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**

RoHS Compliant

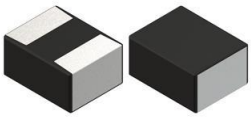
HONG KONG HELISTO INDUSTRIAL LIMITED
香港海利斯特实业有限公司

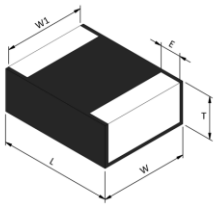
SHENZHEN HELISTO TECHNOLOGYCOLTD
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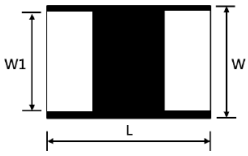
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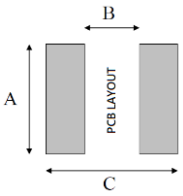
Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
18-Jul-25	18-Jul-25	18-Jul-25	18-Jul-25	
Mandy Chang	*Ben Chang*	*Ben Chang*		

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 ΔT40°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: -40～125°(including self-temperature rising)
- Test equipment:

  L: HP4285A LCR meter or equivalent

  DCR: Micro-ohm meter RM3542 or equivalent
- All test referenced to 25℃ ambient

Characteristics for MLP03

- Isat: DC current that will cause Li to drop approximately 30%
- Irms: DC current that will cause an approximately ΔT40°C
- Operating temperature range: -40～125°(including self-temperature rising)
- Test equipment:

  L: HP4285A LCR meter or equivalent

  DCR: Micro-ohm meter RM3542 or equivalent
- All test referenced to 26℃ 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: ±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

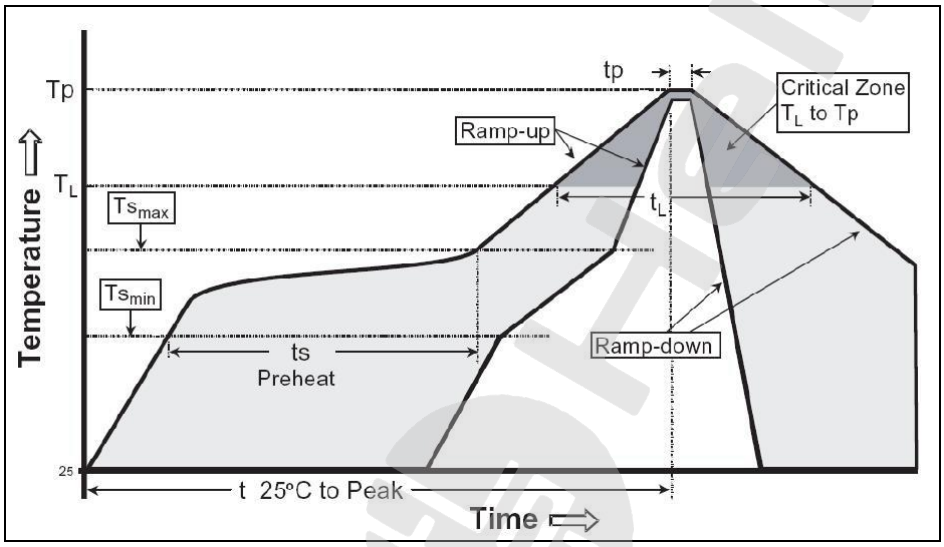
■Environmental Characteristics

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 ±20% of initial value	Flux: Rosin Solder Temperature: 260±5°C Immersion Time: 10±1 sec.
Adhesive Test	No mechanical damage Soldering the products on PCB after the pulling test force>5N	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 ±20% of initial value	Temperature: -50~125°C for 30 minutes each Cycle: 500cycles Measurement: at ambient temperature 24 hours after test completion
Dry Heat Test		Temperature: 85±2°C Testing time: 500 hrs Applied current: full rated current Measurement: at ambient temperature 24 hours after test completion
Humidity Test		Temperature: 60±2°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 ~ 40℃;Humidity: <65%RH

■Shelf life: 1 years Max

Recommendable Reflow Soldering

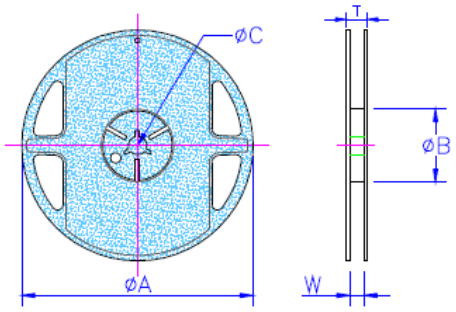


Reference IPC-020c-5-1

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°C +0/-5°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

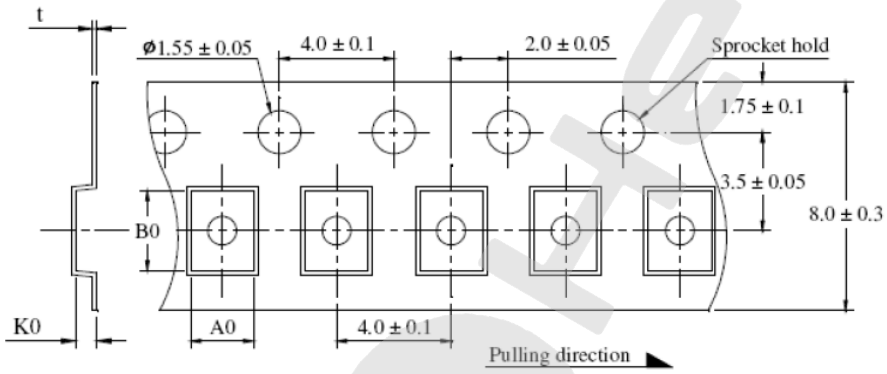
Reel Specifications



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.
Version A7	Jul 18,2025		-Add W1 dimension and modified E dimension for MLP03. -Add SRF and Q specifications for MLP03. -Modify Irms specification for MLP03MTR24. -Modify tape dimension specifications for MLP03.