



◆ 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.



◆ Applications

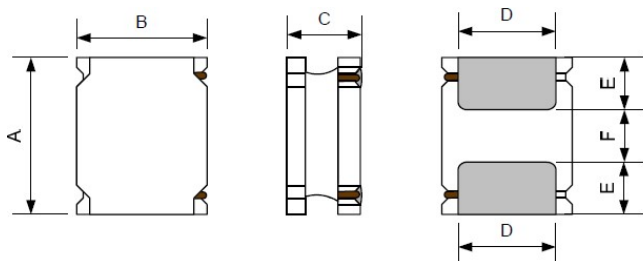
- 1、LED Lighting;
- 2、Mobile devices with multifunction such as adding color TV and camera;
- 3、Flat-screen TVs, blue-ray disc recorders, set top boxes;
- 4、Notebooks, desktop computers, servers, graphic cards;
- 5、Portable gaming devices, personal navigation systems, personal multimedia devices;
- 6、Automotive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

◆ Lead Free Part Numbering

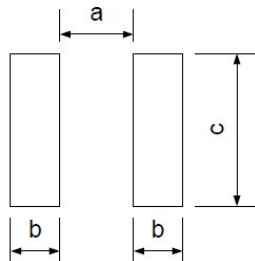
INNER	3015	S	100	M	T
(1)	(2)	(3)	(4)	(5)	(6)

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

◆ Dimensions



Recommended Land Pattern



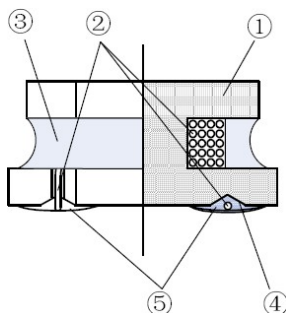
Unit:mm

Series	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
INNER3015F	3.0±0.2	3.0±0.2	1.5Max.	2.5±0.2	0.75±0.2	1.50±0.2	1.5	0.8	2.7

◆ Electrical Characteristics

- 1) Operating and storage temperature range (individual chip without packing): cking): $-25^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- 2) Storage temperature range (packaging conditions): $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ and RH 70% (Max.)

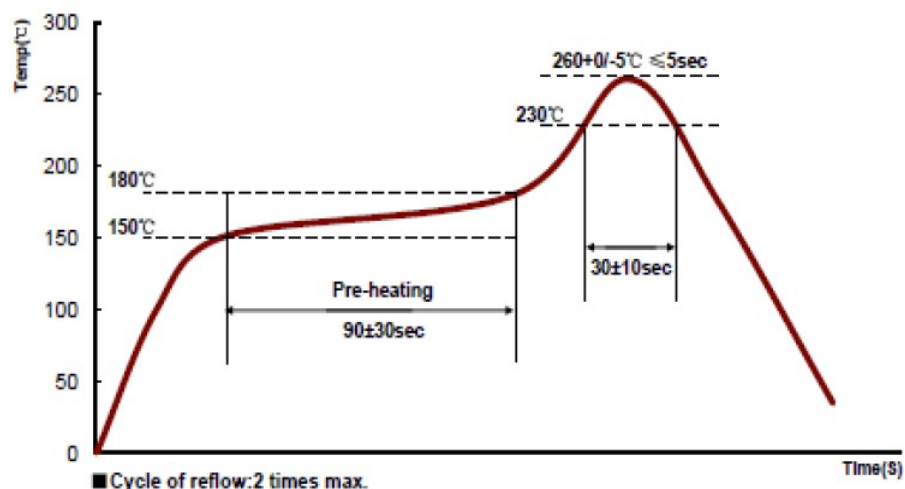
◆ Construction and material



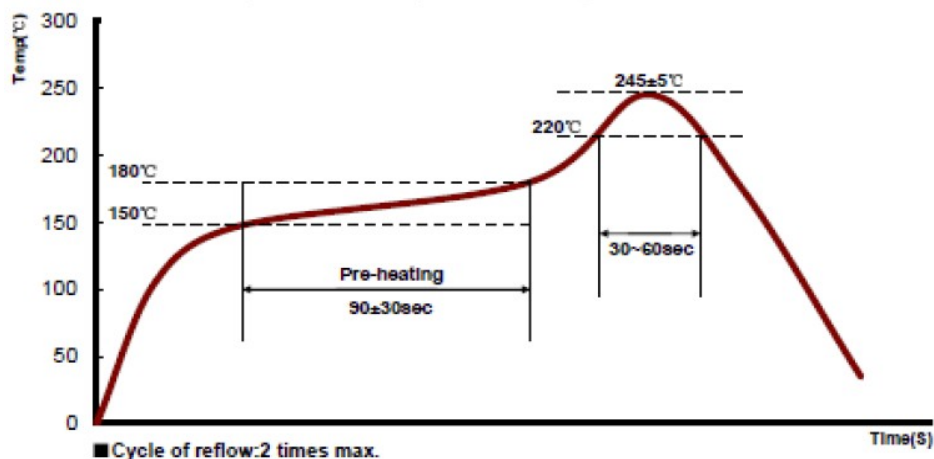
Code	Part Name	Material Name
①	Ferrite Core	Ni-Zn Ferrite
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Plating Electrodes	Ag
		Ni
		Sn
⑤	Outer Electrodes	Top surface solder coating Sn、Ag、Cu

◆ REFLOW-PROFILE

Limit Profile



Standard Profile (for EOC Solder paste S70G-HF)



◆ Specification

Part Number	Inductance @100KHz, 0.25V (μ H)	DC Resistance $\pm 30\%$ (m Ω)	Saturation Current(A)		Heat Rating Current (A)	
		DCR	Max	Typ	Max	Typ
INNER3015F1R0MST	1.0 $\pm 20\%$	30	2.32	2.80	2.10	2.50
INNER3015F1R5MST	1.5 $\pm 20\%$	50	2.00	2.70	1.70	2.20
INNER3015F2R2MST	2.2 $\pm 20\%$	60	1.60	2.00	1.60	2.00
INNER3015F2R7MST	2.7 $\pm 20\%$	75	1.52	1.90	1.50	1.90
INNER3015F3R3MST	3.3 $\pm 20\%$	80	1.32	1.81	1.36	1.60
INNER3015F4R7MST	4.7 $\pm 20\%$	125	1.10	1.40	1.09	1.30
INNER3015F6R8MST	6.8 $\pm 20\%$	200	0.85	1.10	0.85	1.10
INNER3015F100MST	10 $\pm 20\%$	250	0.72	0.92	0.77	0.90
INNER3015F120MST	12 $\pm 20\%$	320	0.70	0.90	0.68	0.89
INNER3015F150MST	15 $\pm 20\%$	350	0.66	0.88	0.65	0.72
INNER3015F180MST	18 $\pm 20\%$	430	0.56	0.72	0.59	0.72
INNER3015F220MST	22 $\pm 20\%$	460	0.52	0.68	0.57	0.68
INNER3015F330MST	33 $\pm 20\%$	820	0.44	0.53	0.42	0.51
INNER3015F470MST	47 $\pm 20\%$	1250	0.35	0.43	0.32	0.44
INNER3015F560MST	56 $\pm 20\%$	1280	0.33	0.42	0.34	0.41
INNER3015F680MST	68 $\pm 20\%$	2700	0.28	0.37	0.23	0.31
INNER3015F101MST	100 $\pm 20\%$	3110	0.23	0.25	0.21	0.25

◆ Note

1. All test data is referenced to 20°C ambient; 2.

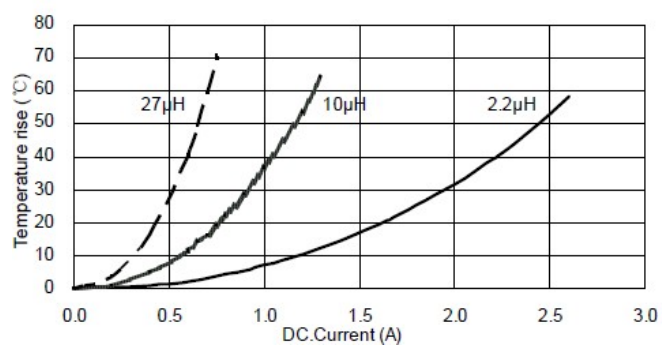
Rated current: Isat or Irms, whichever is smaller;

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 ($\Delta T = 40^\circ\text{C}$) from 20°C ambient.

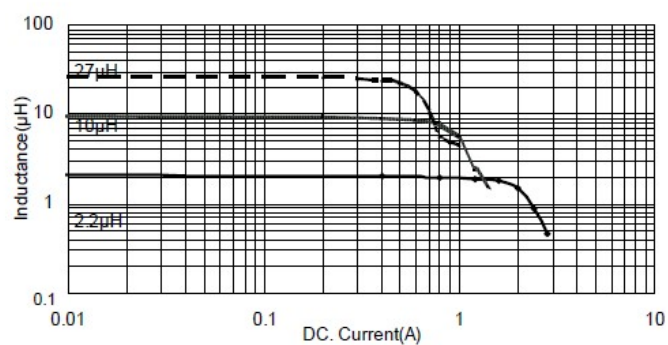
◆ TYPICAL ELECTRICAL CHARACTERISTICS

INNER3015 Series

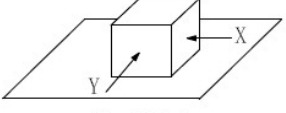
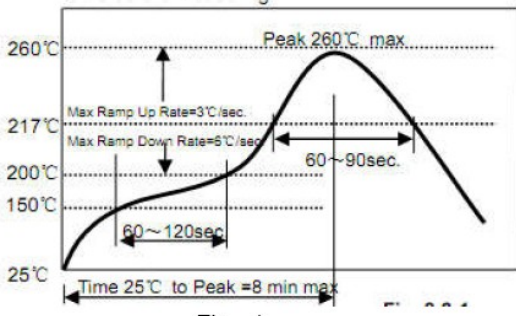
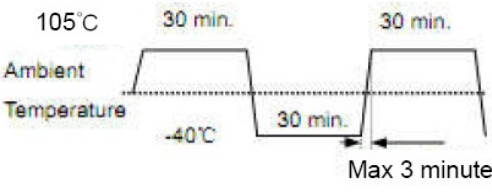
Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics

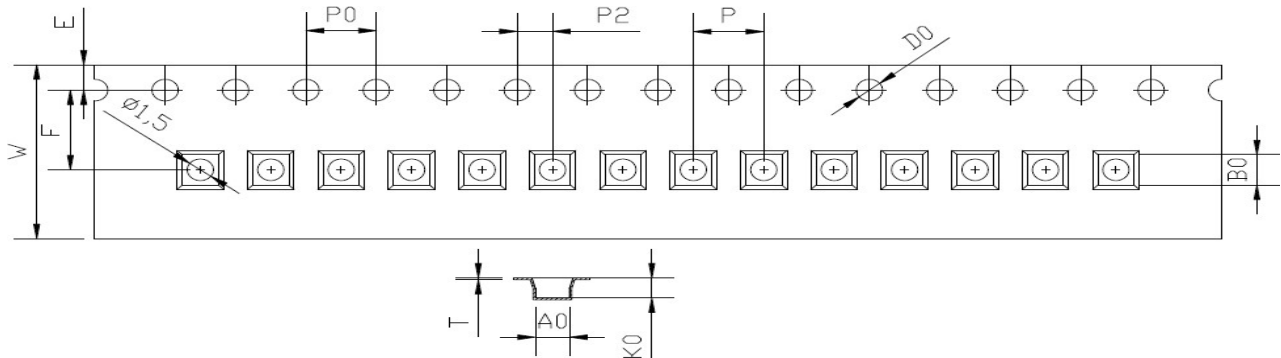


◆ Reliability Test

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

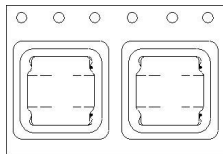
◆ Packaging and Marking:

1. Carrier Tape Dimensions:

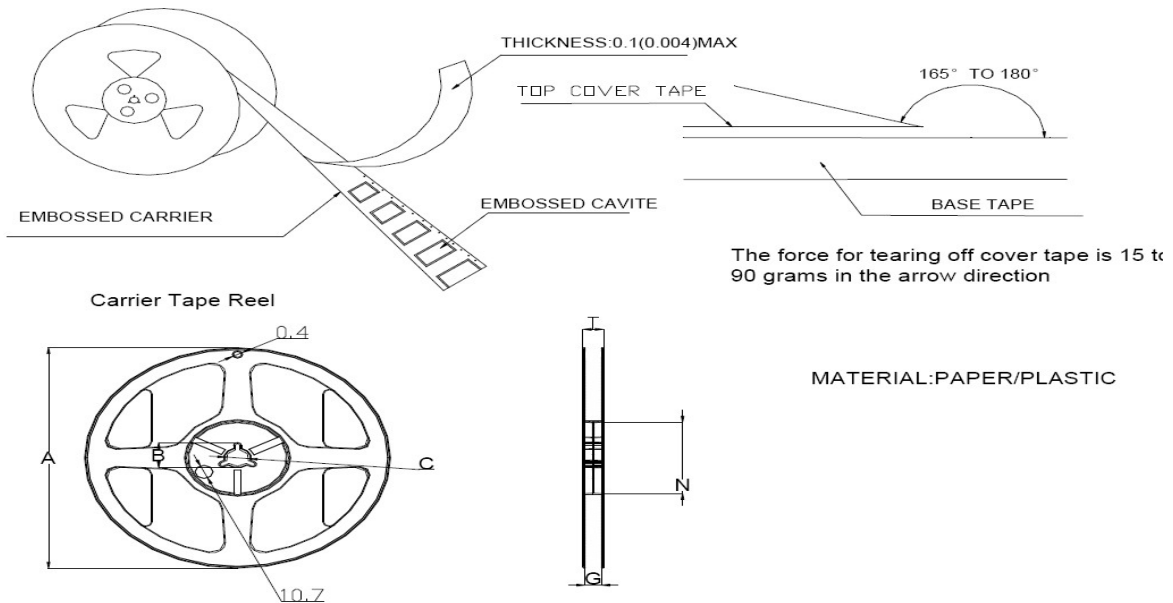


ITEM	W	A0	B0	K0	P	F	E	D0	P0	P2	T
DIM	8.00	3.3	3.3	1.6	4.00	3.50	1.75	1.50	4.00	2.00	0.25
TOLE	±0.1	±0.05	±0.05	±0.1	±0.1	±0.1	±0.1	+0.1	±0.1	±0.1	±0.05

2. Taping Dimensions:



3. Reel Dimensions:



Type	A	B	C	G	N	T
8mm	178	20.7±0.8	13±0.4	9	60	10.8

4. Packaging Quantity:

Standard Packing Quantity: 2000 pcs/reel