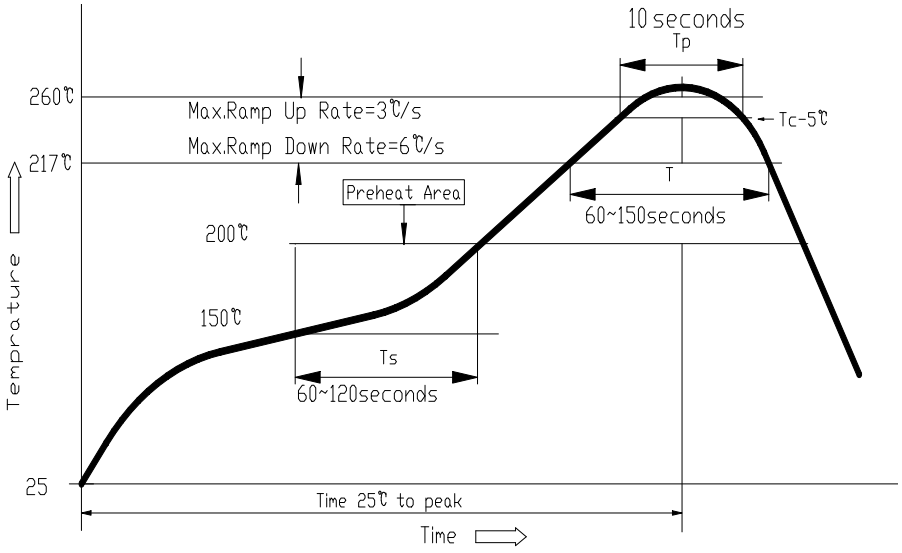
Applicable soldering process to the products is refl.

1 Soldering Materials

(1) Solder:Sn-3.0Ag-0.5Cu

(2) Flux:Use rosin-based flux,but not strongly acidic flux (with xhlorine exceeding 0.2wt%).Do not use water-soluble flux.

2 Reflow Soldering Profile



3 Soldering Iron

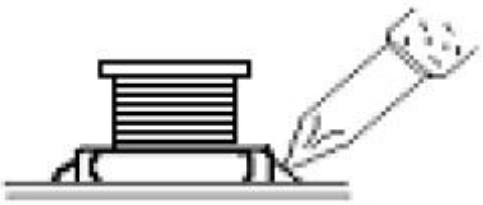
Reworking with electric solding iron must preheating at 150℃ for 1 minute is required,and do not directly touch the core with the tip of the soldering iron.The reworking soldering conditions are as follows.

①Temperature of soldering iron tip:350℃；

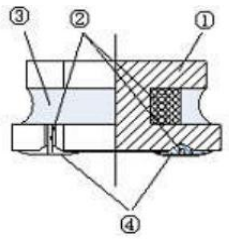
② Soldering iron power output:≤30W；

③ Diameter of soldering iron end:≤1.0mm；

④Soldering time:＜3 s



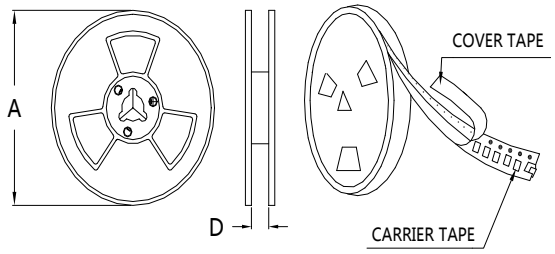
Structure (The structure of product.)



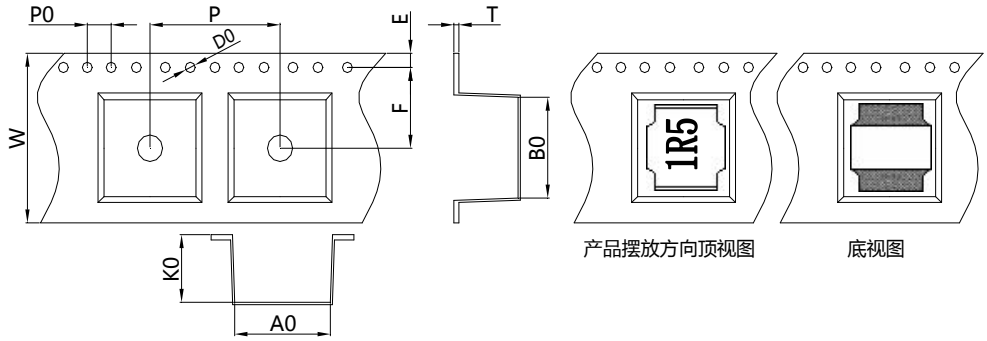
NO	Components	Material
①	Core	Ni-Zn Ferrite
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Plating	AgNiSn or FeNiCu + Sn Alloy

PACKAGING(unit: mm)

☑ 13″ 盘　　☐ 7″ 盘



	13″ 盘	7″ 盘
A	Φ330±2.0	Φ178±2.0
D	12.5	



Size	Item	W	A0	B0	K0	P	T	E	F	D0	P0
4030	(mm)	12.0±0.3	4.4±0.2	4.4±0.2	3.1±0.2	8.0±0.3	0.3±0.1	1.75±0.1	5.5±0.2	1.5±0.1	4.0±0.2

Quantity：2000PCS/Reel