

## Specification Sheet for Approved

|                    |              |
|--------------------|--------------|
| Customer Name:     |              |
| Customer Part No.: |              |
| Ceaiya Part No:    | CMPI1040D 系列 |
| Spec No:           | L1040D       |

**【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

## 1. Scope

This specification applies to the CMPI1040D Series of wire wound SMD power inductor.

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

- 1) Description:  
CMPI1040D series of Wire wound SMD power inductor.
- 2) Product Identification (Part Number)

CMPI  
①
1040D  
②
-
1R0  
③
M  
④

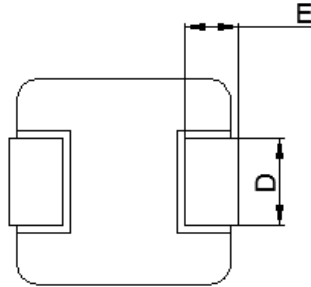
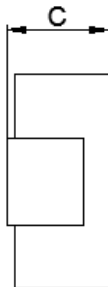
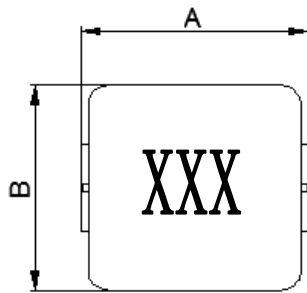
- ① Product Series
- ② Choke Size
- ③ Initial Inductance(L @ 0A):1R0=1.0μH
- ④ Inductance Tolerance:M=L+/-20%

## 3. Electrical Characteristics

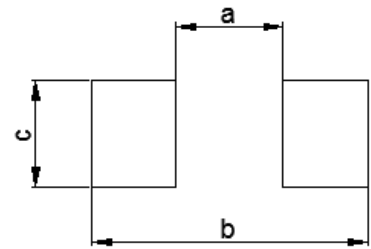
- 1) Operating temperature range (individual chip without packing): -40°C ~ +125°C (Including Self-heating)
- 2) Storage temperature range (On PCB ): -40°C ~ +125°C

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

### MECHANICAL PARAMETERS



### RECOMMENDED PCB LAYOUT



| A    | B     | C    | D     | E     | a    | b    | c    |
|------|-------|------|-------|-------|------|------|------|
| 11.5 | 10.0  | 4.10 | 3.00  | 2.00  | 5.40 | 13.6 | 4.10 |
| Max  | ±0.30 | Max  | ±0.50 | ±0.50 | 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 or place vias underneath the inductor. Proper layout is required.

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### 5. Electrical Characteristics

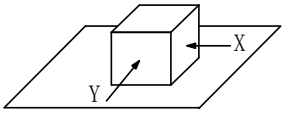
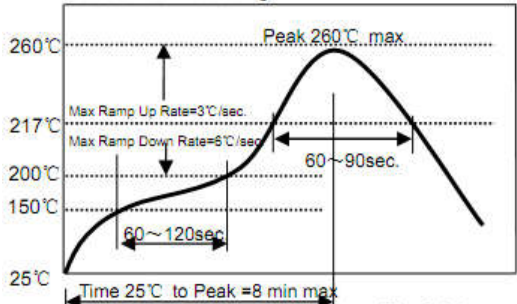
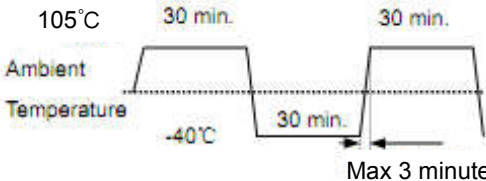
| Part Number    | L0(uH)<br>±20% | DCR(mΩ) @25°C | Isat(Amp) | Irms(Amp) |
|----------------|----------------|---------------|-----------|-----------|
|                |                | Max.          | Typ.      | Typ.      |
| CMPI1040D-R15M | 0.15           | 0.70          | 74.6      | 44.8      |
| CMPI1040D-R22M | 0.22           | 1.10          | 50.2      | 34.9      |
| CMPI1040D-R30M | 0.30           | 1.20          | 44.3      | 34.9      |
| CMPI1040D-R36M | 0.36           | 1.30          | 44.3      | 29.8      |
| CMPI1040D-R47M | 0.47           | 1.80          | 41.0      | 29.8      |
| CMPI1040D-R56M | 0.56           | 2.0           | 32.6      | 24.6      |
| CMPI1040D-R68M | 0.68           | 2.50          | 29.6      | 22.8      |
| CMPI1040D-R82M | 0.82           | 2.80          | 28.8      | 22.8      |
| CMPI1040D-1R0M | 1.0            | 3.40          | 27.8      | 18.8      |
| CMPI1040D-1R5M | 1.5            | 4.30          | 23.8      | 15.8      |
| CMPI1040D-2R2M | 2.2            | 7.20          | 18.0      | 11.6      |
| CMPI1040D-3R3M | 3.3            | 15.0          | 15.8      | 10.8      |
| CMPI1040D-4R7M | 4.7            | 20.5          | 12.8      | 8.80      |
| CMPI1040D-6R8M | 6.8            | 25.5          | 11.8      | 8.40      |
| CMPI1040D-8R2M | 8.2            | 27.5          | 8.80      | 7.90      |
| CMPI1040D-100M | 10             | 31.0          | 8.30      | 7.70      |
| CMPI1040D-150M | 15             | 45.6          | 6.80      | 6.40      |
| CMPI1040D-220M | 22             | 66.8          | 5.30      | 4.80      |
| CMPI1040D-330M | 33             | 95.0          | 4.60      | 4.30      |
| CMPI1040D-470M | 47             | 145.6         | 3.40      | 3.20      |
| CMPI1040D-680M | 68             | 195.6         | 2.90      | 2.40      |
| CMPI1040D-820M | 82             | 290.0         | 2.80      | 2.30      |
| CMPI1040D-101M | 100            | 340.6         | 2.20      | 1.90      |

**Notes:**

1. Initial Inductance (L0) Test Parameters:100KHz,1V,I<sub>dc</sub>=0.0A,+25°C
2. Rated current: Isat or Irms, whichever is smaller;
3. Irms(A):DC current (A) that will causes an approximate ΔTof 40°C (referance ambient temperature is 25°C);
4. Isat(A):DC current (A) that will cause L0 to drop approximately 30%

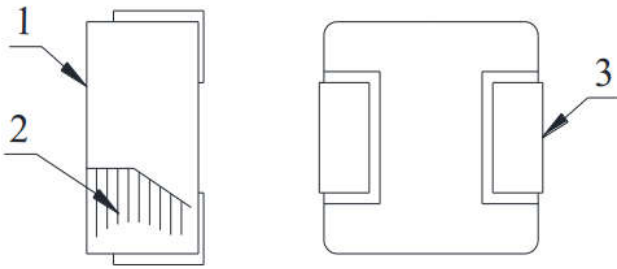
# Specification Sheet for SMD Power Inductor

## 6. Reliability Test

| Items                                  | Requirements  | Test Methods and Remarks   |
|--|---|--|
| 6.1<br>Terminal Strength               | No removal or split of the termination or other defects shall occur.<br><br><br>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.<br>2) 10N force.<br>3) Keep time: 5±2s   |
| 6.2<br>High Temperature                | 1. No visible mechanical damage.<br>2. Inductance change: Within ±10%   | 1) Storage Temperature :125+/-5°C<br>2) Duration : 96 ±4 Hours<br>3) Recovery : then measured at room ambient temperature after placing 24 hours.  |
| 6.3<br>Low Temperature                 | 1. No visible mechanical damage<br>2. Inductance change: Within ±10%  | 1) Temperature and time: -40±5°C<br>2) Duration: 96±4 hours<br>3) Recovery : then measured at room ambient temperature after placing 24 hours.   |
| 6.4<br>Vibration test                  | 1. No visible mechanical damage.<br>2. Inductance change: Within ±10%   | 1) Frequency range:10Hz~55Hz~10Hz<br>2) Amplitude:1.5mm p-p<br>3) Direction:X,Y,Z<br>4) Time:1 minute/cycle,2hours per axis  |
| 6.5<br>High Temperature Storage Tested | 1. No visible mechanical damage.<br>2. Inductance change: Within ±10%   | 1) Storage Temperature :60+/-2°C<br>2) Relative Humidity :90-95%<br>3) Duration : 96 ±4 Hours<br>4) Recovery : then measured at room ambient temperature after placing 24 hours.   |
| 6.6<br>Resistance to Soldering Heat    | 1. No visible mechanical damage.<br>2. Inductance change: Within ±10%<br><br><br>Fig.6.6-1 | 1) Re-flowing Profile: Please refer to Fig.6.6-1<br>2) Test board thickness: 1.0mm<br>3) Test board material: glass epoxy resin<br>4) The chip shall be stabilized at normal condition for 1~2 hours before measuring  |
| 6.7<br>Thermal Shock                   | 1. No visible mechanical damage.<br>2. Inductance change: Within ±10%<br><br><br>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.<br>2) Transforming interval: Max, 3 minutes<br>3) Tested cycle: 100 cycles<br>4) The chip shall be stabilized at normal condition for 1~2 hours before measuring |

# Specification Sheet for SMD Power Inductor

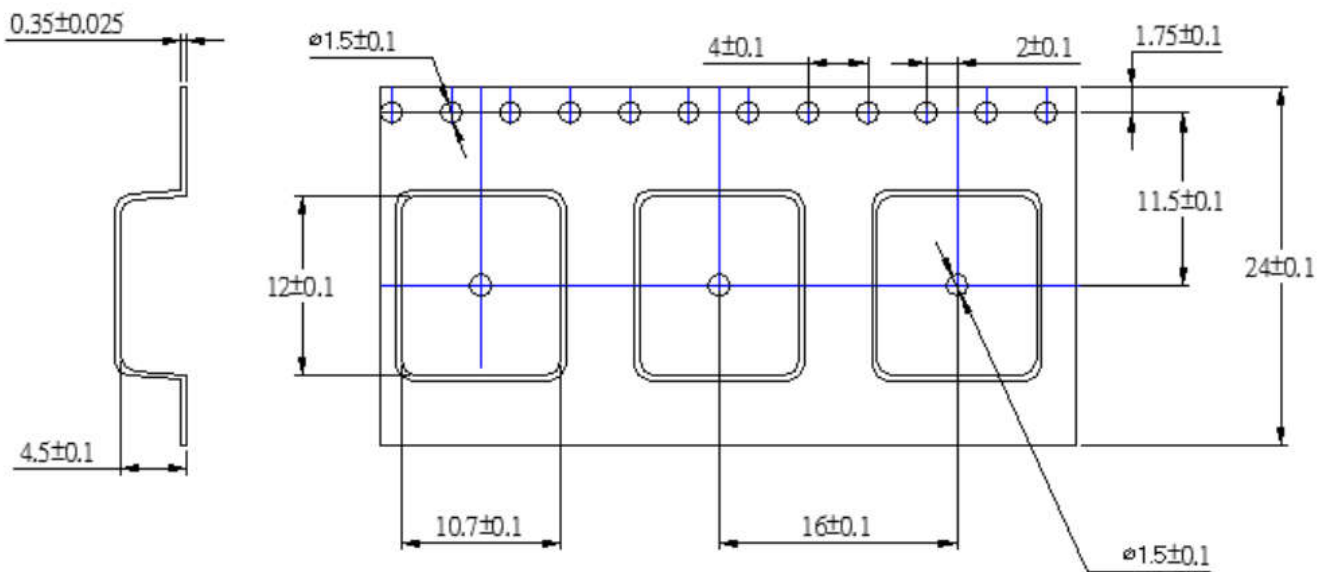
## 7. MATERIAL LIST



| No. | Part | Material      |
|-----|------|---------------|
| 1   | CORE | Alloy powder  |
| 2   | WIRE | Copper wire   |
| 3   | BASE | Tinned copper |

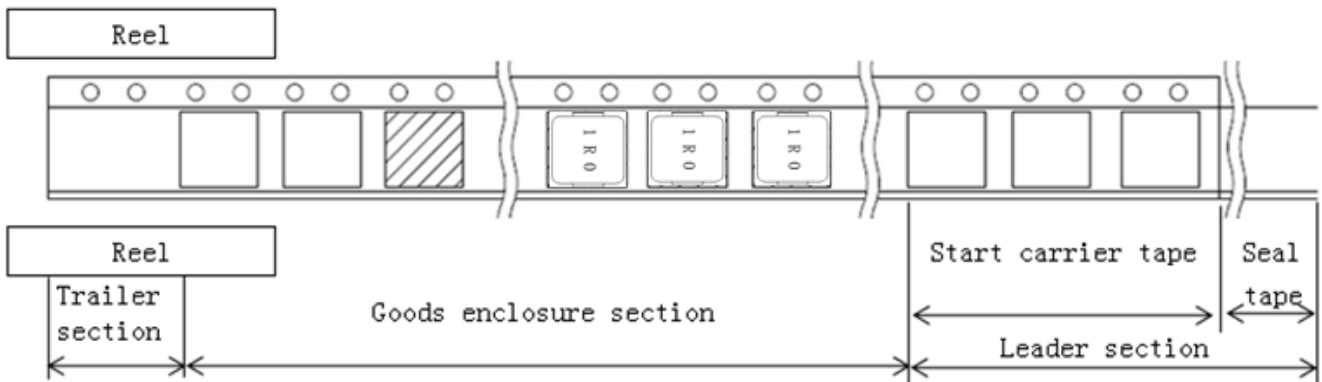
## 8. PACKAGE INFORMATION-mm

### 8.1 Tape Packaging Dimensions



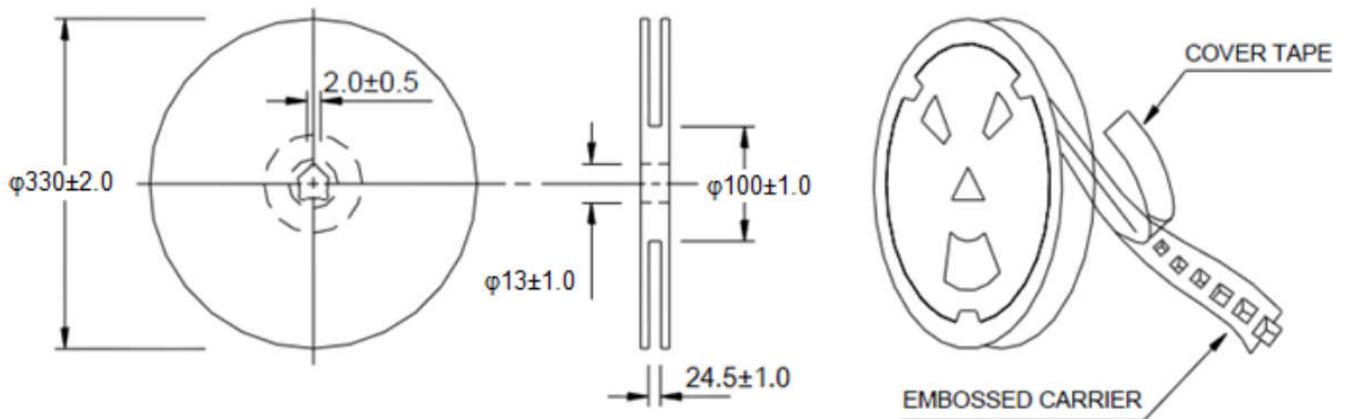
# Specification Sheet for SMD Power Inductor

## 8.2 Taping dimension and tape 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

500pieces/Reel,

## 8.5 Carton

Pizza packaging: 2Reel/ Pizza Box

External Packaging :3 Boxes/Carton

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