

SWISSDIS



Swissdis AG
Grasweg 7
CH-4911 Schwarzhäusern

Tel.: +41 62 919 44 00
Fax: +41 62 919 44 01
info@swissdis.ch
www.swissdis.ch



SPECIFICATIONS

SMD Power Inductor

MLP(H)-Serie

Version January 2018

**Wire Wound Type Power Inductor
Wire Wound Type Power Inductor**

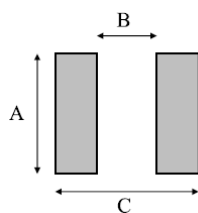
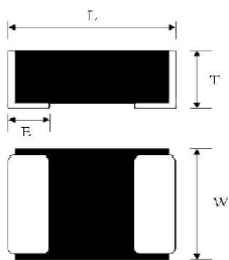
■ Features

- 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

- Smart phone, PAD
- Thin-type power supply module
- DC-DC Converters

■ Dimensions



Unit: mm

Type	Size (Inch)	L	W	T	E	A	B	C
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

■ Part Numbering

MLP	08	M	T	1R0
Product Type	Dimensions	Inductance Tolerance	Packaging Code	Inductance
MLP: Standard MLPH: High Current	06: 0806 04: 1004 08: 1008	M: ±20%	T: Taping Reel	1R0: 1.0uH 1R5: 1.5uH 2R2: 2.2uH

Wire Wound Type Power Inductor

■ **Standard Electrical Specifications**

MLP06(0806) Wire Wound Type Power Inductor(□:Tolerance):

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLP06□TR24	0.24	±20%	1MHz, 1V	21	5.05	4.50
MLP06□TR33	0.33	±20%	1MHz, 1V	29	4.50	3.69
MLP06□TR47	0.47	±20%	1MHz, 1V	40	4.00	3.15
MLP06□TR68	0.68	±20%	1MHz, 1V	49	3.33	3.06
MLP06□T1R0	1.0	±20%	1MHz, 1V	69	2.61	2.26
MLP06□T1R5	1.5	±20%	1MHz, 1V	137	2.25	1.65
MLP06□T2R2	2.2	±20%	1MHz, 1V	150	1.71	1.50

MLP04(1004) Wire Wound Type Power Inductor(□:Tolerance):

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLP04□TR33	0.33	±20%	1MHz, 1V	26	6.00	4.00
MLP04□TR47	0.47	±20%	1MHz, 1V	32	4.50	3.51
MLP04□TR68	0.68	±20%	1MHz, 1V	44	3.87	3.06
MLP04□T1R0	1.0	±20%	1MHz, 1V	54	3.15	2.70
MLP04□T1R5	1.5	±20%	1MHz, 1V	91	2.34	2.25
MLP04□T2R2	2.2	±20%	1MHz, 1V	119	2.16	2.07
MLP04□T4R7	4.7	±20%	1MHz, 1V	262	1.62	1.22

MLP08(1008) Wire Wound Type Power Inductor(□:Tolerance):

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLP08□TR47	0.47	±20%	1MHz, 1V	25	4.95	4.18
MLP08□TR68	0.68	±20%	1MHz, 1V	35	4.63	3.36
MLP08□T1R0	1.0	±20%	1MHz, 1V	49	4.04	3.18
MLP08□T1R5	1.5	±20%	1MHz, 1V	77	2.91	2.27
MLP08□T2R2	2.2	±20%	1MHz, 1V	98	2.73	2.06
MLP08□T4R7	4.7	±20%	1MHz, 1V	235	1.58	1.40

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

■ **High Current Electrical Specifications**

MLPH06(0806) Wire Wound Type Power Inductor(□:Tolerance):

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLPH06□TR47	0.47	±20%	1MHz, 1V	30	5.30	4.05
MLPH06□T1R0	1.0	±20%	1MHz, 1V	60	3.30	3.00
MLPH06□T1R5	1.5	±20%	1MHz, 1V	99	3.10	2.20
MLPH06□T2R2	2.2	±20%	1MHz, 1V	140	2.45	2.00

MLPH04(1004) Wire Wound Type Power Inductor(□:Tolerance):

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLPH04□TR47	0.47	±20%	1MHz, 1V	29	6.00	4.40
MLPH04□T1R0	1.0	±20%	1MHz, 1V	52	4.00	3.10
MLPH04□T2R2	2.2	±20%	1MHz, 1V	110	3.00	2.10

MLPH08(1008) Wire Wound Type Power Inductor(□:Tolerance):

Part No	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
MLPH08□TR47	0.47	±20%	1MHz, 1V	22	6.20	4.90
MLPH08□T1R0	1.0	±20%	1MHz, 1V	44	4.30	3.30
MLPH08□T2R2	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

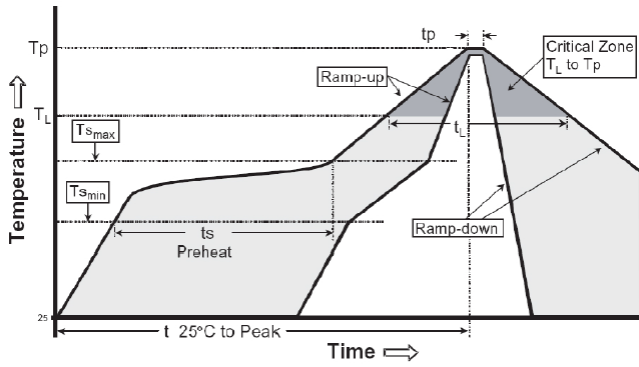
Item	Requirement	Test Method
Inductance	Refer to standard electrical characteristic spec.	HP4285A
DC Resistance RDC		micro-ohm meter
Isat		DC current will cause a 30% inductance reduction form initial value
Irms		DC current will cause coil temp. rising to 40°C whichever is smaller

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 $\pm 20\%$ 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

Recommendable Reflow Soldering

Wire Wound Type Power Inductor

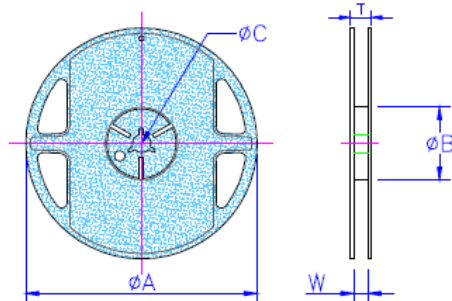


Reference IPC-020c-5-1

Profile Feature	Pb free Assembly
Average Ramp Rate (Ts max to Tp)	3 °C/second max
Preheat	
- Temperature Min (Ts _{min})	150°C
- Temperature Min (Ts _{max})	200°C
- Time (ts _{min} to ts _{max})	60-180 seconds
Time maintained above:	
- Temperature (TL)	217°C
- Time (tL)	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

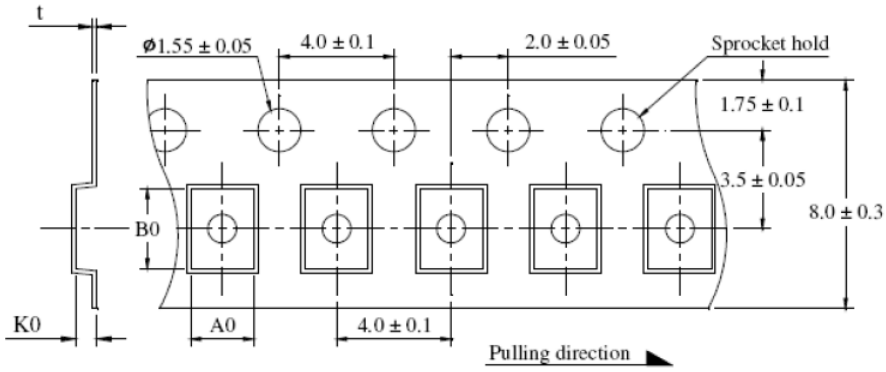


Unit: mm

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

Tape Specifications

Wire Wound Type Power Inductor



Unit: mm

Type	A0	B0	K0	t
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