

MDSA Series

SMD Low Profile High Current Molded Inductor

Size 4020



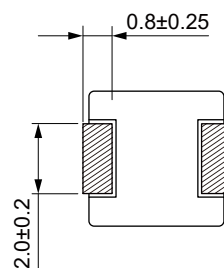
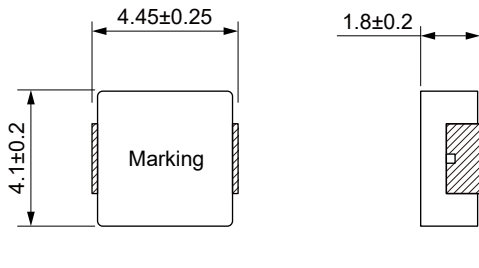
FEATURES

- 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: 3000PCS

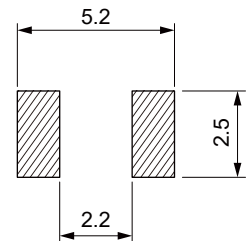
APPLICATION

- 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:

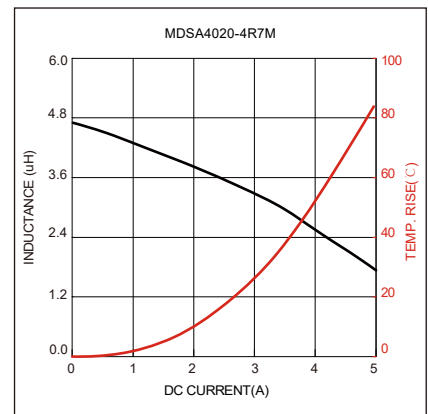
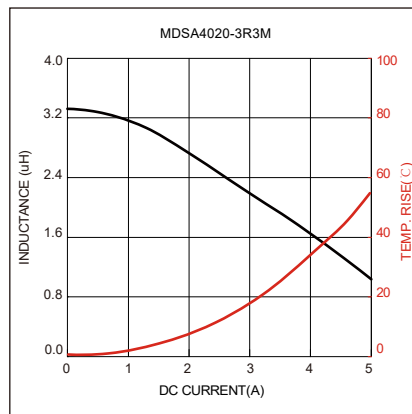
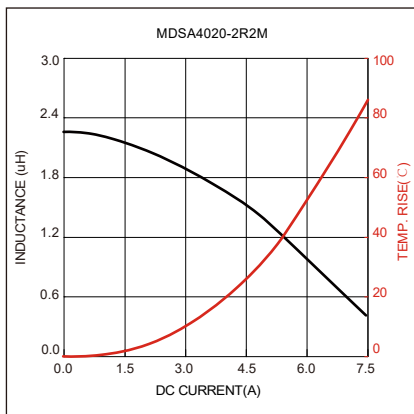
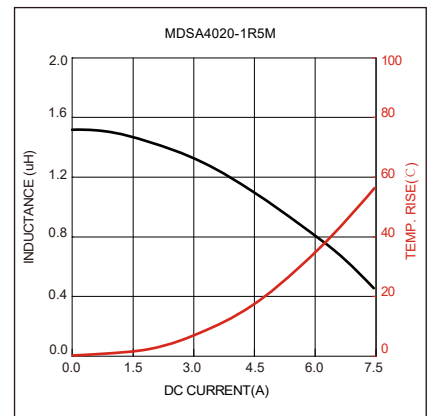
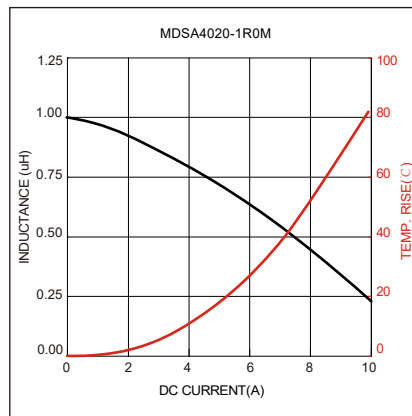
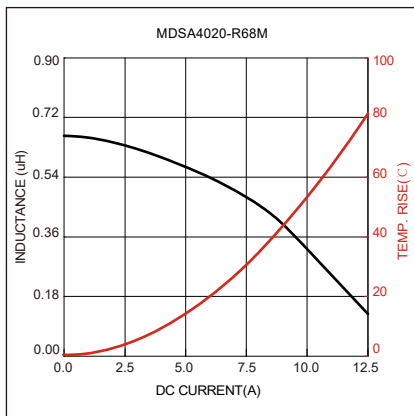
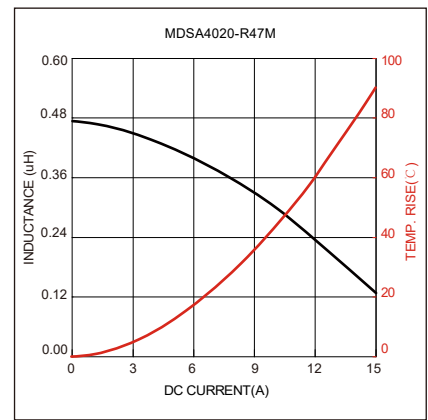
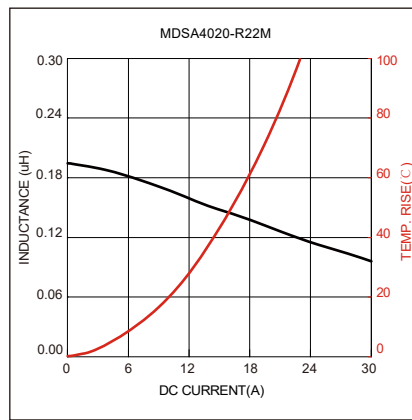
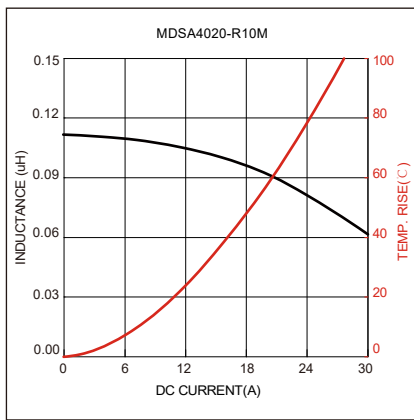
Part No	Inductance @ 100KHz/1V (μH)	Tolerance	Temperature Rise Current Typ. (A)	Temperature Rise Current Max. (A)	Saturation Current Typ. (A)	Saturation Current Max. (A)	DC Resistance Typ. (mΩ)	DC Resistance Max. (mΩ)
MDSA4020-R10M	0.10	±20%	15.9	13.8	26.0	22.0	2.91	3.25
MDSA4020-R22M	0.22	±20%	14.0	12.4	14.9	12.8	4.81	5.50
MDSA4020-R47M	0.47	±20%	10.0	8.9	8.9	8.0	9.50	11.0
MDSA4020-R68M	0.68	±20%	8.8	8.0	7.5	6.5	11.7	13.7
MDSA4020-1R0M	1.00	±20%	7.4	6.4	5.4	5.0	19.0	22.1
MDSA4020-1R5M	1.50	±20%	6.6	5.6	5.0	4.7	27.2	31.3
MDSA4020-2R2M	2.20	±20%	5.5	5.0	4.5	4.0	41.1	48.0
MDSA4020-3R3M	3.30	±20%	4.4	3.4	3.0	2.6	65.3	75.1
MDSA4020-4R7M	4.70	±20%	3.8	3.0	2.8	2.4	84.1	95.2

Part No	Inductance @ 100KHz/1V (μ H)	Tolerance	Temperature Rise Current Typ. (A)	Temperature Rise Current Max. (A)	Saturation Current Typ. (A)	Saturation Current Max. (A)	DC Resistance Typ. (m Ω)	DC Resistance Max. (m Ω)
MDSA4020-5R6M	5.60	$\pm 20\%$	3.0	2.7	2.5	2.2	97.1	115.3
MDSA4020-6R8M	6.80	$\pm 20\%$	2.8	2.5	2.4	2.1	131.2	157.2
MDSA4020-8R2M	8.20	$\pm 20\%$	2.5	2.2	2.1	2.0	140.5	168.0
MDSA4020-100M	10.0	$\pm 20\%$	2.4	2.1	2.1	1.8	165.0	215.1

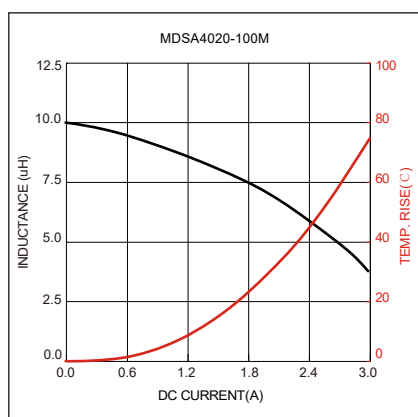
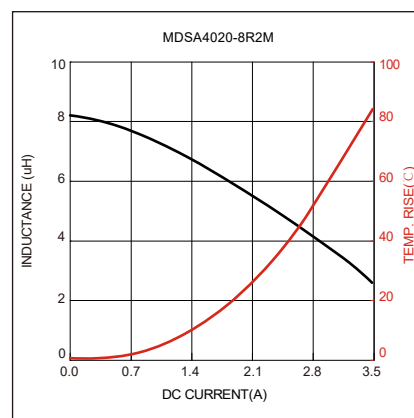
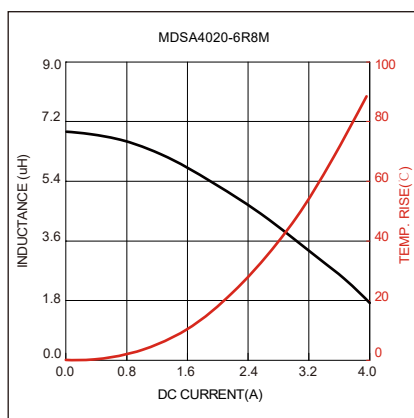
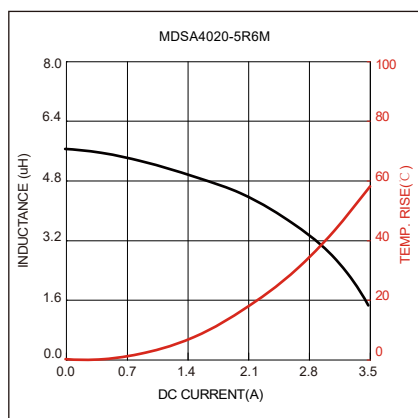
Saturation Current will cause L to drop approximately 30%

Temperature Rise Current: The actual value of DC current when the temperature rise is $\Delta T=40^{\circ}\text{C}$

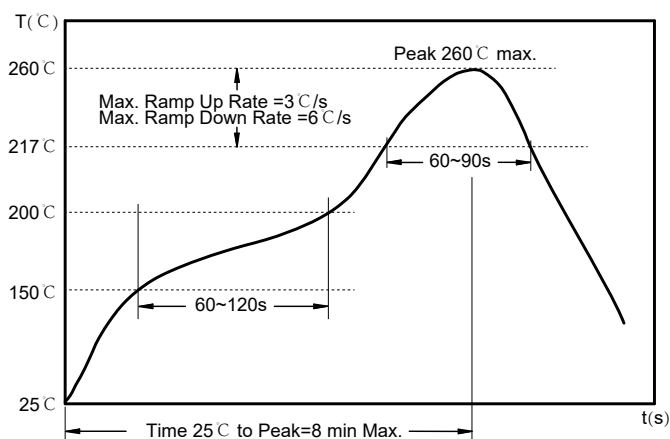
Typical Electrical Characteristics:



Typical Electrical Characteristics:



Soldering Reflow:



Preheat condition: 150 ~200°C / 60~120 sec.

Allowed time above 217°C : 60~90 sec.

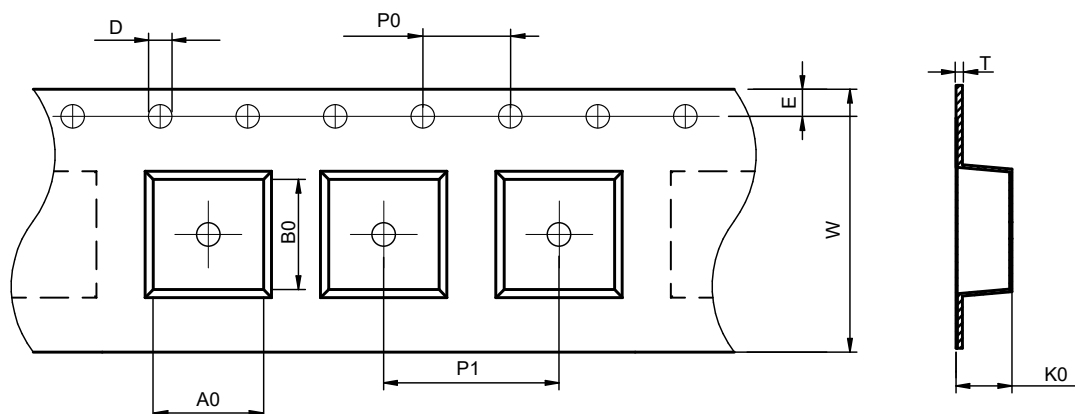
Max temperature: 260°C.

Max time at max temperature: 5 sec.

Allowed Reflow time: 2x max.

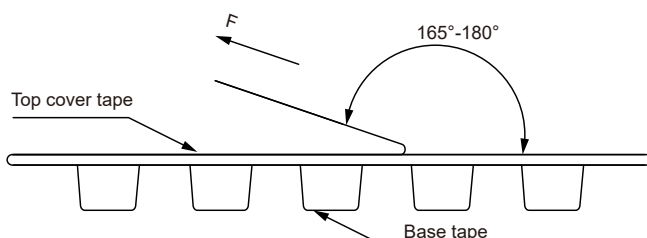
Packaging Information:

Tape Dimension:



Series	A0 (mm)	B0 (mm)	D (mm)	P0 (mm)	P1 (mm)	W (mm)	K0 (mm)	E (mm)	T (mm)
MDSA4020	4.5±0.1	4.85±0.1	1.5±0.1	4.0±0.1	8.0±0.1	12.0±0.3	2.3±0.1	1.75±0.1	0.35±0.05

Peel force of top cover tape:

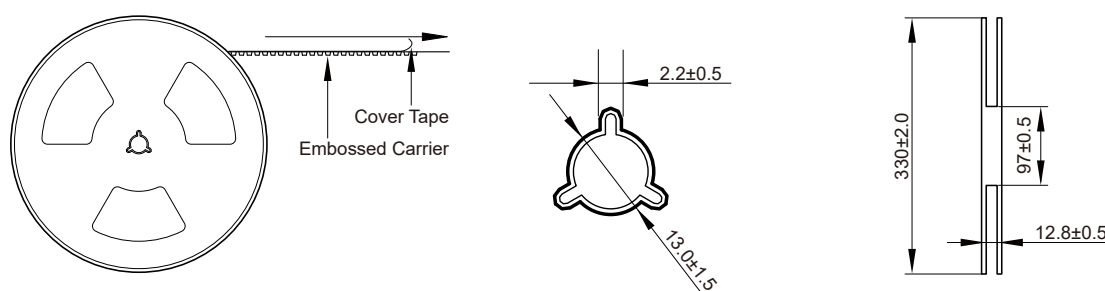


The peel force of top cover tape shall be between 0.1 to 1.3 N

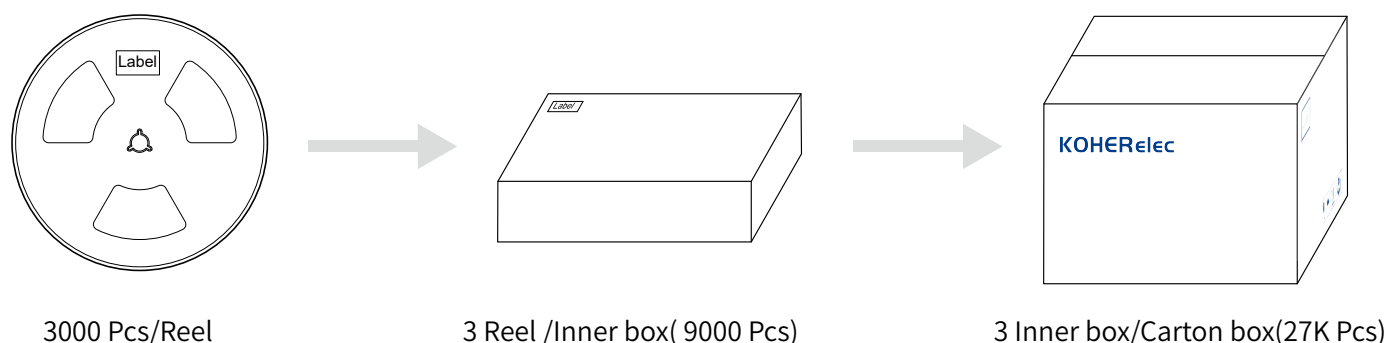
Product Marking:

Marking	K+Printing (Inductance)
---------	-------------------------

Reel Dimension: [mm]



Packaging Quantity:



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.