DATA SHEET

PRODUCT	**WIP201610Y L series**
SERIES	WIP201610Y L
PART NO.	
DESCRIPTION	
ISSUE DATE	2023/06/19
REVISION DATE	2023/06/19
REFERENCE NO.	ENS000115750

RoHS COMPLIANCE ITEM



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WIP201610Y L series Engineering Specification

1. Features

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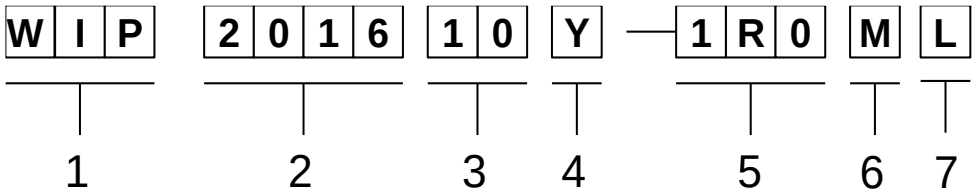
- Low Profile: 2.0 mm × 1.6 mm × 1.0 mm.
- Magnetically shielded structure to accomplish high resolution in EMC protection.
- Halogen free, Lead Free, RoHS Compliance.

2. Applications

WIP201610Y L series is generic applied in portable DC to DC converter line.

- Mobile Phones
- HDDs
- DSCs
- Pads
- LCD, LED display, etc

3. Explanation of Part Number

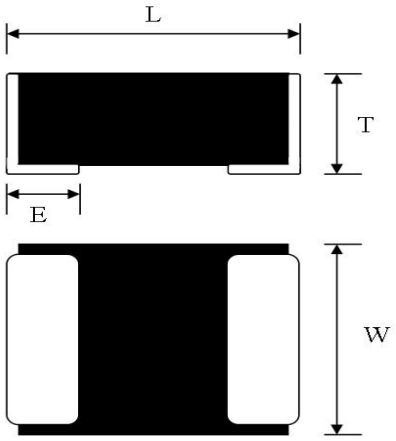


- 1 : Series Name: Wire-wound type power inductor
- 2 : Size Code: The first two digitals: length(mm), The last two digitals: width(mm)
- 3 : Thickness in mm
- 4：Type code
- 5：Initial inductance value: 1R0 = 1.0 μH
- 6：Model code, Tolerance of Inductance ±20%.
- 7：Electrode type.

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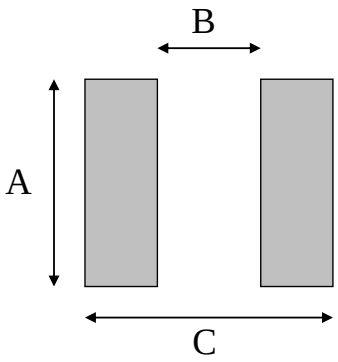
4. Shapes and Dimensions

- **End termination: Ni/Sn**
- **Construction & Dimension :**



L [mm]	W [mm]	T [mm]	E [mm]
2.0±0.2	1.6±0.2	1.0 max.	0.5±0.3

- **Recommend Land Pattern Dimensions :**



A [mm]	B [mm]	C [mm]
1.6	0.9	2.0

5. General Technical Data

Operating Temperature range : -40℃ to +125℃
Storage Temperature range : -50℃ to +125℃

* The detail operating temperature describing can refer to 6. (7).

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6. Electrical Specification

● Specifications

Part Number	Li [μH] *Initial inductance*	R_{DC} [mΩ] *DC Resistance*		I-sat [A] *Saturation Current*		I-rms [A] *Heat Rating Current*	
		Typ.	Max.	Typ.	Max.	Typ.	Max.
WIP201610Y-R47ML	0.47	19	23	5.7	5.0	5.3	4.7
WIP201610Y-1R0ML	1.0	37	44	4.2	4.0	3.4	3.1

Note 1: Customized design is available, please contact us.

Note 2: All test referenced to 26℃ ambient

Note 3: Inductance tolerance +/- 20%

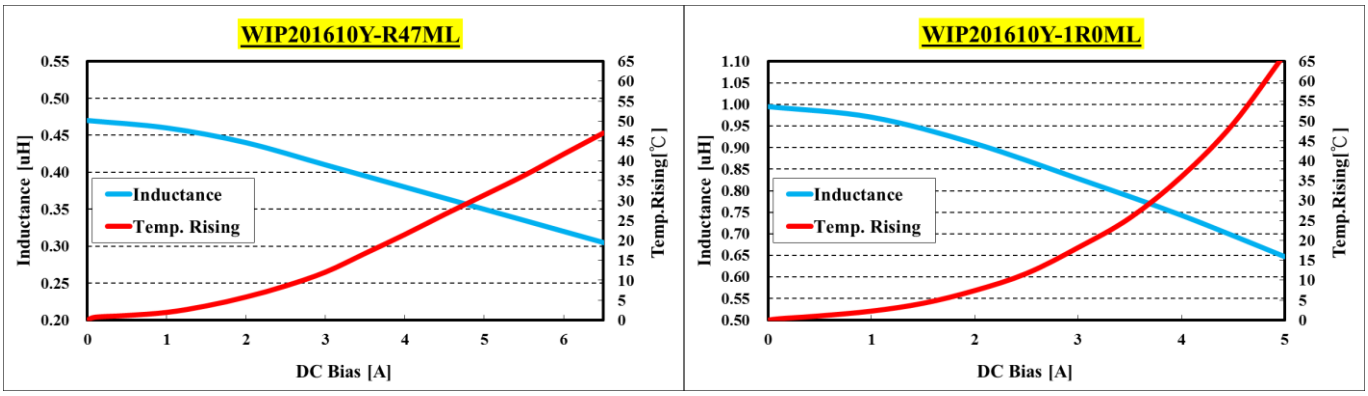
Note 4: Inductance is measured with Agilent® LCR meter 4285A (or equivalent) at 1MHz/1V.

Note 5: DC resistance is measured with HIOKI® micro-ohm meter RM3542 or equivalent.

Note 6: Isat means that DC current will cause a 30% inductance reduction from initial value.

Note 7: Irms means that DC current will cause part temp. rising 40℃ whichever is smaller.

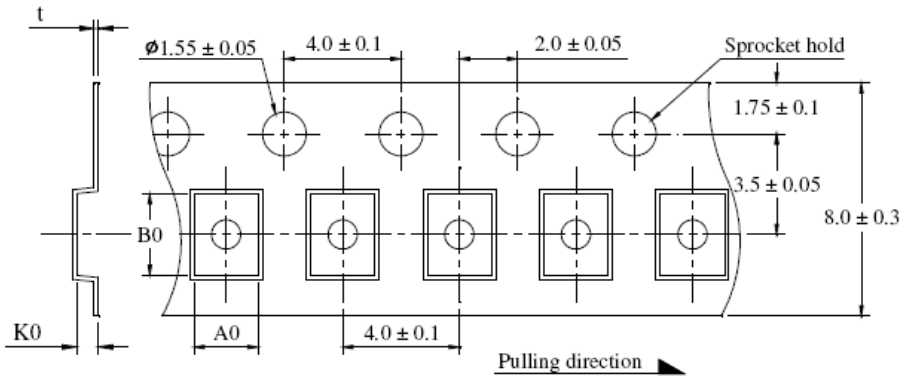
● Current Characteristic



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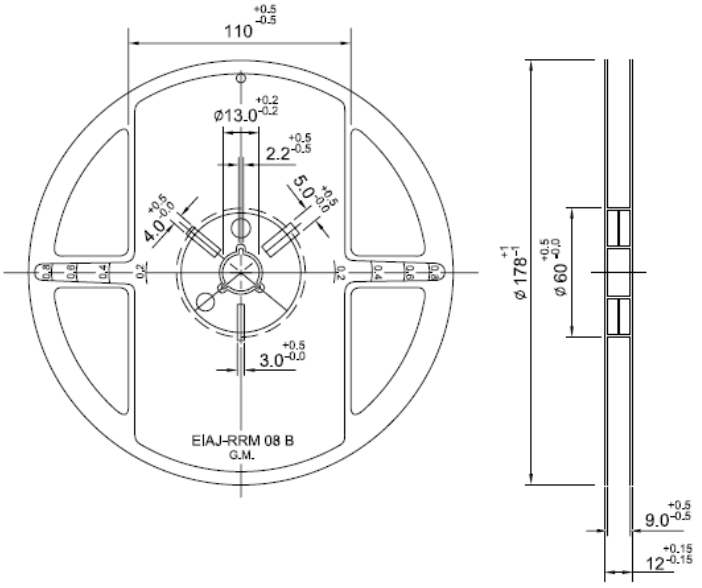
7. Packing

- **Carrier tape dimensions**



	A0	B0	K0	t
mm	1.80±0.1	2.20±0.1	1.15±0.1	0.22±0.05

- **Taping reel dimensions**



PART SIZE	**2016**
Qty.(pcs)	3,000
BOX	5 reels / inner box

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- **Taping specifications**

There shall be the portion having no product in both the head and the end of taping, and there shall be the cover tape in the head of taping.

- **Label Marking**

The label specified as follows shall be put on the side of reel.
(1) Part No.
(2) Quantity
(3) Lot No.
* Part No. And Quantity shall be marked on outer packaging.

- **Quantity of products in the taping package**

(1) Standard quantity：3000pcs/Reel
(2) Shipping quantity is a multiple of standard quantity.

8. Precautions for Handling

- **Precaution for handling of substrate**

Do not exceed to bend the board after soldering this product extremely.
(reference examples)

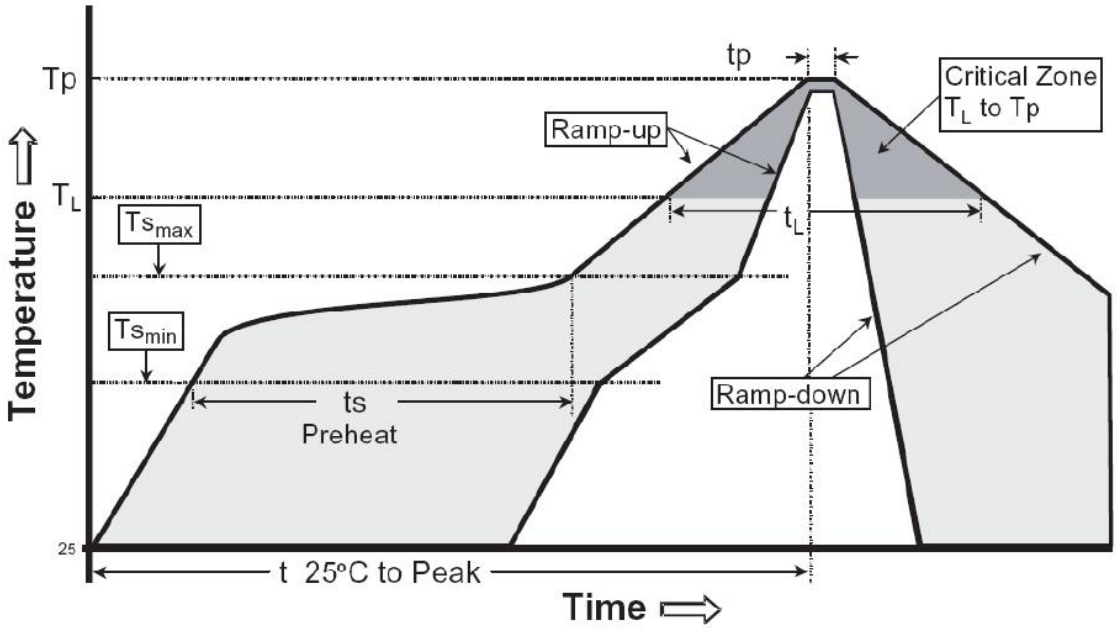
- Mounting place must be as far as possible from the position, which is close to the break line of board, or on the line of large holes of board.
- Do not bend extremely the board, in mounting another components.
  If necessary, use back-up pin (support pin) to prevent from bending extremely.
- Do not break the board by hand. We recommend to use the machine or the jig to break it.

- **Precaution for handling of substrate**

Note that this product will be easily damaged by rapid heating, rapid cooling or local heating.
Do not give heat shock over 100°C in the process of soldering. We recommend to take preheating and gradual cooling.

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- **Recommendable reflow soldering**



Reference IPC-020c-5-1

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

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- **Soldering gun procedure**

Note the follows, in case of using solder gun for replacement.

(1) The tip temperature must be less than 280°C for the period within 3 seconds by using soldering gun under 30 W.

(2) The soldering gun tip shall not touch this product directly.

- **Soldering volume**

Note that excess of soldering volume will easily get crack the body of this product.

- **Soldering volume**

Storage Temperature : 5 to 40℃

Relative Humidity : < 65%RH

Storage Time : 12 months max

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9. Reliability Performance

Test item	Test condition	Criteria
Resistance to Solder Heat	1. Solder temperature : 260 ± 5℃ 2. Flux : Rosin 3. DIP time : 10 ± 1 sec	1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage 3. Inductance value should be within ± 20 % of the initial value
Adhesive Test	1. Reflow temperature : 245℃ It shall be Soldered on the substrate applying direction parallel to the substrate 2. Apply force(F) : 5 N 3. Test time : 10 sec	1. No mechanical damage 2. Soldering the products on PCB after the pulling test force > 5 N
Temperature Cycle	1. Temperature : -50 ~ 125℃ For 30 minutes each 2. Cycle: 500 cycles 3. Measurement: At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance should be within ±20% of the initial value
Dry Heat Test	1. Temperature : 85 ± 2℃ 2. Testing time : 500 hrs 3. Applied current: Full rated current 4. Measurement: At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance should be within ± 20% of the initial value
Humidity Test	1. Temperature : 60 ± 2℃ 2. Humidity : 90-95 % RH 3. Applied current: Full rated current 4. Testing time : 500 hrs 5. Measurement : At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance should be within ±20% of the initial value

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