



SPECIFICATION FOR APPROVAL

Customer : _____

Customer P/N: _____

Drawing No : _____

Quantity : 0 Pcs. Date : 2015/07/13

Chilisin P/N : MHCB10040-100M-AU

Automotive Grade Inductor

**Halogen Free
RoHS Compliant
REACH Compliant
Lead Free Solders
AEC-Q200**

奇力新電子股份有限公司

Chilisin Electronic sCorp
No. 29, Alley 301, Tehhsin Rd.,
Hukou,Hsinchu 303, Taiwan
TEL : +886-3- 599-2646
FAX : +886-3- 599-9176
E-mail : sales@chilisin.com.tw
http : //www.chilisin.com.tw

東莞奇力新電子有限公司

Chilisin Electronics (Dongguan) Co., Ltd.
No. 78, Puxing Rd., Yuliangwei Administration
Area, Qingxi Town, Dongguan City,
Guangdong,China
TEL : +86-769-8773-0251~3
FAX : +86-769-8773-0232
E-mail : cect@chilisin.com.tw

奇力新電子(河南)有限公司

Chilisin Electronics (Henan) Co., Ltd.
XiuWu Xian, industry gathering area
JiaoZuo, Henan China
Postal Code:454350
TEL:+86-391-717-0682
FAX:+86-391-717-0666

奇力新電子(蘇州)有限公司

Chilisin Electronics (Suzhou) Co., Ltd.
No.143,Song Shan Rd., Suzhou New District,
Suzhou,China
Postal Code:215129
TEL:+86-512-6841-2350

Drawn by
陳瑞揚 ryan.chen

Checked by
邱明傑 Joseph.Chiu

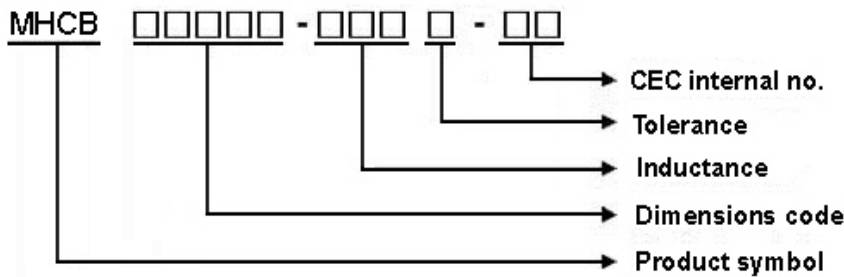
Approved by
陳瑞揚 ryan.chen

MHCB10040 Series Specification

AEC-Q200

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

2 Part Numbering:



3 Rating:

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

Storage Temperature: (on tape & reel): -20°C to $+40^{\circ}\text{C}$; 75% RH max.

4 Marking:



Ex : MHCB10040-3R3M-AU

Marking : 3R3

Marking color : Black

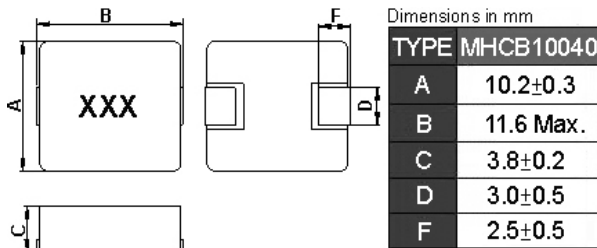
5 Standard Testing Condition

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

MHCB10040 Series Specification

AEC-Q200

6 Configuration and Dimensions:



7 Electrical Characteristics:

Part No.	Inductance (uH)	Test Freq.	Tolerance (±%)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC (mΩ)Max.	Marking
MHCB10040-R47M-AU	0.47	1MHz,0.5V	20	30	45	1.32(1.2typ)	R47
MHCB10040-1R0M-AU	1	1MHz,0.5V	20	18	30	3.5(3.2typ)	1R0
MHCB10040-2R2M-AU	2.2	1MHz,0.5V	20	12	26	7.0(6.3typ)	2R2
MHCB10040-3R3M-AU	3.3	1MHz,0.5V	20	11	22	11(10typ)	3R3
MHCB10040-4R7M-AU	4.7	1MHz,0.5V	20	10	18	16.5(15typ)	4R7
MHCB10040-6R8M-AU	6.8	1MHz,0.5V	20	9	14	22(20typ)	6R8
MHCB10040-100M-AU	10	1MHz,0.5V	20	7	10	30(27typ)	100

Note:

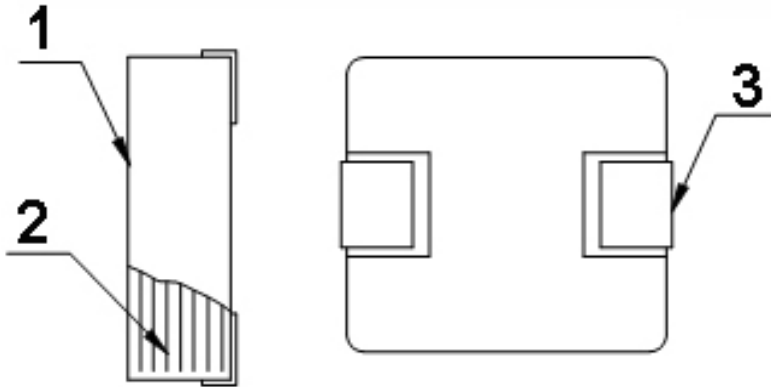
1. Operating temperature range -40°C~125°C (Including self - temperature rise)
2. I_{sat} for Inductance drop 30% from its value without current.
3. I_{rms} for a 40°C temperature rise from 25°C ambient.
4. The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions.
Circuit design 125°C under worst case operating conditions. Component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

MHCB10040 Series Specification

AEC-Q200

8 MHCB10040 Series

8.1 Construction:



8.2 Material List:

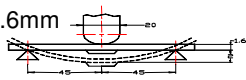
No	Part	Material
1	Coating+Core	Polymer+Carbonyl Iron powders
2	Wire	Copper Wire
3	Terminal	Terminal Copper

MHCB10040 Series Specification

AEC-Q200

9 Reliability of Large Current and Low Loss SMD Power Inductor

1-1.Mechanical Performance

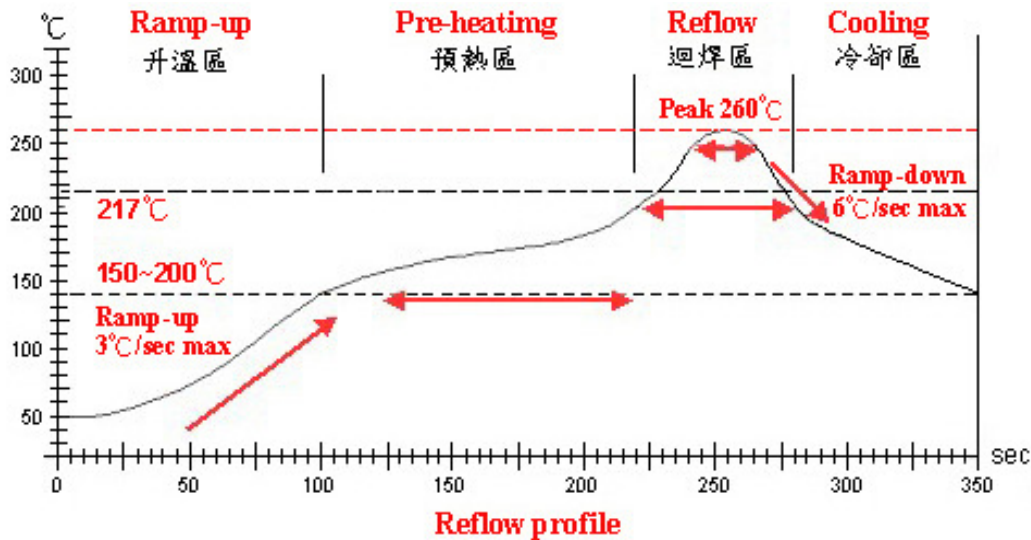
No	Item	Specification	Test Method
1-1-1	Board Flex	The forces applied on the right conditions must not damage the terminal electrode and the ferrite	Refer to AEC-Q200-005 Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 60sec 
1-1-2	Resistance to Soldering Heat	Appearance: No damage Inductance change shall be within $\pm 10\%$.	Refer to MIL-STD-202 Method 210 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
1-1-3	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Refer to J-STD-002 Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245 \pm 5°C (Pb-Free) Immersion Time: 4 \pm 1sec
1-1-4	Terminal Strength Test	Appearance: No damage	Refer AEC-Q200-006 Soldered on PCB for testing as fig. Force : 1.8kg Keeping Time: 60 seconds.
1-1-5	Resistance to Solvent	There must be no change in appearance or obliteration of marking	Refer to MIL-STD-202 Method 215 Inductors must withstand 6 minutes of alcohol or water. Sample Size : 15 pcs
1-1-6	Vibration	Appearance: No damage Inductance change shall be within $\pm 10\%$.	Refer MIL-STD-202 Method 204 Vibration waveform: Sine waveform Vibration frequency: 10Hz~2000Hz Vibration acceleration: 5g Sweep rate: 0.764386octave/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 change shall be within $\pm 30\%$	Refer to JESD Method JA-104 Total cycles: 1000 cycles Temperature Cycling Test Conditions : -40 to +125 °C -40 °C Soak Mode Condition : 30 minutes 125 °C Soak Mode Condition : 30 minutes Measured after exposure in the room condition for 24hrs
1-2-2	Biased Humidity Resistance		Refer to MIL-STD-202 Method 103 Temperature: 85 \pm 2°C 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 \pm 3°C / Relative Humidity: 0% Applied Current: Rated Current /Time: 1000hrs Measured after exposure in the room condition for 24hrs
1-2-4	Operational Life		Refer to MIL-PRF-27 Temperature: 85 \pm 3°C Applied Current : Rated Current Time: 1000hrs Measured after exposure in the room condition for 24hrs

MHCB10040 Series Specification

AEC-Q200



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

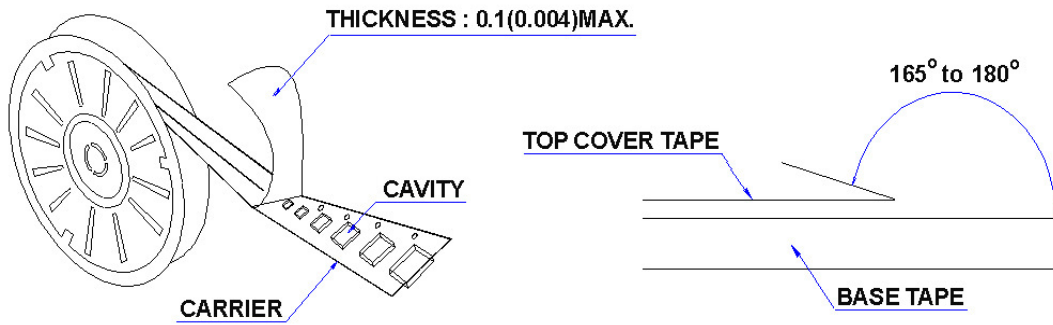
MHCB10040 Series Specification

AEC-Q200

11 Packaging:

11.1 Packaging -Cover Tape

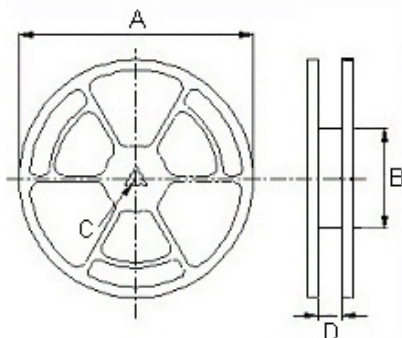
The force for tearing off cover tape is 10 to 130 grams in the arrow direction.



11.2 Packaging Quantity

TYPE	BULK	PCS/REEL
MHCB10040	✓	500

11.3 Reel Dimensions



Reel Dimension : m/m

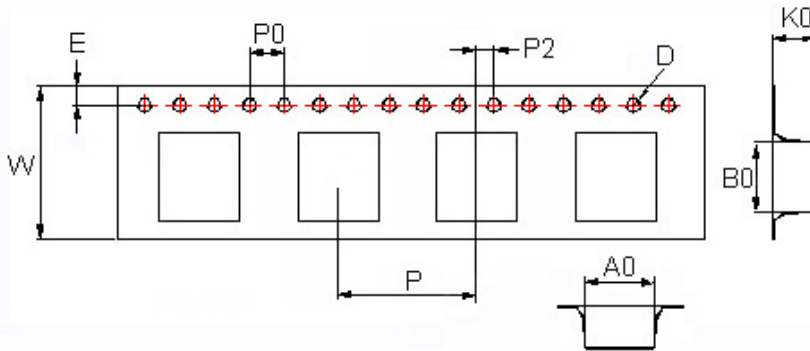
TYPE	A	B	C	D
MHCB10040	330	100	13	24.4

MHCB10040 Series Specification

AEC-Q200

11 Packaging:

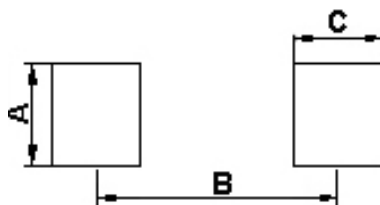
11.4 Tape Dimensions in mm



TYPE	A0	B0	K0	D	E	W	P	P0	P2
MHCB10040	10.6	11.7	4.25	1.55	1.75	24	16	4	2

12 Recommended Land Pattern:

PAD LAYOUT



Dimensions in mm

TYPE	A(in/mm)	B(in/mm)	C(in/mm)
MHCB10040	0.157/4.0	0.374/9.5	0.138/3.5

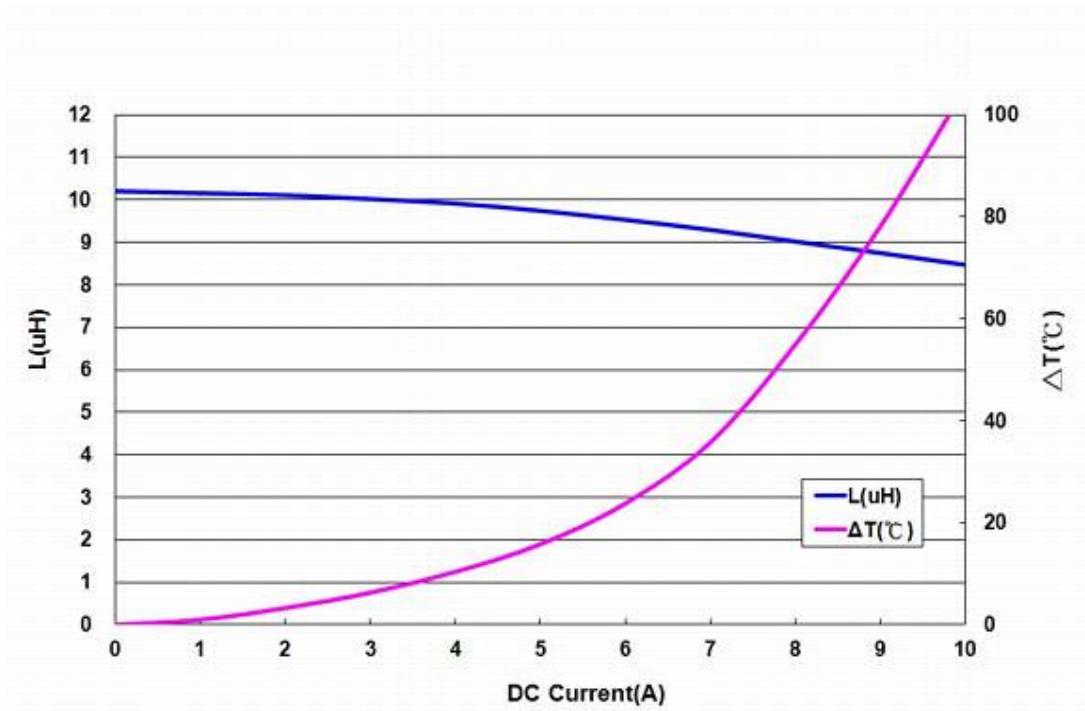
13 Note:

1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. 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. The moisture sensitivity level (MSL) of products is classified as level 1.

MHCB10040 Series Specification

AEC-Q200

14 Graph: MHCB10040-100M-AU



单击下面可查看定价，库存，交付和生命周期等信息

[>>CHILISIN\(奇力新\)](#)

[>>点击查看相关商品](#)