

MDPU Series

Molding SMD Power Inductors



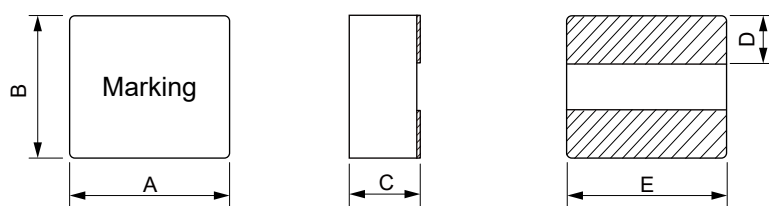
FEATURES

- Halogen Free & ROHS compliant.
- Low profile and low DCR.
- Magnetically Shielded construction, low EMI.
- Frequency range up to 3MHz.
- Minimized acoustic noise and minimized leakage flux noise.
- High current carrying capacity, Low core loss.
- Flat wire: high utilization of winding space delivers low DC resistance.
- Operating temperature: -55 to +125 °C

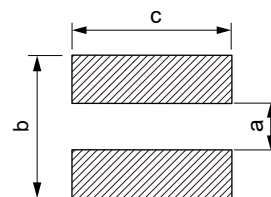
APPLICATION

- AI Servers, Data Centers, GPU/AI Accelerators.
- Desktop Motherboards, CPU/GPU Power Delivery.
- Multi-phase VRM, High-current DC-DC Converters.
- Networking Equipment, Communication Infrastructure.

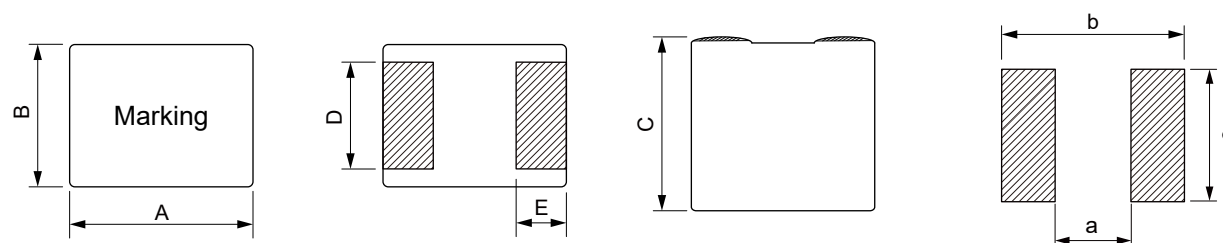
Dimensions: [mm]



Land Pattern: [mm]



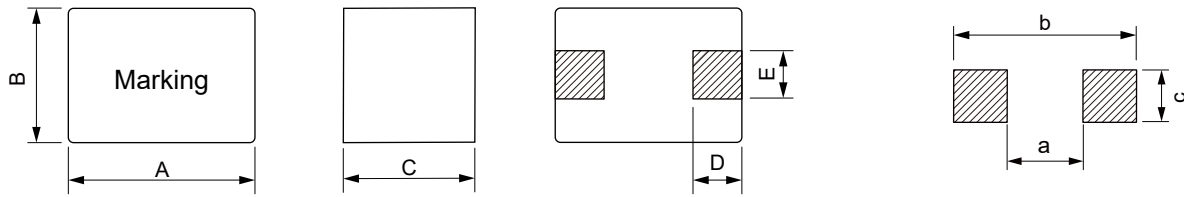
Series	A	B	C	D	E	a	b	c
MDPU0420	4.2±0.2	4.2±0.2	2.0 max	1.2±0.3	4.3±0.3	1.6	4.5	4.5
MDPU0530	5.3±0.3	5.1±0.3	3.0 max	1.6±0.3	5.3±0.3	1.7	5.5	5.7
MDPU0630	6.6±0.4	6.4±0.4	3.0 max	1.9±0.4	6.6±0.4	2.3	7.0	7.2



Series	A	B	C	D	E	a	b	c
MDPU405060	4.8±0.1	3.8±0.2	5.8±0.2	3.0±0.2	1.25±0.2	2.0	4.9	3.4
MDPU4860	4.8±0.2	4.6±0.2	5.8±0.2	4.3±0.2	0.70±0.5	2.7	5.1	4.7

Dimensions: [mm]

Land Pattern: [mm]



Series	A	B	C	D	E	a	b	c
MDPU130806	12.8±0.4	7.0±0.4	6.0±0.2	3.0±0.4	3.5±0.4	6.0	14.0	4.5

Electrical Properties:

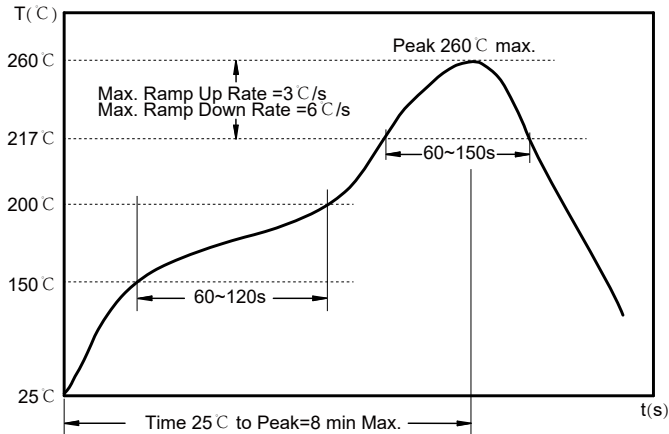
Part No	Inductance @ 100KHz/1V (μH)	Tolerance	Temperature Rise Current Typ. (A)	Saturation Current Typ. (A)	DC Resistance Typ. (mΩ)	DC Resistance Max. (mΩ)
MDPU0420-1R5M	1.50	±20%	10.5	8.5	11.5	14.0
MDPU405060-85NM	0.085	±20%	54.0	93.0	0.28	0.30
MDPU130806-R10M	0.10	±20%	80.0	120	0.11	0.13

Part No	Inductance @ 1MHz/1V (μH)	Tolerance	Temperature Rise Current Typ. (A)	Saturation Current Typ. (A)	DC Resistance Typ. (mΩ)	DC Resistance Max. (mΩ)
MDPU0530-R10M	0.10	±20%	46.0	52.0	0.68	0.82
MDPU0630-R10M	0.10	±20%	48.0	78.0	0.55	0.68
MDPU4860-R10M	0.10	±20%	55.0	65.0	0.28	0.35

Saturation Current will cause L0 to drop approximately 30%.

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

Soldering Reflow:



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

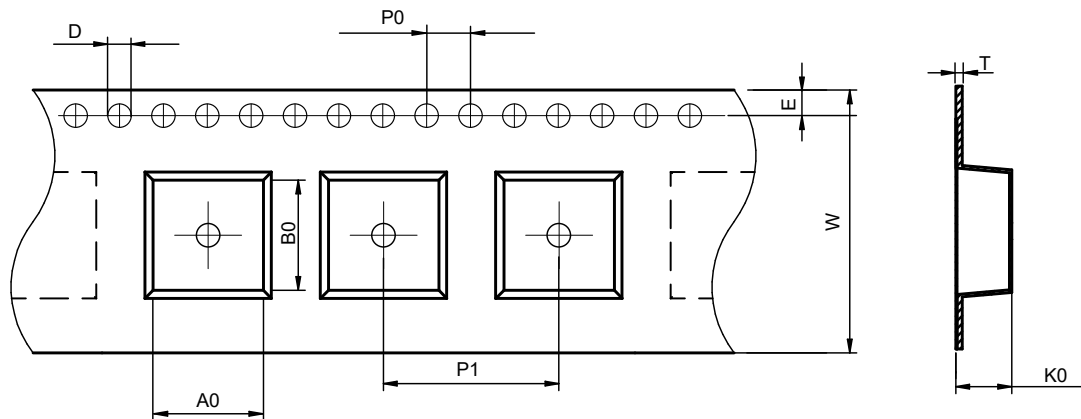
Allowed time above 217 °C: 60~150 sec.

Max temperature: 260 °C.

Time within 5 °C of actual Peak Temperature: 30 sec max.

Packaging Information:

Tape Dimension: [mm]

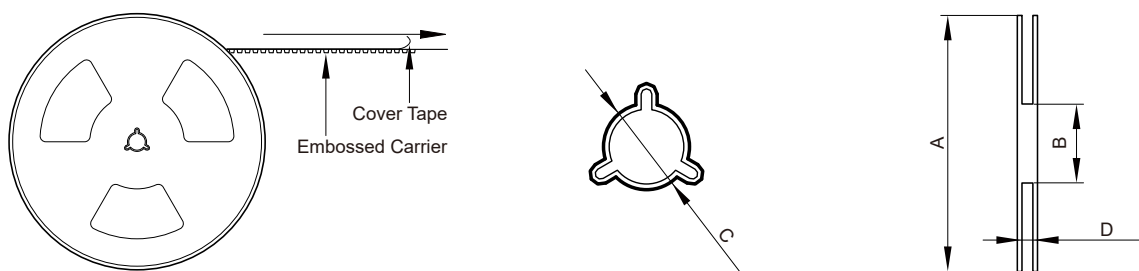


Series	D typ.	P0 typ.	P1 typ.	W typ.	E typ.	A0 typ.	B0 typ.	K0 typ.	T typ.
0420	1.5	4.0	8.0	12.0	1.75	4.4	4.4	2.5	0.35
0530	1.5	4.0	8.0	12.0	1.75	6.0	5.7	3.3	0.35
0630	1.5	4.0	12.0	16.0	1.75	7.1	6.9	3.3	0.35
405060	1.5	4.0	8.0	16.0	1.75	4.6	5.6	6.3	0.40
4860	1.5	4.0	12.0	16.0	1.75	5.2	5.4	6.3	0.40
130806	1.5	4.0	12.0	24.0	1.75	7.3	13.1	6.3	0.40

Product Marking:

Marking	Printing (Inductance)
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Reel Dimension: [mm]



Series	A (mm)	B (mm)	C (mm)	D (mm)	Qty/Reel (pcs)
0420	330±1.0	100±1.0	13.2±0.5	12.5±0.2	3000
0530	330±1.0	100±1.0	13.2±0.5	12.5±0.2	2000
0630	330±1.0	100±1.0	13.2±0.5	16.5±0.2	1000
405060	330±1.0	100±1.0	13.2±0.5	16.5±0.2	1000
4860	330±1.0	100±1.0	13.2±0.5	16.5±0.2	800
130806	330±1.0	100±1.0	13.2±0.5	24.5±0.2	500

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.