

MDVR Series

Molding SMD Power Inductors



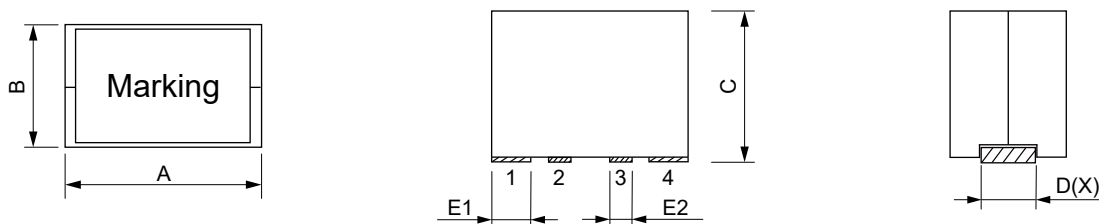
FEATURES

- High saturation characteristic core for large saturation current and low loss.
- Closed magnetic circuit design reduces leakage flux.
- High precision DCR.
- Halogen Free & ROHS compliant.
- Operating temperature: -40 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.

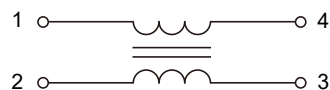
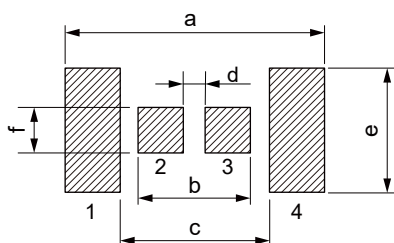
Dimensions: [mm]



Series	A	B	C	D (pin1&4)	D (pin2&3)	E1	E2
MDVR090610	9.6 max	6.4 max	10.4 max	3.2 typ	3.2 typ	1.50 typ	1.00 typ
MDVR10056	10.2 max	5.0 max	6.0 max	4.0±0.3	1.4±0.5	1.25 typ	1.20 typ
MDVR120612	12.0 max	6.0 max	12.2 max	2.55 typ	2.55 typ	1.63 typ	1.27 typ

Land Pattern: [mm]

Schematic:



Series	a	b	c	d	e	f
MDVR090610	10.1	3.9	5.8	1.0	3.8	3.8
MDVR10056	10.4	4.4	6.9	1.0	4.5	1.9
MDVR120612	12.2	4.39	7.94	0.85	3.05	3.05

Electrical Properties:

Part No	Inductance @ 500KHz/0.25V (nH)	Tolerance	Temperature Rise Current Typ. (A) 1-4	Saturation Current Typ. (A) 1-4	DC Resistance ±10% (mΩ) 1-4	DC Resistance ±10% (mΩ) 2-3
MDVR090610-R15L	150	±15%	71	65	0.125	0.45

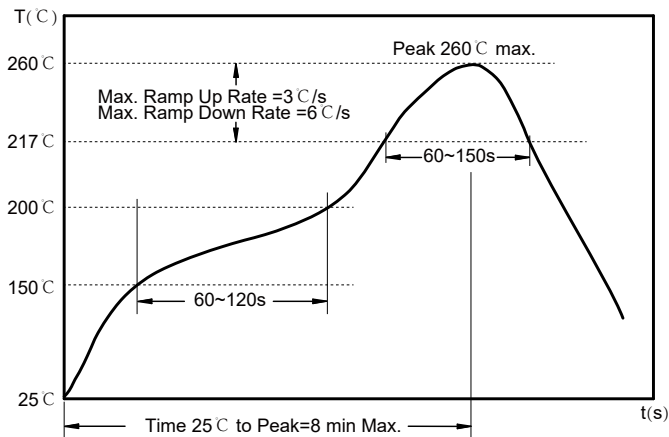
Part No	Inductance @ 100KHz/1V (nH)	Tolerance	Temperature Rise Current Typ. (A) 1-4	Saturation Current Typ. (A) 1-4	DC Resistance ±10% (mΩ) 1-4	DC Resistance ±10% (mΩ) 2-3
MDVR10056F-R12K	120	±10%	40	54	0.29	0.70

Part No	Inductance @ 100KHz/0.1V (nH)	Tolerance	Temperature Rise Current Typ. (A) 1-4	Saturation Current Typ. (A) 1-4	DC Resistance ±10% (mΩ) 1-4	DC Resistance ±10% (mΩ) 2-3
MDVR120612-R10K	100	±10%	75	130	0.125	0.37

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.

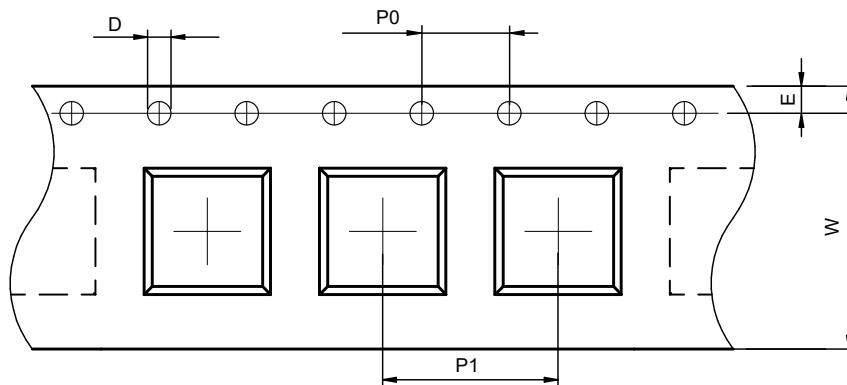
Allowed time above 217 °C: 60~150 sec.

Max temperature: 260 °C.

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

Packaging Information:

Tape Dimension: [mm]

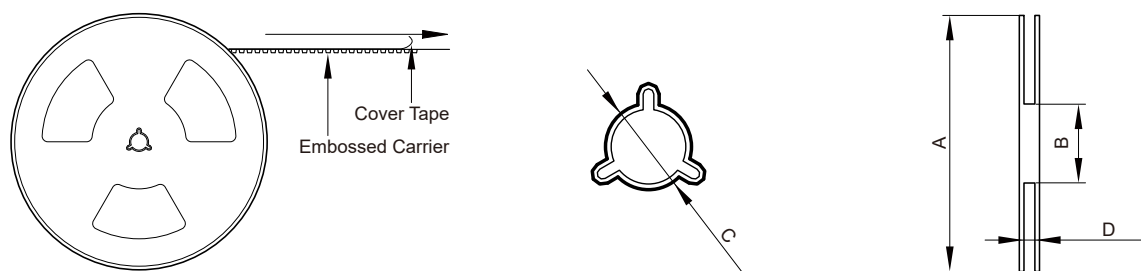


Series	D typ.	P0 typ.	P1 typ.	W typ.	E typ.
090610	1.5	4.0	12.0	24.0	1.75
10056	1.5	4.0	12.0	24.0	1.75
120612	1.5	4.0	16.0	24.0	1.75

Product Marking:

Marking	Printing (Inductance)
---------	-----------------------

Reel Dimension: [mm]



Series	A (mm)	B (mm)	C (mm)	D (mm)	Qty/Reel (pcs)
090610	330±1.0	100±1.0	13.2±0.5	24.5±0.2	450
10056	330±1.0	100±1.0	13.2±0.5	24.5±0.2	800
120612	330±1.0	100±1.0	13.2±0.5	24.5±0.2	300

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.