



CUSTOMER : STD
PRODUCTS : Multilayer Ferrite Chip Beads
PART NO : MCCB Series
CUST PI/ NO :
DATE : 2021.11.30
SALES DEP :
E-MAIL :

VERSION : REV.C
CHANGE PROJECT : -
BEFORE : -
AFTER : -
CHANGE DATE : -
CUSTOMER SIGNATURE : -

APPROVAL BY :	CHECK BY :	DRAWN BY :
<i>Honey Wei</i>	<i>Leo Wang</i>	<i>May Gao</i>



MCCB Series



- Multilayer Ferrite Chip Beads
- Operating Temperature up to -40°C to $+85^{\circ}\text{C}$.
- High Current up to 6A
- Environmental Lead free
- Environmental RoHS2.0 compliant
- Environmental halogen free
- Storage Temperature : -40°C to $+85^{\circ}\text{C}$.
- Packaging 7"/13"Reel, Plastic tape: 8/12 mm wide

FEATURES

- Closed magnetic circuit structure allows high density mounting while preventing crosstalk.
- Extremely high reliability due to entirely monolithic construction.
- Low DC resistance structure of electrode to prevent wasteful electric power consumption.
- High Current rating up to 6A.

Applications

- Personal computers, communication equipment, digital telephone, electronic
- electronic games machines, CRTs, hard disk drives, cellular phones, PDAs, printers
- High current DC lines and other computer peripheral products.

PRODUCT IDENTIFICATION

MC CB 1005 RL 060 C 050
① ② ③ ④ ⑤ ⑥ ⑦

- ① Brand & Product classification
- ② Product Series NO.(CB : Ferrite Chip Beads.)
- ③ External Dimensions.(1005 : L:1.0 × W:0.5 × H:0.5) [mm]
- ④ Separator code.
- ⑤ Nominal Impedance

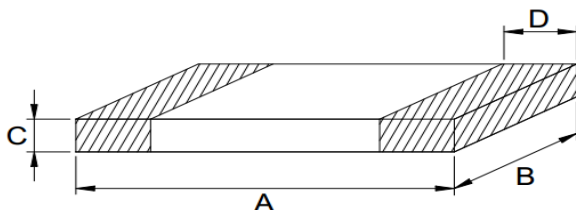
Example	Nominal Value
060	60Ω
120	120Ω
220	220Ω
600	600Ω
1000	1000Ω

- ⑥ Material Code.(C: C Type material.HC: HC Type material)
- ⑦ Rated Current.

Example	Nominal Value
050	500mA
1A	1000mA
2.5A	2500mA

Mechanical & Dimensions

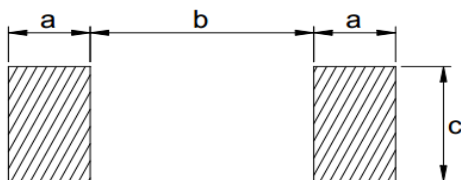
(Unit: mm)



Code	Dimensions
A	1.00 ± 0.15
B	0.50 ± 0.15
C	0.50 ± 0.15
D	0.25 ± 0.10

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	0.80 Ref
b	0.50 Ref
c	0.55 Ref

Electrical Characteristics

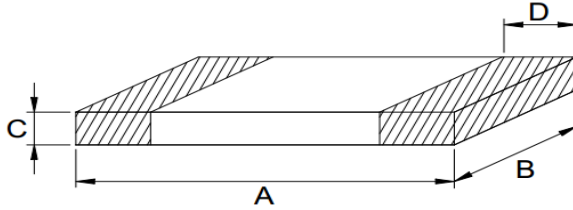
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB1005RL022C030	22±25%	0.10	300		
MCCB1005RL047C050	47±25%	0.25	500		
MCCB1005RL060C050	60±25%	0.25	500		
MCCB1005RL080C050	80±25%	0.25	500		
MCCB1005RL100C050	100±25%	0.30	500		
MCCB1005RL120C050	120±25%	0.30	500		
MCCB1005RL220C030	220±25%	0.40	300		
MCCB1005RL300C020	300±25%	0.50	200		
MCCB1005RL600C050	600±25%	0.80	500		
MCCB1005RL1000C020	1000±25%	1.20	200		
MCCB1005RL1800C010	1800±25%	2.20	100		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

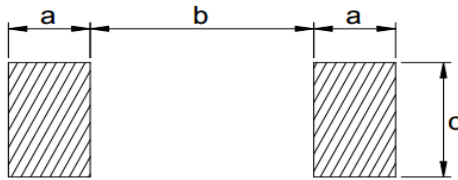
(Unit: mm)



Code	Dimensions
A	1.00 ± 0.15
B	0.50 ± 0.15
C	0.50 ± 0.15
D	0.25 ± 0.10

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	0.80 Ref
b	0.50 Ref
c	0.55 Ref

Electrical Characteristics

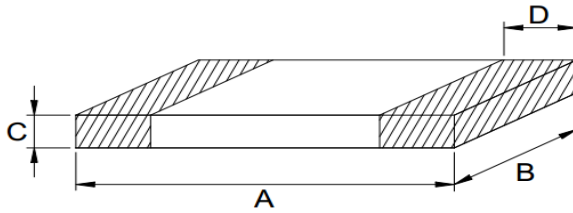
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB1005RL030HC1.3A	30±25%	0.08	1300		
MCCB1005RL060HC1A	60±25%	0.10	1000		
MCCB1005RL180HC1.5A	180±25%	0.15	1500		
MCCB1005RL220HC1.5A	220±25%	0.15	1500		
MCCB1005RL060HC2.5A	60±25%	0.032	2500		
MCCB1005RL080HC2A	80±25%	0.05	2000		
MCCB1005RL100HC2A	100±25%	0.10	2000		
MCCB1005RL120HC2A	120±25%	0.095	2000		
MCCB1005RL030HC3A	30±25%	0.04	3000		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

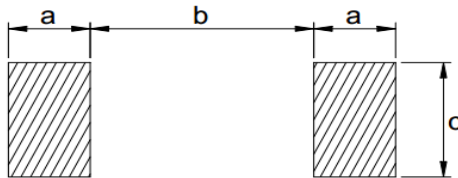
(Unit: mm)



Code	Dimensions
A	1.60 ± 0.20
B	0.80 ± 0.20
C	0.80 ± 0.20
D	0.30 ± 0.20

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.00 Ref
b	0.60 Ref
c	0.80 Ref

Electrical Characteristics

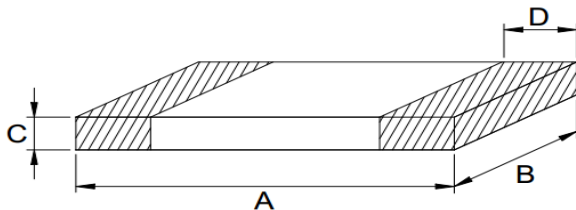
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB1608RL022C050	22±25%	0.25	500		
MCCB1608RL030C070	30±25%	0.20	700		
MCCB1608RL047C050	47±25%	0.20	500		
MCCB1608RL060C070	60±25%	0.20	700		
MCCB1608RL080C070	80±25%	0.20	700		
MCCB1608RL120C060	120±25%	0.25	600		
MCCB1608RL220C055	220±25%	0.30	550		
MCCB1608RL300C050	300±25%	0.35	500		
MCCB1608RL470C035	470±25%	0.45	350		
MCCB1608RL600C050	600±25%	0.45	500		
MCCB1608RL1000C020	1000±25%	0.70	200		
MCCB1608RL1500C020	1500±25%	1.00	200		
MCCB1608RL2000C015	2000±25%	1.20	150		
MCCB1608RL2200C030	2200±25%	1.50	300		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

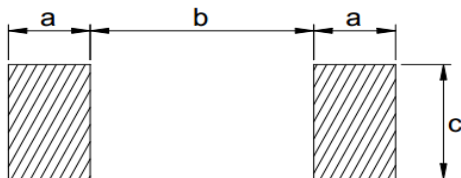
(Unit: mm)



Code	Dimensions
A	1.60 ± 0.20
B	0.80 ± 0.20
C	0.80 ± 0.20
D	0.30 ± 0.20

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.00 Ref
b	0.60 Ref
c	0.80 Ref

Electrical Characteristics

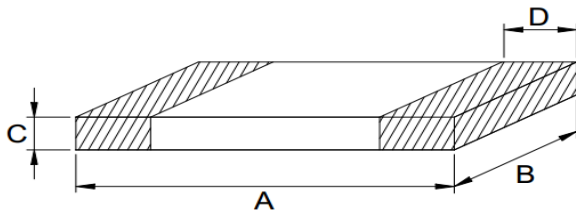
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB1608RL030HC1A	30±25%	0.08	1000		
MCCB1608RL060HC1A	60±25%	0.20	1000		
MCCB1608RL120HC1A	120±25%	0.20	1000		
MCCB1608RL180HC1.5A	180±25%	0.15	1500		
MCCB1608RL300HC1A	300±25%	0.25	1000		
MCCB1608RL330HC1.5A	330±25%	0.20	1500		
MCCB1608RL470HC1A	470±25%	0.20	1000		
MCCB1608RL600HC1A	600±25%	0.15	1000		
MCCB1608RL600HC1.5A	600±25%	0.10	1500		
MCCB1608RL1000C1A	1000±25%	0.30	1000		
MCCB1608RL180HC2A	180±25%	0.10	2000		
MCCB1608RL220HC2A	220±25%	0.10	2000		
MCCB1608RL300HC2A	300±25%	0.15	2000		
MCCB1608RL030HC3A	30±25%	0.04	3000		
MCCB1608RL040HC3A	40±25%	0.04	3000		
MCCB1608RL047HC3A	47±25%	0.04	3000		
MCCB1608RL060HC3A	60±25%	0.04	3000		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

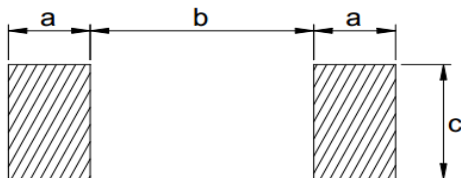
(Unit: mm)



Code	Dimensions
A	1.60 ± 0.20
B	0.80 ± 0.20
C	0.80 ± 0.20
D	0.30 ± 0.20

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.00 Ref
b	0.60 Ref
c	0.80 Ref

Electrical Characteristics

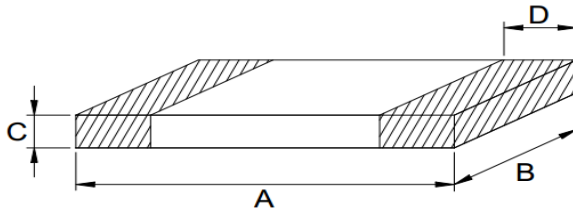
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB1608RL080HC3A	80±25%	0.04	3000		
MCCB1608RL100HC3A	100±25%	0.04	3000		
MCCB1608RL120HC3A	120±25%	0.04	3000		
MCCB1608RL470HC3A	470±25%	0.04	3000		
MCCB1608RL070HC4A	70±25%	0.04	4000		
MCCB1608RL022HC6A	22±25%	0.01	6000		
MCCB1608RL030HC6A	30±25%	0.01	6000		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

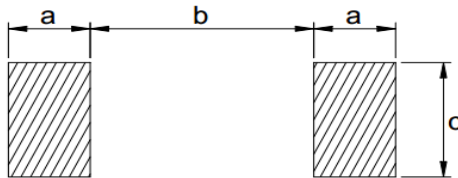
(Unit: mm)



Code	Dimensions
A	2.00 ± 0.2
B	1.25 ± 0.2
C	0.85 ± 0.2
D	0.50 ± 0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.00 Ref
b	1.00 Ref
c	1.00 Ref

Electrical Characteristics

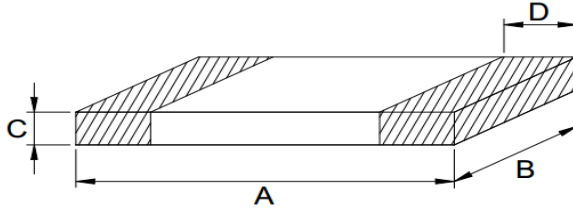
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB2012RL011C090	11±25%	0.10	900		
MCCB2012RL030C060	30±25%	0.10	600		
MCCB2012RL060C070	60±25%	0.10	700		
MCCB2012RL080C050	80±25%	0.18	500		
MCCB2012RL120C080	120±25%	0.20	800		
MCCB2012RL150C080	150±25%	0.20	800		
MCCB2012RL220C060	220±25%	0.30	600		
MCCB2012RL300C070	300±25%	0.30	700		
MCCB2012RL470C050	470±25%	0.35	500		
MCCB2012RL600C050	600±25%	0.40	500		
MCCB2012RL1000C030	1000±25%	0.40	300		
MCCB2012RL1500C030	1500±25%	0.50	300		
MCCB2012RL2000C030	2000±25%	0.90	300		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

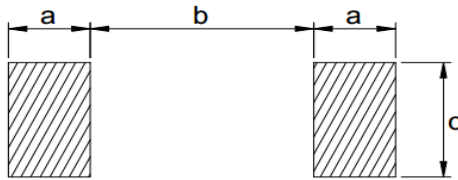
(Unit: mm)



Code	Dimensions
A	2.00 ± 0.2
B	1.25 ± 0.2
C	0.85 ± 0.2
D	0.50 ± 0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.00 Ref
b	1.00 Ref
c	1.00 Ref

Electrical Characteristics

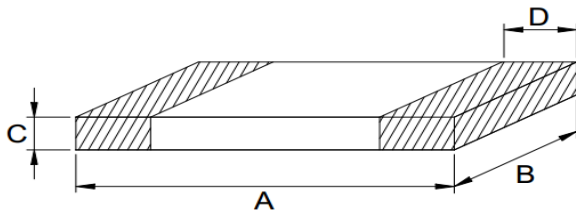
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB2012RL1000HC1.5A	1000±25%	0.12	1500		
MCCB2012RL120HC2A	120±25%	0.10	2000		
MCCB2012RL180HC2A	180±25%	0.15	2000		
MCCB2012RL300HC2A	300±25%	0.20	2000		
MCCB2012RL600HC2A	600±25%	0.10	2000		
MCCB2012RL030HC3A	30±25%	0.05	3000		
MCCB2012RL050HC3A	50±25%	0.06	3000		
MCCB2012RL060HC3A	60±25%	0.04	3000		
MCCB2012RL080HC3A	80±25%	0.04	3000		
MCCB2012RL100HC3A	100±25%	0.04	3000		
MCCB2012RL120HC3A	120±25%	0.04	3000		
MCCB2012RL150HC3A	150±25%	0.05	3000		
MCCB2012RL220HC3A	220±25%	0.04	3000		
MCCB2012RL400HC3A	400±25%	0.04	3000		
MCCB2012RL030HC4A	30±25%	0.04	4000		
MCCB2012RL040HC4A	40±25%	0.03	4000		
MCCB2012RL120HC5A	120±25%	0.02	5000		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

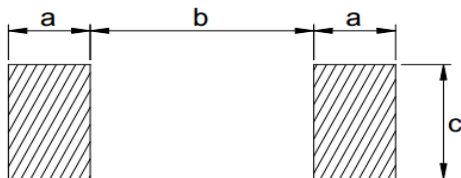
(Unit: mm)



Code	Dimensions
A	2.00 ± 0.2
B	1.25 ± 0.2
C	0.85 ± 0.2
D	0.50 ± 0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.00 Ref
b	1.00 Ref
c	1.00 Ref

Electrical Characteristics

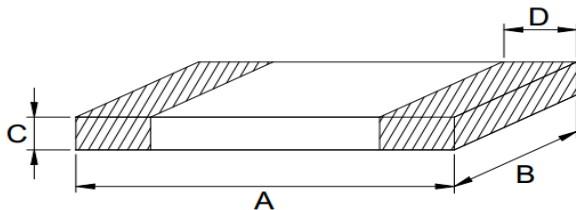
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB2012RL011HC6A	11±25%	0.01	6000		
MCCB2012RL022HC6A	22±25%	0.01	6000		
MCCB2012RL030HC6A	30±25%	0.01	6000		
MCCB2012RL060HC6A	60±25%	0.02	6000		
MCCB2012RL080HC6A	80±25%	0.025	6000		
MCCB2012RL120HC6A	120±25%	0.02	6000		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

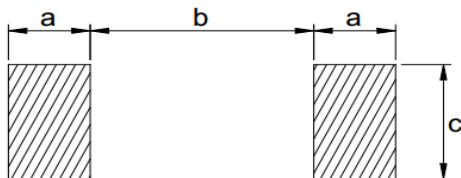
(Unit: mm)



Code	Dimensions
A	3.2 ± 0.2
B	1.6 ± 0.2
C	1.1 ± 0.2
D	0.5 ± 0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.10 Ref
b	2.20 Ref
c	1.40 Ref

Electrical Characteristics

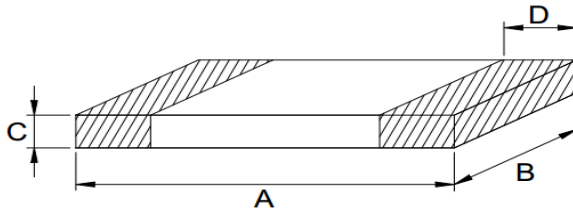
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB3216RL180C080	180±25%	0.20	800		
MCCB3216RL220C080	220±25%	0.20	800		
MCCB3216RL300C080	300±25%	0.20	800		
MCCB3216RL600C060	600±25%	0.30	600		
MCCB3216RL1000C040	1000±25%	0.35	400		
MCCB3216RL1500C010	1500±25%	0.80	100		
MCCB3216RL2000C005	2000±25%	1.00	50		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

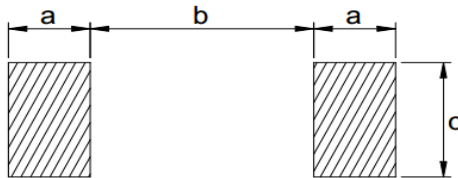
(Unit: mm)



Code	Dimensions
A	3.2 ± 0.2
B	1.6 ± 0.2
C	1.1 ± 0.2
D	0.5 ± 0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.10 Ref
b	2.20 Ref
c	1.40 Ref

Electrical Characteristics

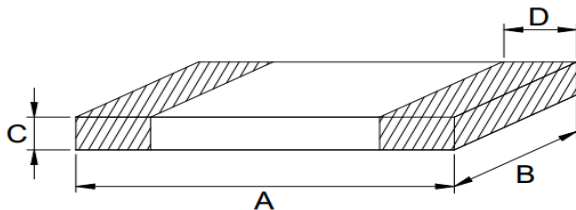
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB3216RL026HC1A	26±25%	0.10	1000		
MCCB3216RL060HC1A	60±25%	0.15	1000		
MCCB3216RL080HC1A	80±25%	0.15	1000		
MCCB3216RL120HC1A	120±25%	0.15	1000		
MCCB3216RL150HC2.5A	150±25%	0.12	2500		
MCCB3216RL220HC2.5A	220±25%	0.12	2500		
MCCB3216RL600HC2A	600±25%	0.10	2000		
MCCB3216RL080HC3A	80±25%	0.07	3000		
MCCB3216RL120HC3A	120±25%	0.03	3000		
MCCB3216RL032HC4A	32±25%	0.015	4000		
MCCB3216RL060HC4A	60±25%	0.025	4000		
MCCB3216RL120HC4A	120±25%	0.035	4000		
MCCB3216RL120HC5A	120±25%	0.03	5000		
MCCB3216RL030HC6A	30±25%	0.01	6000		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

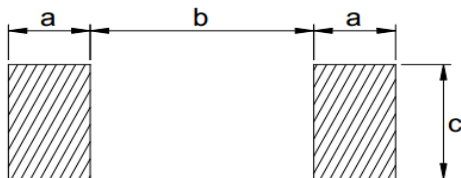
(Unit: mm)



Code	Dimensions
A	3.2 ± 0.2
B	2.5 ± 0.2
C	1.3 ± 0.2
D	0.5 ± 0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.10 Ref
b	2.20 Ref
c	3.40 Ref

Electrical Characteristics

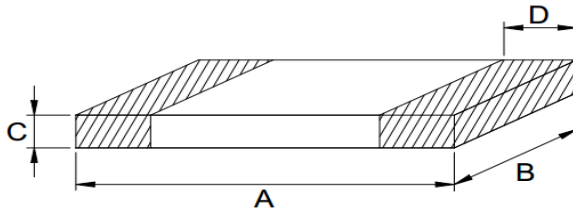
Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB3225RL080C040	80±25%	0.20	400		
MCCB3225RL120C040	120±25%	0.20	400		
MCCB3225RL150C040	150±25%	0.30	400		
MCCB3225RL220C040	220±25%	0.40	400		
MCCB3225RL600C030	600±25%	0.40	300		
MCCB3225RL1000C030	1000±25%	0.40	300		

Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Mechanical & Dimensions

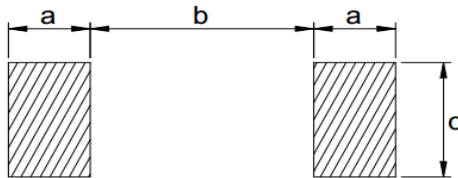
(Unit: mm)



Code	Dimensions
A	3.2 ± 0.2
B	2.5 ± 0.2
C	1.3 ± 0.2
D	0.5 ± 0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.10 Ref
b	2.20 Ref
c	3.40 Ref

Electrical Characteristics

Part Number	Impedance ¹ (Ω)	DCR ² (Ω) Max	Rated Current ³ (mA)Max		
MCCB3225RL026HC1A	26±25%	0.10	1000		
MCCB3225RL060HC1A	60±25%	0.15	1000		
MCCB3225RL600HC2A	600±25%	0.20	2000		
MCCB3225RL1000HC2A	1000±25%	0.30	2000		
MCCB3225RL080HC3A	80±25%	0.08	3000		
MCCB3225RL120HC3A	120±25%	0.10	3000		
MCCB3225RL220HC3A	220±25%	0.15	3000		
MCCB3225RL060HC4A	60±25%	0.06	4000		
MCCB3225RL026HC5A	26±25%	0.05	5000		
MCCB3225RL070HC6A	70±25%	0.04	6000		

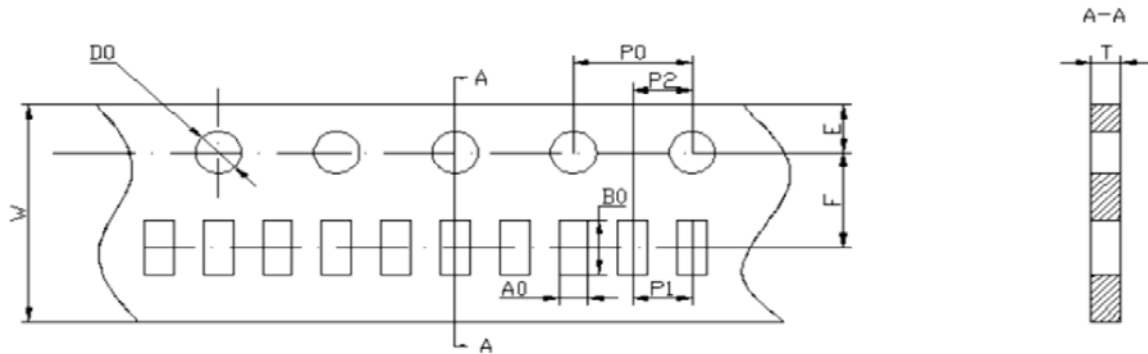
Note:

1. Test Frequency is measured at 100 MHz and 50 mV.
2. The nominal DCR is measured at 20°C ambient temperature.
3. The Rated Current is Operating Current.

Packaging

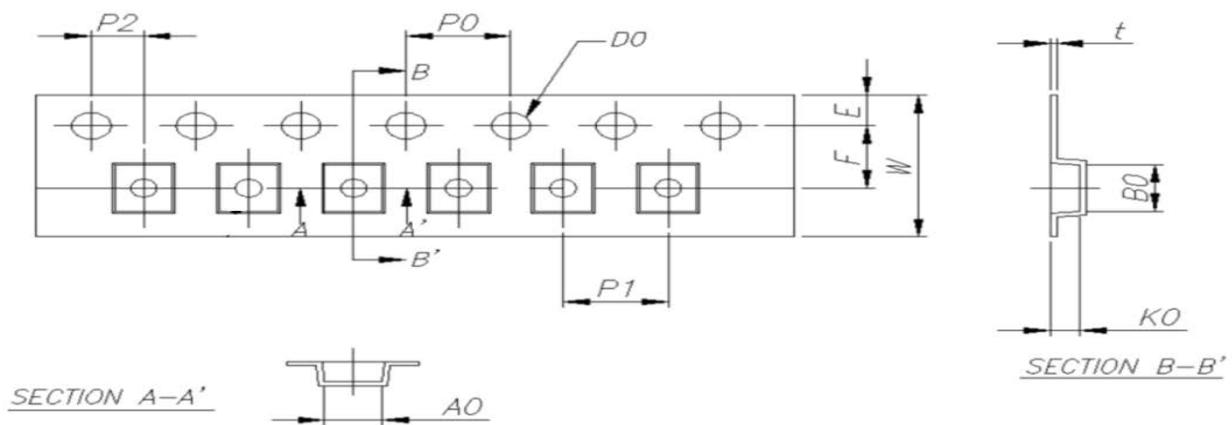
Tape Dimension:

Material of taping is paper



P/N	Ao	Bo	T	E	F	D	P1	P2	W	P0
MCCB1005	0.65±0.1	1.15±0.1	0.60±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCB1608	1.10±0.1	1.90±0.1	0.95±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCB2012	1.50±0.1	2.30±0.1	0.95±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCB3216	1.90±0.1	3.50±0.1	0.95±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCB3225	2.77±0.1	3.42±0.1	1.55±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1

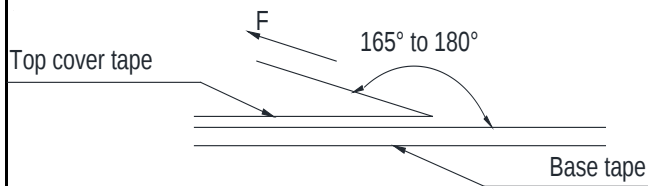
Material of taping is plastic



P/N	Ao	Bo	K0	E	F	D	P1	P2	W	P0
MCCB1608	1.15±0.1	1.95±0.1	1.05±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCB2012	1.42±0.1	2.25±0.1	1.04±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCB3216	1.88±0.1	3.50±0.1	1.27±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCB3225	2.77±0.1	3.42±0.1	1.55±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCB4532	3.66±0.1	4.95±0.1	3.66±0.1	1.75±0.1	5.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	12.0±0.3	4.0±0.1

Packaging

Tearing Off Force:



The force tearing off cobe tape is 10 to 130 g.f in the arrow direction under the following conditions			
Room Temp (°C)	Room Humidity (%)	Room atrn (hPa)	Teaming Speed (mm/min)
5~35	45~85	860~1060	300

※Storage Conditions

1. Temperature and humidity conditions:
-40°C ~ +85°C and 70% RH.
2. Recommended products should be used within 6 months form the time of delivery.
3. The packaging material should be kept where no chlorine or sulfur exists in the air.

※Transportation

1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

Recommended Soldering Conditions

Figure 1. Re-flow Soldering

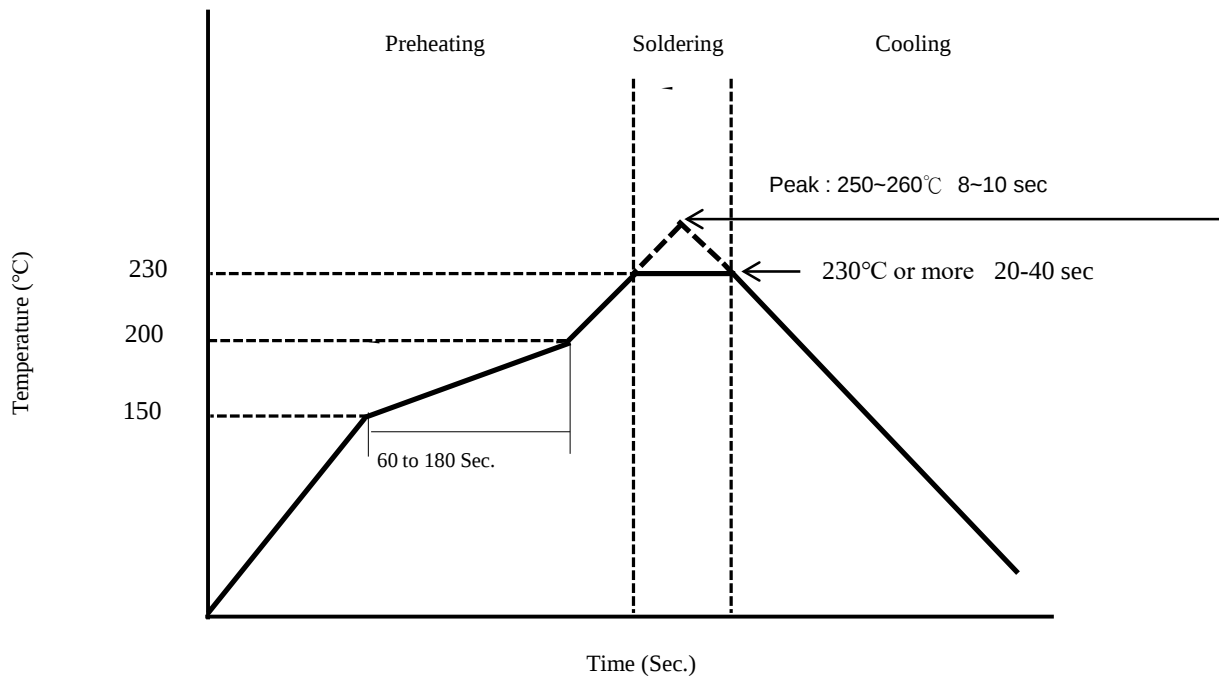
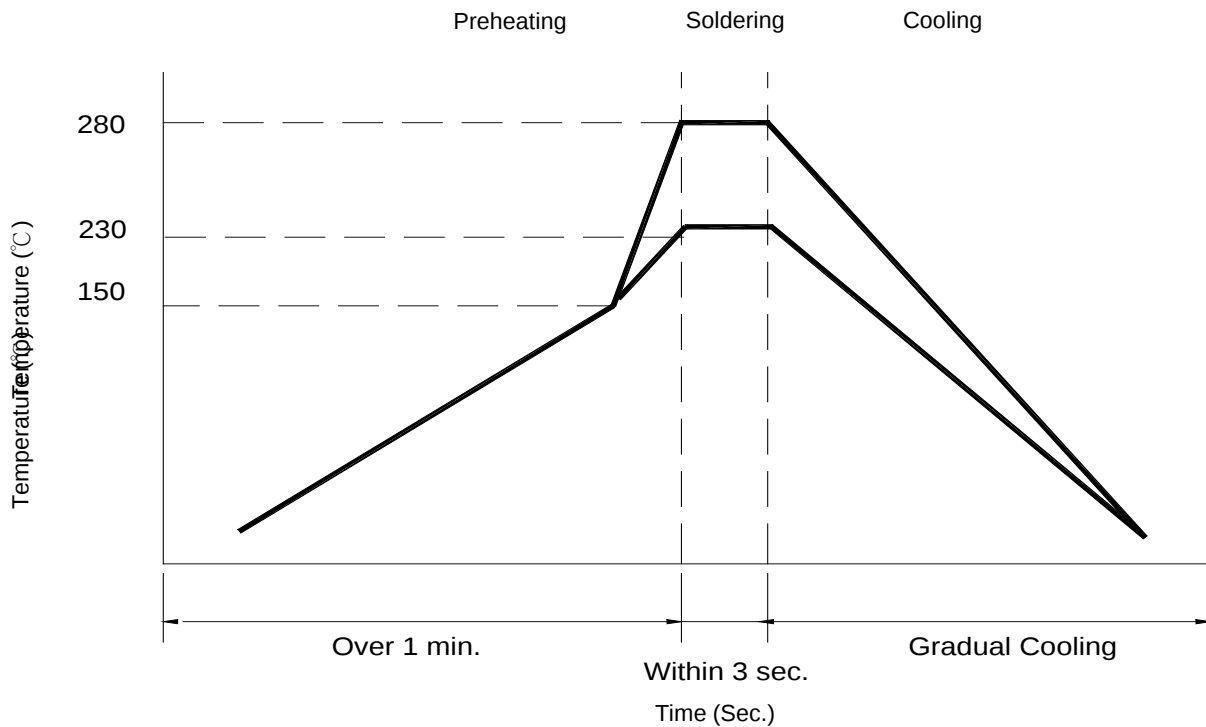
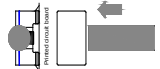


Figure 2. Hand Soldering



Reliability and Testing Conditions

Item	Specification	Conditions															
Operating temperature range	-40℃ ~+85℃ (Including self-temperature rise)																
Storage temperature and humidity range	-40℃ ~+85℃ , 70% RH Max																
Solderability	More than 95% of the terminal electrode should be covered with solder.	- Preheat: 150℃ , 60 sec - Solder: Sn96.5%-Ag3%-Cu0.5% - Temperature: 245±5℃ - Flux for lead free: Rosin 9.5% - Dip time: 4±1 sec - Depth: completely cover the termination															
Resistance to Soldering Heat	Electrical Characteristics (Impedance or Inductance) within ± 30% of initial value. No disconnection or short circuit. The appearance shall not break.	- Solder technique simulation: SMD - Temperature (℃): 260 ± 5 (solder temp) - Time (s): 10 ± 1 - Temperature ramp / immersion and emersion rate: 25 mm/s ± 6 mm/s - Number of heat cycles: 1															
Resistance to High Temperature	Electrical Characteristics (Impedance or Inductance) within ± 30% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 85±2℃ and 2 hour drying under normal condition.															
Resistance to Low Temperature	Electrical Characteristics (Impedance or Inductance) within ± 30% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in -40±2℃ and 2 hour drying under normal condition.															
Resistance to Humidity	Electrical Characteristics (Impedance or Inductance) within ± 30% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 60±2℃ and 90% to 95% RH, and 2 hour drying under normal condition.															
Thermal shock	Electrical Characteristics (Impedance or Inductance) within ± 30% of initial value. No disconnection or short circuit. The appearance shall not break.	After 30 cycles of following condition. <table border="1"> <thead> <tr> <th>Step</th><th>Temperature (℃)</th><th>Times (min.)</th></tr> </thead> <tbody> <tr> <td>1</td><td>-40±2℃</td><td>30</td></tr> <tr> <td>2</td><td>Room Temperature</td><td>Within 3</td></tr> <tr> <td>3</td><td>85±5℃</td><td>30</td></tr> <tr> <td>4</td><td>Room Temperature</td><td>Within 3</td></tr> </tbody> </table>	Step	Temperature (℃)	Times (min.)	1	-40±2℃	30	2	Room Temperature	Within 3	3	85±5℃	30	4	Room Temperature	Within 3
Step	Temperature (℃)	Times (min.)															
1	-40±2℃	30															
2	Room Temperature	Within 3															
3	85±5℃	30															
4	Room Temperature	Within 3															
Vibration Test	Electrical Characteristics (Impedance or Inductance) within ± 30% of initial value and no mechanical damaged.	After vibration for 1hour, In each of three orientations at sweep vibration (10~55~10Hz) with 1.52mm P-P Amplitudes.															
Terminal strength	The terminal electrode and the ferrite must be no damage	Solder a chip to test substrate, and then laterally apply a force(< 1005:2N , ≤ 2012:5N , > 2012:10N) in the arrow direction, Duration :5.0s 															
Drop Test	Electrical Characteristics (Impedance or Inductance) within ± 30% of initial value and appearance shall not break.	Drop 3 times on a concrete floor from a height of 75cm by inimum packing															