Power Inductor MHCB Series

Automotive AEC-Q200

RoHS Compliant
Halogen Free
REACH Compliant



Power Circuit | Shield | Wire Wound | Metal | Ultra High Current

■ Part Numbering

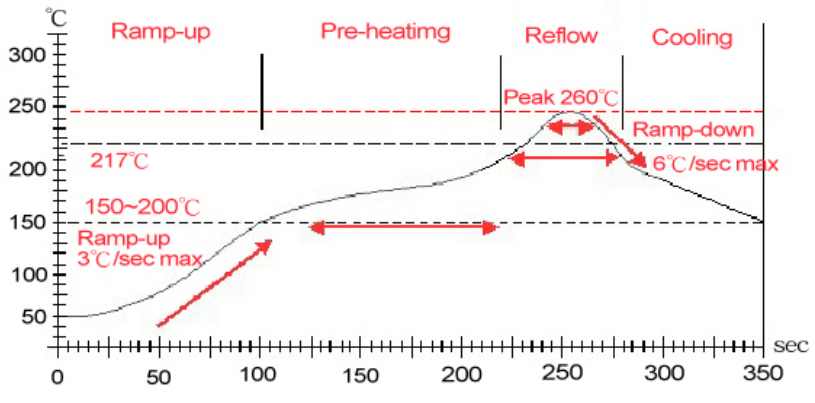
MHCB	06030	-	1R0	M	-	AU
Series Name	Dimensions Code (mm)		Inductance (uH)	Tolerance		Internal Code

Dimensions Code	(mm)
06024	7.3x6.8x2.2
06030	7.3x6.8x2.8
10040	11.6x10.2x3.8
12050	14.0x12.8x4.8
12060	14.0x12.8x6.0
12065	14.0x12.8x6.5

Inductance (uH)	
R22	0.22
R33	0.33
3R3	3.3

Tolerance	
M	±20%

■ Recommend Reflow Profile



Reflow profile

Lead-Free(LF)

Item.	Ramp-up	Pre-heatimg	Reflow	Peak Temp	Cooling
Temp.scope	R.T. ~ 150℃	150℃ ~ 200℃	217℃	260±5℃	Peak Temp. ~ 150℃
Time spec.	—	60 ~ 180sec	60 ~ 150sec	20 ~ 40sec	—
Time result	—	75 ~ 100sec	90 ~ 120sec	20 ~ 35sec	—

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CHILISIN ELECTRONICS CORP.

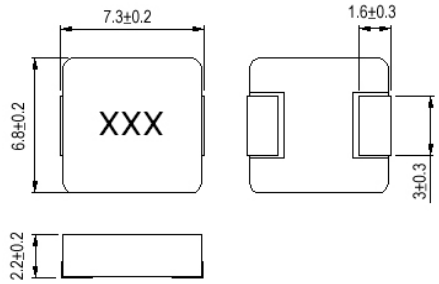
ISO9001 | ISO14001 | TS16949

Power Inductor MHCB Series

Automotive
AEC-Q200

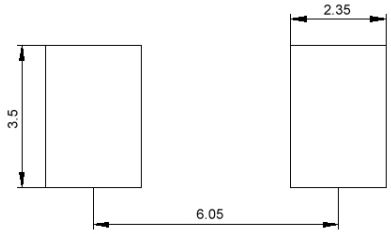
MHCB06024 - AU Type

■ Dimensions



unit:mm

■ Recommended Land Pattern



unit:mm

■ Electrical Characteristics

Part No.	Inductance (uH)	Test Freq.	RDC (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Tolerance (±%)	Marking
MHCB06024-2R2M-AU	2.2	1MHz,0.5V	22(20typ)	14	7	20	2R2
MHCB06024-4R7M-AU	4.7	1MHz,0.5V	45(41typ)	11	5	20	4R7

Note: When ordering, please specify tolerance code. Tolerance: M=±20%

1. Operating temperature range - 55℃ ~ 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 with current
4. Measure Equipment:
   L: WK3260B or WK6500P
   RDC: CHEN HWA502 or 16502
   Isat: WK3260B+WK3265B
   Irms: CHROMA 1810

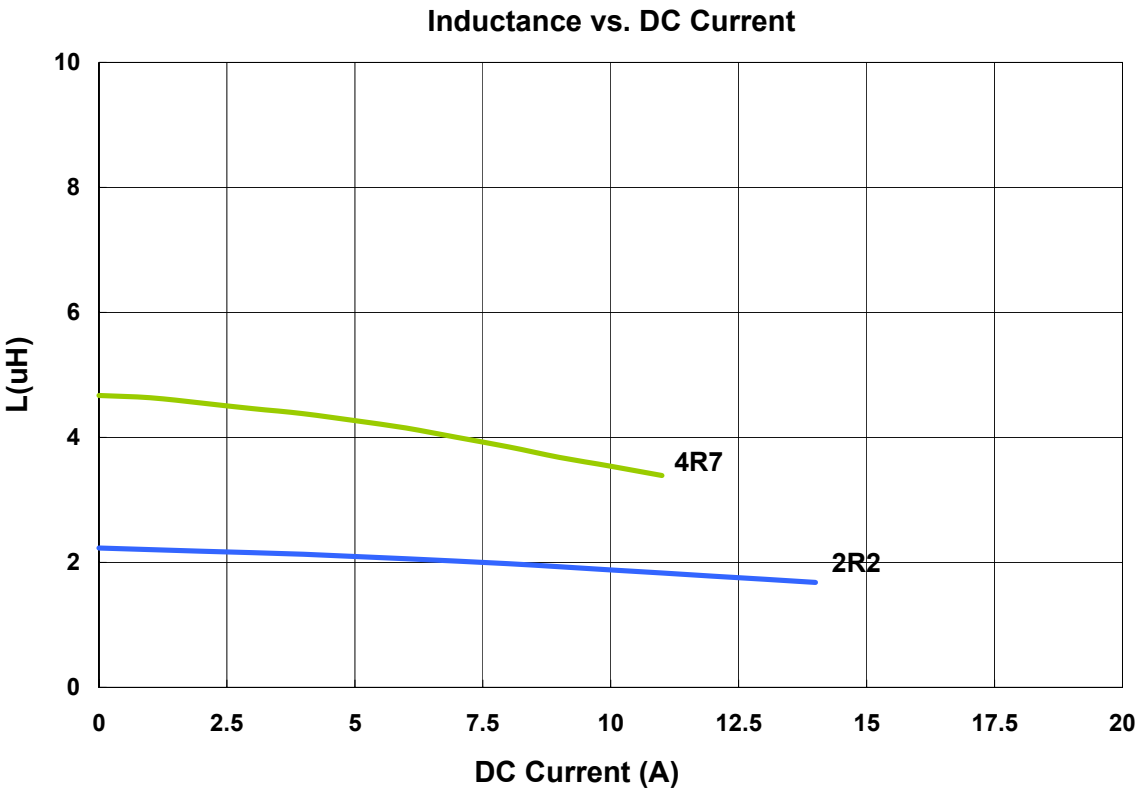
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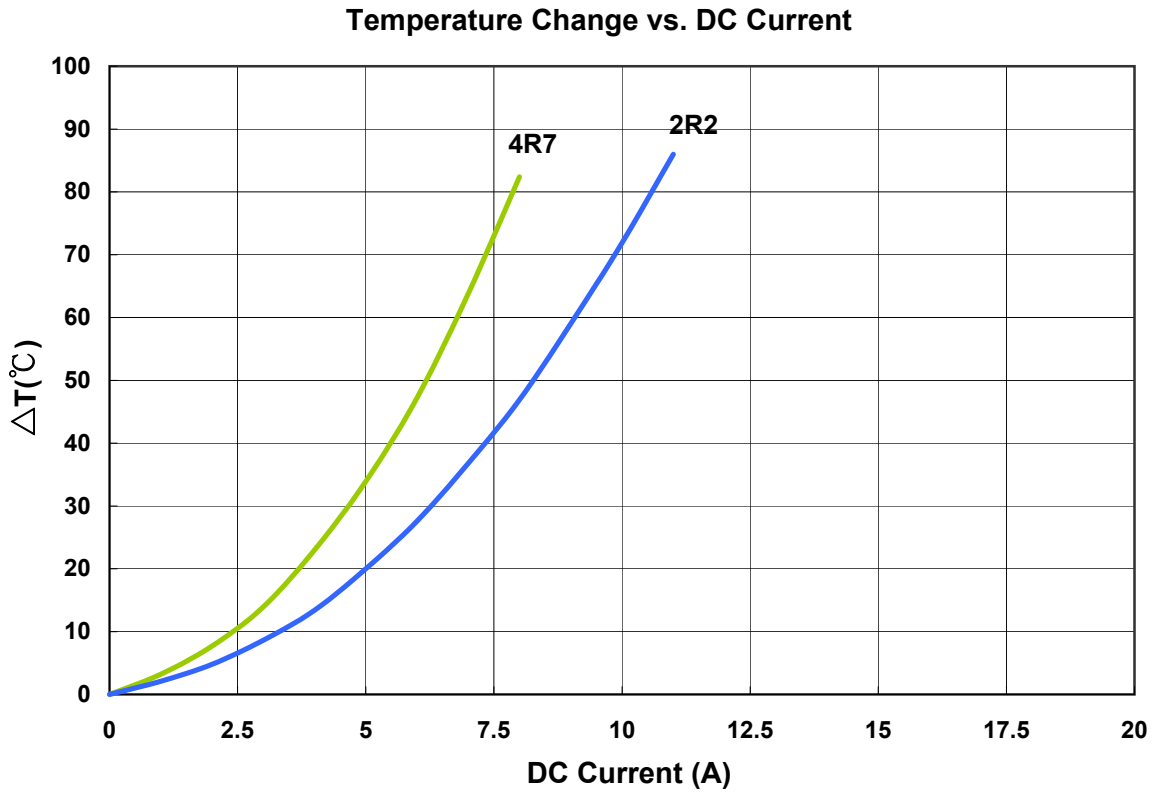
Power Inductor MHCB Series

Automotive
AEC-Q200

MHCB06024 - AU Type

■ Characteristics Graph





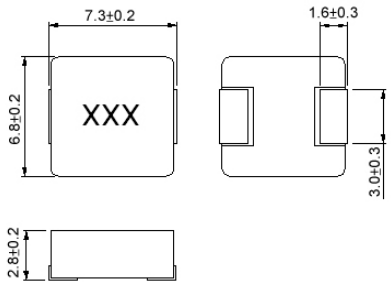
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Power Inductor MHCB Series

Automotive AEC-Q200

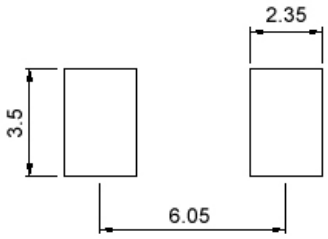
MHCB06030 - AU Type

■ Dimensions



unit:mm

■ Recommended Land Pattern



unit:mm

■ Electrical Characteristics

Part No.	Inductance (uH)	Test Freq.	RDC (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Tolerance (±%)	Marking
MHCB06030-R22M-AU	0.22	1MHz,0.5V	2.8(2.5typ)	40	23	20	R22
MHCB06030-R47M-AU	0.47	1MHz,0.5V	4.2(3.8typ)	27	17.5	20	R47
MHCB06030-1R0M-AU	1.0	1MHz,0.5V	8.3(7.5typ)	24	11	20	1R0
MHCB06030-1R5M-AU	1.5	1MHz,0.5V	12(11typ)	20	9.5	20	1R5
MHCB06030-2R2M-AU	2.2	1MHz,0.5V	20(18typ)	18	8	20	2R2
MHCB06030-3R3M-AU	3.3	1MHz,0.5V	30(28typ)	13.5	6	20	3R
MHCB06030-4R7M-AU	4.7	1MHz,0.5V	40(36typ)	11	5.5	20	4R7
MHCB06030-6R8M-AU	6.8	1MHz,0.5V	48(43typ)	9	4.8	20	6R8
MHCB06030-8R2M-AU	8.2	1MHz,0.5V	68(64typ)	7.5	4	20	8R2
MHCB06030-100M-AU	10	1MHz,0.5V	102(85typ)	8	3	20	100

Note: When ordering, please specify tolerance code. Tolerance: M=±20%

1. Operating temperature range - 55℃ ~ 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 with current
4. Measure Equipment:
   L: WK3260B or WK6500P
   RDC: CHEN HWA502 or 16502
   Isat: WK3260B+WK3265B
   Irms: CHROMA 1810

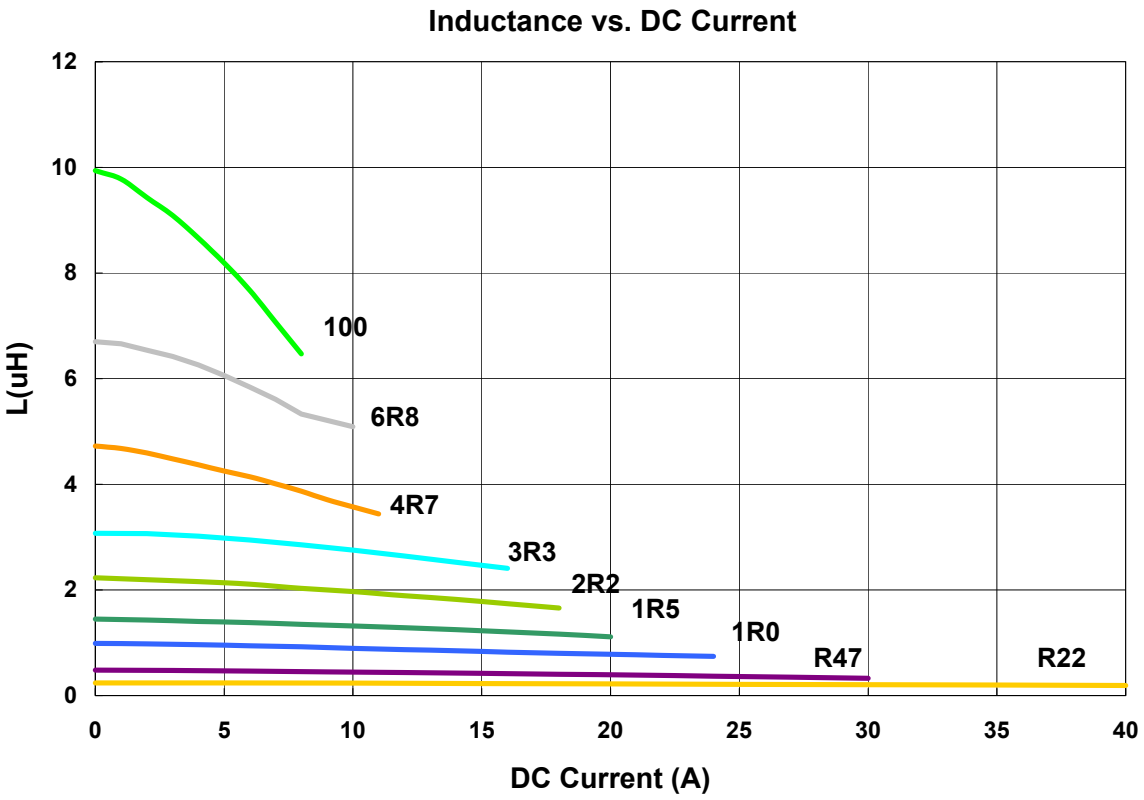
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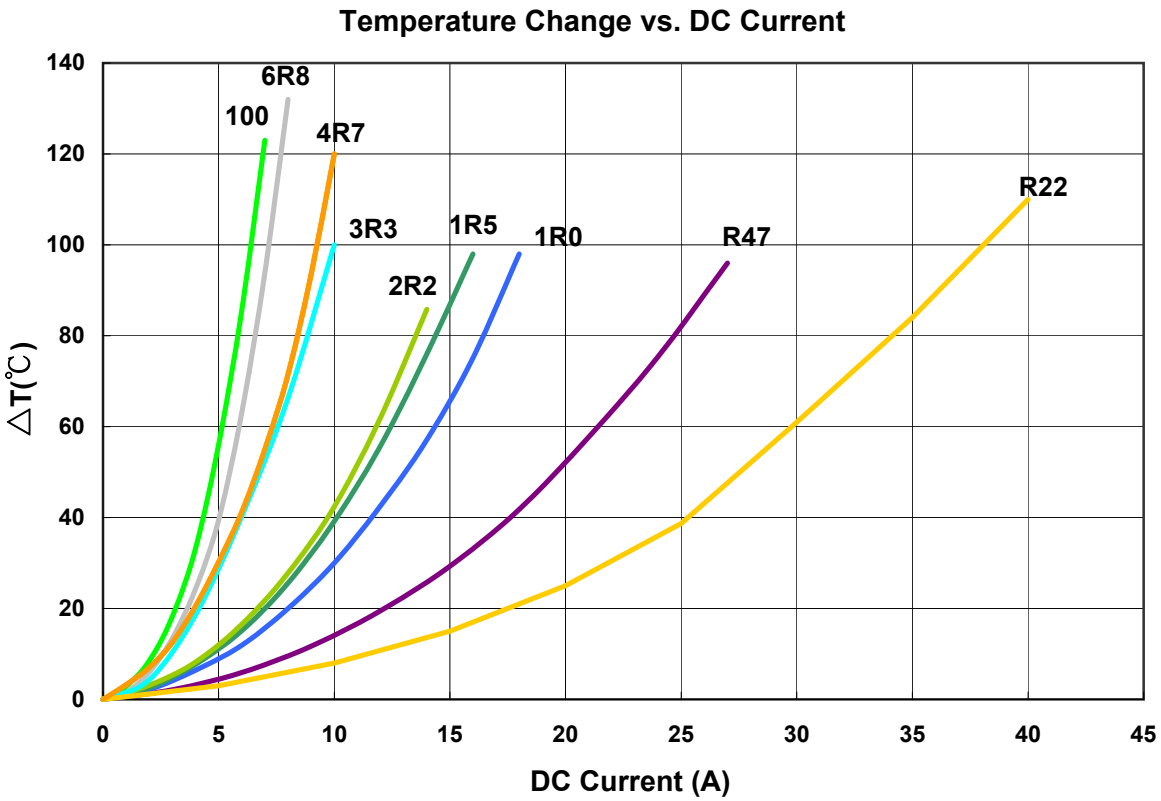
Power Inductor MHCB Series

Automotive
AEC-Q200

MHCB06030 - AU Type

■ Characteristics Graph





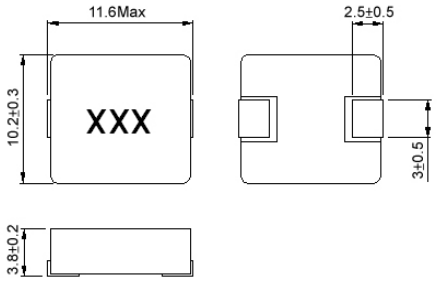
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Power Inductor MHCB Series

Automotive AEC-Q200

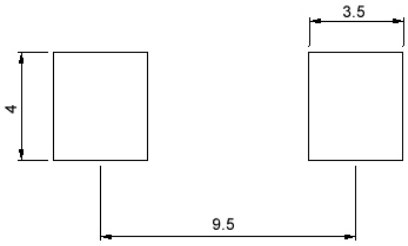
MHCB10040 - AU Type

■ Dimensions



unit:mm

■ Recommended Land Pattern



unit:mm

■ Electrical Characteristics

Part No.	Inductance (uH)	Test Freq.	RDC (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Tolerance (±%)	Marking
MHCB10040-R47M-AU	0.47	1MHz,0.5V	1.32(1.2typ)	45	30	20	R47
MHCB10040-1R0M-AU	1.0	1MHz,0.5V	3.5(3.2typ)	30	18	20	1R0
MHCB10040-2R2M-AU	2.2	1MHz,0.5V	7.0(6.3typ)	26	12	20	2R2
MHCB10040-3R3M-AU	3.3	1MHz,0.5V	11(10typ)	22	11	20	3R3
MHCB10040-4R7M-AU	4.7	1MHz,0.5V	16.5(15typ)	18	10	20	4R7
MHCB10040-6R8M-AU	6.8	1MHz,0.5V	22(20typ)	14	9	20	6R8
MHCB10040-100M-AU	10	1MHz,0.5V	30(27typ)	10	7	20	100

Note: When ordering, please specify tolerance code. Tolerance: M=±20%

1. Operating temperature range - 55℃ ~ 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 with current
4. Measure Equipment:
   L: WK3260B or WK6500P
   RDC: CHEN HWA502 or 16502
   Isat: WK3260B+WK3265B
   Irms: CHROMA 1810

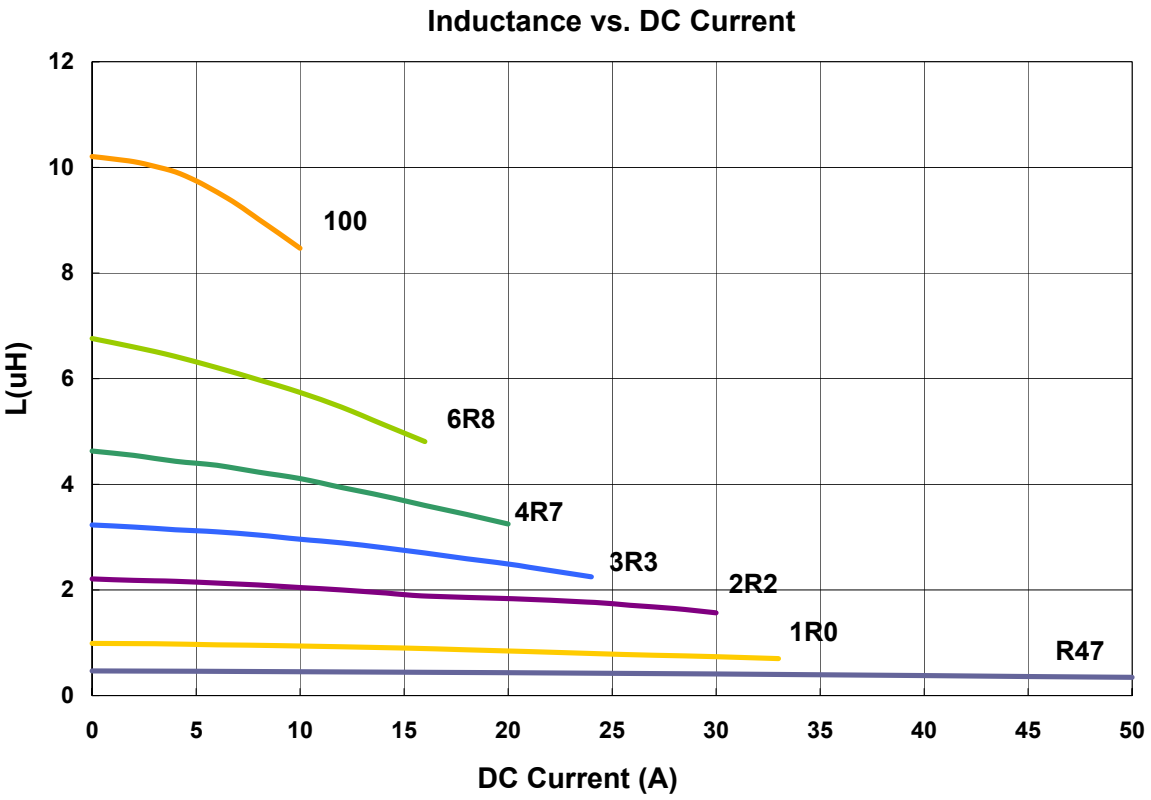
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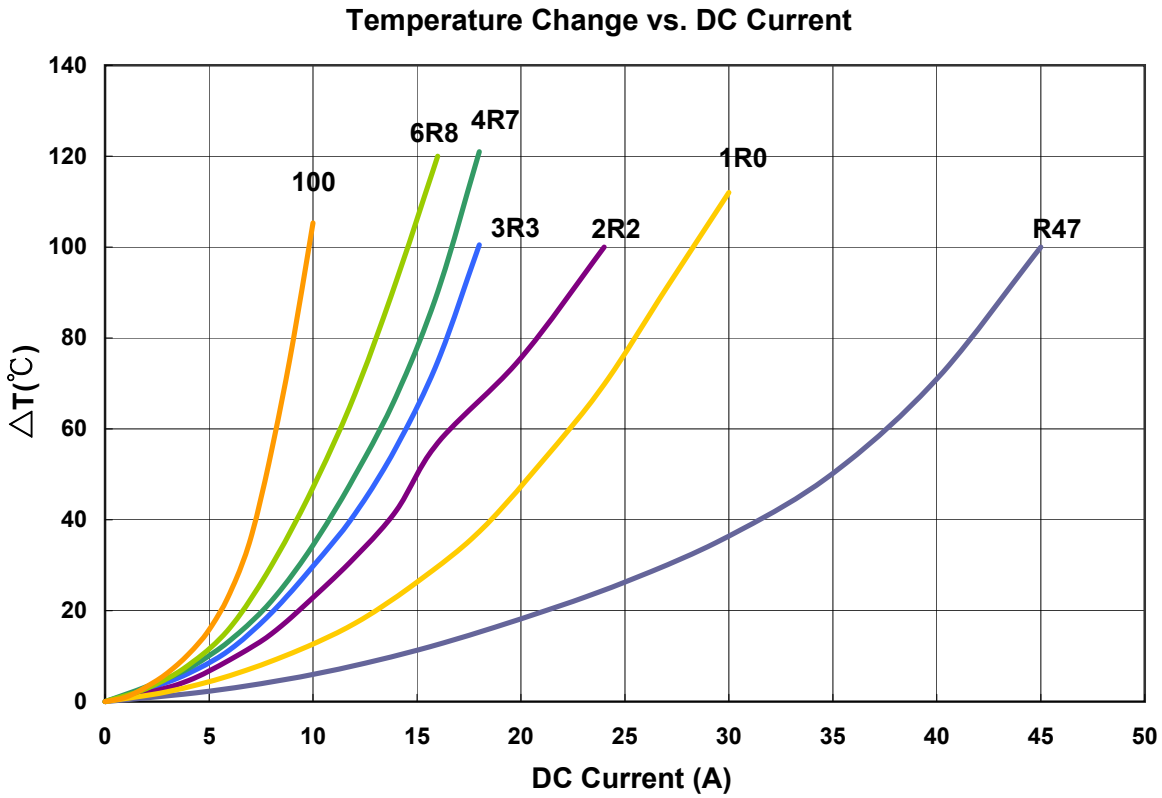
Power Inductor MHCB Series

Automotive
AEC-Q200

MHCB10040 - AU Type

■ Characteristics Graph





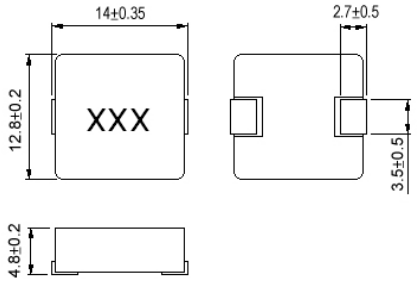
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Power Inductor MHCB Series

Automotive AEC-Q200

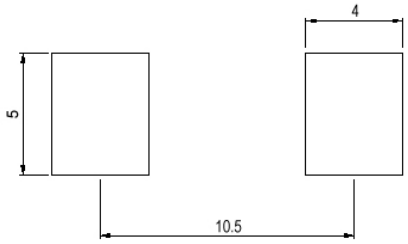
MHCB12050 - AU Type

■ Dimensions



unit:mm

■ Recommended Land Pattern



unit:mm

■ Electrical Characteristics

Part No.	Inductance (uH)	Test Freq.	RDC (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Tolerance (±%)	Marking
MHCB12050-R22M-AU	0.22	1MHz,0.5V	0.8(0.6typ)	70	50	20	R22
MHCB12050-R33M-AU	0.33	1MHz,0.5V	1.0(0.8typ)	60	45	20	R33
MHCB12050-R56M-AU	0.56	1MHz,0.5V	1.5(1.3typ)	55	36	20	R56
MHCB12050-R82M-AU	0.82	1MHz,0.5V	1.7(1.5typ)	45	32	20	R82

Note: When ordering, please specify tolerance code. Tolerance: M=±20%

1. Operating temperature range - 55℃ ~ 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 with current
4. Measure Equipment:
   L: WK3260B or WK6500P
   RDC: CHEN HWA502 or 16502
   Isat: WK3260B+WK3265B
   Irms: CHROMA 1810

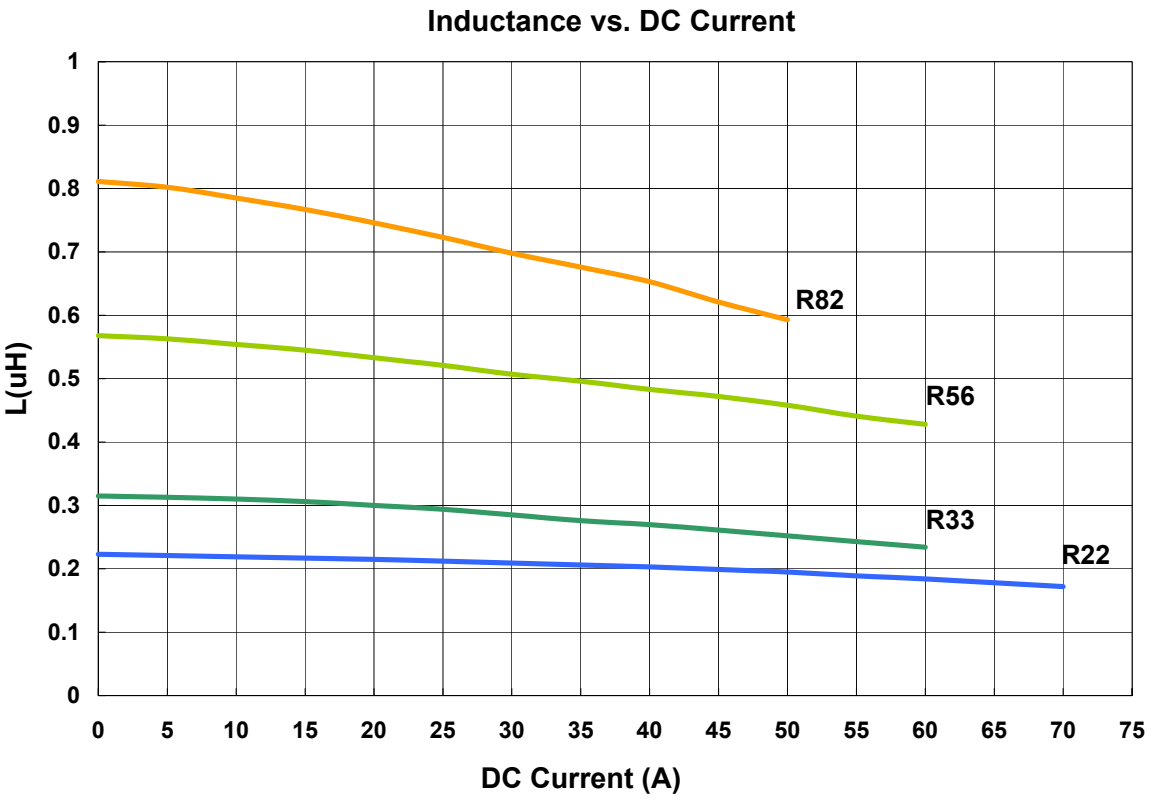
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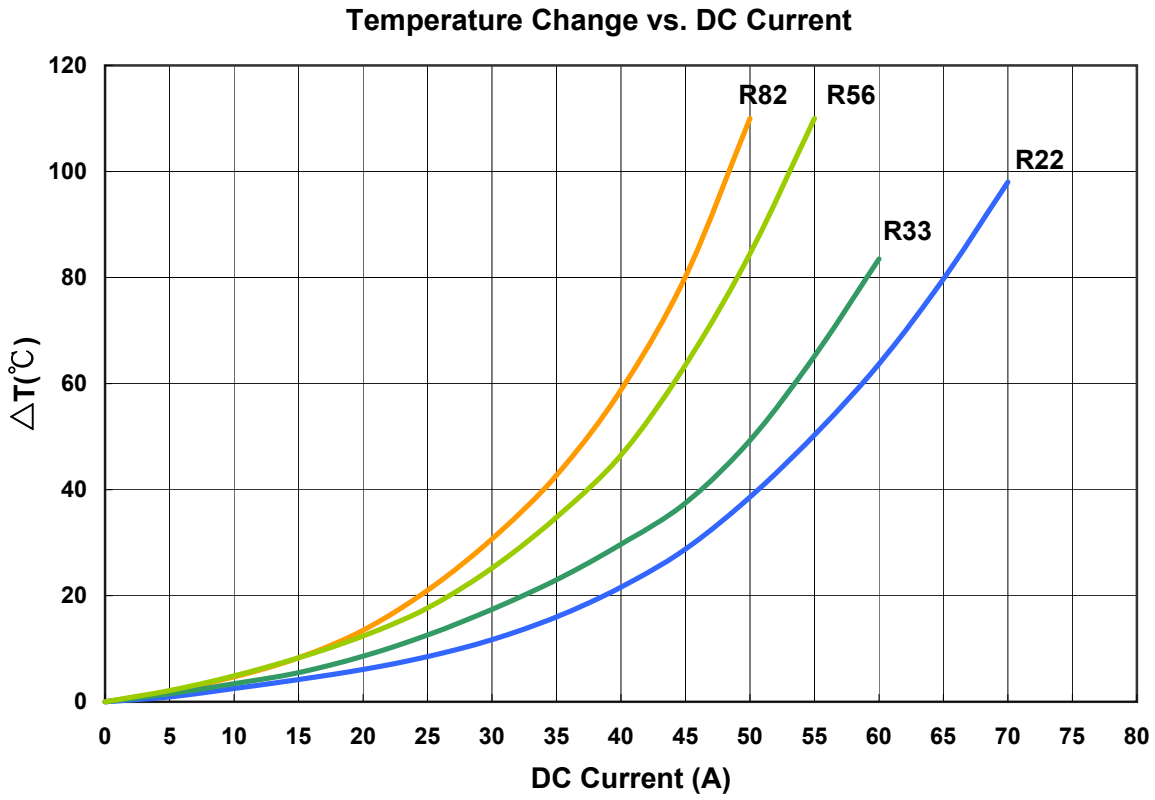
Power Inductor MHCB Series

Automotive
AEC-Q200

MHCB12050 - AU Type

■ Characteristics Graph





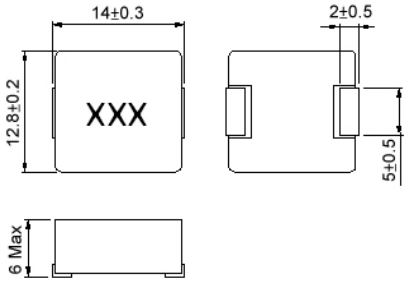
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Power Inductor MHCB Series

Automotive AEC-Q200

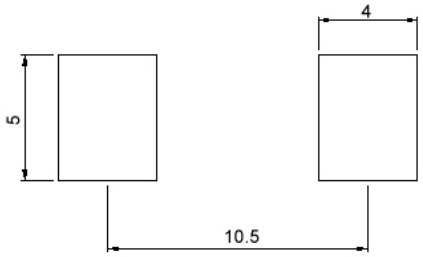
MHCB12060 - AU Type

Dimensions



unit:mm

Recommended Land Pattern



unit:mm

Electrical Characteristics

Part No.	Inductance (uH)	Test Freq.	RDC (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Tolerance (±%)	Marking
MHCB12060-R47M-AU	0.47	1MHz,0.5V	1.32(1.2typ)	63	41	20	R47
MHCB12060-3R3M-AU	3.3	1MHz,0.5V	6.6(6.0typ)	35	18	20	3R3
MHCB12060-8R2M-AU	8.2	1MHz,0.5V	16.5(15yp)	22	11	20	8R2
MHCB12060-100M-AU	10	1MHz,0.5V	17.6(16typ)	20	10	20	100

Note: When ordering, please specify tolerance code. Tolerance: M=±20%

1. Operating temperature range - 55℃ ~ 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 with current
4. Measure Equipment:
   L: WK3260B or WK6500P
   RDC: CHEN HWA502 or 16502
   Isat: WK3260B+WK3265B
   Irms: CHROMA 1810

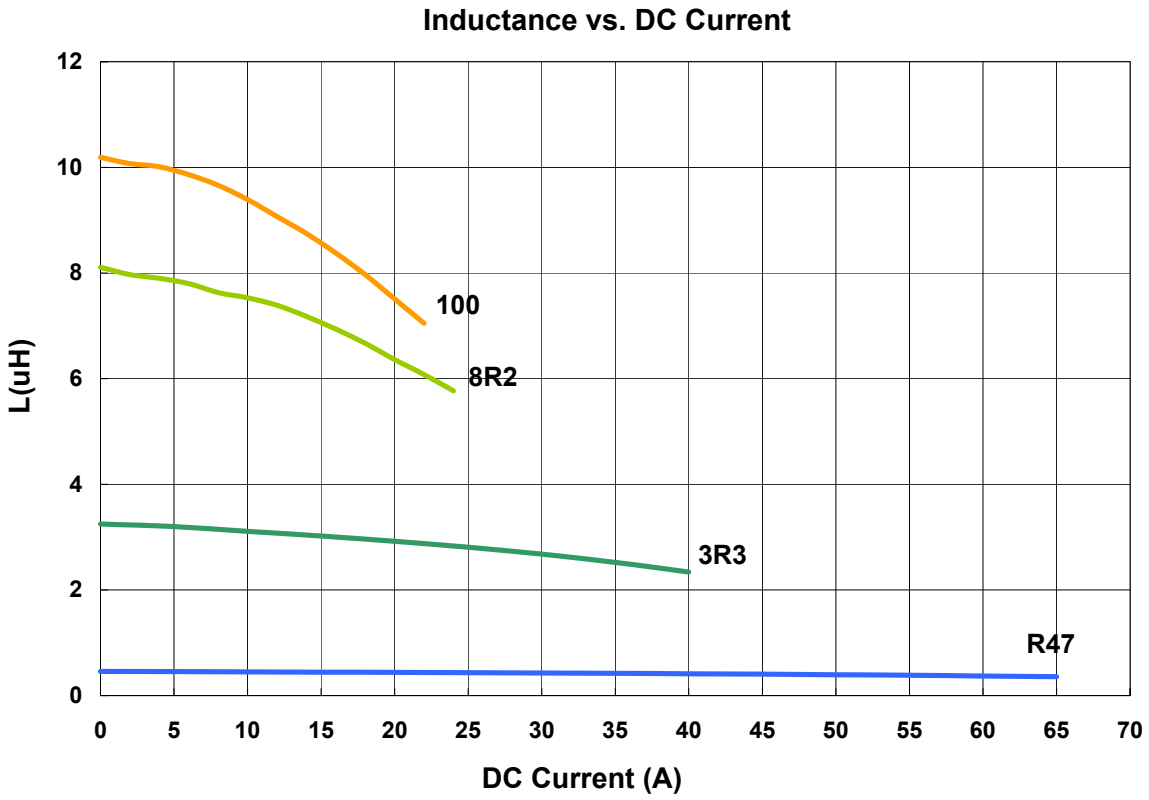
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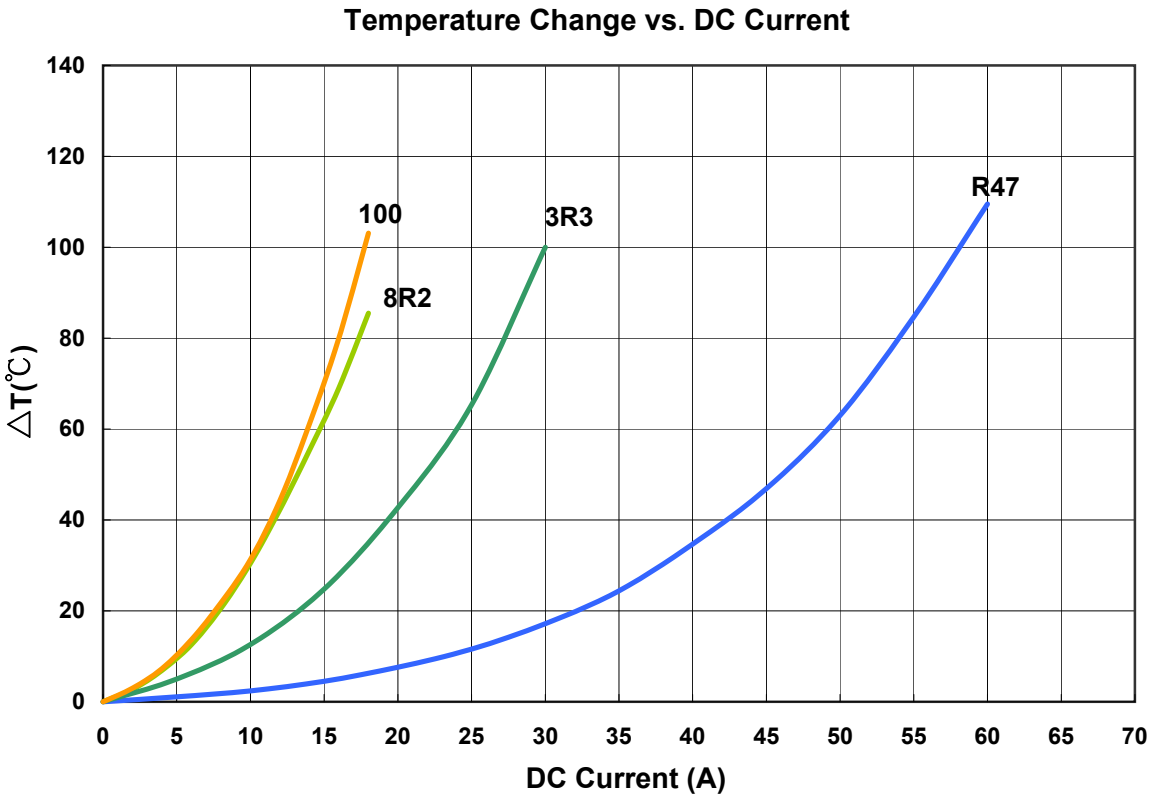
Power Inductor MHCB Series

Automotive
AEC-Q200

MHCB12060 - AU Type

■ Characteristics Graph





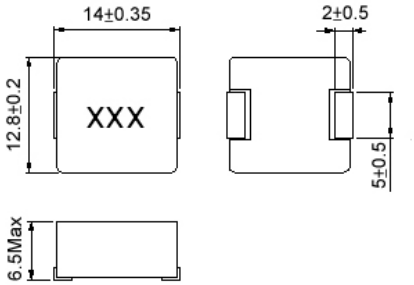
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Automotive AEC-Q200

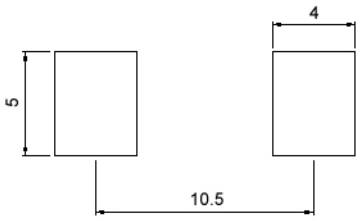
MHCB12065 - AU Type

■ Dimensions



unit:mm

■ Recommended Land Pattern



unit:mm

■ Electrical Characteristics

Part No.	Inductance (uH)	Test Freq.	RDC (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Tolerance (±%)	Marking
MHCB12065-R47M-AU	0.47	1MHz,0.5V	1.32(1.2typ)	63	41	20	R47
MHCB12065-3R3M-AU	3.3	1MHz,0.5V	6.6(6.0typ)	35	18	20	3R3

Note: When ordering, please specify tolerance code. Tolerance: M=±20%

1.Operating temperature range - 55℃ ~ 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. Measure Equipment:

L: WK3260B or WK6500P

RDC: CHEN HWA502 or 16502

Isat: WK3260B+WK3265B

Irms: CHROMA 1810

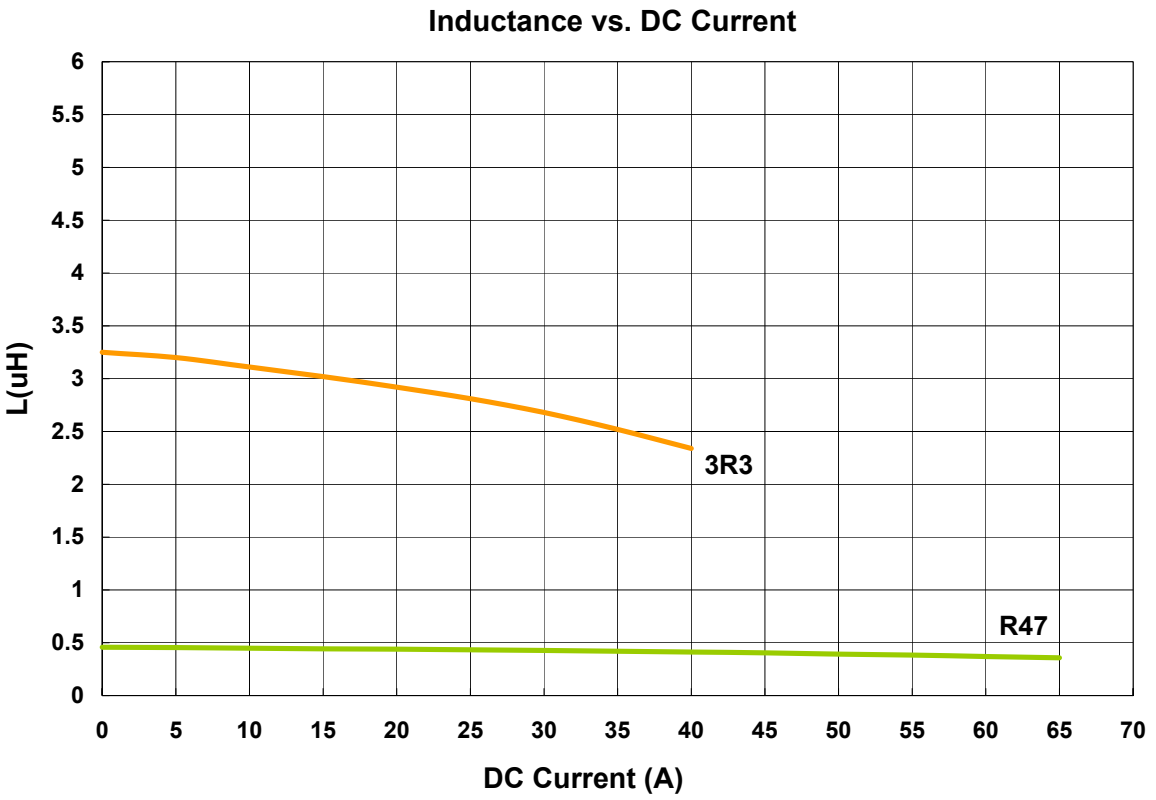
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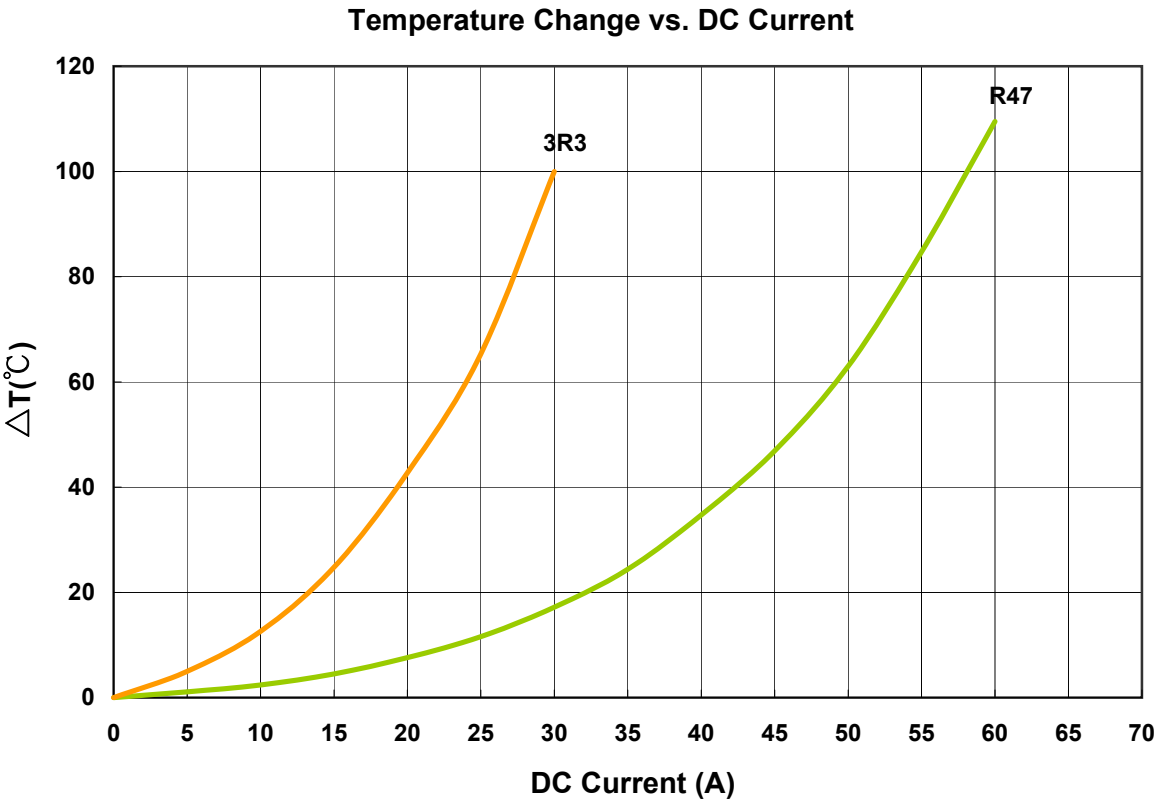
Power Inductor MHCB Series

Automotive
AEC-Q200

MHCB12065 - AU Type

■ Characteristics Graph





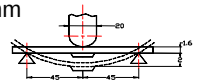
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Power Inductor MHCB Series

Automotive
AEC-Q200

Reliability

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 ±10%	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
1-1-3	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	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 mimutes of alcohol or water. Sample Size : 15 pcs
	Vibration	Appearance: No damage Inductance change shall be within ±10%	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 change shall be within±30%	Refer to JESD Method JA-104 Total cycles: 1000 cycles Temperature Cycling Test Conditions : -40 to +125 ℃ -40 ℃ Soak Mode Condition : 30 minutes 125 ℃ 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±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℃ / 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±3℃ Applied Current : Rated Current Time: 1000hrs Measured after exposure in the room condition for 24hrs

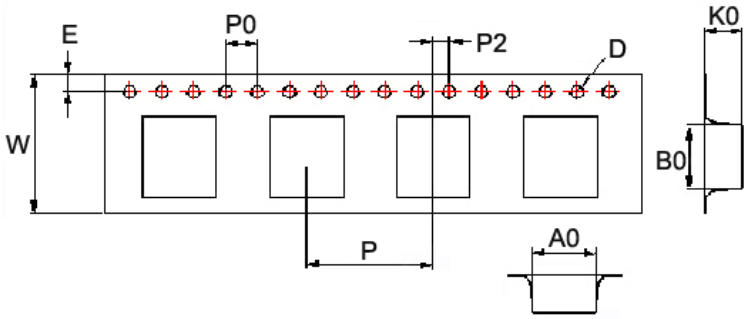
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Power Inductor MHCB Series

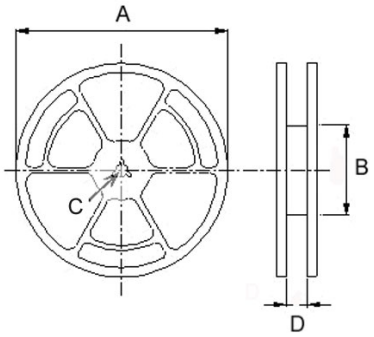
Automotive
AEC-Q200

Packaging

Tape Dimensions



Reel Dimensions



Dimensions in mm

TYPE	Tape Dimensions									Reel Dimensions				Quantity
	A0	B0	K0	D	E	W	P	P0	P2	A	B	C	D	PCS / REEL
MHCB06024	6.9	7.6	2.9	1.55	1.75	16	12	4	2	330	100	13	16	1000
MHCB06030	6.9	7.6	3.4	1.55	1.75	16	12	4	2	330	100	13	16	1000
MHCB10040	10.6	11.7	4.25	1.55	1.75	24	16	4	2	330	100	13	24.4	500
MHCB12050	13	14.6	5.25	1.55	1.75	24	16	4	2	330	100	13	24.4	500
MHCB12060	13	14.6	6.25	1.55	1.75	24	16	4	2	330	100	13	24.4	500
MHCB12065	13	14.6	6.75	1.55	1.75	24	16	4	2	330	100	13	24.4	500

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