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

SPECIFICATION FOR APPROVAL

Customer：	超利維
Customer P/N:	
Drawing No：	**TE1-820061**
Quantity：	**X Pcs. Date： 2018/02/06**
Chilisin P/N：	**MHCH252010A-R24M-AU**

Automotive Grade Inductor

Holegen Free
RoHS Compliant
REACH Compliant
Lead Free Solders
AEC-Q200

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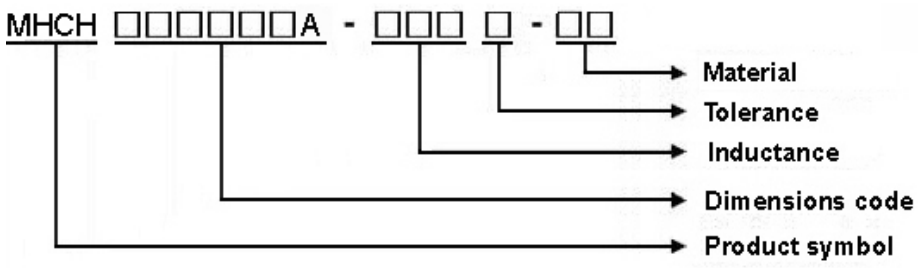
ISO9001 & ISO14001 & TS16949 CHILISIN ELECTRONICS CORP.

MHCH252010A Series Specification

1 Scope:
This specification applies to Molding power inductors

2 Part Numbering:



3 Rating:

Operating Temperature: －４０℃～１２５℃(Including self - temperature rise)

Storage Temperature: －４０℃～１２５℃(after PCB)
－５℃～３５℃,Humidity ４５%～８５%(before PCB)

4 Marking:

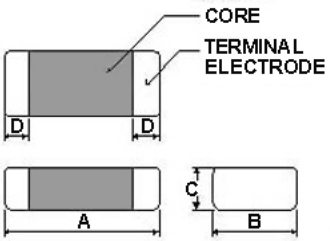
No Marking

5 Standard Testing Condition

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

MHCH252010A Series Specification

6 Configuration and Dimensions:



Dimensions in mm

TYPE	MHCH252010A
A	2.5±0.3
B	2.0±0.3
C	1.0 Max.
D	0.6±0.3

7 Electrical Characteristics:

Part No.	Inductance (uH)	Tolerance (±%)	Test Freq.	Irms(A) Max.(Typ)	Isat(A) Max.(Typ)	RDC(mΩ) Max.(Typ)
MHCH252010A-R24M-AU	0.24	20	2MHz,0.2V	5.5(6.5)	8.0(9.5)	18(13)

NOTE:

1.Operating temperature range －４０℃～１２５℃(Including self - temperature rise)

2.Isat for Inductance drop 30% from its value without current.

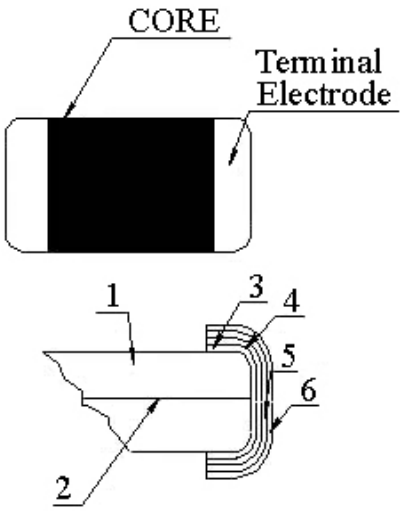
3.Irms for a 40℃ temprature rise from 25℃ ambient.

4.All test data is referenced to 25℃ ambient

MHCH252010A Series Specification

8 MHCH252010A Series

8.1 Construction:



8.2 Material List:

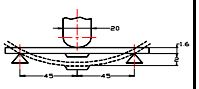
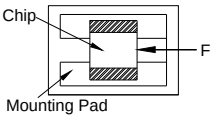
NO	Part	Description
1	Core	Metal Powder
2	Wire	Copper wire
3	Sputter/Plating	Cu
4	Silver Electrode	Ag
5	Plating	Ni
6	Plating	Sn

MHCH252010A Series Specification

AEC-Q200

9 Reliability of molding power inductors

1-1.Mechanical Performance

No	Item	Specification	Test Method
1-1-1	Board Flex	The forces applied on the right conditions must not damage the terminal electrode and the metal body	Refer to AEC-Q200-005 Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 60sec 
1-1-2	Terminal Strength Test	Appearance: No damage	Refer AEC-Q200-006 Soldered on PCB for testing as fig. Force : 1.8kg Keeping Time: 60 seconds. 
1-1-3	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Refer to J-STD-002 Pre-heating: 150℃, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245±5℃(Pb-Free) Immersion Time: 4±1sec
1-1-4	Resistance to Soldering Heat	Appearance: No damage Inductance: within ±20% of initial value	Refer to MIL-STD-202 Method 210 Pre-heating: 150℃, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 260±5℃ Immersion Time: 10±1sec
1-1-5	Resistance to Solvents	There must be no change in appearance or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.
1-1-6	Mechanical Shock	The forces applied on the right conditions must not damage the terminal electrode and the ferrite.	Pulse shape：Half-sine waveform Impact acceleration：100 g Pulse duration：6 ms Number of shocks：18 shocks (3 shocks for each face) Orientation：Bottom, top, left, right, front and rear faces
1-1-7	Vibration	Appearance: No damage Inductance change shall be within ±20%.	Refer MIL-STD-202 Method 204 Vibration waveform: Sine waveform Vibration frequency: 10Hz~2000Hz Vibration acceleration: 5g Sweep rate: 0.764386otcave/minute Duration of test: 12 cycles each of 3 orientations, 20 minutes for each cycle Vibration axes: X, Y & Z

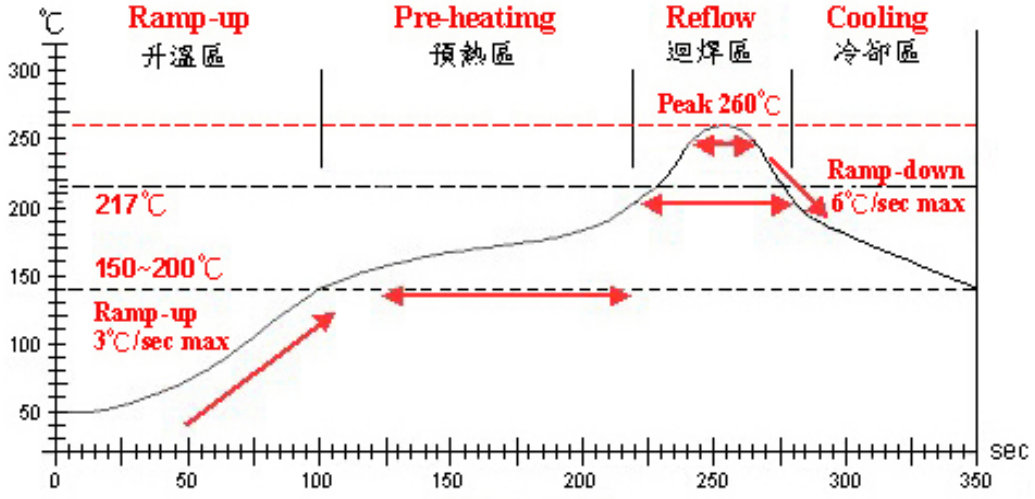
1-2.Environmental Performance

No	Item	Specification	Test Method
1-2-1	Temperature Cycle	Appearance: No damage Inductance:within±30% of initial value	Refer to JESD Method JA-104 Total cycles: 1000 cycles Temperature Cycling Test Conditions : -40 to +125 ℃ Soak Mode Condition : 30 minutes Measured after exposure in the room condition for 24hrs
1-2-2	Operational Life		Temperature: 125±2℃ Appliend Current : Rated Current Time: 1000± 24 hrs Measured after exposure in the room condition for 24hrs
1-2-2	Biased Humidity Resistance		Refer to MIL-STD-202 Method 103

MHCH252010A Series Specification

AEC-Q200

			Temperature: 85±2℃ Relative Humidity:85% / Time: 1000hrs Measured after exposure in the room condition for 24hrs
1-2-3	High Temperature Exposure (Storage)		Refer to MIL-STD-202 Method 108 Temperature: 125±3℃ Time: 1000hrs Measured after exposure in the room condition for 24hrs



Reflow profile

Lead-Free(LF) 標準溫度分析範圍 Refer to J-STD-020C

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

NOTE :

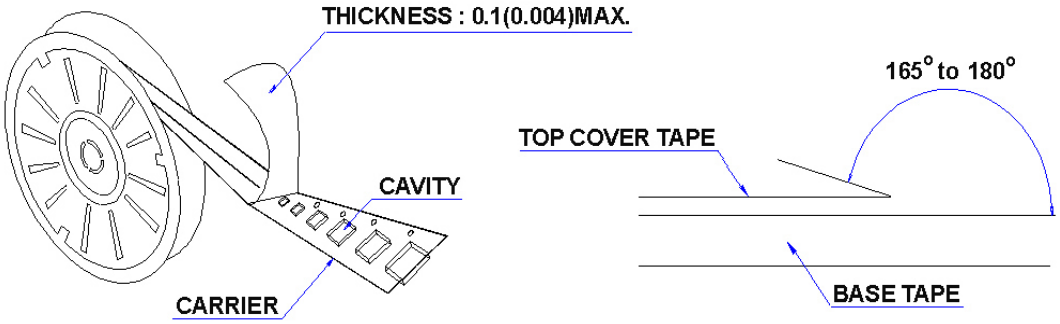
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow

MHCH252010A Series Specification

10 Packaging:

10.1 Packaging -Cover Tape

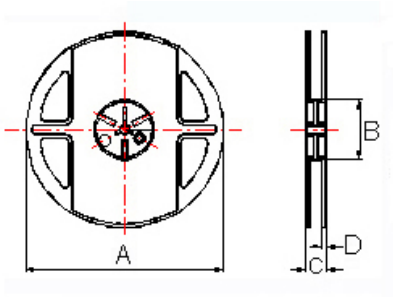
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



10.2 Packaging Quantity

TYPE	PCS/REEL
MHCH252010A	3000

10.3 Reel Dimensions



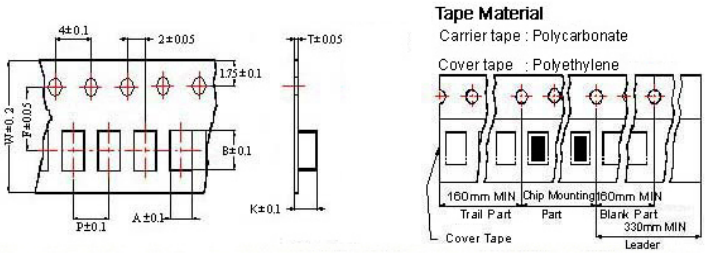
Dimensions in mm

TYPE	A	B	C	D
MHCH252010A	178	60	12	1.5

MHCH252010A Series Specification

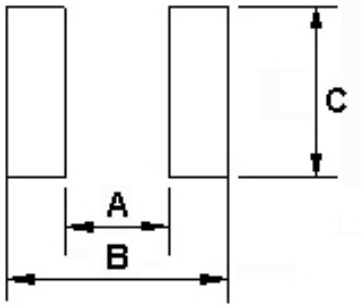
10 Packaging:

10.4 Tape Dimensions in mm



TYPE	A	B	T	W	P	F	K
MHCH252010A	2.25	2.8	0.22	8	4	3.5	1.15

11 Recommended Land Pattern:



Dimensions in mm

TYPE	A	B	C
MHCH252010A	1.2	2.8	2.3

12 Note:

1. Please make sure that your product 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)
5. After manufacturing process, there might be slight irregular shape on the edge of the products, and it's a normal phenomenon that can be neglectable.
6. The moisture sensitivity level (MSL) of products is classified as level 1.

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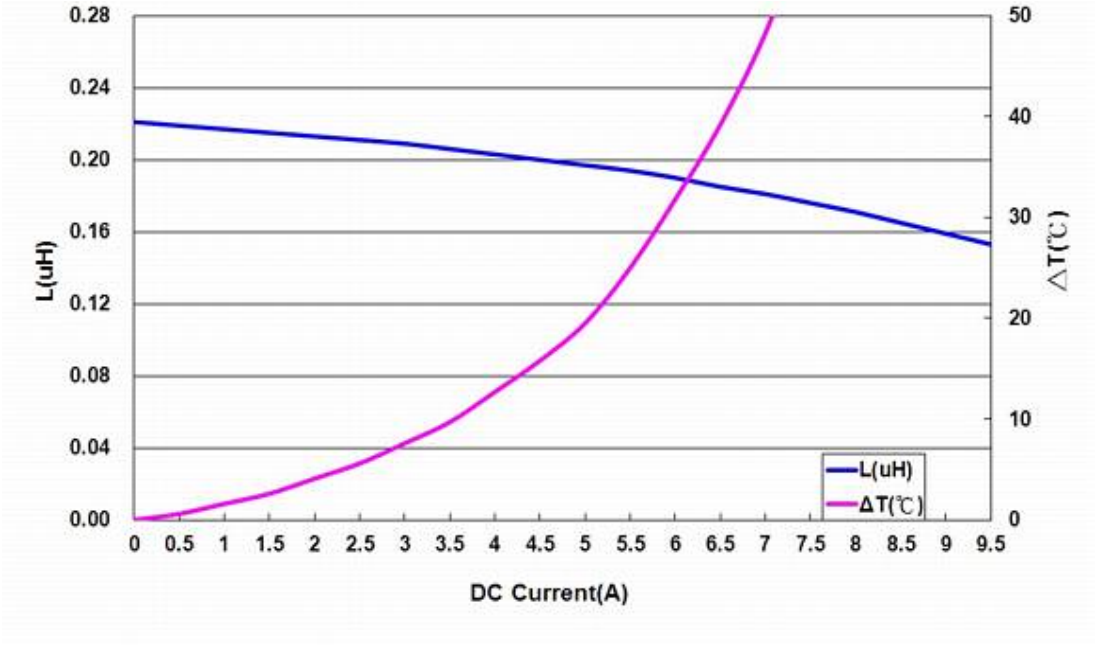
13 Graph: MHCH252010A-R24M-AU



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