MetalLions

MNR3015 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

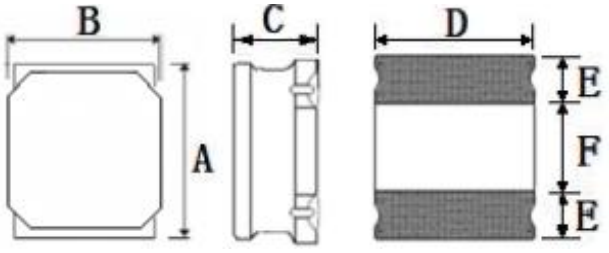
Explanation of Part Number

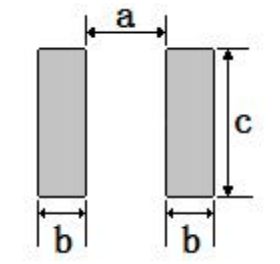
MNR 3015T 1R0 M T

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.
MNR3015	3.0±0.2	3.0±0.2	1.5 Max.	2.5±0.2	0.75±0.2	1.5±0.2	1.50	0.80	2.7

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	
MNR3015TR47NT	0.47±30%	0.030	0.025	3.00	3.50	3.00	3.50	R47
MNR3015T1R0NT	1.0±30%	0.039	0.032	2.35	2.60	2.35	2.50	1R0
MNR3015T1R5NT	1.5±30%	0.065	0.050	2.30	2.70	2.10	2.30	1R5
MNR3015T2R2MT	2.2±20%	0.078	0.064	1.75	1.90	1.60	1.90	2R2
MNR3015T3R3MT	3.3±20%	0.104	0.091	1.32	1.45	1.36	1.50	3R3
MNR3015T4R7MT	4.7±20%	0.163	0.120	1.10	1.20	1.20	1.40	4R7
MNR3015T100MT	10.0±20%	0.325	0.255	0.77	0.85	0.80	0.90	100
MNR3015T150MT	15.0±20%	0.520	0.456	0.66	0.72	0.70	0.85	150
MNR3015T220MT	22.0±20%	0.598	0.469	0.52	0.65	0.57	0.65	220
MNR3015T330MT	33.0±20%	1.100	0.910	0.45	0.50	0.45	0.50	330
MNR3015T470MT	47.0±20%	1.850	1.480	0.35	0.43	0.35	0.43	470

Notes:

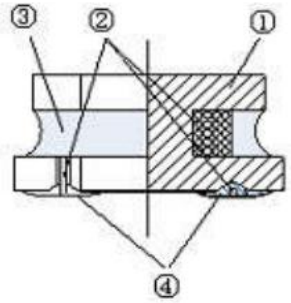
※1: All test data is referenced to 20°C ambient;

※2: Rated current: Isat or Irms, whichever is smaller;

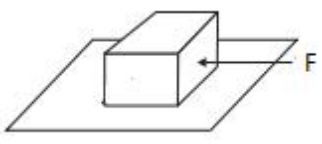
※*3: Isat: DC current at which the inductance drops approximate 30% from its value without current;

※*4: Irms: DC current that causes the temperature rise (△T =40°C) from 20°C ambient.

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

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

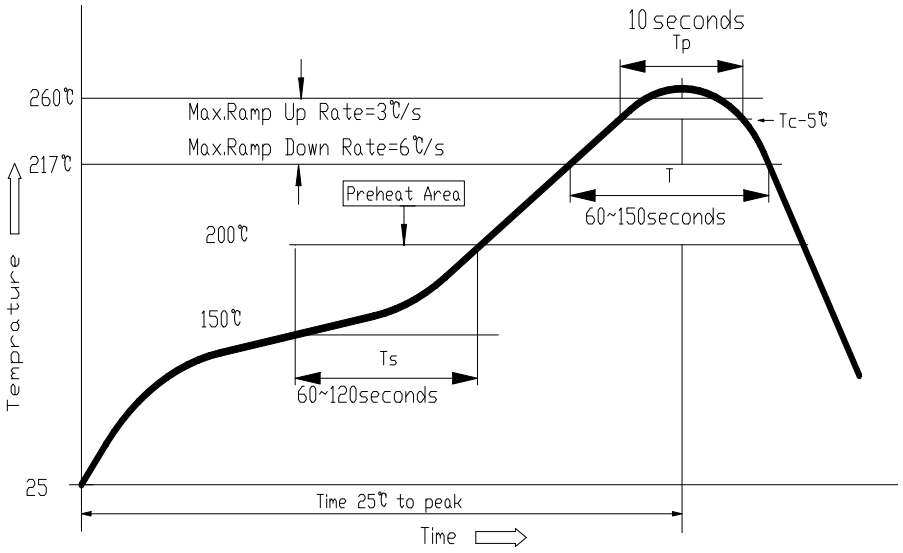
Applicable soldering process to the products is refl.

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；

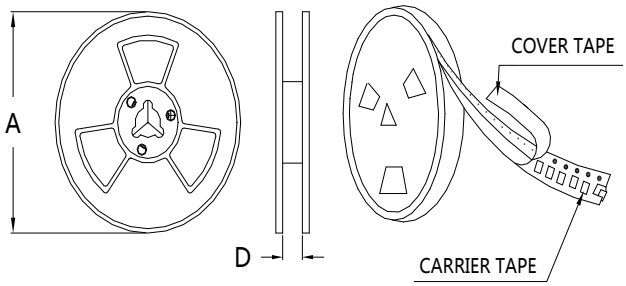
③ Diameter of soldering iron end:≤1.0mm；

④Soldering time:＜3 s

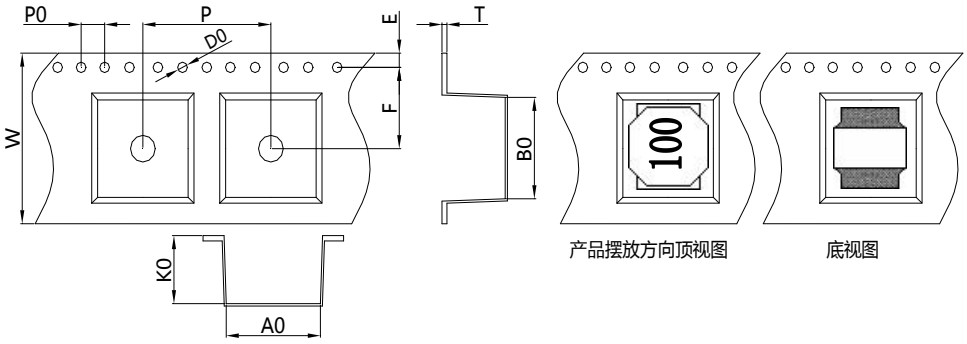


PACKAGING(unit: mm)

☐ 13″ 盘　　☑ 7″ 盘



	13″ 盘	7″ 盘
A	Φ330±2.0	Φ178±2.0
D	8.5	



Item	W	A0	B0	K0	P	T	E	F	D0	P0
(mm)	8.0 ±0.3	3.3±0.15	3.3±0.15	2.0 ±0.1	4.0±0.1	0.3±0.1	1.75±0.1	3.5 ±0.1	1.5 ±0.1	4.0 ±0.1

Quantity：2000PCS/Reel