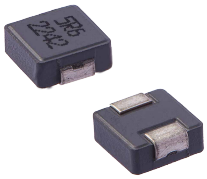
MDCA Series
SMD Power Inductor
Size 6020



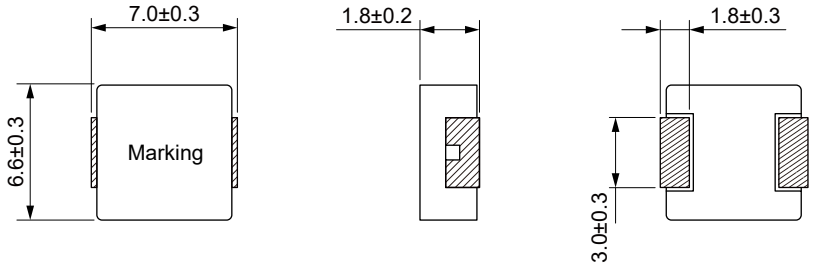
FEATURES

- Shielded construction.
- Capable of corresponding high frequency.
- Low loss realized with low DCR.
- High performance (Isat) realized by Carbonyl Powder.
- Ultra low buzz noise, due to composite construction.
- 100% Lead(Pb)-Free and RoHS compliant.
- AEC-Q200 qualified.
  Operating temperature: -55 to +125 °C(including self-temperature rise)
- Quantity: 1500pcs.

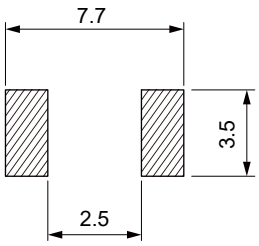
APPLICATION

- Headlamps, tail lamps and interior lighting.
- HVAC.
- Doors, window lift and seat control.
- Audio subsystem.
- Digital instrument cluster.
- In-Vehicle Infotainment and navigation.

Dimensions: [mm]



Land Pattern: [mm]



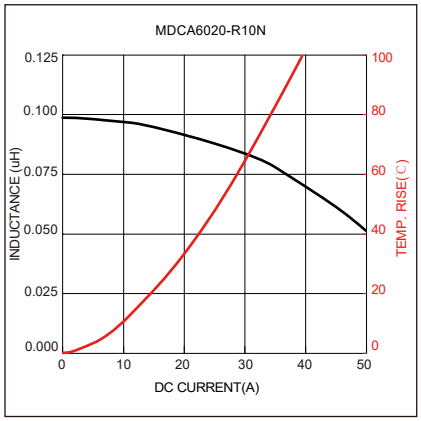
Electrical Properties:

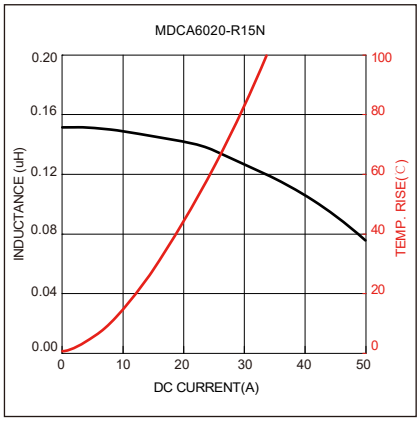
Part No	Inductance @ 100KHz/1V (μH)	Tolerance	Temperature Rise Current (A)	Saturation Current (A)	DC Resistance Typ. (mΩ)	DC Resistance Max. (mΩ)
MDCA6020-R10N	0.10	±30%	21.0	40.0	2.0	2.4
MDCA6020-R15N	0.15	±30%	18.0	39.0	2.3	2.7
MDCA6020-R22N	0.22	±30%	15.0	32.0	3.5	4.0
MDCA6020-R33M	0.33	±20%	14.0	25.0	4.5	5.0
MDCA6020-R47M	0.47	±20%	11.7	20.0	7.1	8.3
MDCA6020-R56M	0.56	±20%	11.0	18.0	7.9	9.3
MDCA6020-R68M	0.68	±20%	10.5	16.0	8.3	10.0
MDCA6020-1R0M	1.00	±20%	8.0	14.0	16.5	18.0
MDCA6020-1R5M	1.50	±20%	7.0	12.0	23.0	27.0
MDCA6020-2R2M	2.20	±20%	6.0	10.0	32.0	37.0
MDCA6020-3R3M	3.30	±20%	5.0	8.0	43.0	48.0
MDCA6020-4R7M	4.70	±20%	4.5	7.0	53.0	60.0
MDCA6020-5R6M	5.60	±20%	4.0	6.0	59.0	68.0
MDCA6020-6R8M	6.80	±20%	4.0	5.5	63.0	73.0
MDCA6020-8R2M	8.20	±20%	3.2	5.0	101	116

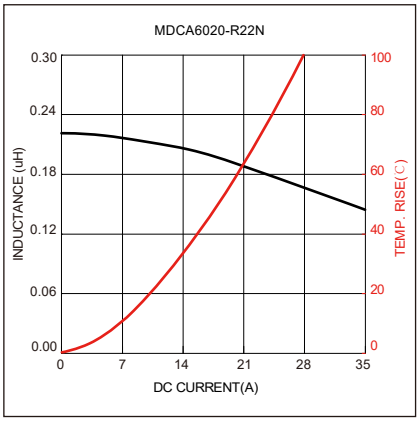
Part No	Inductance @ 100KHz/1V (μH)	Tolerance	Temperature Rise Current (A)	Saturation Current (A)	DC Resistance Typ. (mΩ)	DC Resistance Max. (mΩ)
MDCA6020-100M	10.0	±20%	2.8	4.0	134	154
MDCA6020-150M	15.0	±20%	2.1	3.3	190	210
MDCA6020-220M	22.0	±20%	1.5	2.5	236	280

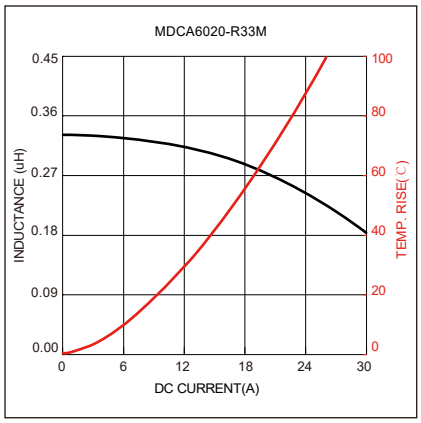
Saturation Current will cause L to drop approximately 30%
Temperature Rise Current: The actual value of DC current when the temperature rise is △T=40°C

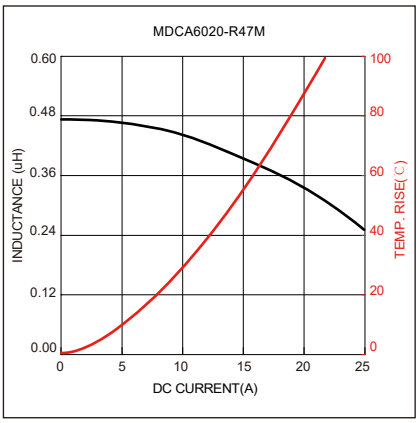
Typical Electrical Characteristics:

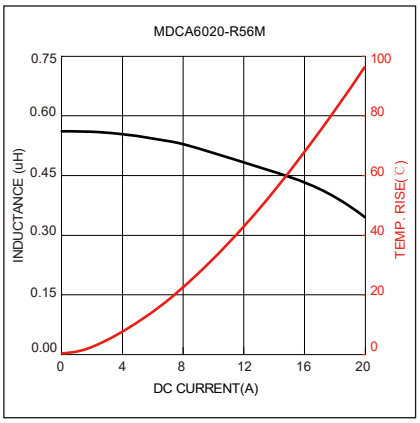


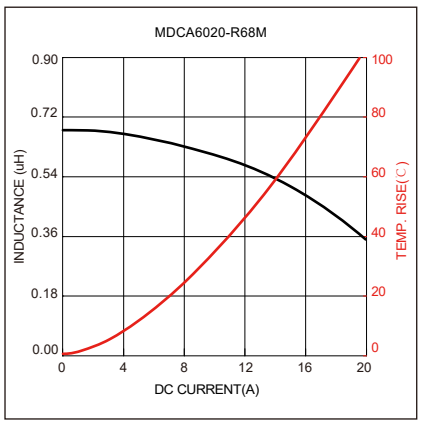


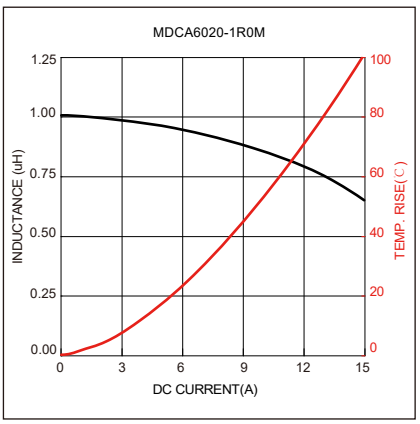


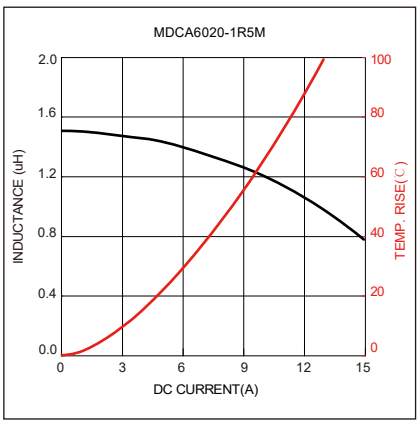


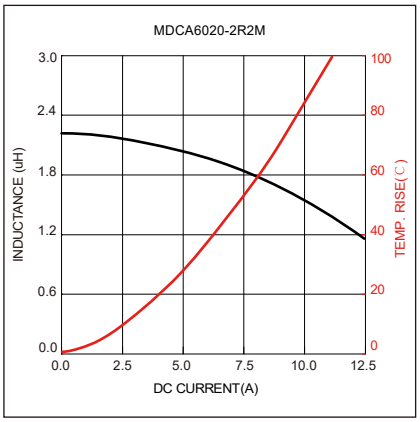


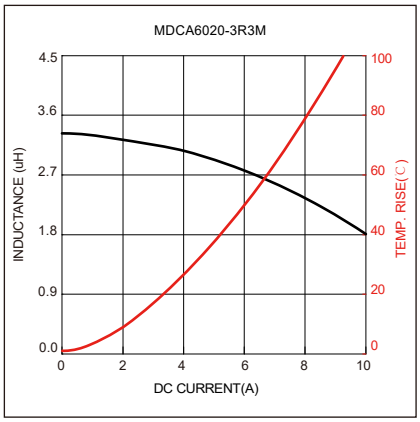


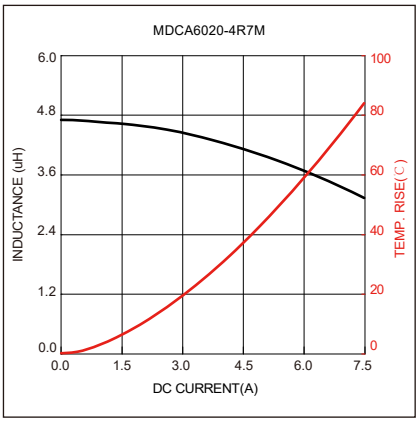


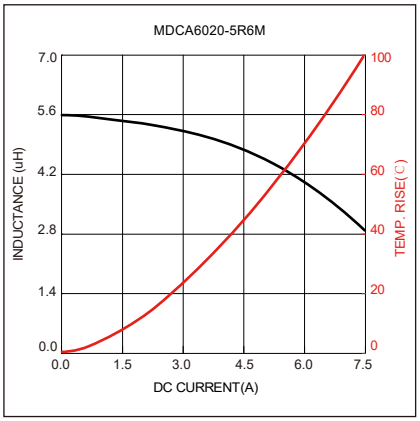


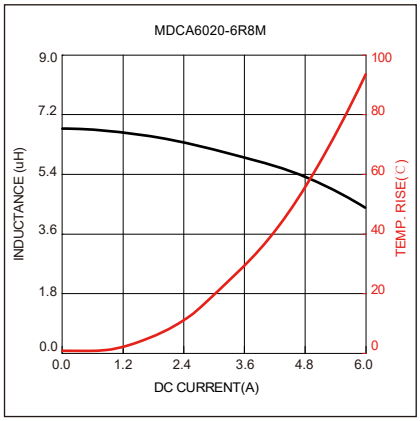


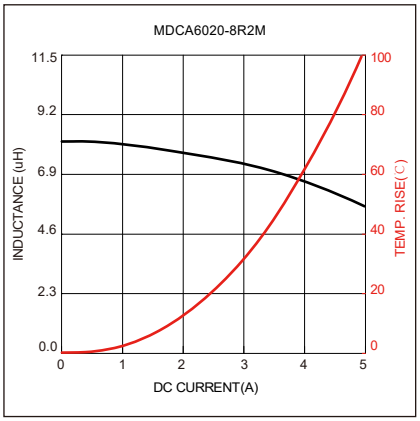

MDCA6020-2R2M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
3.0
2.4
1.8
1.2
0.6
0.0
100
80
60
40
20
0
0.0
2.5
5.0
7.5
10.0
12.5

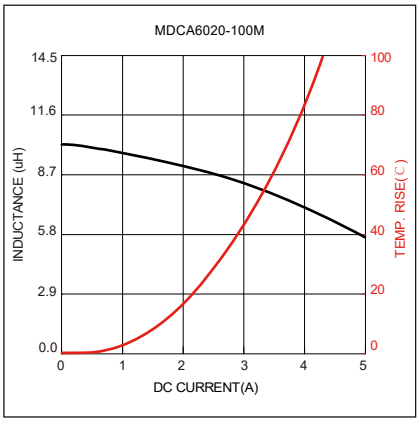

MDCA6020-3R3M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
4.5
3.6
2.7
1.8
0.9
0.0
100
80
60
40
20
0
0
2
4
6
8
10

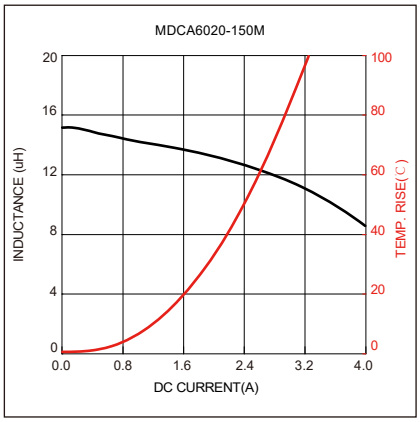

MDCA6020-4R7M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
6.0
4.8
3.6
2.4
1.2
0.0
100
80
60
40
20
0
0.0
1.5
3.0
4.5
6.0
7.5

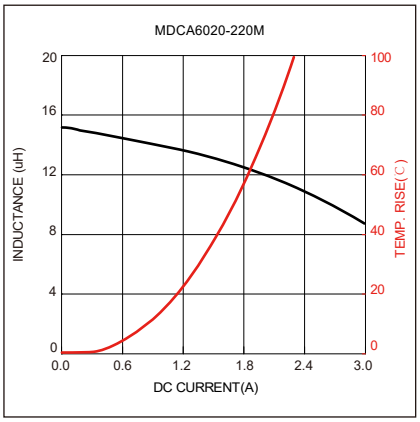

MDCA6020-5R6M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
7.0
5.6
4.2
2.8
1.4
0.0
100
80
60
40
20
0
0.0
1.5
3.0
4.5
6.0
7.5


MDCA6020-6R8M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
9.0
7.2
5.4
3.6
1.8
0.0
100
80
60
40
20
0
0.0
1.2
2.4
3.6
4.8
6.0

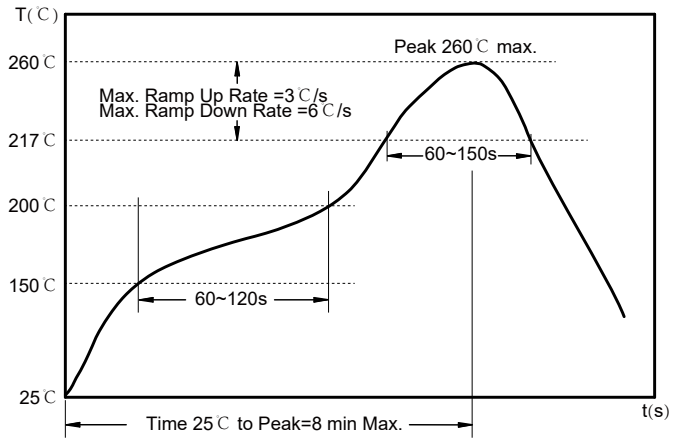

MDCA6020-8R2M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
11.5
9.2
6.9
4.6
2.3
0.0
100
80
60
40
20
0
0
1
2
3
4
5


MDCA6020-100M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
14.5
11.6
8.7
5.8
2.9
0.0
100
80
60
40
20
0
0
1
2
3
4
5


MDCA6020-150M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
20
16
12
8
4
0
100
80
60
40
20
0
0.0
0.8
1.6
2.4
3.2
4.0


MDCA6020-220M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
20
16
12
8
4
0
100
80
60
40
20
0
0.0
0.6
1.2
1.8
2.4
3.0

Soldering Reflow:



Preheat condition: 150 ~200℃/ 60~120 sec.

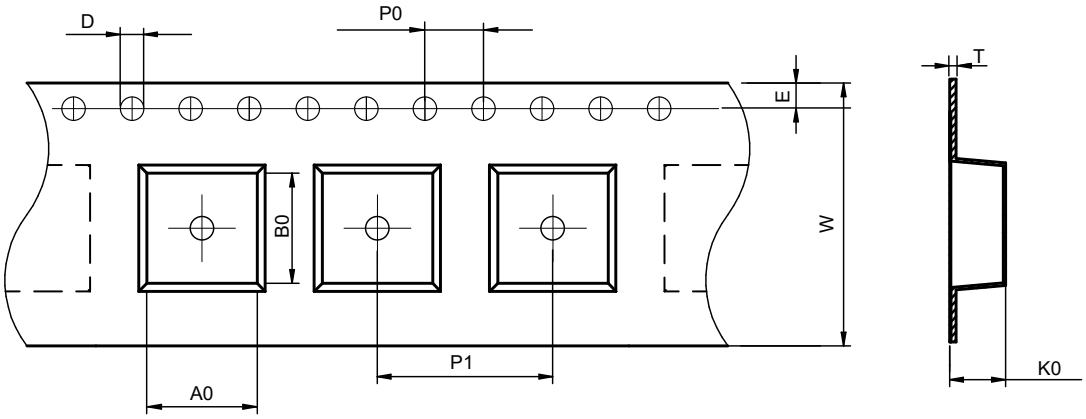
Allowed time above 217℃: 60~150 sec.

Max temperature: 260℃.

Allowed Reflow time: 2x max.

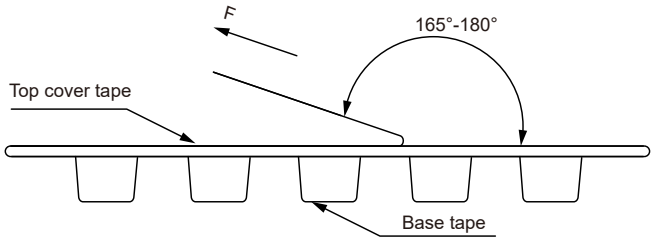
Packaging Information:

Tape Dimension:



Series	A0 (mm)	B0 (mm)	D (mm)	P0 (mm)	P1 (mm)	W (mm)	K0 (mm)	E (mm)	T (mm)
MDCA6020	7.0±0.1	7.7±0.1	1.5±0.1	4.0±0.1	12.0±0.1	16.0±0.3	2.3±0.1	1.75±0.1	0.35±0.05

Peel force of top cover tape:

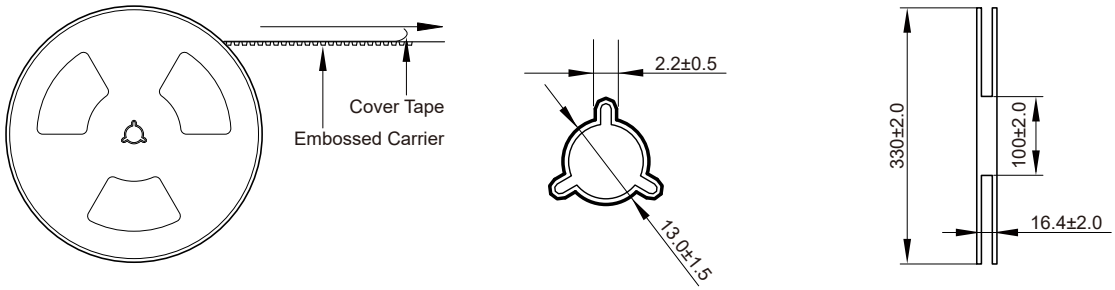


The peel force of top cover tape shall be between 0.1 to 1.3 N

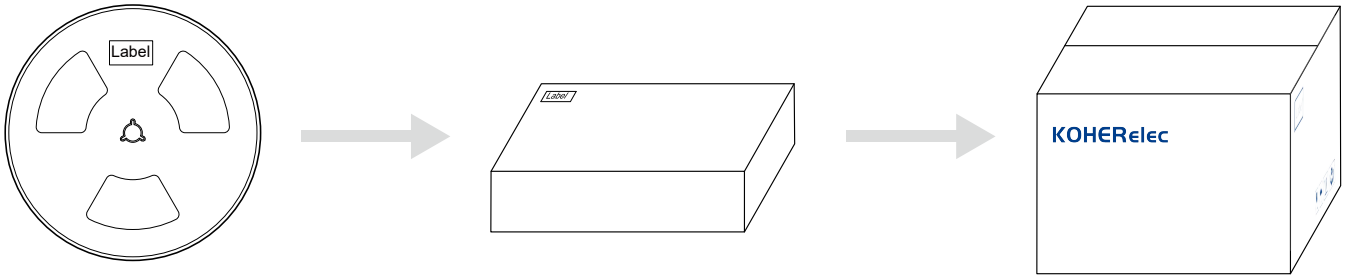
Product Marking:

Marking	Printing (Inductance+period)

Reel Dimension：[mm]



Packaging Quantity:



1500 Pcs/Reel

2 Reel /Inner box(3000 Pcs)

3 Inner box/Carton box(9K Pcs)

Cautions and Warnings:

Storage Conditions：

- The storage period is within 12 months after the completion of production. Be sure to follow the storage conditions (temperature: -5 to 35°C, humidity: 75% RH Max).If the storage period elapses, the soldering of the terminal electrodes may deteriorate.The warranty period is one year.
- Product should not be exposed to environment with high temperature, high humidity, dust, corrosive gas and etc.
- Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- Please always handle products carefully to prevent any damage caused by dropping down or inappropriate removing.

Operation Instructions:

- Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design.
- Before soldering, be sure to preheat components.The preheating temperature should be set so that the temperature difference between the solder temperature and chip temperature does not exceed 150°C.
- Soldering corrections after mounting should be within the range of the conditions determined in the specifications.If overheated, a short circuit, performance deterioration, or lifespan shortening may occur.
- Generally, Koher might not be familiar with either customer's specific application or actual requests as customer does.As a result customer shall be responsible for checking and confirming whether Koher product with the performance described in the product specification is suitable for using in customer's particular application or not.