MDCA Series
SMD Power Inductor
Size 4020



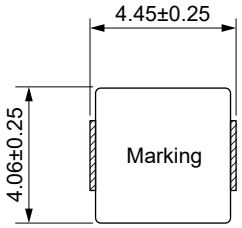
FEATURES

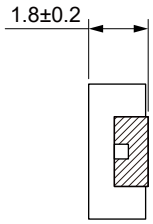
- Shielded construction.
- Capable of corresponding high frequency.
- Low loss realized with low DCR.
- High performance (Isat) realized by Carbonyl Powder.
- Ultra low buzz noise, due to composite construction.
- 100% Lead(Pb)-Free and RoHS compliant.
- AEC-Q200 qualified
- Operating temperature: -55 to +125 °C(including self-temperature rise)
- Quantity:3000pcs

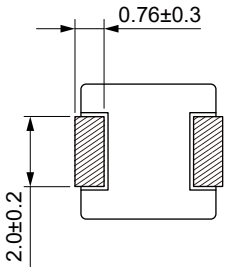
APPLICATION

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

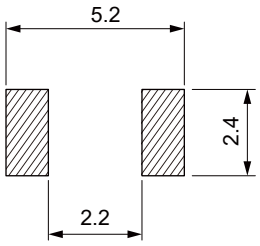
Dimensions: [mm]







Land Pattern: [mm]



Electrical Properties:

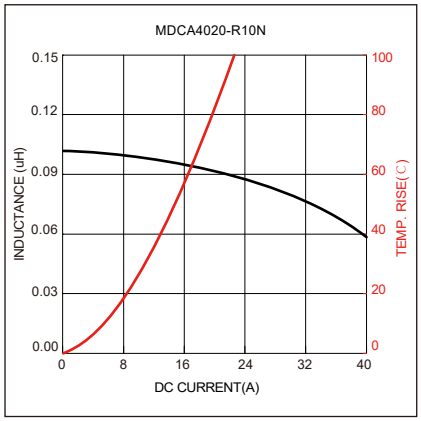
Part No	Inductance @ 100KHz/1V (µH)	Tolerance	Temperature Rise Current Typ. (A)	Saturation Current Typ. (A)	DC Resistance Typ. (mΩ)	DC Resistance Max. (mΩ)
MDCA4020-R10N	0.10	±30%	14.0	35.0	3.20	4.0
MDCA4020-R22N	0.22	±30%	13.0	24.0	6.60	7.3
MDCA4020-R33M	0.33	±20%	10.0	18.0	7.80	8.6
MDCA4020-R47M	0.47	±20%	8.00	12.0	11.2	14
MDCA4020-R56M	0.56	±20%	7.30	10.0	13.5	16
MDCA4020-R68M	0.68	±20%	7.00	10.0	16.0	19
MDCA4020-1R0M	1.00	±20%	5.00	8.50	22.0	27
MDCA4020-1R5M	1.50	±20%	4.50	7.00	34.8	42
MDCA4020-2R2M	2.20	±20%	4.00	6.00	51.0	61
MDCA4020-3R3M	3.30	±20%	3.50	4.00	69.0	76
MDCA4020-4R7M	4.70	±20%	2.60	3.50	95.0	105
MDCA4020-5R6M	5.60	±20%	2.20	3.00	112	125
MDCA4020-6R8M	6.80	±20%	2.10	2.80	150	172
MDCA4020-8R2M	8.20	±20%	2.00	2.50	158	180

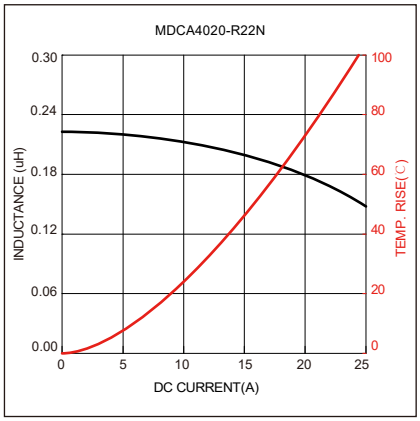
KOHER Electronic
4546 BATES DRIVE, YORBLINDA CA 92886 USA
714-325-4789 Contact@kohergroup.com

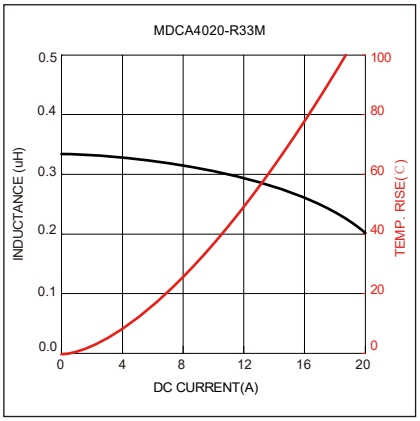
Part No	Inductance @ 100KHz/1V (μH)	Tolerance	Temperature Rise Current Typ. (A)	Saturation Current Typ. (A)	DC Resistance Typ. (mΩ)	DC Resistance Max. (mΩ)
MDCA4020-100M	10.0	±20%	1.80	2.30	215	243
MDCA4020-150M	15.0	±20%	1.50	1.90	325	374
MDCA4020-220M	22.0	±20%	1.20	1.40	470	500

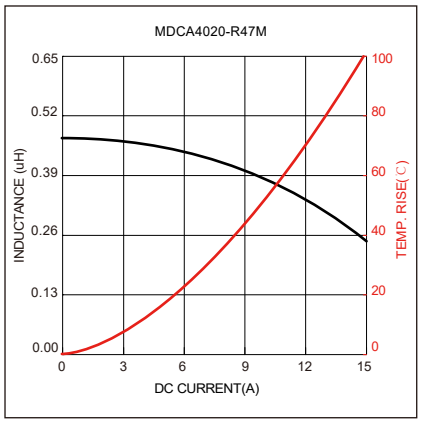
Saturation Current will cause L to drop approximately 30%
Temperature Rise Current: The actual value of DC current when the temperature rise is △T=40°C

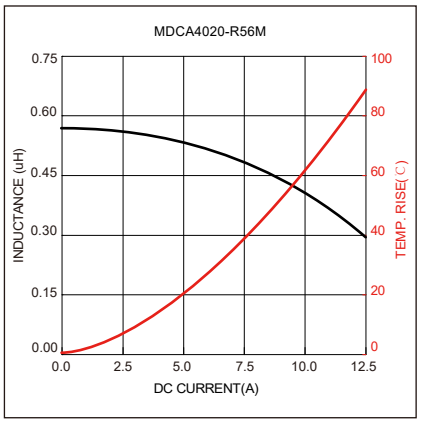
Typical Electrical Characteristics:

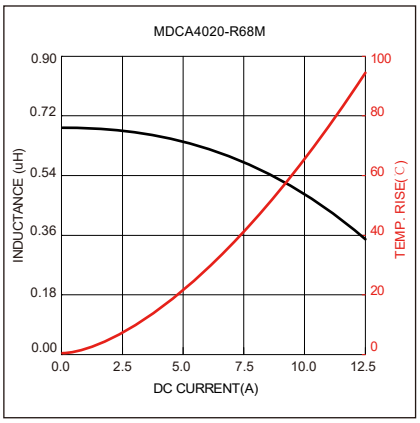


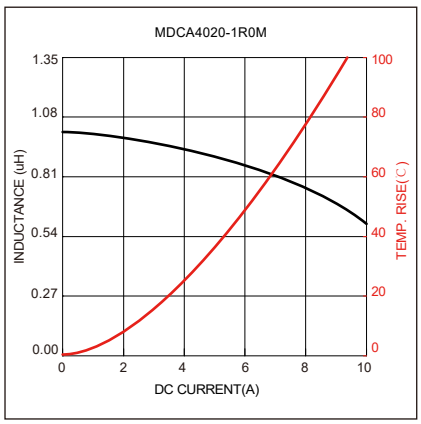


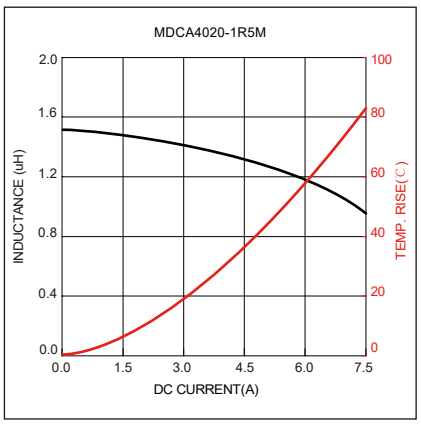


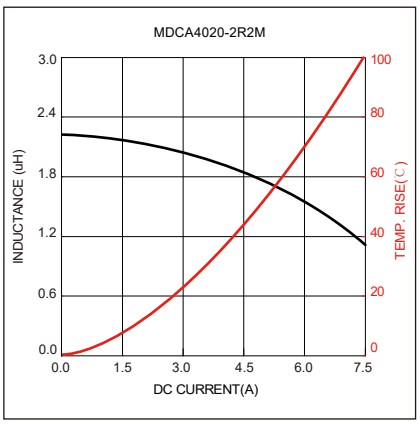


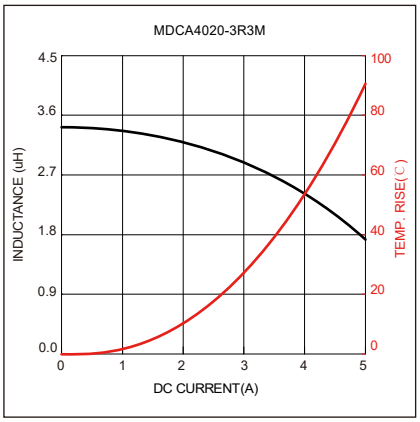


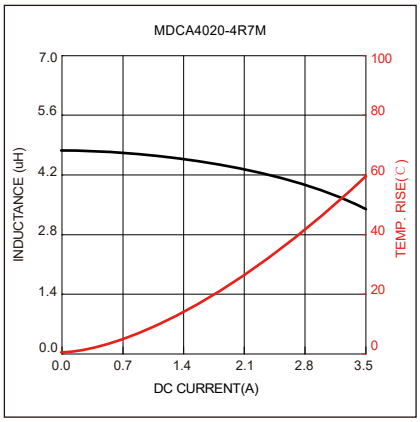


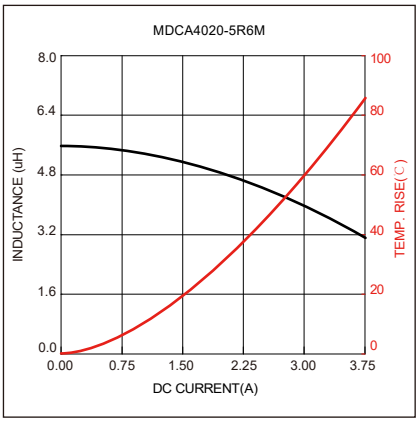


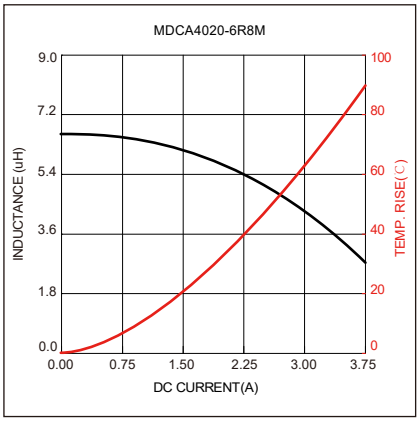


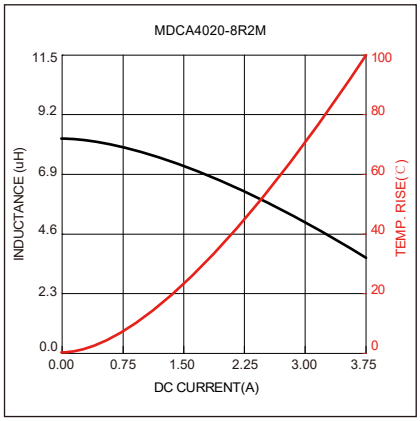


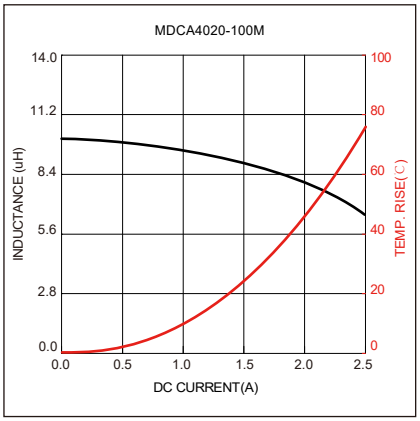

MDCA4020-3R3M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
4.5
3.6
2.7
1.8
0.9
0.0
100
80
60
40
20
0
0
1
2
3
4
5

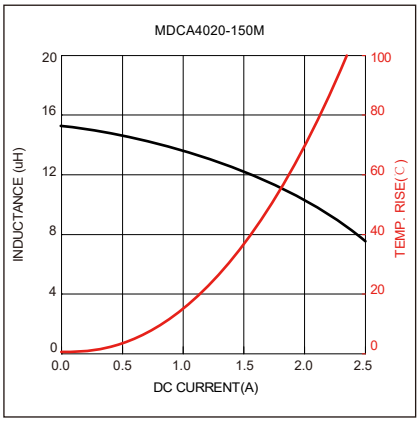

MDCA4020-4R7M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
7.0
5.6
4.2
2.8
1.4
0.0
100
80
60
40
20
0
0.0
0.7
1.4
2.1
2.8
3.5

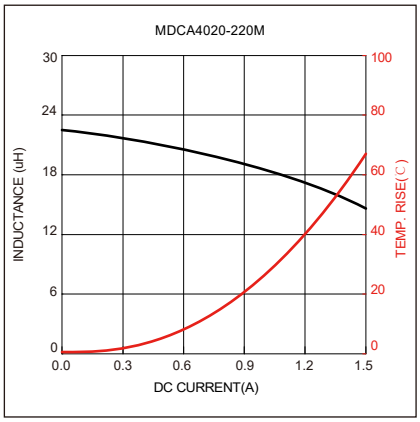

MDCA4020-5R6M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
8.0
6.4
4.8
3.2
1.6
0.0
100
80
60
40
20
0
0.00
0.75
1.50
2.25
3.00
3.75


MDCA4020-6R8M
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
0.00
0.75
1.50
2.25
3.00
3.75

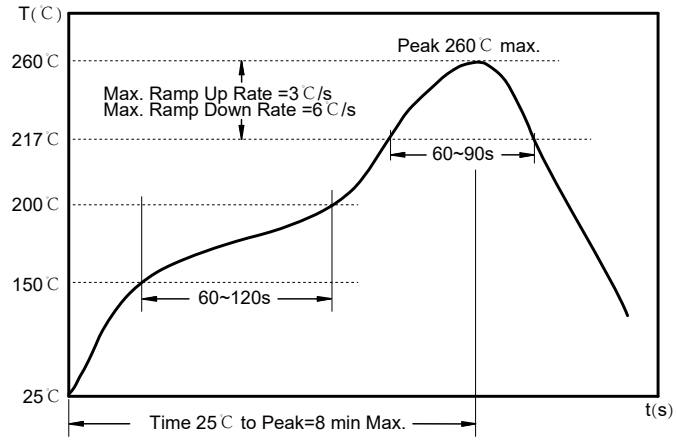

MDCA4020-8R2M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
11.5
9.2
6.9
4.6
2.3
0.0
100
80
60
40
20
0
0.00
0.75
1.50
2.25
3.00
3.75


MDCA4020-100M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
14.0
11.2
8.4
5.6
2.8
0.0
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5


MDCA4020-150M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
20
16
12
8
4
0
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5


MDCA4020-220M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
30
24
18
12
6
0
100
80
60
40
20
0
0.0
0.3
0.6
0.9
1.2
1.5

Soldering Reflow:



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

Allowed time above 217℃: 60~90 sec.

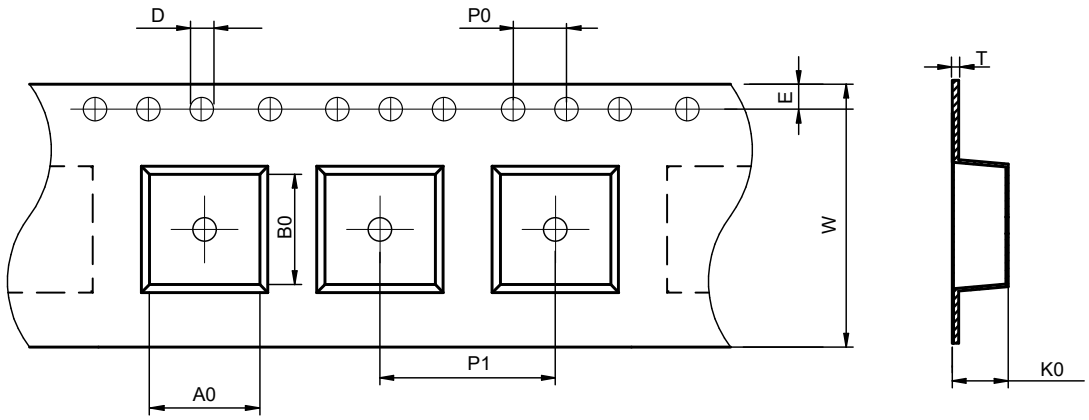
Max temperature: 260℃.

Max time at max temperature: 10 sec.

Allowed Reflow time: 2x max.

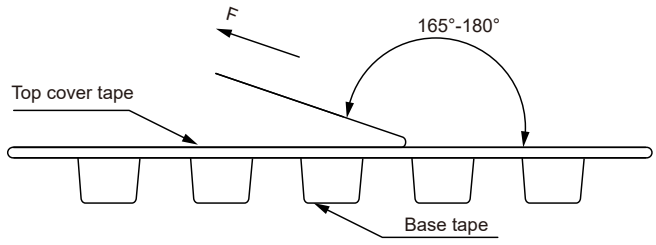
Packaging Information:

Tape Dimension:



Series	A0 (mm)	B0 (mm)	D (mm)	P0 (mm)	P1 (mm)	W (mm)	K0 (mm)	E (mm)	T (mm)
MDCA4020	4.5±0.1	4.85±0.1	1.5±0.1	4.0±0.1	8.0±0.1	12±0.3	2.3±0.1	1.75±0.1	0.35±0.05

Peel force of top cover tape:

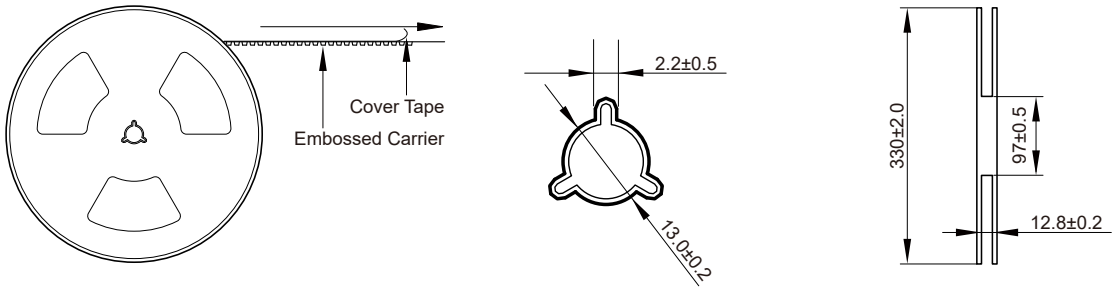


The peel force of top cover tape shall be between 0.1 to 1.3 N

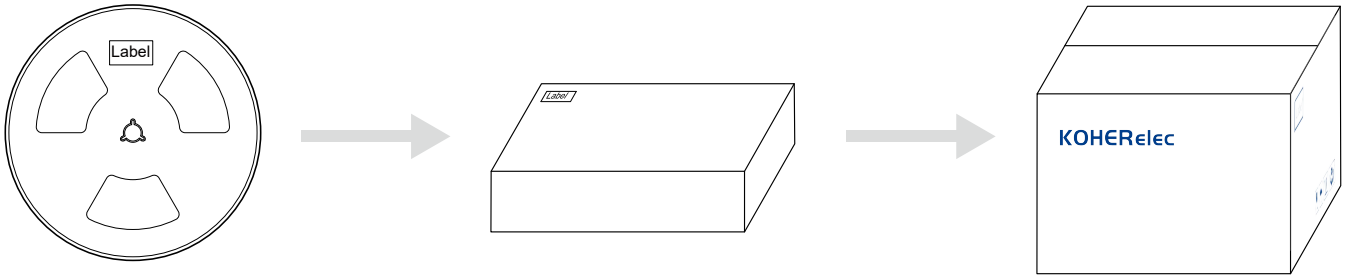
Product Marking:

Marking	K+Printing (Inductance)

Reel Dimension：[mm]



Packaging Quantity:



3000 Pcs/Reel

3 Reel /Inner box(9000 Pcs)

3 Inner box/Carton box(27K 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.
- 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.