

Specification Sheet for Approved

Customer Name:	
Customer Part No.:	
Ceaiya Part No:	CMPI0650 Series
Spec No:	L0650

【For Customer Approval Only】

If you Approval, Please Stamp

【RoHS Compliant Parts】

Approved By	Checked By	Prepared By
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【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 CMPI0650 Series of wire wound SMD power inductor.

2. Product Description and Identification (Part Number)

1) Description:

CMPI0650 series of Wire wound SMD power inductor.

2) Product Identification (Part Number)

CMPI 0650 - 1R0 M
① ② ③ ④

① Product Series

② Choke Size

③ Initial Inductance(L @ 0A):1R0=1.0μH

④ Inductance Tolerance:M=±20%

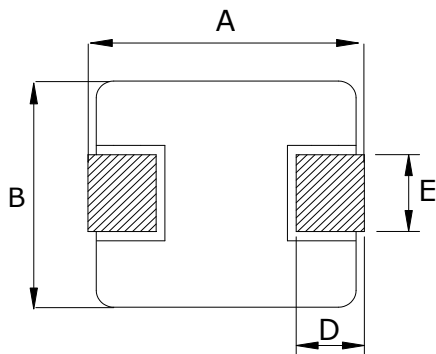
3. Electrical Characteristics

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

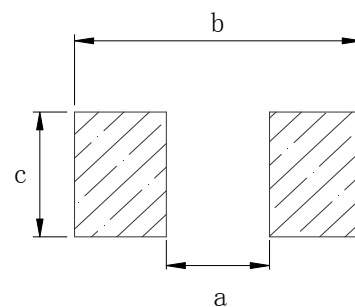
2) Storage temperature range (On PCB): -40℃ ~ +125℃

4. Shape and Dimensions (Unit:mm)

MECHANICAL PARAMETERS



RECOMMENDED PCB LAYOUT



A	B	C	D	E	a	b	c
7.2±0.3	6.6±0.2	4.8±0.2	1.6±0.3	3.0±0.5	3.7Ref	8.4 Ref	3.5 Ref

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

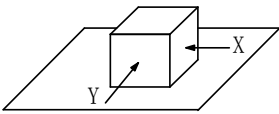
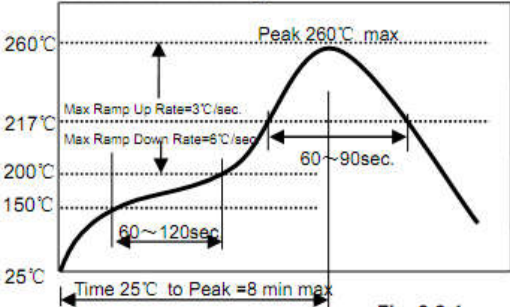
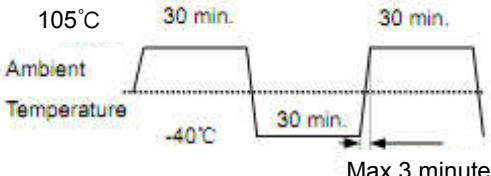
Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX.	TYP.	TYP.
CMPI0650-R47M	0.47	3.9	21	20
CMPI0650-R68M	0.68	4.5	18	16.5
CMPI0650-1R0M	1.0	6.6	16	12.0
CMPI0650-1R5M	1.5	10	13	9.5
CMPI0650-2R2M	2.2	12.5	11	9.0
CMPI0650-3R3M	3.3	22	10	8.5
CMPI0650-4R7M	4.7	29	8.0	6.0
CMPI0650-6R8M	6.8	41	6.3	5.8
CMPI0650-8R2M	8.2	48	5.5	5.5
CMPI0650-100M	10	60	5.3	4.5
CMPI0650-150M	15	90	4.0	3.1
CMPI0650-220M	22	140	3.5	2.6
CMPI0650-330M	33	190	3.0	2.3
CMPI0650-470M	47	230	2.6	2.0
CMPI0650-680M	68	465	1.7	1.2

Notes:

1. All test data is referenced to 25 °C ambient
2. Operating temperature range - 40 °C to + 125 °C
3. Isat(A):DC current (A) that will cause L0 to drop approximately 30 %
4. Irms (A):DC current (A) that will cause an approximate ΔT of 40 °C (reference ambient temperature is 25 °C)
5. 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.

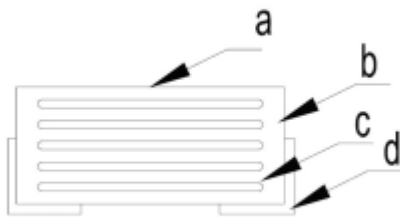
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6. Reliability Test

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±2s
6.2 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.
6.3 Low Temperature	1. No visible mechanical damage 2. Inductance change: Within ±10%	1) Temperature and time: -40±5℃ 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℃ 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℃ for 30±3 min→105℃ 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

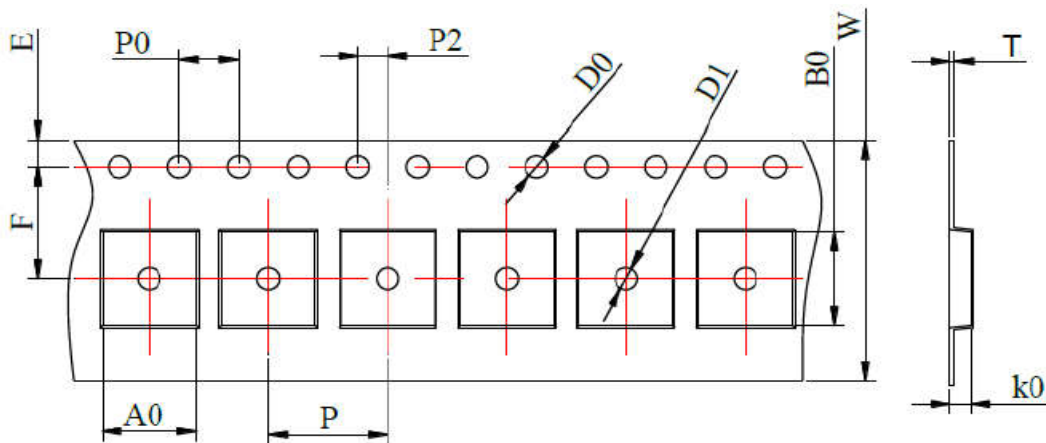
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7. MATERIAL LIST



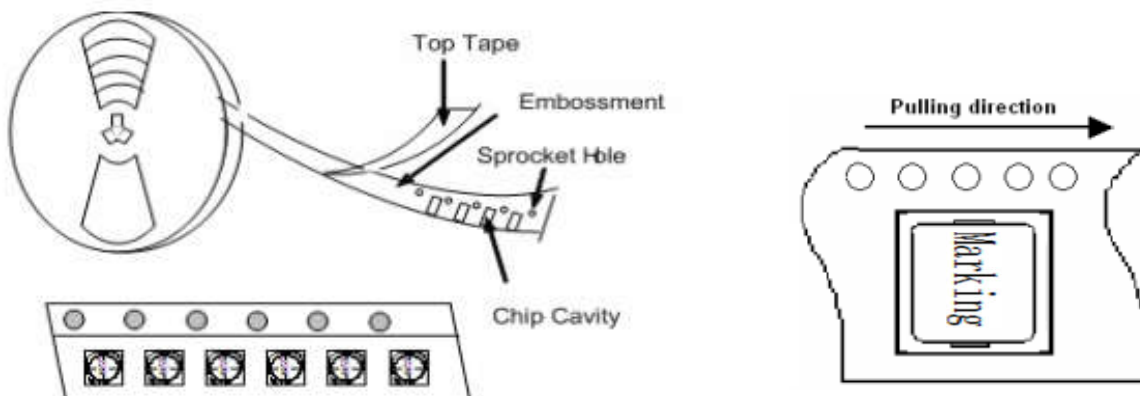
Symbol	Components	Material
a	MARKING	Ink(black)
b	CORE	Metal composite core
c	WIRE	Enamelled copper wire
d	Terminal	Electrode: Cu+Sn+Ni

8. PACKAGE INFORMATION-mm



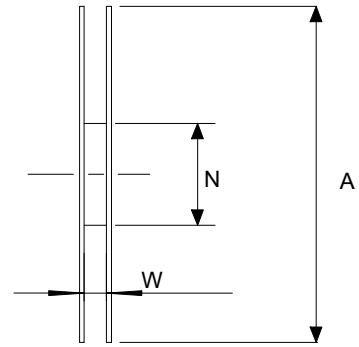
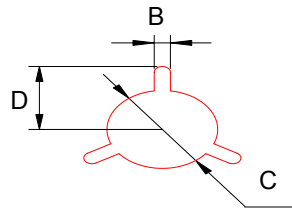
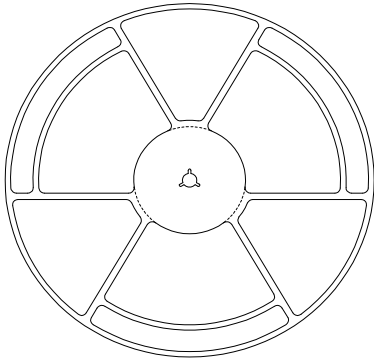
Type	Tape dimensions (mm)											
	W	P	P0	P2	D0	D1	T	A0	B0	K0	E	F
CMP10650	16 ± 0.3	12 ± 0.1	4 ± 0.1	2 ± 0.1	1.5 ± 0.1	1.5 ± 0.1	0.4 ± 0.05	6.9 ± 0.1	7.5 ± 0.1	5.4 ± 0.1	1.75 ± 0.1	7.5 ± 0.1

8.1Tape Packaging Dimensions



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8.2 Reel Dimensions



A	W	N	B	C	D
330+2.0	16.8+2.0/-0	100 Min	2.2+0.5	13.2±0.2	10.75±0.25

8.3 Taping Quantity

1000pieces/Reel