

## Specification Sheet for Approved

Customer Name:	
Customer Part No.:	
Ceaiya Part No:	CMPI0415 Series
Spec No:	L0415

### 【For Customer Approval Only】

If you Approval, Please Stamp

### 【RoHS Compliant Parts】

Approved By	Checked By	Prepared By
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# Specification Sheet for SMD Power Inductor

## 【Version of Changed Record】

Rev.	Effective Date	Changed Contents	Change Reasons	Approved By
A0	2024-05-23	New release	/	Li qing hui

# Specification Sheet for SMD Power Inductor

## 1. Scope

This specification applies to the CMPI0415 Series of wire wound SMD power inductor.

## 2. Product Description and Identification (Part Number)

### 1) Description:

CMPI0415 series of Wire wound SMD power inductor.

### 2) Product Identification (Part Number)

**CMPI**      **0415** - **1R0**      **M**

①              ②              ③              ④

① Product Series

② Choke Size

③ Initial Inductance(L @ 0A):1R0=1.0 $\mu$ H

④ Inductance Tolerance:M=±20%

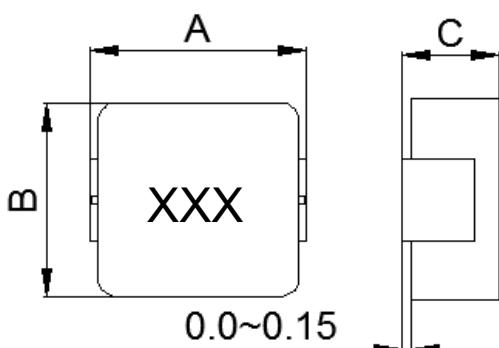
## 3. Electrical Characteristics

1) Operating temperature range (individual chip without packing): -40°C ~ +125°C (Including Self-heating) .

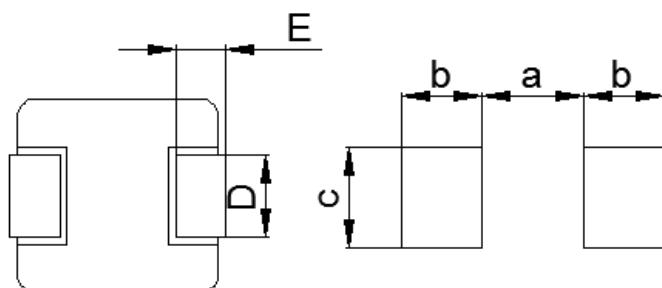
2) Storage temperature range (On PCB ): -40°C ~ +125°C

## 4. Shape and Dimensions (Unit:mm)

Mechanical Parameters



Recommended PCB Layout



A	B	C	D	E	a	b	c
4.40	4.20	1.5	2.0	0.8	2.2	1.5	2.5
±0.35	±0.25	Max	±0.3	±0.3	Typ.	Typ.	Typ.

### Notes:

1. Marking :Ink Marking
2. Stamping XXX :inductor
3. Dimensions of recommended PCB layout are reference only.
4. Do not route traces nor place vias underneath the inductor. Proper layout is required.

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## 5. Electrical Characteristics

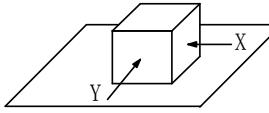
Part Number	L0(uH) ±20%	DCR(mΩ) @25°C		Isat(Amp) Typ.	Irms(Amp) Typ.
		Max.	Typ.		
CMPI0415-1R0M	1.0	28	23	7.0	5.6
CMPI0415-1R5M	1.5	42	35	5.5	4.5
CMPI0415-2R2M	2.2	65	58	4.5	3.2

### Notes:

1. Initial Inductance (L<sub>0</sub>) Test Parameters: 100KHz, 1V, I<sub>dc</sub>=0.0A, +25°C
2. Isat(A): DC current at which the inductance drops approximate 30% from its value without current;
3. Irms(A): DC current that causes the temperature rise ( $\Delta T = 40^\circ\text{C}$ ) from 25°C ambient.
4. The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

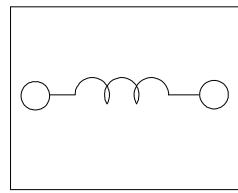
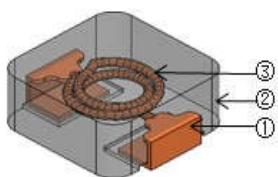
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## 6. Reliability Test

Items	Requirements	Test Methods and Remarks
6.1 Terminal Strength	No removal or split of the termination or other defects shall occur.   Fig.6.1-1	1) Solder the inductor to the testing jig (glass epoxy board shown in Fig.6.1-1) using eutectic solder. Then apply a force in the direction of the arrow. 2) 10N force. 3) Keep time: $5\pm2$ s
6.2 High Temperature	1. No visible mechanical damage. 2. Inductance change: Within $\pm 10\%$	1) Storage Temperature: $125\pm 5^\circ\text{C}$ 2) Duration: $96\pm 4$ Hours 3) Recovery: then measured at room ambient temperature after placing 24 hours.
6.3 Low Temperature	1. No visible mechanical damage 2. Inductance change: Within $\pm 10\%$	1) Temperature and time: $-40\pm 5^\circ\text{C}$ 2) Duration: $96\pm 4$ hours 3) Recovery: then measured at room ambient temperature after placing 24 hours.
6.4 Vibration test	1. No visible mechanical damage. 2. Inductance change: Within $\pm 10\%$	1) Frequency range: $10\text{Hz}\sim 55\text{Hz}\sim 10\text{Hz}$ 2) Amplitude: $1.5\text{mm p-p}$ 3) Direction: X, Y, Z 4) Time: 1 minute/cycle, 2 hours per axis
6.5 High Temperature Storage Tested	1. No visible mechanical damage. 2. Inductance change: Within $\pm 10\%$	1) Storage Temperature: $60\pm 2^\circ\text{C}$ 2) Relative Humidity: 90-95% 3) Duration: $96\pm 4$ Hours 4) Recovery: then measured at room ambient temperature after placing 24 hours.
6.6 Resistance to Soldering Heat	1. No visible mechanical damage. 2. Inductance change: Within $\pm 10\%$	1) Re-flowing Profile: Please refer to Fig.6.6-1 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
6.7 Thermal Shock	1. No visible mechanical damage. 2. Inductance change: Within $\pm 10\%$	1) Temperature and time: $-40\pm 3^\circ\text{C}$ for $30\pm 3$ min $\rightarrow 105^\circ\text{C}$ for $30\pm 3$ min, please refer to Fig.6.7-1. 2) Transforming interval: Max, 3 minutes 3) Tested cycle: 100 cycles 4) The chip shall be stabilized at normal condition for 1~2 hours before measuring

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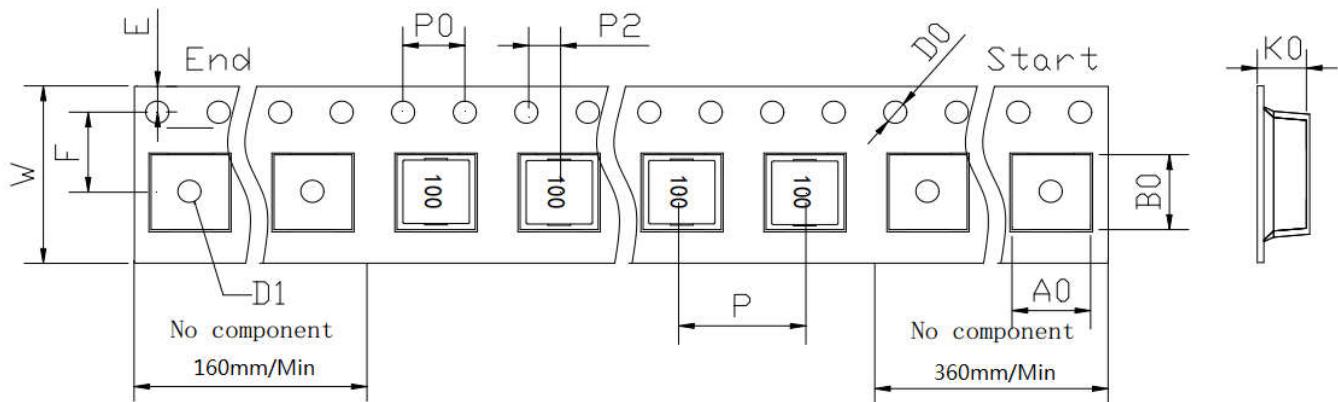
## 7. MATERIAL LIST



NO.	Part Name	Material
1	Electrode	Cu+Sn plating
2	Core	Metal composite core
3	Coil	Copper wire, 220°C

## 8. PACKAGE INFORMATION-mm

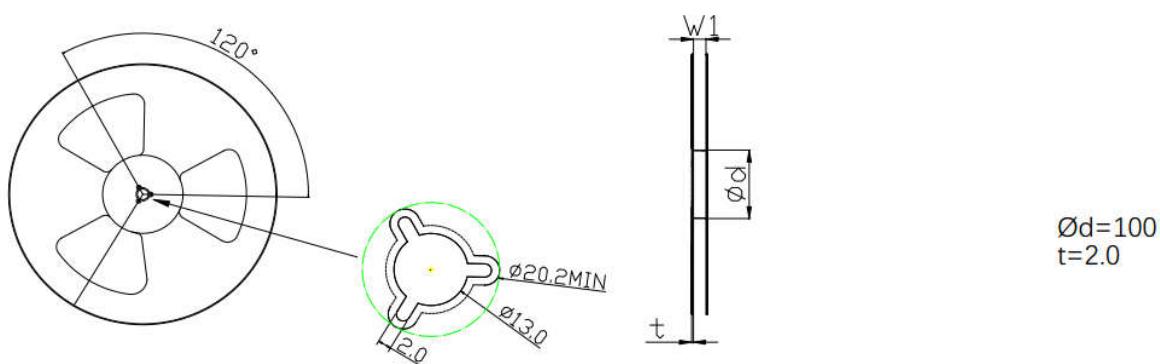
### 8.1 Tape Packaging Dimensions



Item	W	A0	B0	K0	P	F	E	D0	D1	P0	P2	T
DIM	12.0	4.4	4.9	1.8	8.0	5.5	1.75	1.5	1.5	4.0	2.0	0.35
Tole	±0.3	Typ.	Typ.	Typ.	±0.1	±0.1	±0.1	±0.1	±0.0	±0.1	±0.1	Typ.

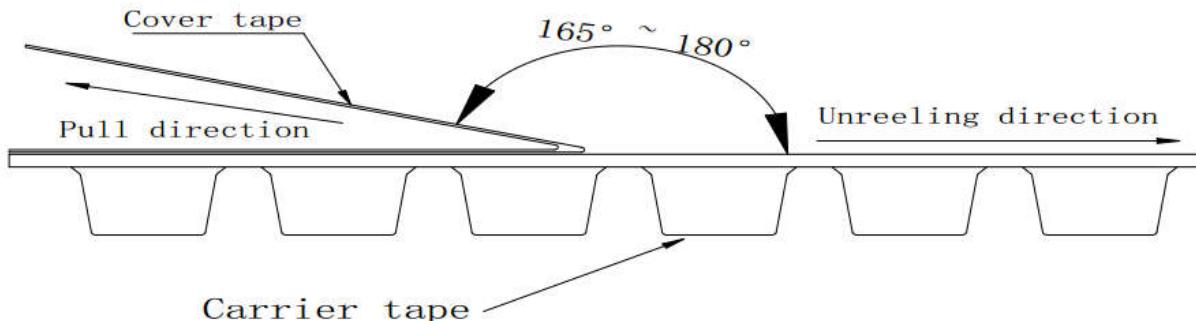
### 8.2 Reel Dimensions

直径 Diameter: 330mm (13')



## 盖带剥离条件 Cover tape peel off condition

- 盖带剥离力度为0.1~1.3N。Cover Tape peel force shall be 0.1 to 1.3N.
- 参考剥离速度300±10mm/分钟。Reference peel speed 300±10mm/min.



## 8.3 Taping Quantity

3000pieces/Reel,

## 8.4 Carton

Pizza packaging: 3Reel/ Pizza Box

External Packaging :3 Boxes/Carton