

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 |

深圳市柯爱亚电子有限公司

Shenzhen Ceaiya Electronics Co., Ltd.

销售地址 1: 深圳市龙华区观湖街道鹭湖社区观盛二路 5 号捷顺科技中心 B706

工厂地址 2: 广东省东莞清溪镇青滨东路 105 号力合紫荆智能制造中心 10 栋

[Http://www.szceaiya.com](http://www.szceaiya.com)

Tel: 0769-89135516

Fax: 0769-89135519

Specification Sheet for SMD Power Inductor

【Version of Changed Record】

| Rev. | Effective Date | Changed Contents | Change Reasons | Approved By |
|------|----------------|------------------|----------------|-------------|
| A0 | 2023-01-03 | New release | / | Li qing hui |
| | | | | |

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%

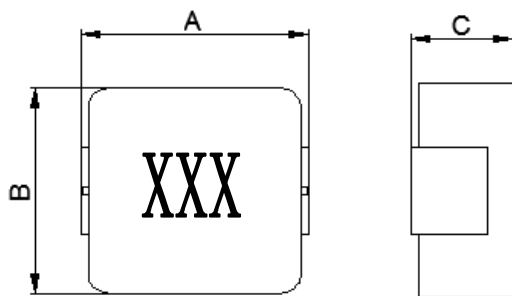
3. Electrical Characteristics

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

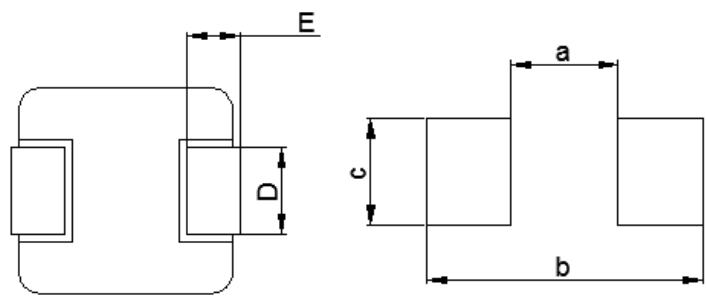
2) Storage temperature range (On PCB): -40°C ~ +125°C

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

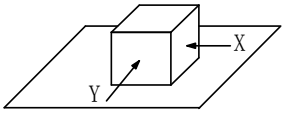
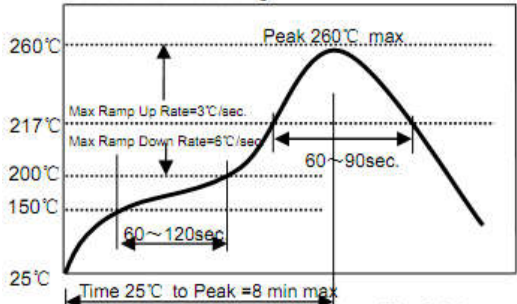
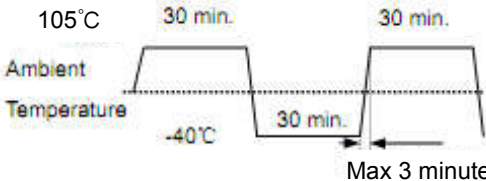
| Part Number | L0(uH) ±20% | DCR(mΩ) @25°C | Isat(Amp) | Irms(Amp) |
|----------------|----------------|---------------|-----------|-----------|
| | | Max. | Typ. | Typ. |
| CMPI1040D-R15M | 0.15 | 0.70 | 74.6 | 44.8 |
| CMPI1040D-R22M | 0.22 | 1.10 | 50.2 | 34.9 |
| CMPI1040D-R30M | 0.30 | 1.20 | 44.3 | 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_{dc}=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%

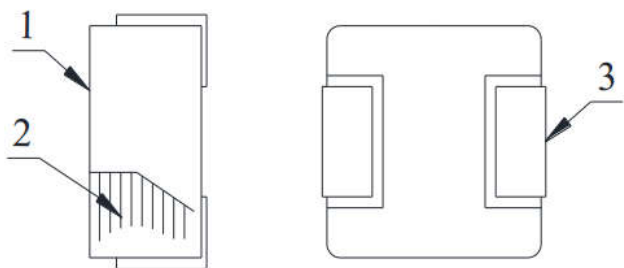
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6. Reliability Test

| Items | Requirements | Test Methods and Remarks |
|--|---|--|
| 6.1 Terminal Strength | No removal or split of the termination or other defects shall occur.  <p style="text-align: center;">Fig.6.1-1</p> | 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) Recovery : 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%  <p style="text-align: center;">Fig.6.6-1</p> | 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%  <p style="text-align: center;">Fig.6.7-1</p> | 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 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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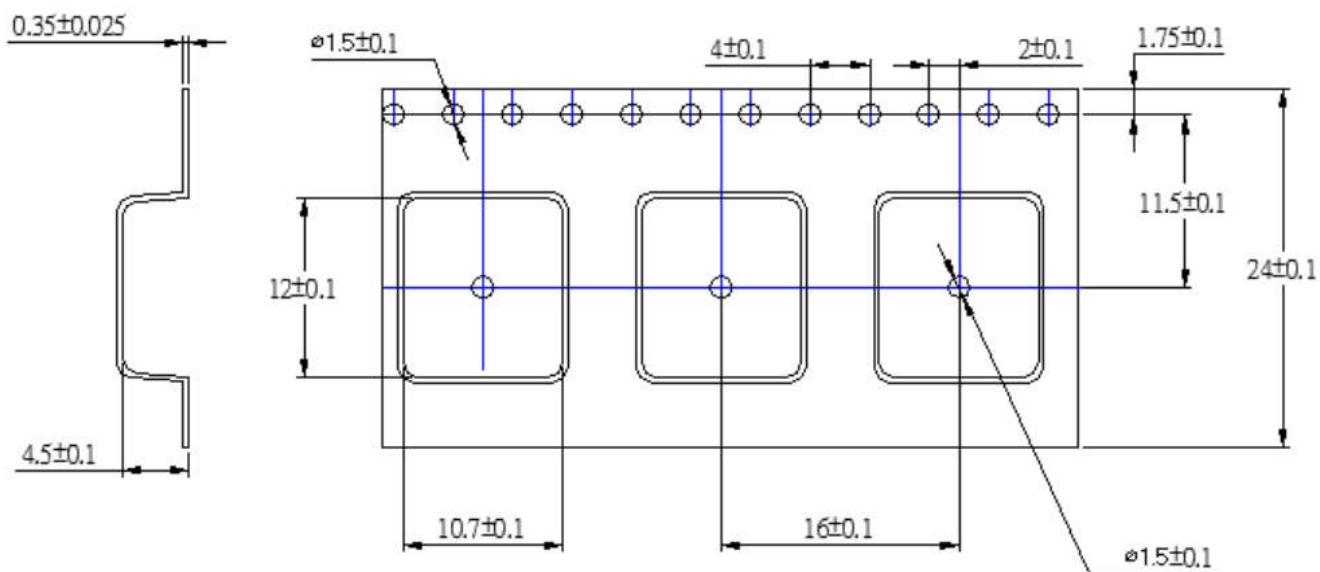
7. MATERIAL LIST



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

8. PACKAGE INFORMATION-mm

8.1 Tape Packaging Dimensions



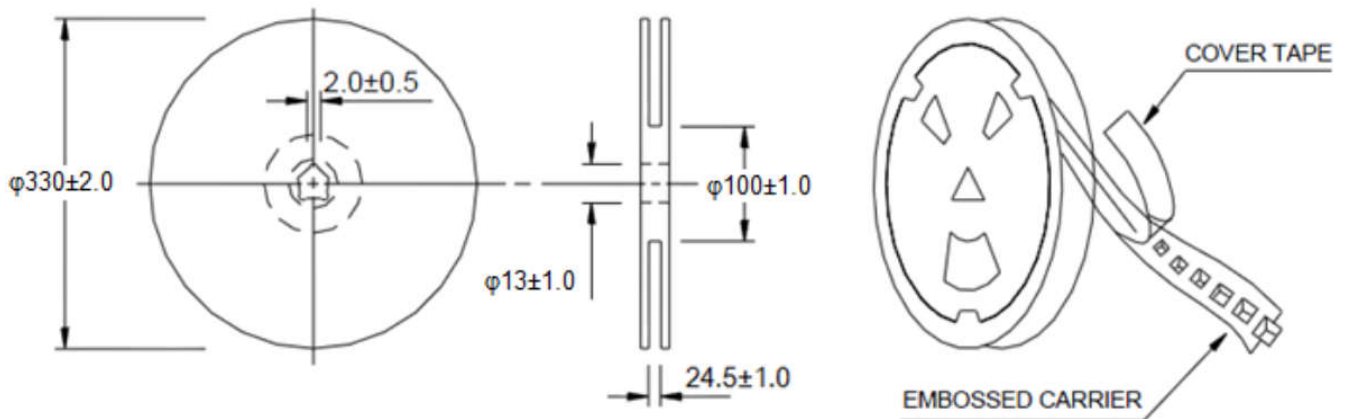
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8.2 Taping dimension and tape direction, Leader ,Trailer, section dimension



| | |
|-------------------------|-----------|
| 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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