

Data Sheet

Customer:

Product: Wire Wound Type Power Inductor—MLP(H) Series

Sizes.: 0803/0805/0806/1004/1008/1310

Issued Date: 18-Jul-25

Edition: REV.A7



VIKING TECH CORPORATION
光頤科技股份有限公司
No.70, Guangfu N. Rd.,
Hukou Township, Hsinchu County
303, Taiwan (R.O.C)

TEL:886-3-5972931
FAX:886-3-5972935•886-3-5973494
E-mail:sales@viking.com.tw

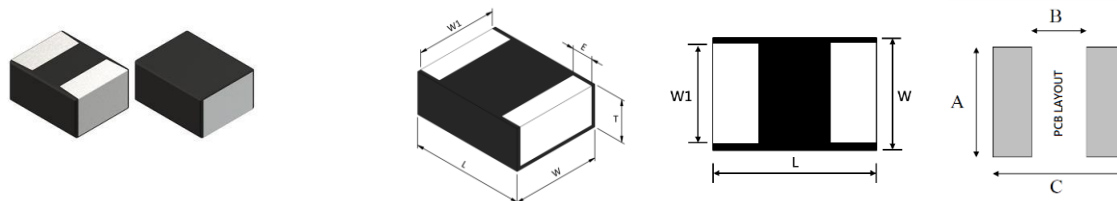
VIKING TECH CORPORATION KAOHSIUNG BRANCH
光頤科技股份有限公司高雄分公司
No.248-3, Sin-Sheng Rd., Cian-Jhen Dist., Kaohsiung,
806, Taiwan

TEL:886-7-8217999
FAX:886-7-8228229
E-mail:sales@viking.com.tw

VIKING ELECTRONICS (WUXI) CO., LTD.
光頤電子(無錫)有限公司
No.22 Xixia Road, Machinery & Industry Park,
National Hi-Tech Industrial Development Zone
of Wuxi, Wuxi, Jiangsu Province, China
Zip Code:214028
TEL:86-510-85203339
FAX:86-510-85203667•86-510-85203977
E-mail:china@viking.com.tw

Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
18-Jul-25	18-Jul-25	18-Jul-25	18-Jul-25	
<i>Mandy Chang</i>	<i>Ben Chang</i>	<i>Ben Chang</i>		

Wire Wound Type Power Inductor



Dimensions

Unit: mm

Type	Size (Inch)	L	W	W1	T	E	A	B	C
MLP03	0803	2.00±0.20	1.20±0.20	1.00±0.20	0.80 max	0.50±0.20	1.2	0.9	2.0
MLP05	0805	2.00±0.20	1.20±0.20	1.00±0.20	1.00 max	0.50±0.20	1.2	0.9	2.0
MLP06	0806	2.00±0.20	1.60±0.20	1.40±0.20	1.00 max	0.50±0.20	1.6	0.9	2.0
MLPH06	0806	2.00±0.20	1.60±0.20	1.40±0.20	1.00 max	0.60±0.30	1.6	0.9	2.0
MLP(H)04	1004	2.50±0.20	2.00±0.20	1.80±0.20	1.00 max	0.60±0.30	2.0	1.2	2.8
MLP(H)08	1008	2.50±0.20	2.00±0.20	1.80±0.20	1.20 max	0.60±0.30	2.0	1.2	2.8
MLP10	1310	3.20±0.20	2.50±0.20	2.30±0.20	1.10±0.1	0.60±0.20	2.5 typ	1.7 typ	3.2 typ

Features

- High saturation current realized by material properties and structure design
- Low DC resistance to achieve high conversion efficiency and lower temperature rising
- Magnetically shielded structure to accomplish high resolution in EMC protection
- Halogen free, Lead Free, RoHS Compliance
- The moisture sensitivity level (MSL) of products is level 1.

Applications for MLP(H)06/04/08/10

- Smart phone, PAD
- Thin-type Power Supply Module
- DC-DC Converters

Applications for MLP03/05

- Mobile Phones
- HDDs, DSCs, Pads
- LCD, LED Display, etc.

Characteristics for MLP(H)05/06/04/08/10

- Isat: DC current that will cause Li to drop approximately 30%
- Irms: DC current that will cause an approximately $\Delta T40^{\circ}\text{C}$
- The rated current value is following either Isat (max.) or Irms (max), which value is lower one
- The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. PCB land pattern, trace size -thick, circuit design and proximity to other components are all the factors will affect the temperature performance of the device. Therefore, it should be approved in application conditions and end product.
- Rated voltage: 20V DC (max.)
- Operating temperature range: $-40 \sim 125^{\circ}$ (including self-temperature rising)
- Test equipment:
 - L: HP4285A LCR meter or equivalent
 - DCR: Micro-ohm meter RM3542 or equivalent
- All test referenced to 25°C ambient

Characteristics for MLP03

- Isat: DC current that will cause Li to drop approximately 30%
- Irms: DC current that will cause an approximately $\Delta T40^{\circ}\text{C}$
- Operating temperature range: $-40 \sim 125^{\circ}$ (including self-temperature rising)
- Test equipment:
 - L: HP4285A LCR meter or equivalent
 - DCR: Micro-ohm meter RM3542 or equivalent
- All test referenced to 26°C ambient

Part Numbering

MLP	08	M	T	1R0
Product Type	Dimensions	Inductance Tolerance	Packaging Code	Inductance
MLP: Standard MLPH: High Current	03: 0803 05: 0805 06: 0806 04: 1004 08: 1008 10: 1310	M: $\pm 20\%$	T: Taping Reel	R47: 0.47uH 1R0: 1.0uH 1R5: 1.5uH 2R2: 2.2uH

■ Standard Electrical Specifications

MLP03(0803) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR(mΩ)		Isat(A)		Irms(A)		SRF (MHz) typ.	Q typ.
				typ.	max.	typ.	max.	typ.	max.		
MLP03MTR24	0.24	±20%	1MHz, 1V	22	26	6.70	6.00	5.00	4.50	>120	25
MLP03MTR47	0.47	±20%	1MHz, 1V	29	35	4.60	4.20	4.00	3.70	>120	25

MLP05(0805) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR(mΩ)		Isat(A)		Irms(A)		SRF (MHz) typ.	Q typ.
				typ.	max.	typ.	max.	typ.	max.		
MLP05MT1R0	1.0	±20%	1MHz, 1V	58	67	3.40	3.10	3.00	2.70	>120	25

MLP06(0806) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR(mΩ)		Isat(A)		Irms(A)		SRF (MHz) typ.	Q typ.
				typ.	max.	typ.	max.	typ.	max.		
MLP06MTR24	0.24	±20%	1MHz, 1V	17	21	5.60	5.05	5.00	4.50	>120	30
MLP06MTR33	0.33	±20%	1MHz, 1V	24	29	5.00	4.50	4.10	3.69	>120	30
MLP06MTR47	0.47	±20%	1MHz, 1V	33	40	4.40	4.00	3.50	3.15	>120	30
MLP06MTR68	0.68	±20%	1MHz, 1V	41	49	3.70	3.33	3.40	3.06	>120	30
MLP06MT1R0	1.0	±20%	1MHz, 1V	60	69	2.90	2.61	2.60	2.26	100	30
MLP06MT1R5	1.5	±20%	1MHz, 1V	114	129	2.50	2.25	2.00	1.81	75	30
MLP06MT2R2	2.2	±20%	1MHz, 1V	135	150	1.90	1.71	1.70	1.50	65	30

MLP04(1004) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR(mΩ)		Isat(A)		Irms(A)		SRF (MHz) typ.	Q typ.
				typ.	max.	typ.	max.	typ.	max.		
MLP04MTR22	0.22	±20%	1MHz, 1V	9	12.5	7.90	7.20	5.90	5.30	>120	30
MLP04MTR33	0.33	±20%	1MHz, 1V	21	26	6.60	6.00	4.40	4.00	>120	30
MLP04MTR47	0.47	±20%	1MHz, 1V	27	32	5.00	4.50	3.90	3.51	>120	30
MLP04MTR68	0.68	±20%	1MHz, 1V	37	44	4.30	3.87	3.40	3.06	110	30
MLP04MT1R0	1.0	±20%	1MHz, 1V	45	54	3.50	3.15	3.00	2.70	95	30
MLP04MT1R5	1.5	±20%	1MHz, 1V	76	91	2.60	2.34	2.50	2.25	75	30
MLP04MT2R2	2.2	±20%	1MHz, 1V	99	119	2.40	2.16	2.30	2.07	60	30
MLP04MT4R7	4.7	±20%	1MHz, 1V	220	262	1.80	1.62	1.36	1.22	35	30

MLP08(1008) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR(mΩ)		Isat(A)		Irms(A)		SRF (MHz) typ.	Q typ.
				typ.	max.	typ.	max.	typ.	max.		
MLP08MTR47	0.47	±20%	1MHz, 1V	21	25	5.30	4.95	4.60	4.18	>120	30
MLP08MTR68	0.68	±20%	1MHz, 1V	29	35	5.00	4.63	3.70	3.36	100	30
MLP08MT1R0	1.0	±20%	1MHz, 1V	41	49	4.40	4.04	3.50	3.18	85	30
MLP08MT1R5	1.5	±20%	1MHz, 1V	64	77	3.20	2.91	2.50	2.27	75	30
MLP08MT2R2	2.2	±20%	1MHz, 1V	85	98	3.00	2.73	2.27	2.06	65	30
MLP08MT3R3	3.3	±20%	1MHz, 1V	125	150	2.10	1.80	2.00	1.80	40	30
MLP08MT4R7	4.7	±20%	1MHz, 1V	196	235	1.90	1.58	1.61	1.40	40	30

MLP10(1310) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR(mΩ)		Isat(A)		Irms(A)		SRF (MHz) typ.	Q typ.
				typ.	max.	typ.	max.	typ.	max.		
MLP10MTR47	0.47	±20%	1MHz, 1V	15	19	7.70	7.00	5.80	5.20	>120	25
MLP10MTR68	0.68	±20%	1MHz, 1V	16	20	6.20	5.80	5.30	4.70	100	25
MLP10MT1R0	1.0	±20%	1MHz, 1V	25	32	5.50	5.00	4.90	4.40	85	25
MLP10MT1R5	1.5	±20%	1MHz, 1V	45	54	4.80	4.30	3.40	3.10	65	25
MLP10MT2R2	2.2	±20%	1MHz, 1V	60	72	4.00	3.50	3.00	2.70	50	25
MLP10MT3R3	3.3	±20%	1MHz, 1V	95	109	3.40	2.90	2.30	2.00	40	25
MLP10MT4R7	4.7	±20%	1MHz, 1V	150	168	2.80	2.40	1.70	1.40	35	25
MLP10MT6R8	6.8	±20%	1MHz, 1V	190	210	2.40	2.10	1.50	1.20	30	25

High Current Electrical Specifications

MLPH06(0806) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR(mΩ)		Isat(A)		Irms(A)		SRF (MHz) typ.	Q typ.
				typ.	max.	typ.	max.	typ.	max.		
MLPH06MTR10	0.10	±20%	1MHz, 1V	7	11	12.20	11.00	9.50	9.00	>120	30
MLPH06MTR15	0.15	±20%	1MHz, 1V	10	16	10.00	9.00	7.50	7.00	>120	30
MLPH06MTR22	0.22	±20%	1MHz, 1V	15	19	7.90	7.00	6.50	6.00	>120	30
MLPH06MTR24	0.24	±20%	1MHz, 1V	17	20	6.80	6.30	5.80	5.30	>120	30
MLPH06MTR33	0.33	±20%	1MHz, 1V	21	26	6.70	6.10	4.70	4.20	>120	30
MLPH06MTR47	0.47	±20%	1MHz, 1V	23	30	6.10	5.30	4.50	4.10	>120	30
MLPH06MTR68	0.68	±20%	1MHz, 1V	40	47	4.70	4.20	4.00	3.50	>120	30
MLPH06MT1R0	1.0	±20%	1MHz, 1V	48	60	3.90	3.30	3.20	3.00	90	30
MLPH06MT1R5	1.5	±20%	1MHz, 1V	86	99	3.40	3.10	2.40	2.20	80	30
MLPH06MT2R2	2.2	±20%	1MHz, 1V	117	140	2.60	2.45	2.20	2.00	60	30
MLPH06MT3R3	3.3	±20%	1MHz, 1V	200	220	1.90	1.65	1.80	1.50	40	30
MLPH06MT4R7	4.7	±20%	1MHz, 1V	240	288	1.80	1.60	1.30	1.10	40	30

MLPH04(1004) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR(mΩ)		Isat(A)		Irms(A)		SRF (MHz) typ.	Q typ.
				typ.	max.	typ.	max.	typ.	max.		
MLPH04MTR22	0.22	±20%	1MHz, 1V	10	13.5	10.50	9.00	6.90	6.30	>120	30
MLPH04MTR24	0.24	±20%	1MHz, 1V	11.5	14.5	8.80	8.00	6.60	6.00	>120	30
MLPH04MTR33	0.33	±20%	1MHz, 1V	17	22	7.80	7.00	5.60	4.80	>120	30
MLPH04MTR47	0.47	±20%	1MHz, 1V	23	29	6.60	6.00	5.20	4.40	>120	30
MLPH04MTR68	0.68	±20%	1MHz, 1V	30	36	5.50	5.00	4.30	3.70	90	30
MLPH04MT1R0	1.0	±20%	1MHz, 1V	41	52	4.40	4.00	3.40	3.10	70	30
MLPH04MT1R5	1.5	±20%	1MHz, 1V	62	72	3.80	3.40	2.90	2.50	60	30
MLPH04MT2R2	2.2	±20%	1MHz, 1V	88	110	3.30	3.00	2.40	2.10	50	30
MLPH04MT3R3	3.3	±20%	1MHz, 1V	140	160	2.50	2.20	1.90	1.60	40	30
MLPH04MT4R7	4.7	±20%	1MHz, 1V	200	240	2.20	1.90	1.60	1.40	30	30

MLPH08(1008) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR(mΩ)		Isat(A)		Irms(A)		SRF (MHz) typ.	Q typ.
				typ.	max.	typ.	max.	typ.	max.		
MLPH08MTR47	0.47	±20%	1MHz, 1V	16	22	6.80	6.20	5.80	4.90	>120	30
MLPH08MT1R0	1.0	±20%	1MHz, 1V	36	44	4.80	4.30	3.90	3.30	70	30
MLPH08MT1R5	1.5	±20%	1MHz, 1V	54	63	4.00	3.50	2.90	2.50	60	30
MLPH08MT2R2	2.2	±20%	1MHz, 1V	74	89	3.50	3.20	2.50	2.20	50	30
MLPH08MT3R3	3.3	±20%	1MHz, 1V	116	130	2.80	2.50	2.10	1.80	40	30
MLPH08MT4R7	4.7	±20%	1MHz, 1V	160	180	2.20	2.00	1.80	1.50	35	30

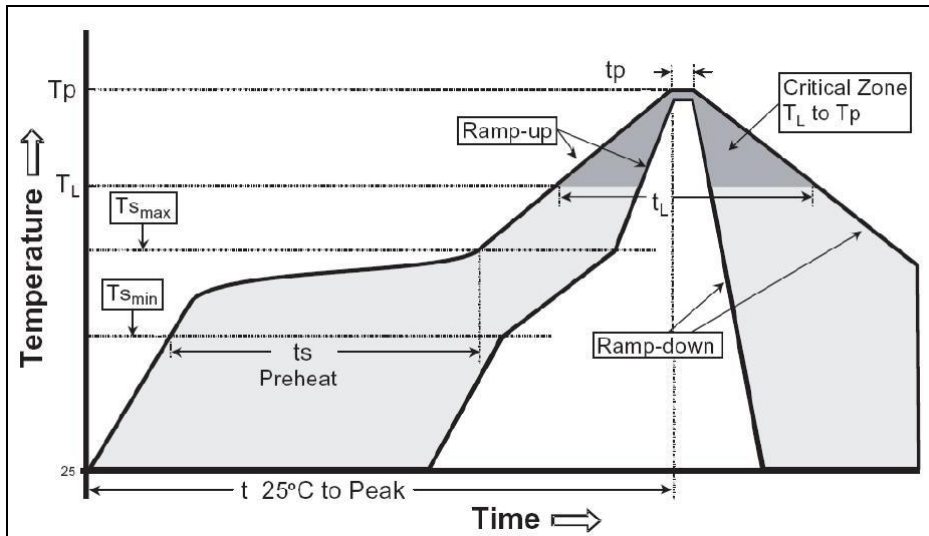
Environmental Characteristics

Item	Requirement	Test Method
Resistance to Soldering Heat	Appearance: No damage More than 95% of the terminal. Electrode should be covered with solder. Inductance: within $\pm 20\%$ of initial value	Flux: Rosin Solder Temperature: $260 \pm 5^\circ\text{C}$ Immersion Time: 10 ± 1 sec.
Adhesive Test	No mechanical damage Soldering the products on PCB after the pulling test force $> 5\text{N}$	Reflow temperature: 245°C it shall be soldered on the substrate applying direction parallel to the substrate Apply force(F) : 5 N Test time : 10 sec
Temperature Cycle	No mechanical damage Inductance: within $\pm 20\%$ of initial value	Temperature: $-50 \sim 125^\circ\text{C}$ for 30 minutes each Cycle: 500cycles Measurement: at ambient temperature 24 hours after test completion
Dry Heat Test		Temperature: $85 \pm 2^\circ\text{C}$ Testing time: 500 hrs Applied current: full rated current Measurement: at ambient temperature 24 hours after test completion
Humidity Test		Temperature: $60 \pm 2^\circ\text{C}$, Humidity: 90~95% RH Testing time: 500 hrs Applied current: full rated current Measurement: at ambient temperature 24 hours after test completion

■ Storage Temperature: $5 \sim 40^\circ\text{C}$; Humidity: $< 65\% \text{RH}$

■ Shelf life: 1 years Max

Recommendable Reflow Soldering

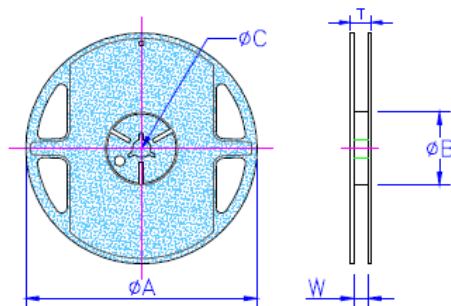


Reference IPC-020c-5-1

Profile Feature	Pb-Free Assembly
Average Ramp Rate (Ts max to Tp)	3 °C/second max.
Preheat Temperature Min (Tsmin) Temperature Min (Tsmax) Time (Tsmin to Tsmin)	150 °C 200 °C 60-180 seconds
Time maintained above: Temperature (T _L) Time (t _L)	217 °C 60-150 seconds
Peak temperature (Tp)	$260^\circ\text{C} +0/-5^\circ\text{C}$
Time within 5 °C of actual Peak Temperature (Tp)	20-40 seconds
Ramp-Down Rate	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max.

■Packaging

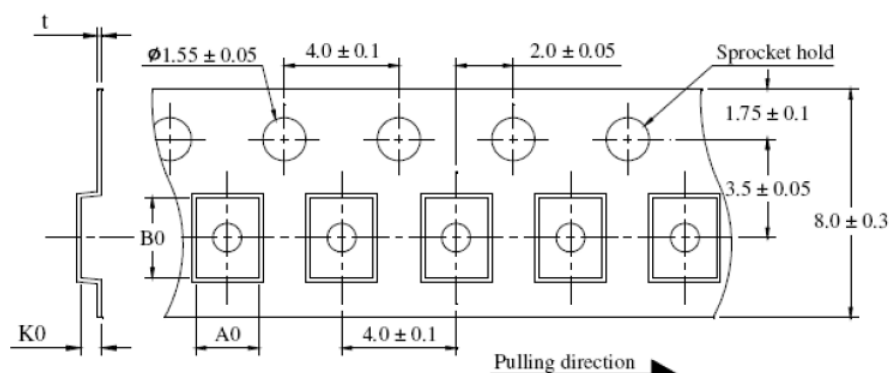
Reel Specifications



Unit: mm

Type	A	B	C	W	T	Quantity (EA)
MLP03	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	3,000
MLP05	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	3,000
MLP(H)06	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	3,000
MLP(H)04	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	3,000
MLP(H)08	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	3,000
MLP10	178±1	60.0±0.5	13.0±0.2	9.00±0.5	12.0±0.15	3,000

Tape Specifications



Unit: mm

Type	A0	B0	K0	t
MLP03	1.52±0.10	2.35±0.10	0.87±0.05	0.22±0.05
MLP05	1.45±0.10	2.20±0.10	1.12±0.10	0.22±0.05
MLP(H)06	1.82±0.05	2.23±0.05	1.15±0.05	0.22±0.05
MLP(H)04	2.25±0.05	2.80±0.10	1.35±0.10	0.22±0.05
MLP(H)08	2.25±0.05	2.80±0.10	1.35±0.10	0.22±0.05
MLP10	2.80±0.10	3.45±0.10	1.34±0.10	0.23±0.05

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A6	Apr 14,2025		-Add Shelf life.
			-Add W1 dimension and modified E dimension for MLP03.
Version A7	Jul 18,2025		-Add SRF and Q specifications for MLP03.
			-Modify Irms specification for MLP03MTR24.
			-Modify tape dimension specifications for MLP03.