

Data Sheet

Customer:

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

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

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Wire Wound Type Power Inductor
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■ Features

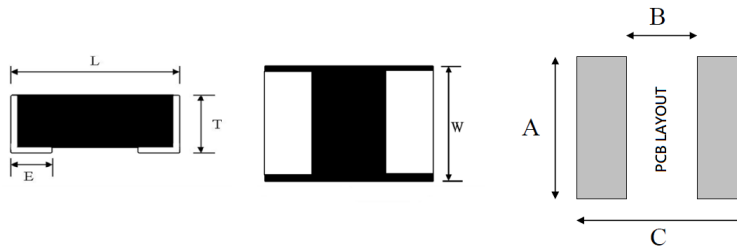
- High saturation current realized by material properties and structure design
- Low DC resistance to achieve high conversion efficiency and lower temperature rising
- Magnetically shielded structure to accomplish high resolution in EMC protection
- Halogen free, Lead Free, RoHS Compliance

■ Applications

- MLP(H)06 / 04 / 08 / 10
- Smart phone, PAD
 - Thin-type power supply module
 - DC-DC Converters

- MLP03 / 05
- Mobile Phones
 - HDDs, DSCs, Pads
 - LCD, LED Display, etc..

■ Dimensions



Unit: mm

Type	Size (Inch)	L	W	T	E	A	B	C
MLP03	0803	2.00±0.20	1.20±0.20	0.80 max	0.50±0.30	1.2	0.9	2.0
MLP05	0805	2.00±0.20	1.20±0.20	1.00 max	0.50±0.30	1.2	0.9	2.0
MLP(H)06	0806	2.00±0.20	1.60±0.20	1.00 max	0.50±0.30	1.6	0.9	2.0
MLP(H)04	1004	2.50±0.20	2.00±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	1.20 max	0.60±0.20	2.0	1.2	2.8
MLP10	1310	3.20±0.20	2.50±0.20	1.10±0.1	0.60±0.20	2.5 typ	1.7 typ	3.2 typ

■ 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

Wire Wound Type Power Inductor

Standard Electrical Specifications

MLP03(0803) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLP03MTR24	0.24	±20%	1MHz, 1V	26	6.00	4.10
MLP03MTR47	0.47	±20%	1MHz, 1V	35	4.20	3.70

MLP05(0805) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLP05MT1R0	1.0	±20%	1MHz, 1V	67	3.10	2.70

MLP06(0806) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLP06MTR24	0.24	±20%	1MHz, 1V	21	5.05	4.50
MLP06MTR33	0.33	±20%	1MHz, 1V	29	4.50	3.69
MLP06MTR47	0.47	±20%	1MHz, 1V	40	4.00	3.15
MLP06MTR68	0.68	±20%	1MHz, 1V	49	3.33	3.06
MLP06MT1R0	1.0	±20%	1MHz, 1V	69	2.61	2.26
MLP06MT1R5	1.5	±20%	1MHz, 1V	137	2.25	1.65
MLP06MT2R2	2.2	±20%	1MHz, 1V	150	1.71	1.50

MLP04(1004) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLP04MTR33	0.33	±20%	1MHz, 1V	26	6.00	4.00
MLP04MTR47	0.47	±20%	1MHz, 1V	32	4.50	3.51
MLP04MTR68	0.68	±20%	1MHz, 1V	44	3.87	3.06
MLP04MT1R0	1.0	±20%	1MHz, 1V	54	3.15	2.70
MLP04MT1R5	1.5	±20%	1MHz, 1V	91	2.34	2.25
MLP04MT2R2	2.2	±20%	1MHz, 1V	119	2.16	2.07
MLP04MT4R7	4.7	±20%	1MHz, 1V	262	1.62	1.22

MLP08(1008) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLP08MTR47	0.47	±20%	1MHz, 1V	25	4.95	4.18
MLP08MTR68	0.68	±20%	1MHz, 1V	35	4.63	3.36
MLP08MT1R0	1.0	±20%	1MHz, 1V	49	4.04	3.18
MLP08MT1R5	1.5	±20%	1MHz, 1V	77	2.91	2.27
MLP08MT2R2	2.2	±20%	1MHz, 1V	98	2.73	2.06
MLP08MT4R7	4.7	±20%	1MHz, 1V	235	1.58	1.40

Operating Temperature range : -40°C to +125°C

Wire Wound Type Power Inductor

Standard Electrical Specifications

MLP10(1310) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) Max.	Irms (A) Max.
MLP10MTR47	0.47	±20%	1MHz, 1V	19	7	5.2
MLP10MTR68	0.68	±20%	1MHz, 1V	20	5.8	4.7
MLP10MT1R0	1.0	±20%	1MHz, 1V	32	5	4.4
MLP10MT2R2	2.2	±20%	1MHz, 1V	72	3.5	2.7
MLP10MT4R7	4.7	±20%	1MHz, 1V	168	2.4	1.4
MLP10MT6R8	6.8	±20%	1MHz, 1V	210	2.1	1.2

Operating Temperature range : -40°C to +125°C

■Withstand Voltage is 20V DC.

High Current Electrical Specifications

MLPH06(0806) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLPH06MTR47	0.47	±20%	1MHz, 1V	30	5.30	4.05
MLPH06MT1R0	1.0	±20%	1MHz, 1V	60	3.30	3.00
MLPH06MT1R5	1.5	±20%	1MHz, 1V	99	3.10	2.20
MLPH06MT2R2	2.2	±20%	1MHz, 1V	140	2.45	2.00

MLPH04(1004) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLPH04MTR47	0.47	±20%	1MHz, 1V	29	6.00	4.40
MLPH04MT1R0	1.0	±20%	1MHz, 1V	52	4.00	3.10
MLPH04MT2R2	2.2	±20%	1MHz, 1V	110	3.00	2.10

MLPH08(1008) Wire Wound Type Power Inductor

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLPH08MTR47	0.47	±20%	1MHz, 1V	22	6.20	4.90
MLPH08MT1R0	1.0	±20%	1MHz, 1V	44	4.30	3.30
MLPH08MT2R2	2.2	±20%	1MHz, 1V	89	3.20	2.20

Operating Temperature range : -40°C to +125°C

Wire Wound Type Power Inductor

Environmental Characteristics

Electrical Performance Test

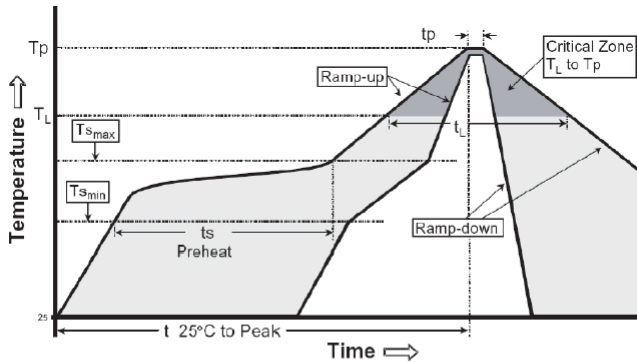
Item	Requirement	Test Method
Inductance	Refer to standard electrical characteristic spec.	HP4285A
DC Resistance RDC		micro-ohm meter
Isat		DC current will cause a 30% inductance reduction form initial value
Irms		DC current will cause coil temp. rising to 40°C whichever is smaller

Mechanical Performance Test

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°C ;Humidity: <65%RH

Recommendable Reflow Soldering



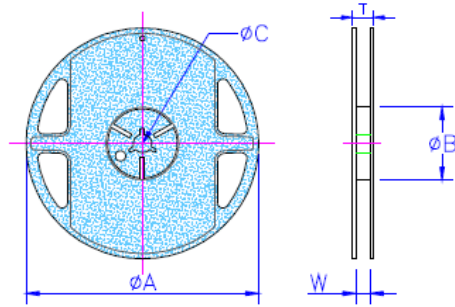
Reference IPC-020c-5-1

Profile Feature	Pb free Assembly
Average Ramp Rate (Ts max to Tp)	3 °C/second max
Preheat	
- Temperature Min ($T_{s_{min}}$)	150°C
- Temperature Min ($T_{s_{max}}$)	200°C
- Time ($t_{s_{min}}$ to $t_{s_{min}}$)	60-180 seconds
Time maintained above:	
- Temperature (TL)	217°C
- Time (tL)	60-150 seconds
Peak Temperature (T_p)	260°C +0/-5 °C
Time within 5 °C of actual Peak Temperature (T_p)	20-40 seconds
Ramp-Down Rate	6 °C/second max.
Time 25°C to Peak Temperature	8 minutes max

Wire Wound Type Power Inductor

■Packaging

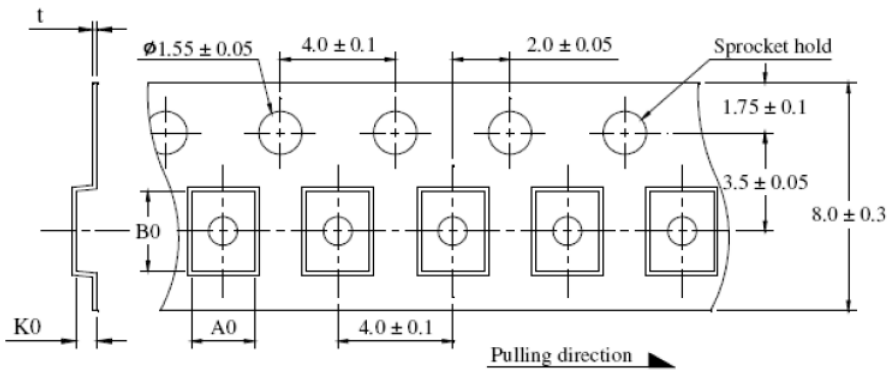
Reel Specifications



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	1.45±0.10	2.20±0.10	1.12±0.10	0.22±0.05
MLP05	1.45±0.10	2.20±0.10	1.12±0.10	0.22±0.05
MLP06	1.80±0.10	2.20±0.10	1.15±0.10	0.22±0.05
MLPH06	1.82±0.05	2.23±0.05	1.15±0.05	0.22±0.05
MLP04	2.50±0.10	3.00±0.10	1.60±0.10	0.25±0.05
MLPH04	2.25±0.05	2.80±0.10	1.35±0.10	0.22±0.05
MLP08	2.50±0.10	3.00±0.10	1.60±0.10	0.25±0.05
MLPH08	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