

Specification Sheet for Approved

| | |
|--------------------|-----------------|
| Customer Name: | |
| Customer Part No.: | |
| Ceaiya Part No: | CMPI0420 Series |
| Spec No: | L0421 |

【For Customer Approval Only】

If you Approval, Please Stamp

【RoHS Compliant Parts】

| Approved By | Checked By | Prepared By |
|-------------|------------|-------------|
| 李庆辉 | 刘志坚 | 劳水花 |

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Specification Sheet for SMD Power Inductor

【Version of Changed Record】

| Rev. | Effective Date | Changed Contents | Change Reasons | Approved By |
|------|----------------|------------------|------------------|-------------|
| A0 | 2021-11-11 | New release | Internal changes | Li qin hui |
| | | | | |

Specification Sheet for SMD Power Inductor

1. Scope

This specification applies to the CMPI0420 Series of wire wound SMD power inductor.

2. Product Description and Identification (Part Number)

1) Description:

CMPI0420 series of Wire wound SMD power inductor.

2) Product Identification (Part Number)

CMPI **0420** - **1R0** **M**
 ① ② ③ ④

- ① Product Series
- ② ChokeSize
- ③ InitialInductance(L@ 0A):1R0=1.0μH
- ④ InductanceTolerance:M=L+/-20%

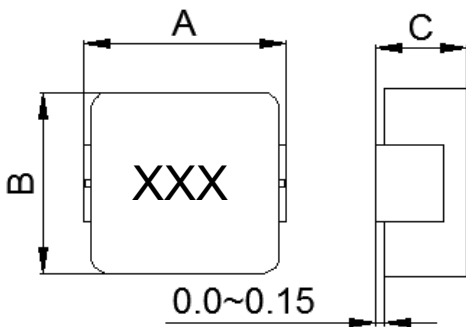
3. Electrical Characteristics

- 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

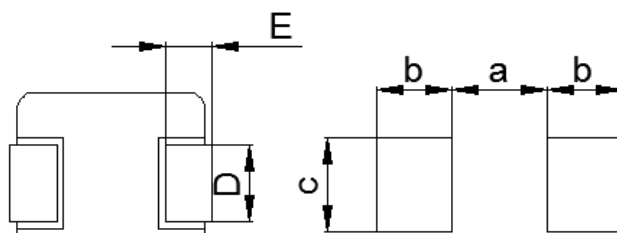
4. Shape and Dimensions (Unit:mm)

Dimensions and recommended PCB pattern for reflow soldering, please see

MECHANICALPARAMETERS



RECOMMENDEDPCBLAYOUT



| A | B | C | D | E | a | b | c |
|-------|-------|------|-------|-------|------|------|------|
| 4.50 | 4.20 | 2.0 | 2.0 | 0.8 | 2.2 | 1.5 | 2.5 |
| ±0.30 | ±0.25 | Max. | ±0.30 | ±0.30 | 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

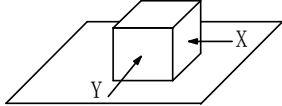
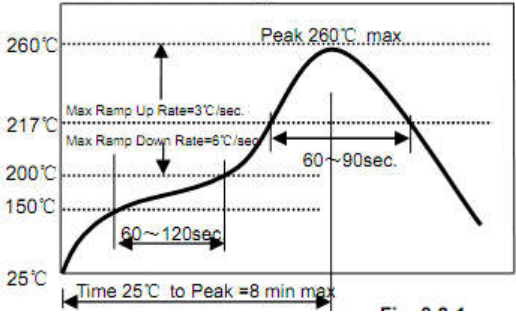
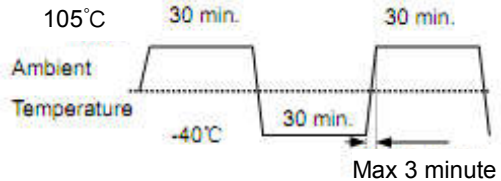
| Part Number | L0(uH) ±20% | DCR(mΩ) @25°C | | Isat(Amp) Typ. | Irms(Amp) Typ. |
|---------------|----------------|------------------|------|-------------------|-------------------|
| | | Max. | Typ. | | |
| CMPI0420-R47M | 0.47 | 14 | 12.5 | 9.5 | 7.0 |
| CMPI0420-R56M | 0.56 | 16 | 14 | 8.5 | 6.5 |
| CMPI0420-R68M | 0.68 | 21 | 18 | 8.0 | 6.0 |
| CMPI0420-1R0M | 1.0 | 27 | 24 | 7.0 | 4.5 |
| CMPI0420-1R5M | 1.5 | 46 | 40 | 6.0 | 4.0 |
| CMPI0420-2R2M | 2.2 | 60 | 52 | 5.0 | 3.0 |
| CMPI0420-3R3M | 3.3 | 87 | 74 | 4.0 | 2.5 |
| CMPI0420-4R7M | 4.7 | 105 | 92 | 3.0 | 2.2 |
| CMPI0420-6R8M | 6.8 | 175 | 140 | 2.5 | 2.0 |
| CMPI0420-100M | 10 | 258 | 220 | 2.0 | 1.4 |

Notes:

1. Initial Inductance (L0) Test Parameters: 100KHz,1V,Idc=0.0A,+25°C
2. All test data is referenced to 25°C ambient;
3. Rated current: Isat or Irms, whichever is smaller;
4. Irms(A):DC current that causes the temperature rise ($\Delta T = 40^\circ \text{C}$) from 25°C ambient.
5. Isat(A):DC current at which the inductance drops approximate 30% from its value without current;

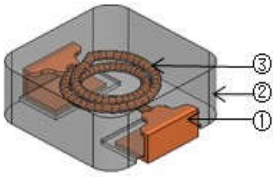
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6. Reliability Test

| 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±2s |
| 6.2 High Temperature | 1. No visible mechanical damage. 2. Inductance change: Within ±10% | 1) Storage Temperature :125+/-5°C 2) Duration : 96 ±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 ±10% | 1) Temperature and time: -40±5°C 2) Duration: 96±4 hours 3) TRecovery : then measured at room ambient temperature after placing 24 hours. |
| 6.4 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 |
| 6.5 High Temperature Storage Tested | 1. No visible mechanical damage. 2. Inductance change: Within ±10% | 1)Storage Temperature :60+/-2°C 2) Relative Humidity :90-95% 3) Duration : 96 ±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 ±10%  Fig.6.6-1 | 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 ±10%  Fig.6.7-1 | 1) Temperature and time: -40±3°C for 30±3 min→105°C for 30±3min, please refer to Fig.6.7-1. 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 |

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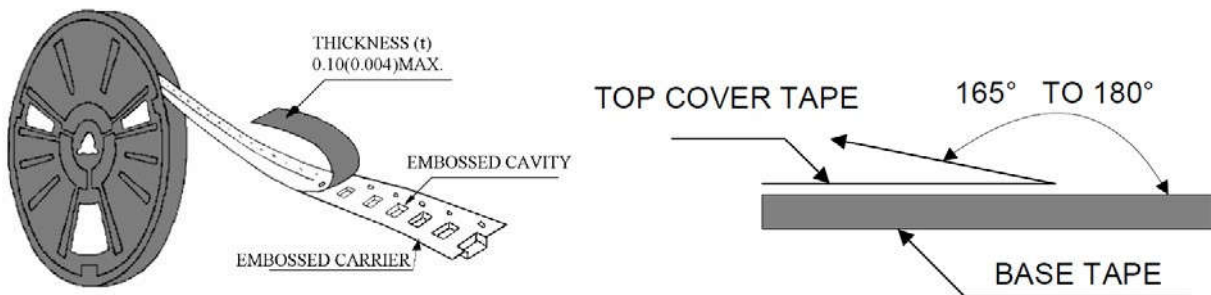
7. MATERIALLIST



| NO. | Part Name | Material |
|-----|-----------|--------------------|
| 1 | Electrode | Cu+Snplating |
| 2 | Core | Metalcompositecore |
| 3 | Coil | Copperwire,220°C |

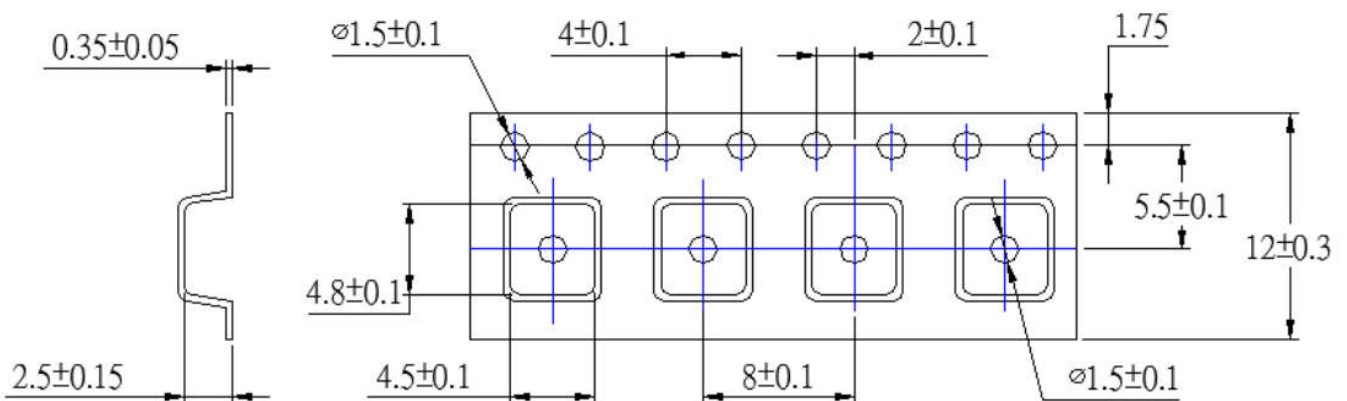
8. PACKAGE INFORMATION-mm

Peel-off Force



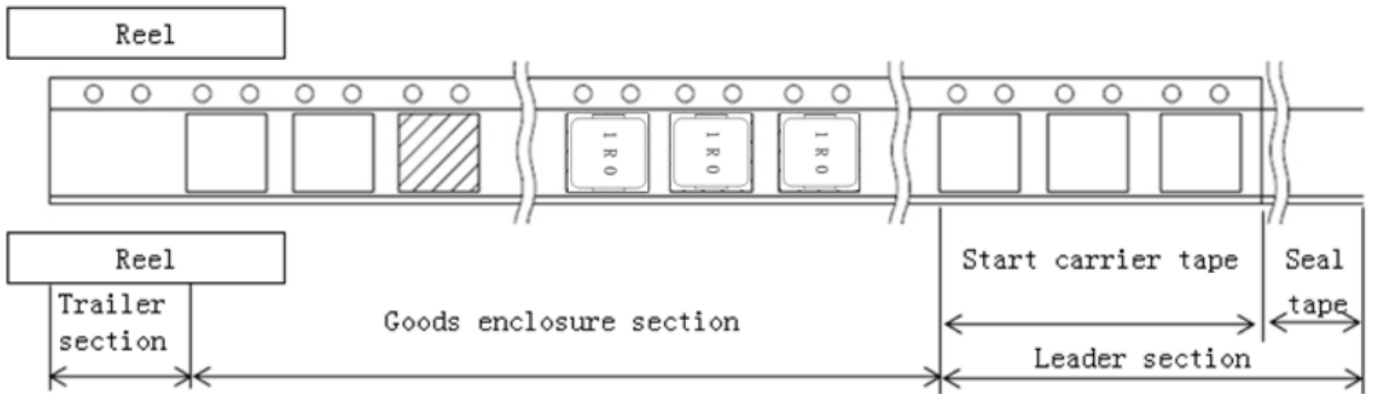
The force for peeling off cover tape is 10 to 70 grams in the arrow direction.

8.1TapePackagingDimensions



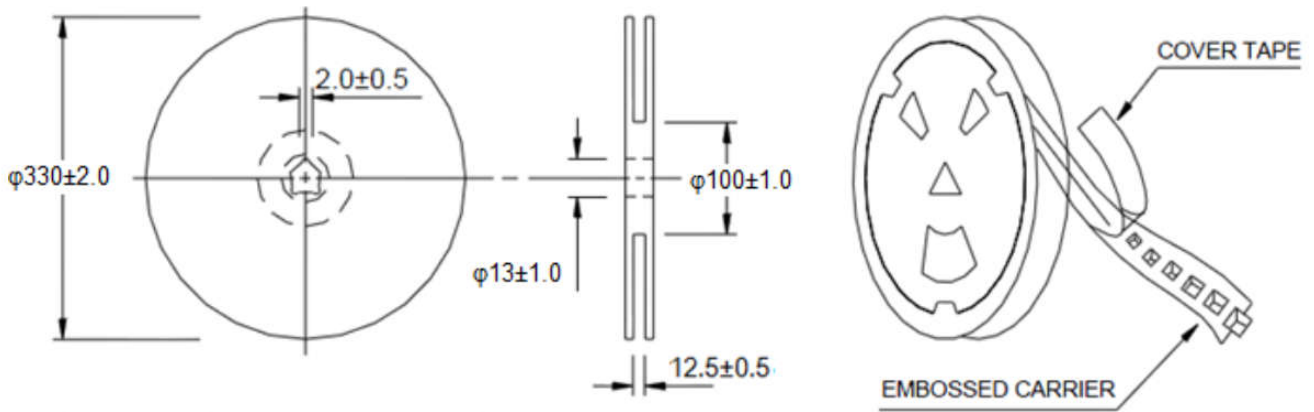
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8.2 Taping dimension and taping direction, Leader, Trailer, section dimension



| | |
|-------------------------|------------|
| Leader section | Min. 400mm |
| Carrier tape start size | Min. 100mm |
| Trailer section size | Min. 160mm |

8.3 Reel Dimensions



8.4 Taping Quantity

3000 pieces/Reel,

8.5 Carton

Pizza packaging: 3 Reel/Pizza Box

External Packaging: 3 Boxes/Carton

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