



ISO9001 & ISO14001 & TS16949 **CHILISIN ELECTRONICS CORP.**

Halogen Free & RoHs Compliance

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

CUSTOMER P/N : _____

OUR DWG No : _____

QUANTITY : X **Pcs.** **DATE :** 2014/06/26

ITEM : HEI252010A-2R2M-Q8A

SPECIFICATION ACCEPTED BY:	
COMPONENT ENGINEER	
ELECTRICAL ENGINEER	
MECHANICAL ENGINEER	
APPROVED	
REJECTED	

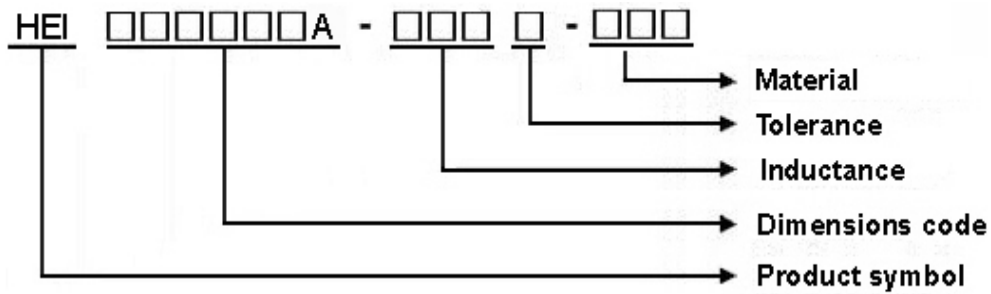
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HEI252010A Series Specification

1 Scope: This specification applies to Molding power inductors

2 Part Numbering: Product Identification



3 Rating:

Operating Temperature: $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (Including self - temperature rise)

Storage Temperature: $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (after PCB)

$-5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, Humidity 45%~85% (before PCB)

4 Marking:

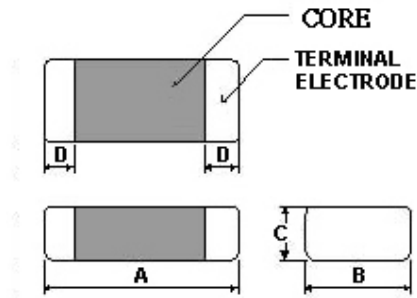
No Marking

5 Standard Testing Condition

	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature(15 to 35°C)	20±2°C
Humidity	Ordinary Humidity(25 to 85% RH)	60 to 70 % RH

HEI252010A Series Specification

6 Configuration and Dimensions:



Dimensions in mm

TYPE	HEI252010A
A	2.5±0.3
B	2.0±0.3
C	1.0max
D	0.6±0.3

7 ELECTRICAL CHARACTERISTICS :

Part No.	Inductance (uH)	Test Freq.	I _{rms} (A) Max.(Typ)	I _{sat} (A) Max.(Typ)	RDC(mΩ) Max.(Typ)	SRF(MHz) Typ	Tolerance (±%)
HEI252010A-2R2M-Q8A	2.2	2MHz,0.2V	2.5(2.9)	3.2(3.8)	98(87)	40	20

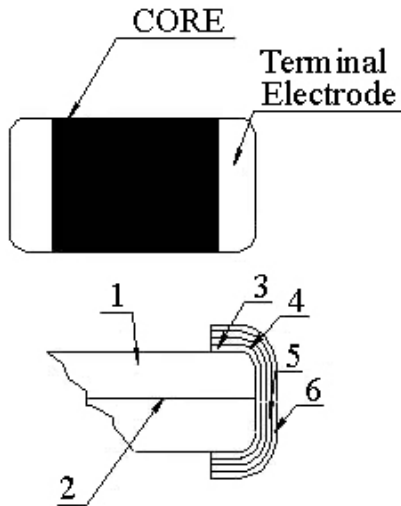
NOTE:

1. Operating temperature range - 40°C ~ 125°C (Including self - temperature rise)
2. I_{rms} DC current (A) that will cause an approximate ΔT of 40°C.
3. I_{sat} DC current (A) that will cause L_o to drop approximately 30%
4. All test data is referenced to 25°C ambient

HEI252010A Series Specification

8 HEI252010A Series

8.1 Construction:



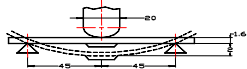
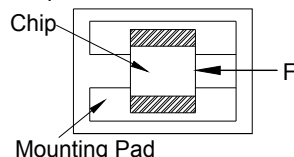
8.2 Material List:

NO	Part	Description
1	Core	Metal Power
2	Wire	Copper wire
3	Sputter/Plating	Cu
4	Silver Electrode	Ag
5	Plating	Ni
6	Plating	Sn

HEI252010A Series Specification

9 Reliability of Molding Power Inductor

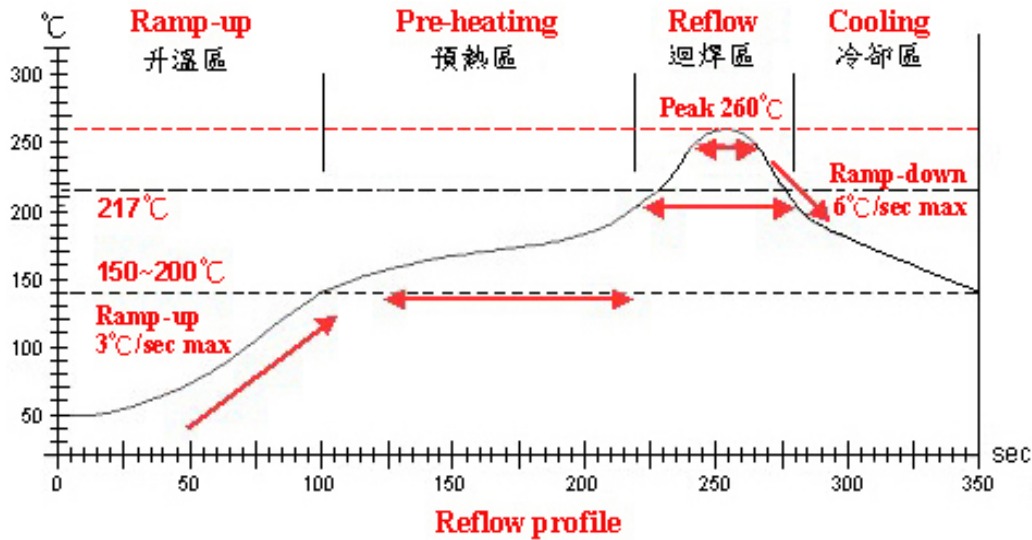
1-1. Mechanical Performance

No	Item	Specification	Test Method
1-1-1	Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the ferrite	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 30sec 
1-1-2	Vibration		
1-1-3	Resistance to Soldering Heat	Appearance: No damage More than 75% of the terminal electrode should be covered with solder. Inductance: within $\pm 20\%$ of initial value	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 260 \pm 5°C Immersion Time: 10 \pm 1sec
1-1-4	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245 \pm 5°C Immersion Time: 4 \pm 1sec
1-1-5	Terminal Strength Test	No split termination 	Test device shall be soldered on the substrate, then apply a force in the direction of the arrow. Force : 5N Keeping Time: 10 \pm 1sec

1-2. Environmental Performance

No	Item	Specification	Test Method															
1-2-1	Temperature Cycle	Appearance: No damage Inductance: within $\pm 20\%$ of initial value	One cycle: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40\pm3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25\pm2</td> <td>2</td> </tr> <tr> <td>3</td> <td>125\pm3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25\pm2</td> <td>2</td> </tr> </tbody> </table> Total: 100cycles Measured after exposure in the room condition for 24hrs	Step	Temperature (°C)	Time (min)	1	-40 \pm 3	30	2	25 \pm 2	2	3	125 \pm 3	30	4	25 \pm 2	2
Step	Temperature (°C)		Time (min)															
1	-40 \pm 3		30															
2	25 \pm 2		2															
3	125 \pm 3		30															
4	25 \pm 2	2																
1-2-2	Humidity Resistance	Temperature: 60 \pm 2°C Relative Humidity: 90 ~ 95% / Time: 500hrs Measured after exposure in the room condition for 12hrs																
1-2-3	High Temperature Resistance	Temperature: 85 \pm 3°C Relative Humidity: 0% / Time: 500hrs Measured after exposure in the room condition for 12hrs																
1-2-4	Low Temperature Resistance	Temperature: -40 \pm 3°C Relative Humidity: 0% / Time: 500hrs Measured after exposure in the room condition for 12hrs																

HEI252010A Series Specification



Lead-Free(LF) 標準溫度分析範圍

Refer to J-STD-020C

管制項目 Item.	升温區 Ramp-up	預熱區 Pre-heating	迴焊區 Reflow	Peak Temp	冷卻區 Cooling
溫度範圍 Temp.scope	R.T. ~ 150°C	150°C ~ 200°C	217°C	260±5°C	Peak Temp. ~ 150°C
標準時間 Time spec.	—	60 ~ 180 sec	60 ~ 150sec	20 ~ 40 sec	—
實際時間 Time result	—	75 ~ 100 sec	90 ~ 120sec	20 ~ 35 sec	—

NOTE :

1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow



HEI252010A Series Specification

10 TEST DATA FOR PREPRODUCTION SAMPLES

QF-1419

DESCRIPTION: HEI252010A-2R2M-Q8A

MEAS. Item	L0 (uH)	L1 (uH)Max.	RDC (mΩ)Max.	SRF(MHz) TYP	A m/m	B m/m	C m/m	D m/m			
Spec	Customer	2.20±20%									
	Suggest		L0*0.7	97(87typ)	40	2.5±0.3	2.0±0.3	1.0max	0.6±0.3		
Test Freq.	Isat=0A 2MHz 0.2V	Isat=3.2A 2MHz 0.2V									
1	2.15	1.65	88.4	44.03	2.62	2.18	0.98	0.52			
2	2.10	1.60	88.1	35.52	2.62	2.18	0.92	0.52			
3	2.05	1.58	88.7	40.99	2.61	2.17	0.94	0.50			
4	2.03	1.49	87.2	35.52	2.62	2.18	0.96	0.50			
5	2.04	1.54	87.5	40.99	2.62	2.19	0.96	0.54			
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
X	2.074	1.572	87.98	39.41	2.618	2.18	0.952	0.516			
R	0.12	0.16	1.5	8.51	0.01	0.02	0.06	0.04			
CUSTOMER											
SAMPLE											

TEST INSTRUMENT:

- L : Agilent E4991A/HP4287A+16197A
- RDC : CHEN HWA 502BC / HP4338B
- Isat : Agilent E4980A+HP42841A
- Irms : Agilent 6641 SYSTEM DC POWER SUPPLY

APPEARANCE AND DIMENSIONS :

- SPEC : MEET ITEM 6.
- TEST METHOD : VISUAL INSPECTION AND MEASURED WITH SILDE CALIPERS.

TESTING CONDITIONS :

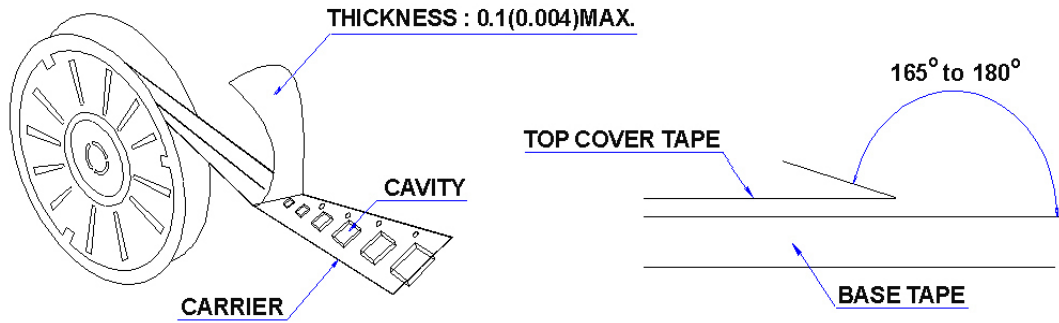
	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature (15 to 35°C)	20 ± 2 °C
Humidity	Ordinary Humidity (25 to 85 %RH)	60 to 70 %RH

HEI252010A Series Specification

11 Packaging

11.1 Packaging -Cover tape

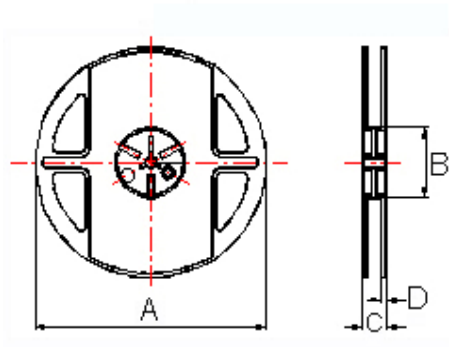
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



11.2 Packaging Quantity

TYPE	BULK	PCS/REEL
HEI252010A	V	3000

11.3 Reel Dimensions



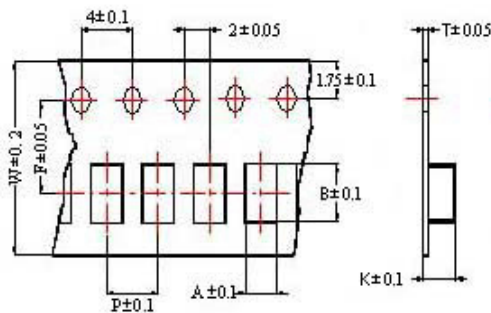
Dimensions in mm

TYPE	A	B	C	D
HEI252010A	178	60	12	1.5

HEI252010A Series Specification

11 Packaging

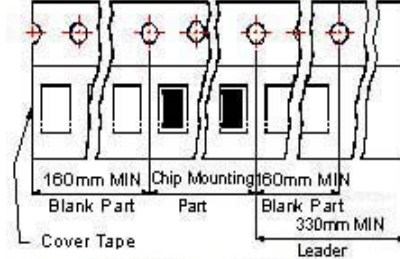
11.4 Tape Dimensions in mm



Tape Material

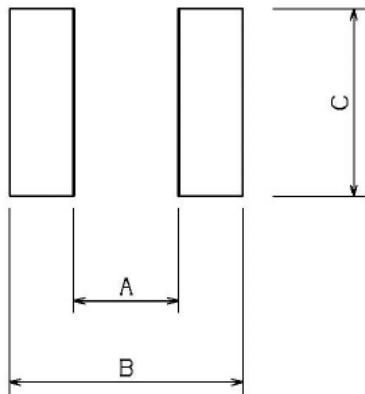
Carrier tape : Polystyrene

Cover tape : Polyethylene



TYPE	A	B	T	W	P	F	K
HEI252010A	2.25	2.8	0.22	8	4	3.5	1.35

12 Recommended Pattern



Dimensions in mm

TYPE	A	B	C
HEI252010A	1.2	2.8	2.0

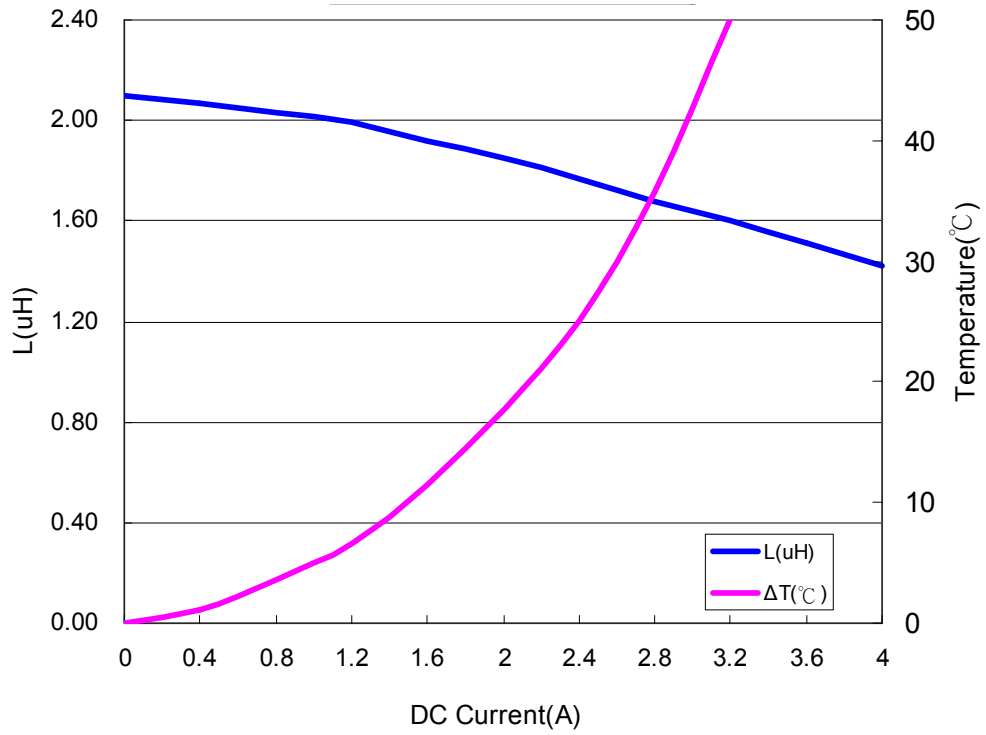
13 Note:

1. Please make sure that your product is has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment agreed upon between you and us. You are requested not to use our product deviating from such agreement.
4. Please keep the distance between transformer/coil and other components (refer to the standard IEC 950)



HEI252010A Series Specification

14 Curve: HEI252010A-2R2M-Q8A



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