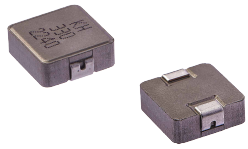
THE DATASHEET OF

MDA1040-1R0M

MDA Series

SMD Low Profile High Current Molded Inductor

Size 1040



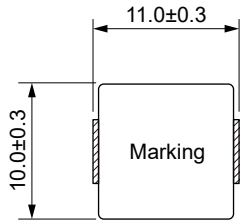
FEATURES

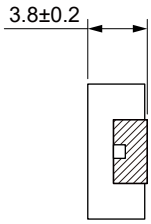
- Shielded construction
- Capable of corresponding high frequency .
- Low loss realized with low DCR.
- High performance (Isat) realized by metal dust core.
- Ultra low buzz noise, due to composite construction.
- 100% Lead(Pb)-Free and RoHS compliant.
- AEC-Q200 qualified
- Operating temperature: -55 to +155 °C (including self-temperature rise)
- Quantity: 500PCS

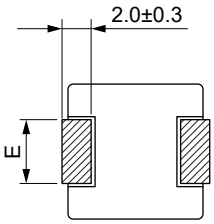
APPLICATION

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

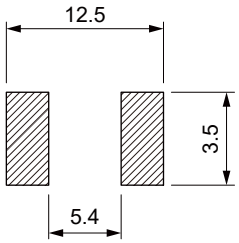
Dimensions: [mm]







Land Pattern: [mm]



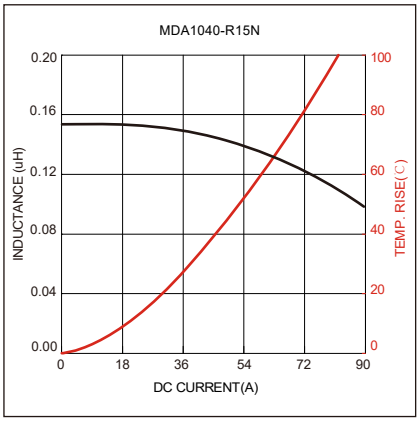
Electrical Properties:

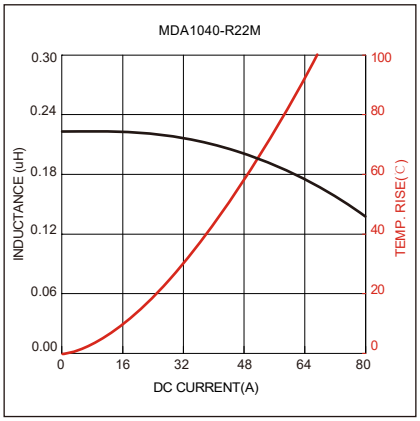
Part No	Inductance @ 100KHz/1V (μH)	Tolerance	Temperature Rise Current Typ. (A)	Temperature Rise Current Max. (A)	Saturation Current Typ. (A)	Saturation Current Max. (A)	DC Resistance Typ. (mΩ)	DC Resistance Max. (mΩ)	E
MDA1040-R15N	0.15	±30%	44.0	38.0	82.0	75.0	0.50	0.60	3.0±0.3
MDA1040-R22M	0.22	±20%	36.0	33.0	70.0	60.0	0.72	0.83	3.0±0.3
MDA1040-R36M	0.36	±20%	33.0	29.0	51.0	45.0	1.05	1.18	3.0±0.3
MDA1040-R47M	0.47	±20%	32.0	28.0	46.0	40.0	1.30	1.50	3.0±0.3
MDA1040-R56M	0.56	±20%	25.0	23.0	34.0	29.0	1.60	1.80	2.5±0.3
MDA1040-R68M	0.68	±20%	23.0	20.0	31.0	28.0	1.90	2.20	2.5±0.3
MDA1040-1R0M	1.00	±20%	20.0	18.0	29.0	26.0	2.90	3.25	2.5±0.3
MDA1040-1R5M	1.50	±20%	17.5	16.0	26.0	22.0	3.70	4.20	2.5±0.3
MDA1040-1R8M	1.80	±20%	16.5	15.0	23.0	20.0	5.10	5.70	3.0±0.3
MDA1040-2R2M	2.20	±20%	15.0	13.0	20.0	16.0	5.80	6.70	3.0±0.3
MDA1040-3R3M	3.30	±20%	11.0	10.0	17.5	14.0	10.5	11.8	3.0±0.3
MDA1040-4R7M	4.70	±20%	8.80	8.0	15.2	13.0	15.8	19.0	3.0±0.3
MDA1040-5R6M	5.60	±20%	8.00	7.2	14.1	11.5	19.0	22.8	3.0±0.3
MDA1040-6R8M	6.80	±20%	7.80	6.8	12.2	11.0	22.0	24.5	3.0±0.3

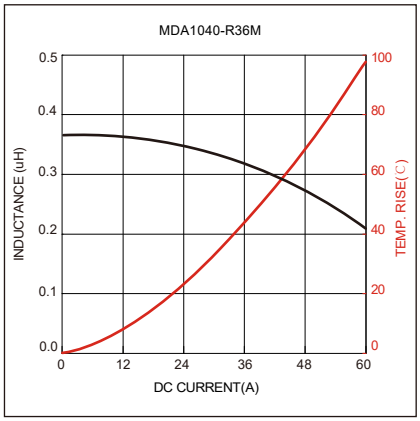
Part No	Inductance @ 100KHz/1V (μH)	Tolerance	Temperature Rise Current Typ. (A)	Temperature Rise Current Max. (A)	Saturation Current Typ. (A)	Saturation Current Max. (A)	DC Resistance Typ. (mΩ)	DC Resistance Max. (mΩ)	E
MDA1040-8R2M	8.20	±20%	7.60	6.5	9.50	8.5	25.0	28.0	3.0±0.3
MDA1040-100M	10.0	±20%	7.50	6.1	8.60	7.5	27.0	30.0	3.0±0.3
MDA1040-150M	15.0	±20%	6.25	5.0	7.00	6.0	41.0	45.0	3.0±0.3
MDA1040-220M	22.0	±20%	5.00	4.1	6.20	5.5	58.0	66.0	3.0±0.3
MDA1040-330M	33.0	±20%	4.40	3.5	5.50	5.0	84.0	91.0	3.0±0.3
MDA1040-470M	47.0	±20%	3.50	3.0	4.00	3.7	125	143	3.0±0.3
MDA1040-680M	68.0	±20%	2.60	2.4	3.20	3.0	192	210	3.0±0.3

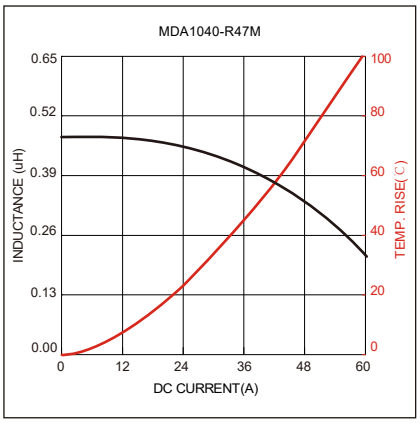
Saturation Current will cause L to drop approximately 30%
Temperature Rise Current: The actual value of DC current when the temperature rise is △T=40°C

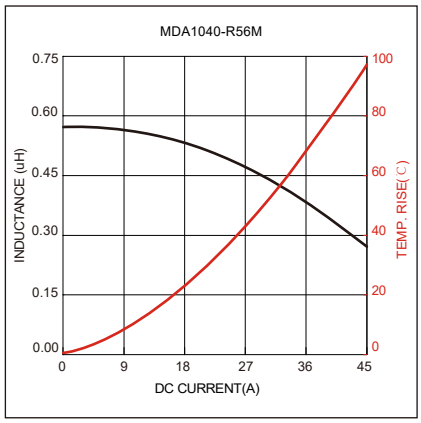
Typical Electrical Characteristics:

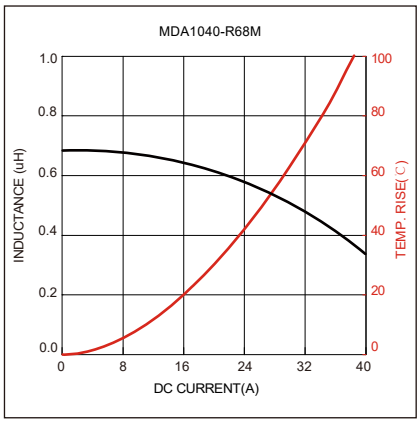


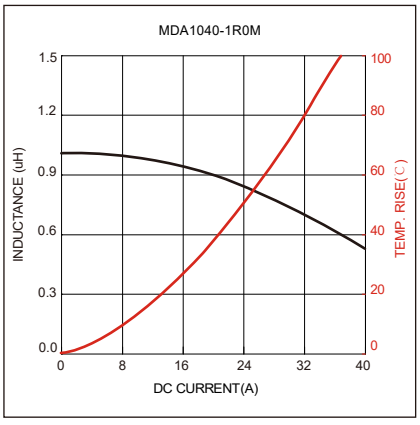


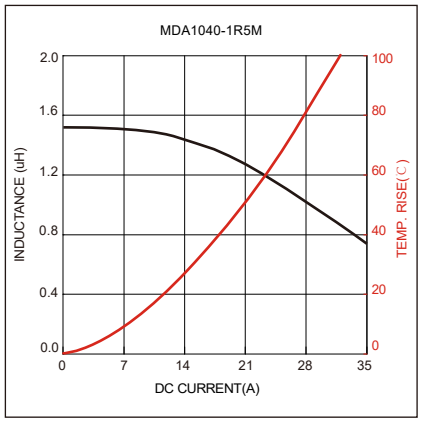


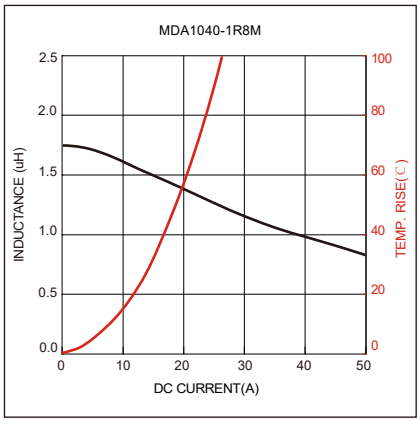


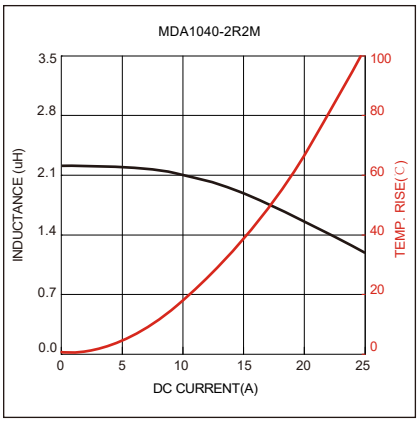


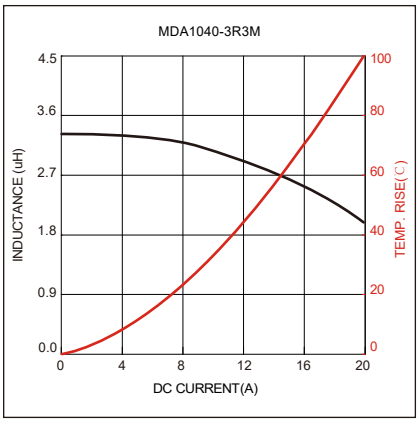


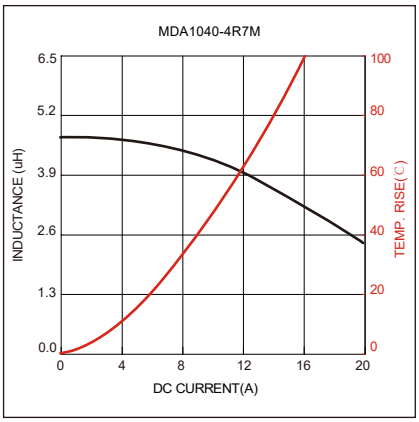


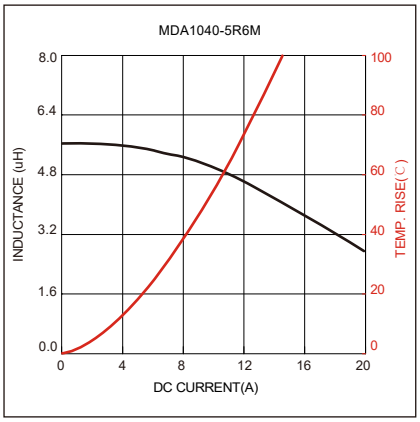


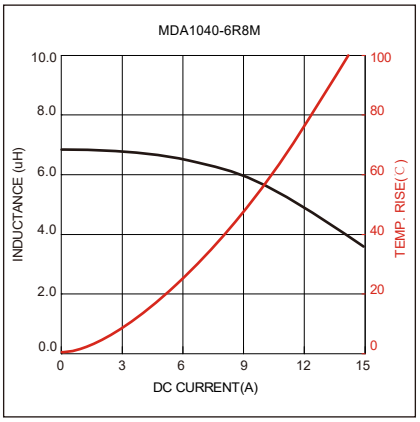


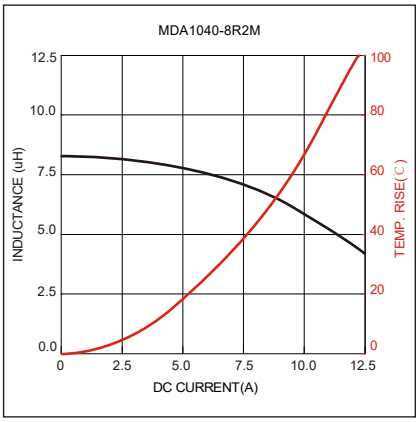

MDA1040-2R2M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
3.5 2.8 2.1 1.4 0.7 0.0
100 80 60 40 20 0
0 5 10 15 20 25

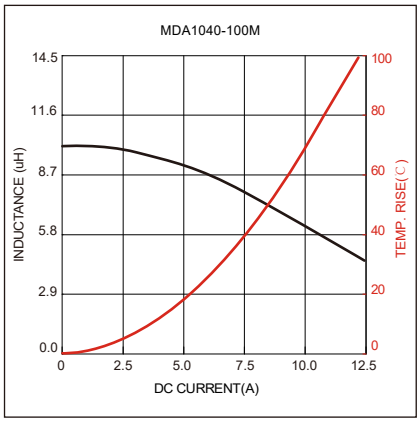

MDA1040-3R3M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
4.5 3.6 2.7 1.8 0.9 0.0
100 80 60 40 20 0
0 4 8 12 16 20

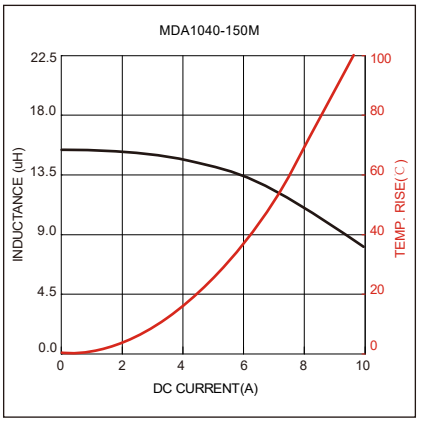

MDA1040-4R7M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
6.5 5.2 3.9 2.6 1.3 0.0
100 80 60 40 20 0
0 4 8 12 16 20

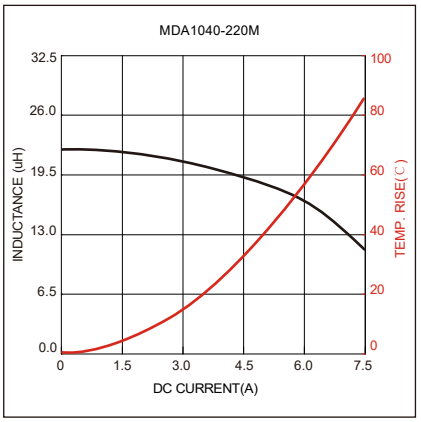

MDA1040-5R6M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
8.0 6.4 4.8 3.2 1.6 0.0
100 80 60 40 20 0
0 4 8 12 16 20

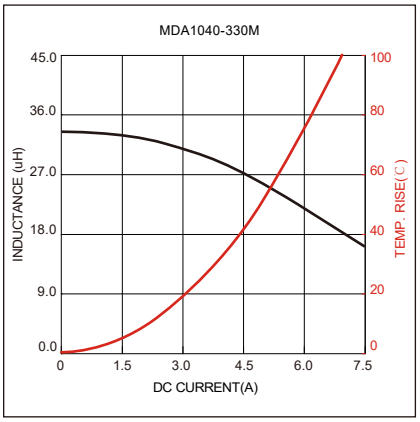

MDA1040-6R8M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
10.0 8.0 6.0 4.0 2.0 0.0
100 80 60 40 20 0
0 3 6 9 12 15

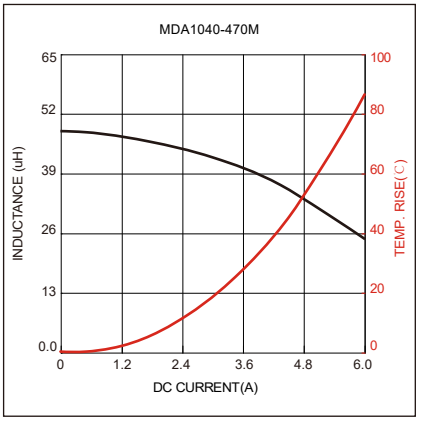

MDA1040-8R2M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
12.5 10.0 7.5 5.0 2.5 0.0
100 80 60 40 20 0
0 2.5 5.0 7.5 10.0 12.5

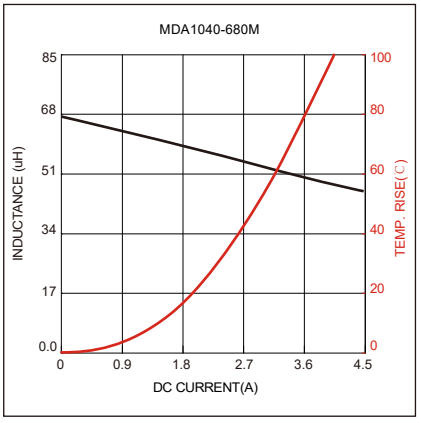

MDA1040-100M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
14.5 11.6 8.7 5.8 2.9 0.0
100 80 60 40 20 0
0 2.5 5.0 7.5 10.0 12.5


MDA1040-150M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
22.5 18.0 13.5 9.0 4.5 0.0
100 80 60 40 20 0
0 2 4 6 8 10

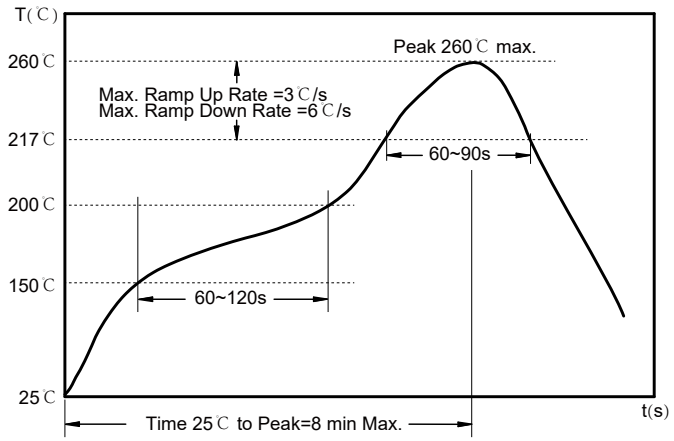

MDA1040-220M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
32.5 26.0 19.5 13.0 6.5 0.0
100 80 60 40 20 0
0 1.5 3.0 4.5 6.0 7.5


MDA1040-330M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
45.0 36.0 27.0 18.0 9.0 0.0
100 80 60 40 20 0
0 1.5 3.0 4.5 6.0 7.5


MDA1040-470M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
65 52 39 26 13 0.0
100 80 60 40 20 0
0 1.2 2.4 3.6 4.8 6.0


MDA1040-680M
INDUCTANCE (uH)
TEMP. RISE(℃)
DC CURRENT(A)
85 68 51 34 17 0.0
100 80 60 40 20 0
0 0.9 1.8 2.7 3.6 4.5

Soldering Reflow:



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

Allowed time above 217℃: 60~90 sec.

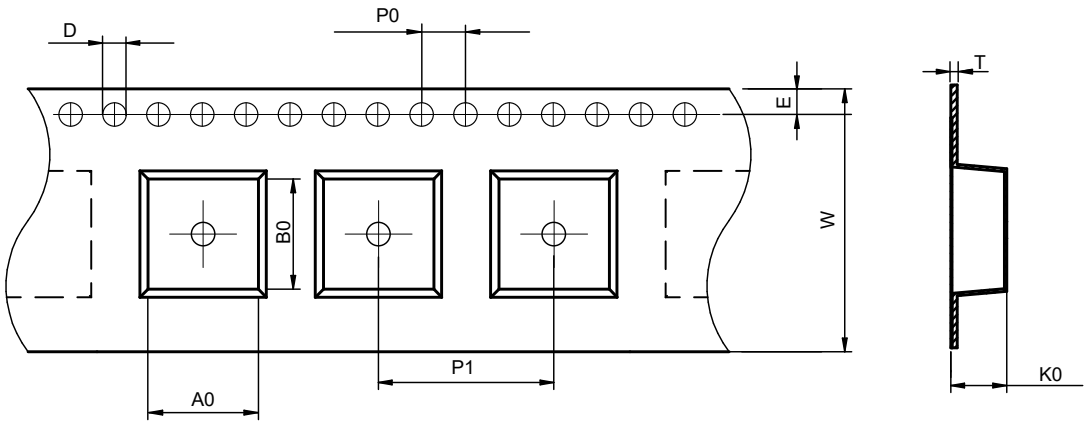
Max temperature: 260℃.

Max time at max temperature: 10 sec.

Allowed Reflow time: 2x max.

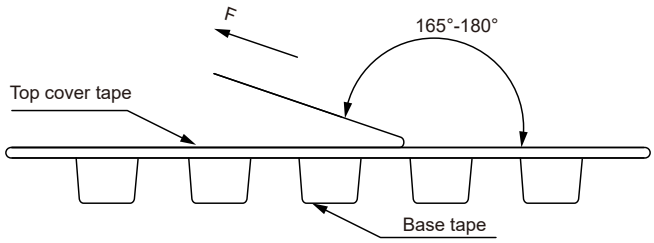
Packaging Information:

Tape Dimension:



Series	A0 (mm)	B0 (mm)	D (mm)	P0 (mm)	P1 (mm)	W (mm)	K0 (mm)	E (mm)	T (mm)
MDA1040	10.4±0.1	11.6±0.1	1.5±0.1	4.0±0.1	16.0±0.1	24.0±0.3	4.3±0.1	1.75±0.1	0.35±0.05

Peel force of top cover tape:

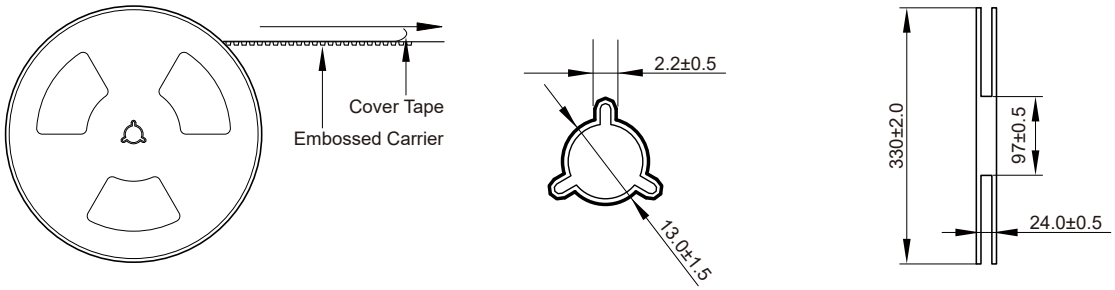


The peel force of top cover tape shall be between 0.1 to 1.3 N

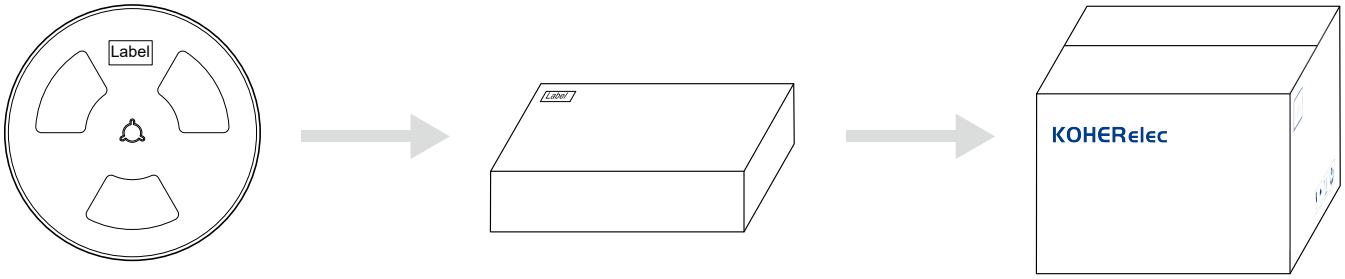
Product Marking:

Marking	KH+Printing (Inductance+period)

Reel Dimension： [mm]



Packaging Quantity:



500 Pcs/Reel

2 Reel /Inner box(1000 Pcs)

3 Inner box/Carton box(3K 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.

Looking for pricing, stock, or lifecycle information?

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- Shortage Management
- Alternative Solution
- Excess Inventory Management