

Wire Wound SMD Power Inductor



1. Features

- 1、Magnetic-resin shielded construction reduces buzz noise to ultra-low levels;
- 2、Metallization on ferrite core results in excellent shock resistance and damage-free durability;
- 3、Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI);
- 4、30% higher current rating than conventional inductors of equal size;
- 5、Take up less PCB real estate and save more power。



1) Applications

- 1、LED Lighting;
- 2、Mobile devices with multifunction such as adding color TV and camera;
- 3、Flat-screen TVs, blue-ray disc recorders, set top boxes;
- 4、Notebooks, desktop computers, servers, graphic cards;
- 5、Portable gaming devices, personal navigation systems, personal multimedia devices;
- 6、Automotive systems
- 7、Telecomm base stations

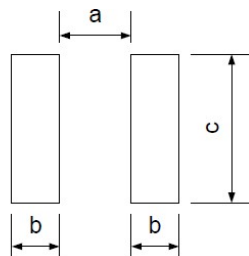
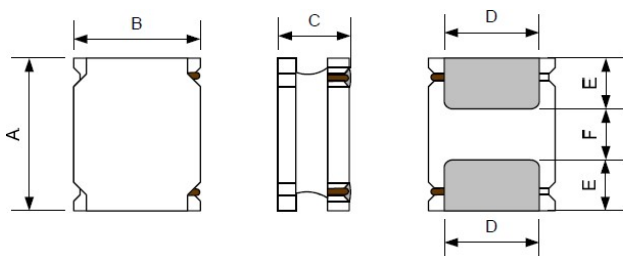
◆ Lead Free Part Numbering

INNER	4018	F	100	M	T
(1)	(2)	(3)	(4)	(5)	(6)

- Series Type
- Dimension: L X H
- Material Code
- Inductance: 2R2=2.2μH;
100=10μH; 101=100μH
- Inductance Tolerance: M=±20%, N=±30%
- Packaging: Tape Carrier Package

2) Dimensions

Recommended Land Pattern



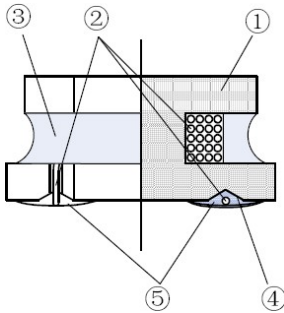
Unit:mm

Series	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
INNER4018F	4.0±0.2	4.0±0.2	1.8Max.	3.3±0.2	0.95±0.2	2.10±0.2	1.9	1.1	3.7

3) Electrical Characteristics

- ◆ Operating temperature range (Including self-heating): $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- ◆ Storage temperature range (packaging conditions): $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ and RH 70% (Max.)

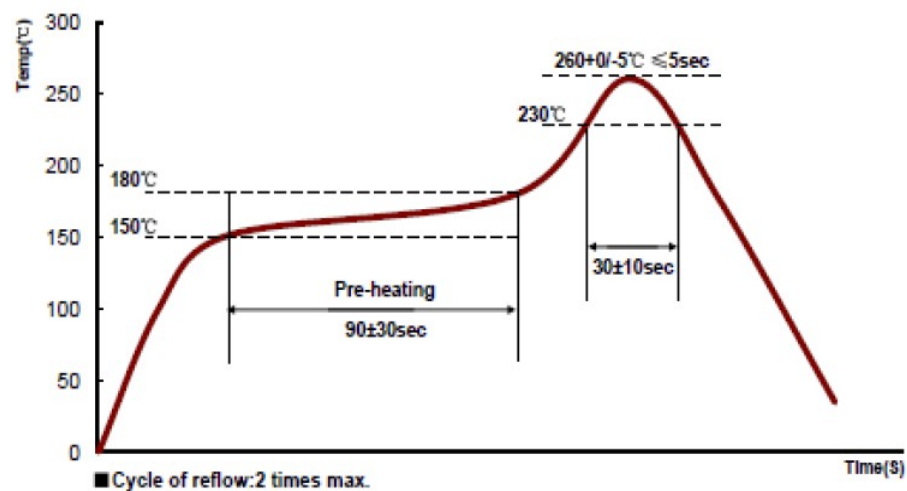
4) Construction and material



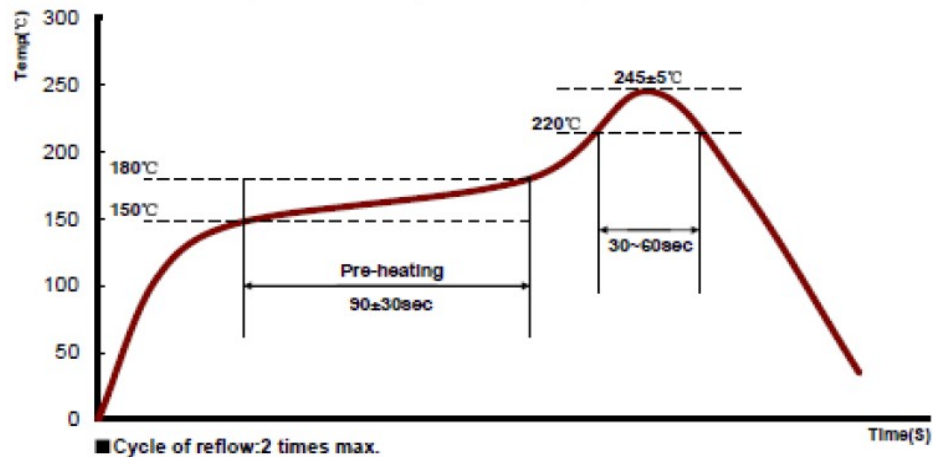
Code	Part Name	Material Name
①	Ferrite Core	Ni-Zn Ferrite
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Plating Electrodes	Ag
		Ni
		Sn
⑤	Outer Electrodes	Top surface solder coating Sn、Ag、Cu

5) REFLOW-PROFILE

Limit Profile



Standard Profile (for EOC Solder paste S70G-HF)



6) Specification

Part Number	Inductance @100KHz, 1V (μH)	DC Resistance±30% (Ω)	Min.Self- resonant Frequency (MHz)	Saturation Current(A)	Heat Rating Current (A)
		DCR	S.R.F	Isat	Irms
INNER4018F Series					
INNER4018F1R0MT	1.0±20%	0.025	80	4.8	2
INNER4018F1R5MT	1.5±20%	0.03	65	3.35	1.8
INNER4018F2R2MT	2.2±20%	0.045	52	3	1.65
INNER4018F3R3MT	3.3±20%	0.07	44	2.45	1.23
INNER4018F4R7MT	4.7±20%	0.09	34	2	1.2
INNER4018F5R6MT	5.6±20%	0.105	32	1.65	1.1
INNER4018F6R8MT	6.8±20%	0.11	29	1.45	1.06
INNER4018F100MT	10±20%	0.18	24	1.3	0.84
INNER4018F150MT	15±20%	0.25	19	0.94	0.65
INNER4018F220MT	22±20%	0.36	16	0.8	0.59
INNER4018F330MT	33±20%	0.53	12	0.65	0.49
INNER4018F470MT	47±20%	0.65	10	0.57	0.42
INNER4018F680MT	68±20%	1	8.3	0.47	0.32
INNER4018F101MT	100±20%	1.75	6.5	0.4	0.25
INNER4018F151MT	150±20%	2.5	5.5	0.31	0.22
INNER4018F221MT	220±20%	4	4	0.27	0.17

7) Note

1: All test data is referenced to 20℃ ambient; 2:

Rated current: Isat or Irms, whichever is smaller;

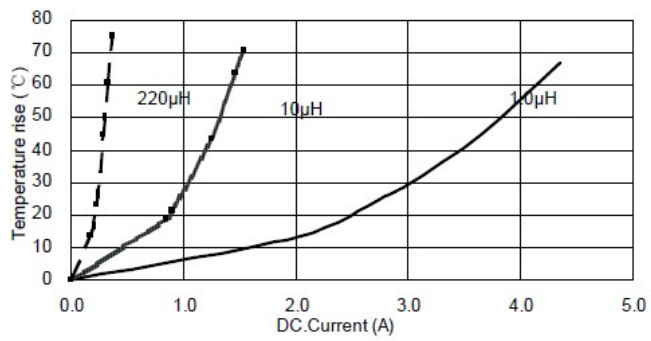
3: Isat: DC current at which the inductance drops approximate 30% from its value without current; 4:

Irms: DC current that causes the temperature rise ($\Delta T = 40^{\circ}\text{C}$) from 20℃ ambient.

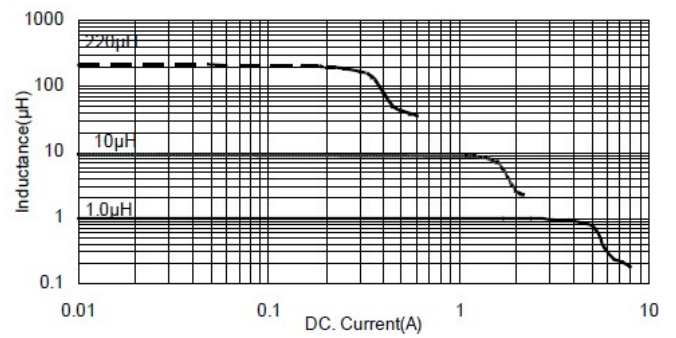
8) TYPICAL ELECTRICAL CHARA

INNER4018F Series

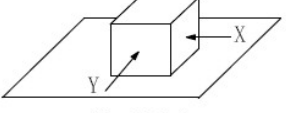
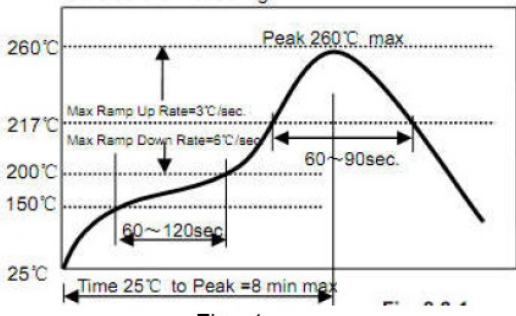
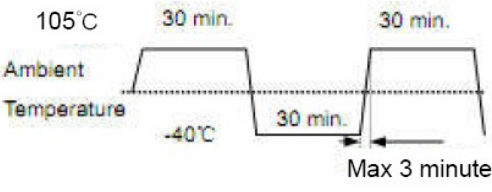
Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics

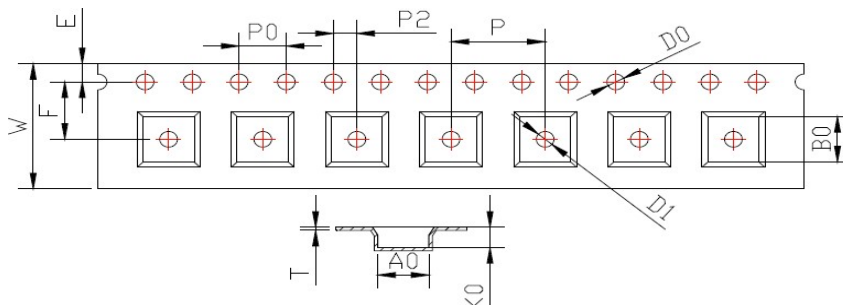


9) Reliability Test

Items	Requirements	Test Methods and Remarks
A. Terminal Strength	No removal or split of the termination or other defects shall occur.  Fig.7.1-1	1) Solder the inductor to the testing jig (glass epoxy board shown in Fig.7.1-1) using eutectic solder. Then apply a force in the direction of the arrow. 2) 10N force. 3) Keep time: 5±2s
B. High Temperature	1. No visible mechanical damage. 2. Inductance change: Within ±10%	1) Storage Temperature :125+/-5℃ 2) Duration : 96 ±4 Hours 3) Recovery : then measured at room ambient temperature after placing 24 hours.
C. Low Temperature	1. No visible mechanical damage 2. Inductance change: Within ±10%	1) Temperature and time: -40±5℃ 2) Duration: 96±4 hours 3) TRecovery : then measured at room ambient temperature after placing 24 hours.
D. Vibration test	1. No visible mechanical damage. 2. Inductance change: Within ±10%	1) Frequency range:10HZ~55HZ~10HZ 2) Amplitude:1.5mm p-p 3) Direction:X,Y,Z 4) Time:1 minute/cycle,2hours per axis
E. High Temperature Storage Tested	1. No visible mechanical damage. 2. Inductance change: Within ±10%	1) Storage Temperature :60+/-2℃ 2) Relative Humidity :90-95% RH 3) Duration : 96 ±4 Hours 4) Recovery : then measured at room ambient temperature after placing 24 hours.
F. Resistance to Soldering Heat	1. No visible mechanical damage. 2. Inductance change: Within ±10%  Fig. 1	1) Re-flowing Profile: Please refer to Fig. 1 2) Test board thickness: 1.0mm 3) Test board material: glass epoxy resin 4) The chip shall be stabilized at normal condition for 1~2 hours before measuring
G. Thermal Shock	1. No visible mechanical damage. 2. Inductance change: Within ±10%  Fig. 2	1) Temperature and time: -40±3℃ for 30±3 min→105℃ for 30±3min, please refer to Fig. 2. 2) Transforming interval: Max, 3 minute 3) Tested cycle: 100 cycles 4) The chip shall be stabilized at normal condition for 1~2 hours before measuring

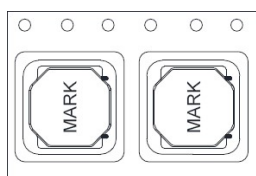
10) Packaging and Marking:

Carrier Tape Dimensions:

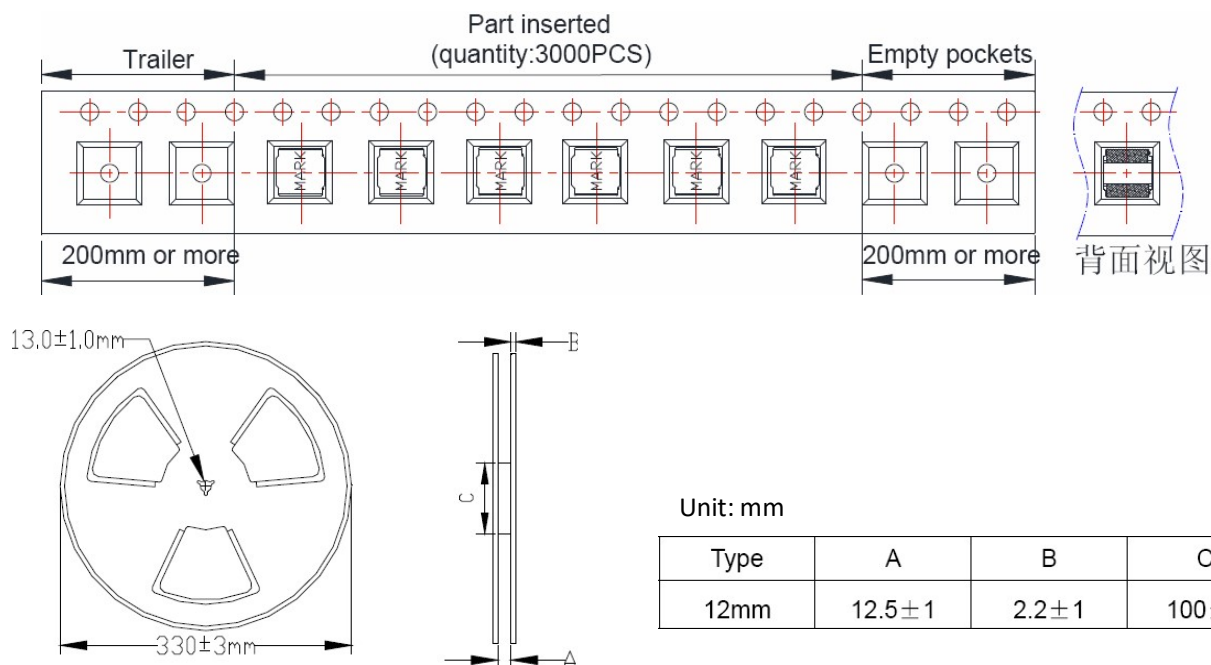


ITEM	W	A0	B0	K0	P	F	E	D0	D1	P0	P2	T
DIM	12	4.3	4.3	1.6	8	5.5	1.75	1.5	1.5	4	2	0.3
TOLE	0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	0.1	0.1	±0.1	±0.1	±0.05

Taping Dimensions:



Reel Dimensions:



Unit: mm

Type	A	B	C
12mm	12.5±1	2.2±1	100±1

Packaging Quantity:

Standard Packing Quantity. 3000 pcs/reel