

RoHS & Halogen Free & REACH Compliance.

SPECIFICATION FOR APPROVAL

Customer

Customer P/N

Drawing No

QC010250106438

Quantity

1

Pcs.

Date

2025/01/07

Pulse P/N

MHCI06030-4R7M-S8

SPECIFICATION ACCEPTED BY

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COMPONENT ENGINEER	
ELECTRICAL ENGINEER	
MECHANICAL ENGINEER	
APPROVED	
REJECTED	

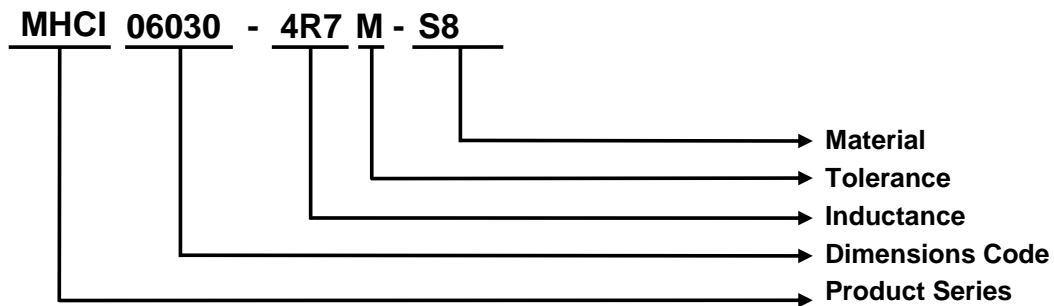
Chilisin Electronics Corp No. 270, Nanfeng Rd., Pingzhen Dist., Taoyuan City 324019, Taiwan (R.O.C.) Tel : +886-3- 415-9111	Chilisin Electronics (Dongguan) Co., Ltd. No. 78, Puxing Rd., Yuliangwei Administration Area, Qingxi Town, Dongguan City, Guangdong,China Tel : +86-769-8773-0251~3
Chilisin Electronics (Vietnam) Limited No 143 - 145, Road No 10, VSIP Hai Phong, Lap Le Commune, Thuy Nguyen Dist, Haiphong City, Vietnam Tel : 84-316 255 688	HuNan Chilisin Electronics Technology Co., Ltd No. 8, Shaziao Liangshuijing Town, Yuanling County, Huaihua City, Hunan Province 419601, China Tel : 86-745-867-5882
Chilisin Electronics (Kunshan) Limited No. 240, Binjiang South Road, Zhangpu Town, Kunshan City, Jiangsu Province Tel : 0512-57450881	

Drawn by	Checked by	Approved by
Ryan Tsai	Wayne Wu	Mark Chung

MHCI06030 Series Specification

1 Scope This specification applies to large current and low loss SMD power inductor.

2 Part numbering

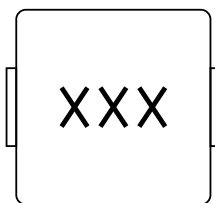


3 Temperature rating

Operating Temperature: -55°C to 125°C.

Storage Temperature: (on tape & reel): -20°C to +40°C; 75% RH max.

4 Marking



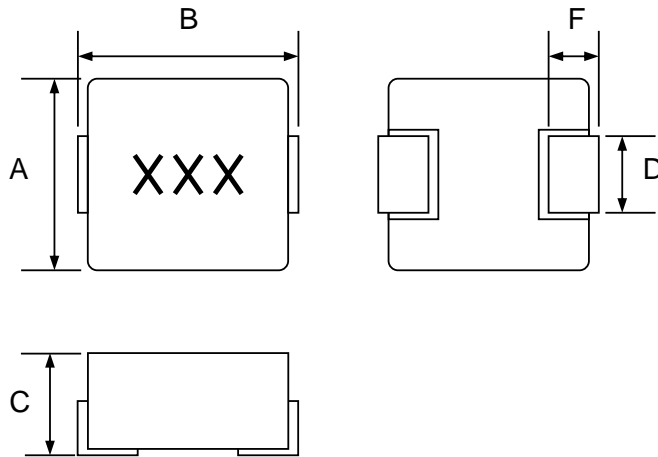
Marking : 4R7

5 Standard testing condition

	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature(15 to 35°C)	20 to 30°C
Humidity	Ordinary Humidity(25 to 85% RH)	50 to 80 %RH

MHCI06030 Series Specification

6 Configuration and dimensions



Dimensions in mm

Type	06030
A	6.6 ± 0.2
B	7.3 Max
C	3.0 Max
D	2.9 Typ
F	1.6 ± 0.5

Size Code	Net weight(grms)
06030	0.72(typ.)

7 Electrical characteristics

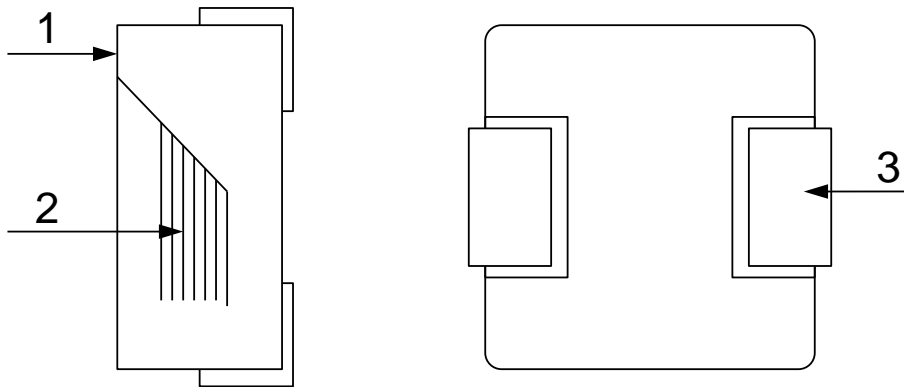
Part number	Inductance (uH)	Tolerance (±%)	Test Freq.	I _{rms} (A) Typ.	I _{sat} (A) Typ.	RDC (mΩ) Max.(Typ.)	Marking
MHCI06030-4R7M-S8	4.7	20	100kHz,0.5V	5.5	10	42(35)	4R7

Note:

- Operating temperature range -55°C to 125°C.
- I_{sat} for Inductance drop 30% from its value without current.
- I_{rms} for a 40°C temperature rise from 25°C ambient.
- The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. Circuit design 125°C under worst case operating conditions. Component placement, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
- Absolute maximum voltage 30V DC. (Based on test method, it may not the same under different application, it is recommended to verify first.)

MHCI06030 Series Specification

8 MHCI06030 Series 8.1 Construction



8.2 Material List

Item	Part	Description
1	Magnetic core	Magnetic metal powder
2	Coil	Enameled copper wire
3	Terminals	Copper based terminal

MHCI06030 Series Specification

9 Reliability test items

1-1.Mechanical Performance

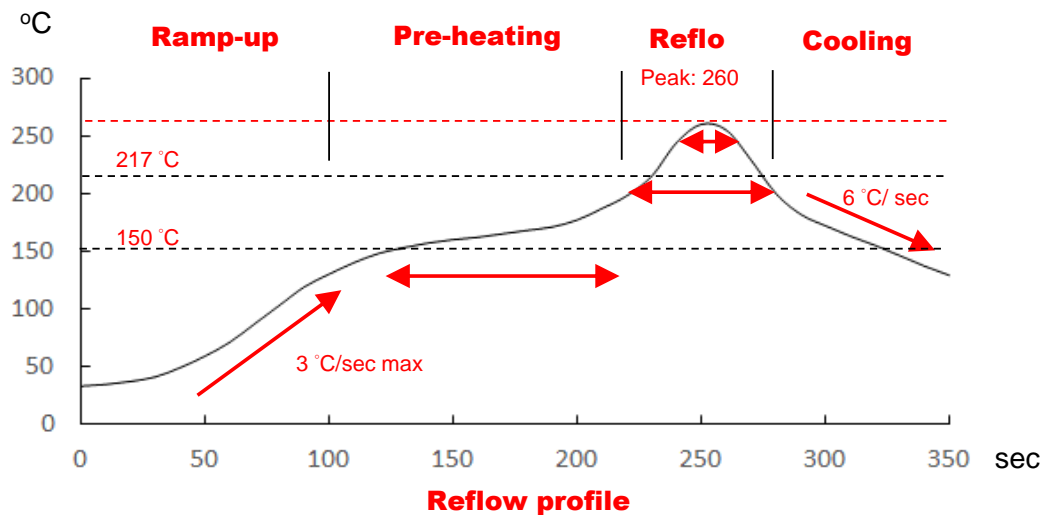
No	Item	Specification	Test Method
1-1-1	Vibration	Appearance: No damage Inductance: within $\pm 10\%$ of initial value	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
1-1-2	Resistance to Soldering Heat	Appearance: No damage	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5 Solder Temperature: 260 ± 5 °C Immersion Time: 10 ± 1 sec
1-1-3	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 Solder Temperature: 245 ± 5 °C Immersion Time: 4 ± 1 sec
1-1-4	Resistance to solvent	There must be no change in appearance or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.

1-2.Environmental Performance

No	Item	Specification	Test Method															
1-2-1	Temperature Shock	Appearance: No damage Inductance: within±10% of initial value	10 cycles (Air to Air) 1 cycles shall consist of: 30 minutes exposure to -55°C 30 minutes exposure to 125°C 15 seconds maximum transition between temperatures															
1-2-2	Temperature Cycle		One cycle: <table><tr><th>Step</th><th>Temperature (°C)</th><th>Time (min)</th></tr><tr><td>1</td><td>-55±3</td><td>30</td></tr><tr><td>2</td><td>25±2</td><td>3</td></tr><tr><td>3</td><td>125±3</td><td>30</td></tr><tr><td>4</td><td>25±2</td><td>3</td></tr></table>	Step	Temperature (°C)	Time (min)	1	-55±3	30	2	25±2	3	3	125±3	30	4	25±2	3
Step	Temperature (°C)		Time (min)															
1	-55±3		30															
2	25±2		3															
3	125±3	30																
4	25±2	3																
1-2-3	Humidity Resistance	Total: 100cycles Measured after exposure in the room condition for 24hrs																
1-2-4	Heat Life	Temperature: 40±2°C Relative Humidity: 90 ~ 95% Time: 1000hrs Measured after exposure in the room condition for 24hrs																
1-2-5	Cold Resistance	Temperature: 85±3°C Relative Humidity: 20% Applied Current: Rated Current Time: 1000hrs Measured after exposure in the room condition for 24hrs																
			Temperature: -55±3°C Relative Humidity: 0% Time: 1000hrs Measured after exposure in the room condition for 24hrs															

MHCI06030 Series Specification

10 Recommended IR reflow profile



Lead-Free(LF)

Refer to J-STD-020F

Item	Ramp-up	Pre-heating	Reflow	Peak Temp.	Cooling
Temp. scope	R.T. ~150 °C	150 °C~200 °C	217 °C	260±5 °C	Peak Temp. 150 °C
Time spec	-	60~120 sec	60~150 sec	20~40 sec	-

Note:

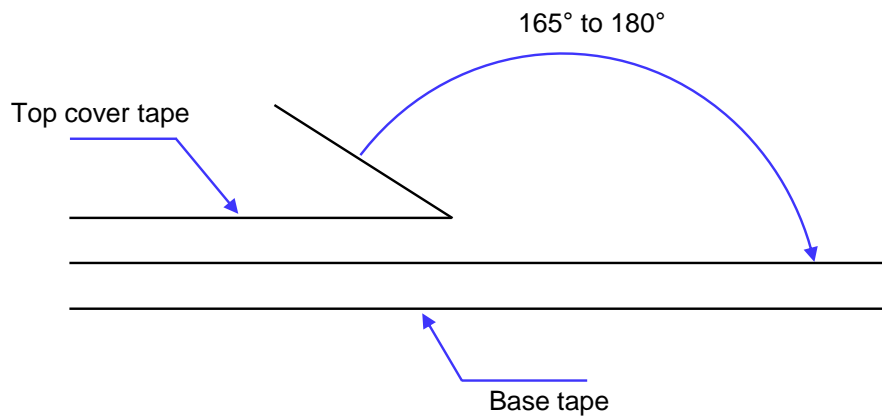
1. IR reflow times: within 3 times.
2. Nitrogen adopted is recommended while in IR reflow.

MHCI06030 Series Specification

11 Packaging

11.1 Packaging-cover tape

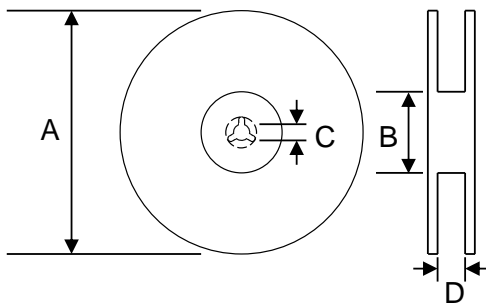
The force for tearing off cover tape is 10 to 130 grams.



11.2 Packaging quantity

Type	pcs/reel
06030	1000

11.3 Reel dimensions



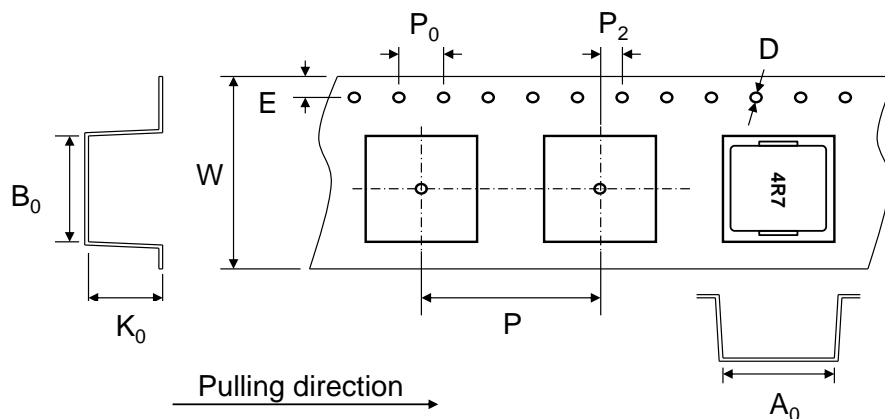
Dimensions in mm

Type	A	B	C	D
06030	330	100	13	16

MHCI06030 Series Specification

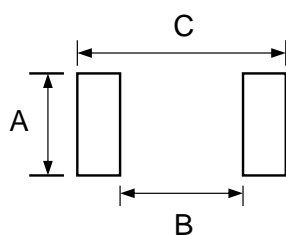
11 Packaging

11.4 Tape dimensions in mm



Type	A ₀	B ₀	K ₀	D	E	W	P	P ₀	P ₂
06030	6.9	7.6	3.4	1.5	1.75	16	12	4	2

12 Recommended pattern



Dimensions in mm

Type	A	B	C
06030	3.5	3.7	8.4

13 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. Don't design/ mount any components in contact with this product.
3. The moisture sensitivity level (MSL) of products is classified as level 1.
4. Shelf life: 1 years from the date of shipment.

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14 Graph

