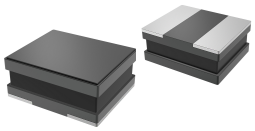
MetalLions

MNR201610 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

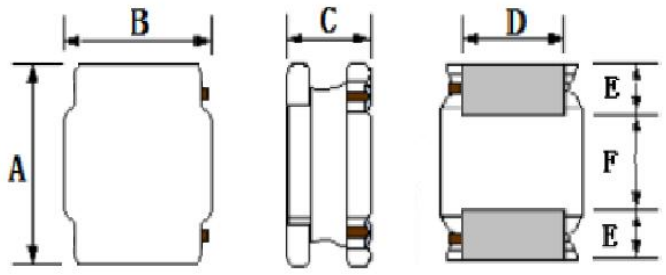
Explanation of Part Number

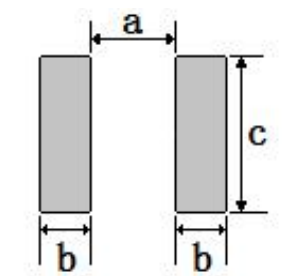
MNR 201610T 1R0 M T

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.
MNR201610T	2.0±0.3	1.6±0.3	1.05 Max.	1.2±0.2	0.6±0.2	0.8±0.2	0.70	0.70	1.70

Electrical Characteristics List

MNR201610 Series

Part Number	Inductance	DC Resistance		Isat(A)		Irms(A)	
	100KHz/1.0V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	（uH）	Ω	Ω	A	A	A	A
MNR201610TR22NT	0.22±30%	0.040	0.033	3.70	4.10	2.80	3.10
MNR201610TR24NT	0.24±30%	0.040	0.033	3.70	4.10	2.80	3.10
MNR201610TR33NT	0.33±30%	0.048	0.043	3.00	3.70	2.40	2.90
MNR201610TR47NT	0.47±30%	0.060	0.052	2.30	2.85	2.30	2.60
MNR201610TR68NT	0.68±30%	0.076	0.068	1.95	2.45	2.00	2.20
MNR201610T1R0MT	1.0±20%	0.114	0.104	1.65	1.85	1.45	1.60
MNR201610T1R5MT	1.5±20%	0.174	0.164	1.35	1.65	1.10	1.20
MNR201610T2R2MT	2.2±20%	0.265	0.232	1.20	1.45	1.05	1.15
MNR201610T3R3MT	3.3±20%	0.345	0.328	1.00	1.20	0.85	0.95
MNR201610T4R7MT	4.7±20%	0.480	0.430	0.75	0.90	0.70	0.80
MNR201610T6R8MT	6.8±20%	0.800	0.715	0.70	0.85	0.55	0.60
MNR201610T8R2MT	8.2±20%	0.940	0.818	0.68	0.78	0.53	0.60
MNR201610T100MT	10±20%	1.000	0.930	0.65	0.70	0.50	0.60

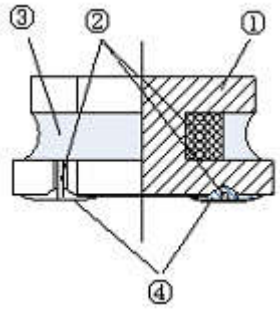
※1: All test data is referenced to 20°C ambient;

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

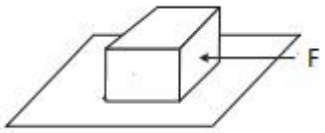
※*3: Isat: DC current at which the inductance drops approximate 30% from its value without current;

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

Structure



NO.	Components	Material
①	Core	Ni-Zn Ferrite
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Electrodes	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

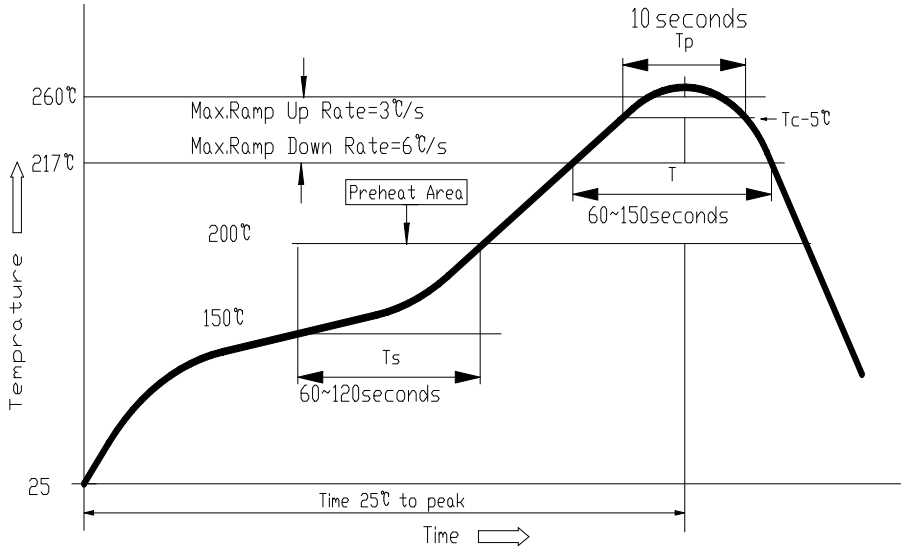
Applicable soldering process to the products is refl.

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;

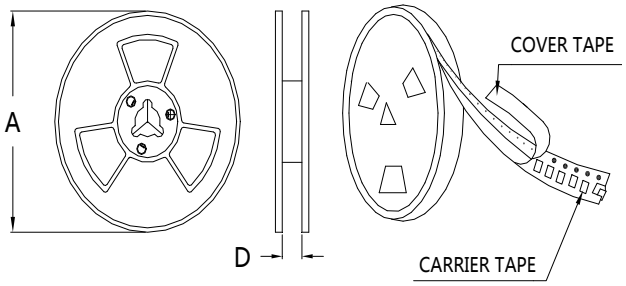
③ Diameter of soldering iron end:≤1.0mm;

④Soldering time:＜3 s

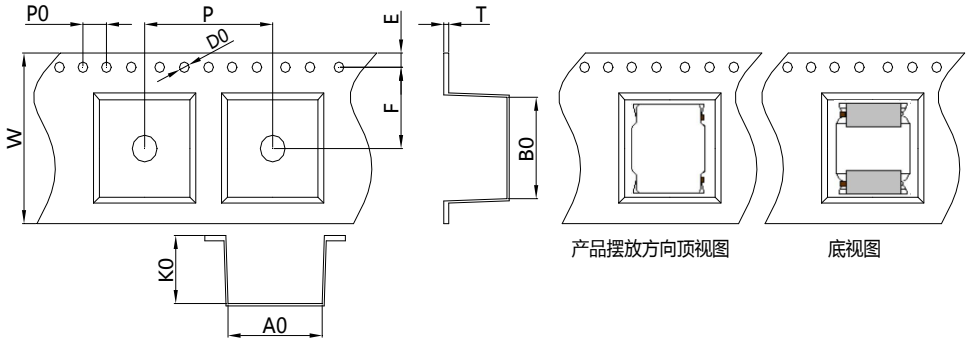


PACKAGING SPECIFICATION :

☐ 13″ 盘　　☑ 7″ 盘



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



Size	Item	W	A0	B0	K0	P	T	E	F	D0	P0
2016	(mm)	8.0±0.1	1.9±0.1	2.2±0.1	1.2±0.1	4.0±0.1	0.25±0.1	1.75±0.1	3.5±0.1	1.5±0.1	4.0±0.1

Packaging Quantity:2000PCS/Reel