

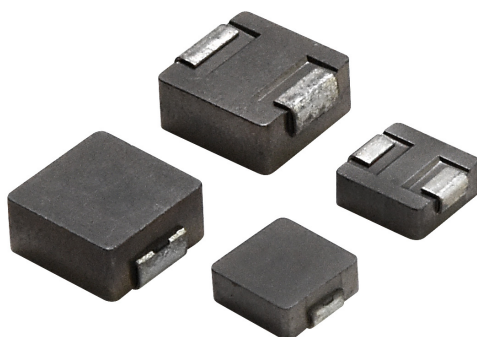
# SLPPI03 / SLPPI04 Series

## High Power Inductors

Signal Transformer is introducing the beginning of a new family of low-profile high-power inductors (SLPPI) with the release of SLPPI03/04. Height profiles of 0.8 mm to 1.8 mm, small footprints of 3.4 mm x 4.4 mm to 3.0 mm x 4.0 mm and broad range of inductance and current ratings, make them ideal for a wide range of applications. Due to their magnetic shielding, SLPPI's can be located adjacent to sensitive circuits, thus enabling higher density designs.

Molded inductors are robust structures, consisting of a pressed core material that prevents both air and noise intrusion thereby enhancing its magnetic performance. They achieve greater inductance and current with less overall volume for unobtrusive placement between tiny devices. Inductance remains stable across a wide current range and drops softly above rated currents, producing power optimization and reliability.

Power inductors are used for a variety of functions including choking, blocking, attenuating, or filtering high frequency noise in electrical circuits and storing energy in power converters (DC-DC or AC-DC) and inverters (DC-AC).



### General Features

- Magnetically shielded
- Low profile
- Compact design for high density devices
- Low power loss with reduced DCR
- Excellent thermal characteristics over working temperature range
- Wide range of inductance values
- Operating temperature range greater than most competitors

### Specifications

- Saturation current ( $I_{sat}$ ): 1.2 A to 24 A max. The current which will cause  $L_0$  (zero amperage inductance) to drop approximately 30% typical
- Temperature rise current ( $I_{rms}$ ): 0.7 A to 12 A max. The current which will cause a temperature rise of approximately  $\Delta T = 40^\circ\text{C}$
- Inductance range: 0.12  $\mu\text{H}$  to 22  $\mu\text{H}$
- Operating temperature range:  $-55^\circ\text{C}$  to  $+125^\circ\text{C}$
- Inductance tolerance:  $\pm 20\%$

### Applications

- Notebooks / Laptops / Gaming devices
- VRM for servers / Storage Systems / Video over IP devices
- Industrial, Electronic and Telecommunication devices (i.e., mobile phones)
- Television / LCD panels / Audio equipment / Speakers
- Power supplies and Modules
- DC to DC Converters
- AC to DC Converters

## PRODUCT IDENTIFICATION

**SLPPI 03 - 12 - 4R7 M - TR**

### Type / Product Series

SLPPI = Signal Low Profile Power Inductors

### Size

03 = 3.0 mm

04 = 4.0 mm

### Profile

10 = 1.0 mm

12 = 1.2 mm

15 = 1.5 mm

02 = 2.0 mm

### Packaging

TR = Tape & Reel

### Inductance Tolerance

M =  $\pm 20\%$

### Inductance \*

4R7 = 4.7  $\mu\text{H}$

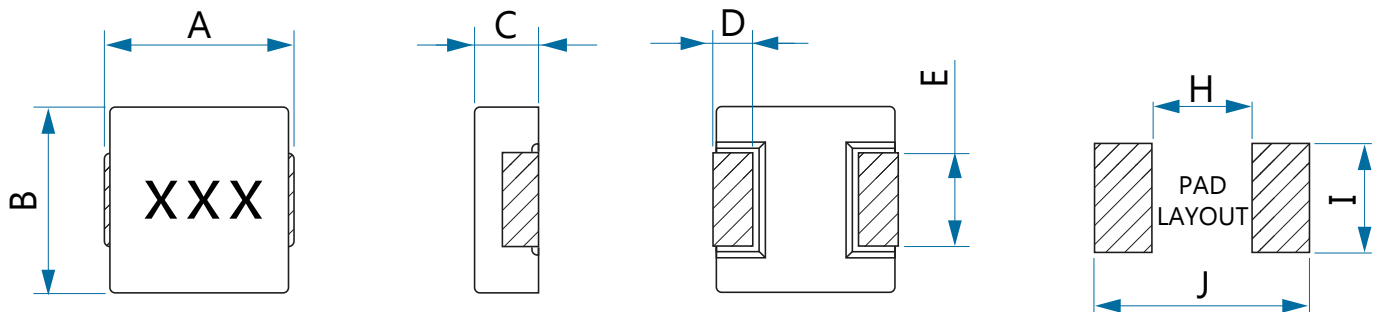
\* Note: Expressed by three figures. The unit is micro henry ( $\mu\text{H}$ ). The first and second figures are significant digits, the third figure expresses the number of zeros which follow the two figures (100 = 10  $\mu\text{H}$ )

If there is a decimal point, it is expressed by the capital letter "R" (3R9 = 3.9  $\mu\text{H}$ ). In that case, all figures are significant digits.

## MECHANICAL SPECIFICATIONS

Dimensions are in mm.

SERIES	A	B	C	D	E	H	I	J
SLPPI03-10	$3.4 \pm 0.2$	$3.0 \pm 0.2$	$0.8 \pm 0.2$	$0.70 \pm 0.3$	$1.3 \pm 0.2$	1.20	2.00	4.20
SLPPI03-12	$3.4 \pm 0.2$	$3.0 \pm 0.2$	$1.0 \pm 0.2$	$0.70 \pm 0.3$	$1.3 \pm 0.2$	1.20	2.00	4.20
SLPPI03-15	$3.4 \pm 0.2$	$3.0 \pm 0.2$	$1.3 \pm 0.2$	$0.70 \pm 0.3$	$1.3 \pm 0.2$	1.20	2.00	4.20
SLPPI03-02	$3.4 \pm 0.2$	$3.0 \pm 0.2$	$1.8 \pm 0.2$	$0.70 \pm 0.3$	$1.3 \pm 0.2$	1.20	2.00	4.20
SLPPI04-10	$4.4 \pm 0.2$	$4.0 \pm 0.2$	$0.8 \pm 0.2$	$0.76 \pm 0.3$	$2.0 \pm 0.3$	2.16	2.30	4.95
SLPPI04-12	$4.4 \pm 0.2$	$4.0 \pm 0.2$	$1.0 \pm 0.2$	$0.76 \pm 0.3$	$2.0 \pm 0.3$	2.16	2.30	4.95
SLPPI04-15	$4.4 \pm 0.2$	$4.0 \pm 0.2$	$1.3 \pm 0.2$	$0.76 \pm 0.3$	$2.0 \pm 0.3$	2.16	2.30	4.95
SLPPI04-02	$4.4 \pm 0.2$	$4.0 \pm 0.2$	$1.8 \pm 0.2$	$0.76 \pm 0.3$	$2.0 \pm 0.3$	2.16	2.30	4.95



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## SLPPI03 SERIES ELECTRICAL SPECIFICATIONS

Electrical specifications for all part numbers measured at 25°C unless otherwise stated.

Part Number	Inductance L (μH)	Inductance Tolerance (± %)	DCR (mΩ)		I sat (A) Max	I rms (A) Max
			Typ	Max		
SLPPI03-10-R15M	0.15	20	9.3	12.0	10.0	7.0
SLPPI03-10-R22M	0.22	20	11.0	14.0	9.0	5.5
SLPPI03-10-R33M	0.33	20	15.0	18.0	9.0	4.0
SLPPI03-10-R47M	0.47	20	22.0	25.0	6.0	3.0
SLPPI03-10-1R0M	1.0	20	40.0	48.0	4.0	2.4
SLPPI03-10-1R5M	1.5	20	54.0	65.0	3.5	2.0
SLPPI03-10-2R2M	2.2	20	87.0	100	3.0	1.5
SLPPI03-10-100M	10.0	20	380	430	1.2	0.7
SLPPI03-12-R11M	0.12	20	4.3	5.5	14.0	9.0
SLPPI03-12-R22M	0.22	20	9.6	12.0	11.0	7.5
SLPPI03-12-R33M	0.33	20	15.8	18.0	8.6	5.2
SLPPI03-12-R47M	0.47	20	22.0	25.0	7.2	4.2
SLPPI03-12-1R0M	1.0	20	39.2	45.0	5.0	3.0
SLPPI03-12-2R2M	2.2	20	88.0	102	3.5	2.1
SLPPI03-12-3R3M	3.3	20	136	155	2.8	1.4
SLPPI03-12-4R7M	4.7	20	160	190	1.8	0.9
SLPPI03-12-100M	10.0	20	313	360	1.2	0.8
SLPPI03-15-R22M	0.22	20	10.7	13.0	12.0	9.0
SLPPI03-15-R33M	0.33	20	15.0	18.0	11.5	6.5
SLPPI03-15-R47M	0.47	20	19.0	22.0	7.5	5.0
SLPPI03-15-1R0M	1.0	20	36.0	42.0	5.2	3.5
SLPPI03-15-1R5M	1.5	20	50.0	60.0	4.8	3.0
SLPPI03-15-2R2M	2.2	20	72.0	85.0	4.0	2.6
SLPPI03-15-3R3M	3.3	20	92.0	110	3.0	1.5
SLPPI03-15-100M	10.0	20	313	360	1.5	0.9
SLPPI03-02-R22M	0.22	20	8.0	10.0	13.0	8.0
SLPPI03-02-R33M	0.33	20	12.0	15.0	12.0	7.0
SLPPI03-02-R47M	0.47	20	15.0	18.0	10.0	6.5
SLPPI03-02-R68M	0.68	20	22.0	26.0	8.5	5.5
SLPPI03-02-1R0M	1.0	20	25.0	30.0	6.5	4.0
SLPPI03-02-1R5M	1.5	20	34.0	39.0	5.0	3.2
SLPPI03-02-2R2M	2.2	20	60.0	69.0	4.0	2.8
SLPPI03-02-3R3M	3.3	20	70.0	83.0	3.5	2.2
SLPPI03-02-4R7M	4.7	20	120	144	3.0	2.0
SLPPI03-02-6R8M	6.8	20	153	184	2.6	1.2
SLPPI03-02-100M	10.0	20	224	260	1.6	1.0

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**Notes:**

1. Test Condition: 1 MHz, 1.0 Vrms.
2. I sat (Max): DC current (A) that will cause L0 to drop 30% max.
3. I rms (Max): DC current (A) that will cause an  $\Delta T$  of 40°C max.
4. Operating temperature range includes self-temperature rise.
5. The rated current as listed is either the saturation current or the heating current depending on which value is lower.

**Test equipment:**

- **L:** Agilent E4980 Precision LCR Meter (Upgraded version of Agilent HP4284A) with HP42841A Current Source
- **DCR:** Milli-ohm meter

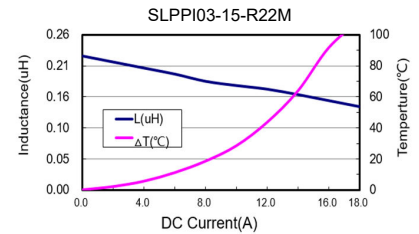
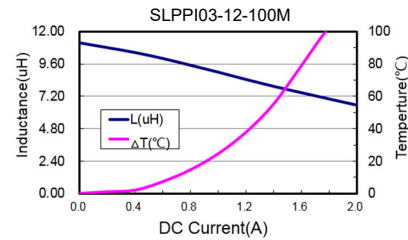
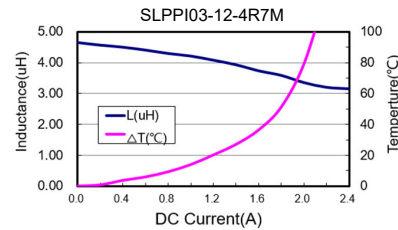
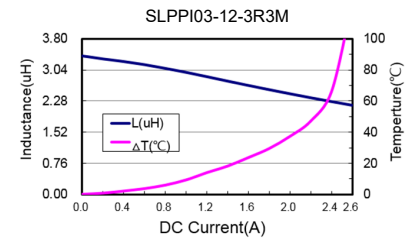
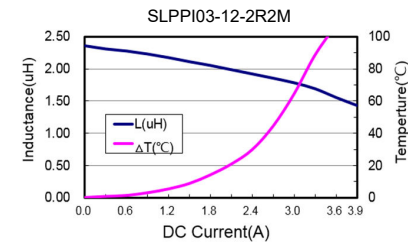
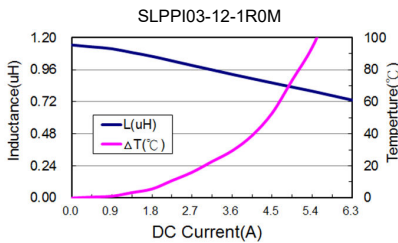
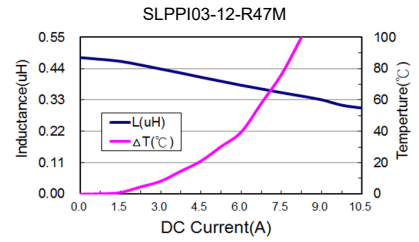
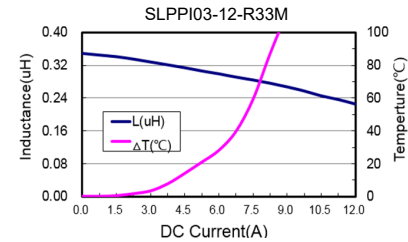
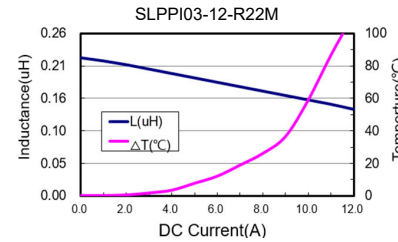
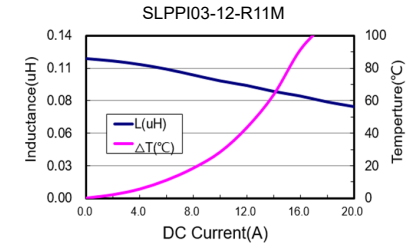
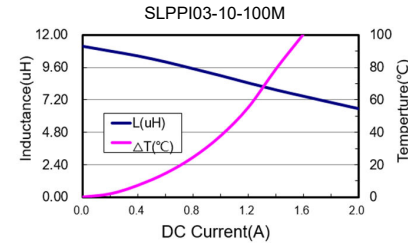
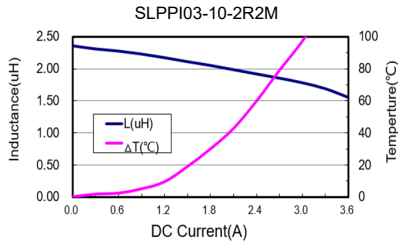
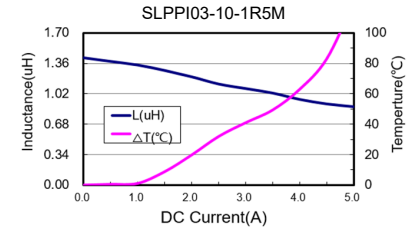
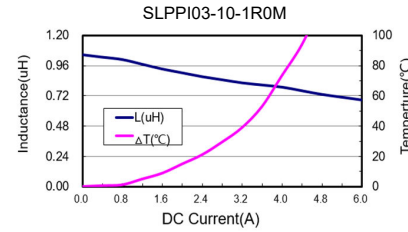
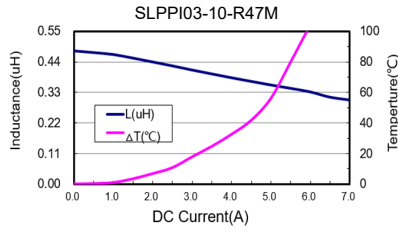
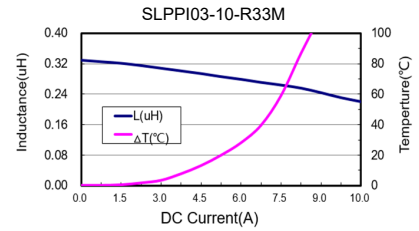
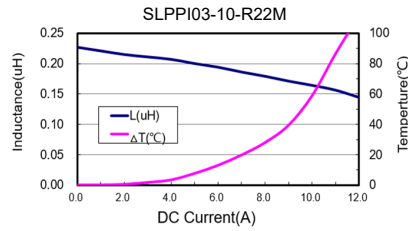
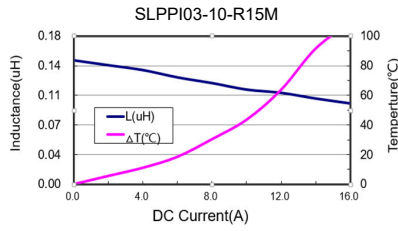
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## SLPPI03 SERIES - TYPICAL PERFORMANCE CURVES



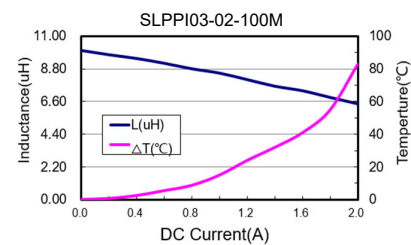
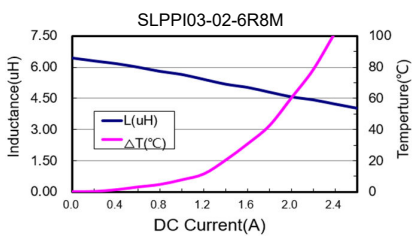
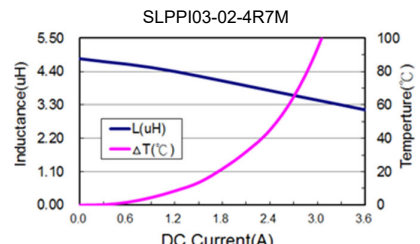
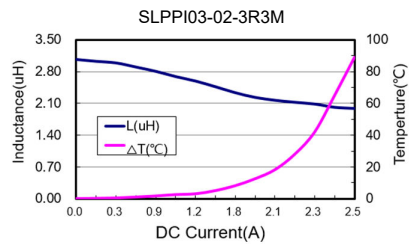
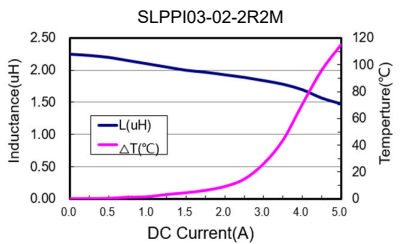
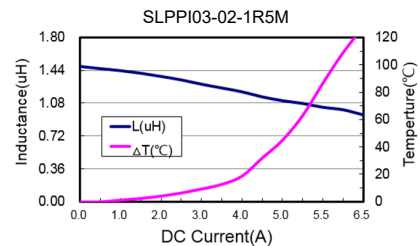
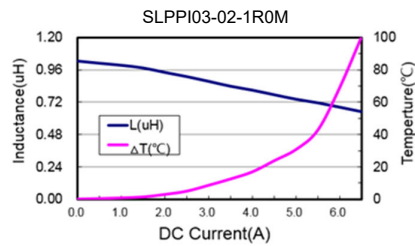
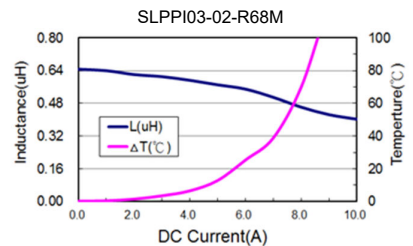
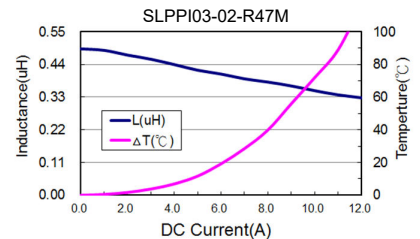
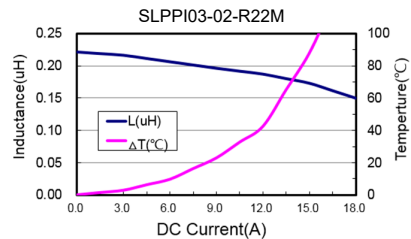
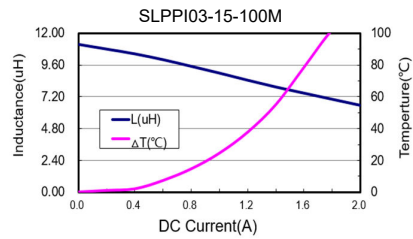
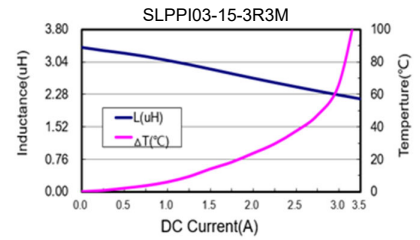
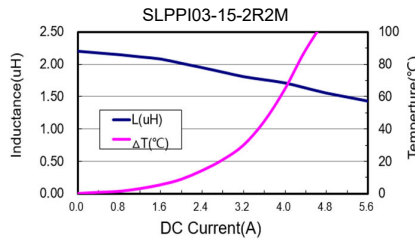
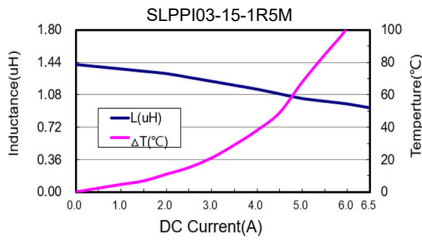
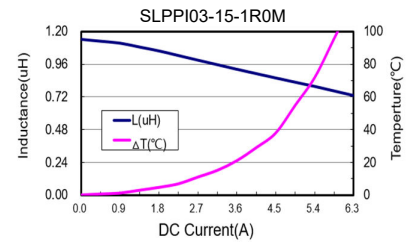
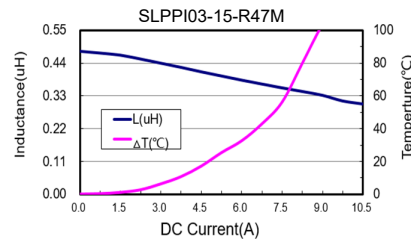
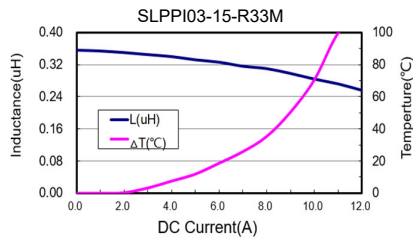
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# SLPPI03 / SLPPI04 Series



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## SLPPI04 SERIES ELECTRICAL SPECIFICATIONS

Electrical specifications for all part numbers measured at 25°C unless otherwise stated.

Part Number	Inductance L (μH)	Inductance Tolerance (± %)	DCR (mΩ)		I sat (A) Max	I rms (A) Max
			Typ	Max		
SLPPI04-10-R22M	0.22	20	9.8	12.0	15.0	9.0
SLPPI04-10-R33M	0.33	20	11.7	14.5	12.0	8.0
SLPPI04-10-R47M	0.47	20	15.2	18.5	9.0	7.0
SLPPI04-10-1R0M	1.0	20	35.0	42.0	5.5	3.5
SLPPI04-10-2R2M	2.2	20	90.0	108	4.0	2.4
SLPPI04-10-6R8M	6.8	20	224	268	2.2	1.1
SLPPI04-10-100M	10.0	20	260	312	1.4	0.8
SLPPI04-12-R33M	0.33	20	12.0	14.5	12.0	8.0
SLPPI04-12-R47M	0.47	20	16.8	20.0	10.0	7.0
SLPPI04-12-R68M	0.68	20	19.0	23.0	7.0	5.0
SLPPI04-12-1R0M	1.0	20	36.5	43.0	6.2	4.5
SLPPI04-12-1R5M	1.5	20	54.5	62.0	5.4	3.5
SLPPI04-12-2R2M	2.2	20	72.0	80.0	4.5	3.0
SLPPI04-12-3R3M	3.3	20	97.0	111	3.9	2.4
SLPPI04-12-4R7M	4.7	20	119	143	2.8	1.8
SLPPI04-15-R12M	0.12	20	6.0	7.2	22.0	12.0
SLPPI04-15-R22M	0.22	20	7.3	8.8	15.0	11.0
SLPPI04-15-R33M	0.33	20	12.0	14.5	12.5	8.0
SLPPI04-15-R47M	0.47	20	17.8	22.0	11.0	7.0
SLPPI04-15-1R0M	1.0	20	28.5	33.5	6.5	5.0
SLPPI04-15-1R5M	1.5	20	41.0	47.0	6.0	3.5
SLPPI04-15-2R2M	2.2	20	53.0	62.5	4.5	3.0
SLPPI04-15-100M	10.0	20	232	278	1.8	1.0
SLPPI04-02-R12M	0.12	20	3.5	4.2	24.0	12.0
SLPPI04-02-R22M	0.22	20	6.2	7.4	18.0	12.0
SLPPI04-02-R33M	0.33	20	7.0	8.4	12.0	9.0
SLPPI04-02-R47M	0.47	20	9.4	11.3	12.0	8.0
SLPPI04-02-R68M	0.68	20	13.3	16.0	11.0	7.0
SLPPI04-02-1R0M	1.0	20	16.4	20.0	7.2	5.5
SLPPI04-02-1R5M	1.5	20	22.0	26.4	6.5	4.0
SLPPI04-02-2R2M	2.2	20	31.5	38.0	5.5	3.5
SLPPI04-02-3R3M	3.3	20	45.0	54.0	4.5	3.0
SLPPI04-02-4R7M	4.7	20	58.0	70.0	4.0	2.2
SLPPI04-02-6R8M	6.8	20	86.0	103	3.0	2.0
SLPPI04-02-100M	10.0	20	170	190	3.0	1.8
SLPPI04-02-150M	15.0	20	240	275	2.0	1.3
SLPPI04-02-220M	22.0	20	265	320	1.6	1.0

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**Notes:**

1. Test Condition: 1 MHz, 1.0 Vrms.
2. I sat (Max): DC current (A) that will cause L0 to drop 30% max.
3. I rms (Max): DC current (A) that will cause an  $\Delta T$  of 40°C max.
4. Operating temperature range includes self-temperature rise.
5. The rated current as listed is either the saturation current or the heating current depending on which value is lower.

**Test equipment:**

- **L:** Agilent E4980 Precision LCR Meter (Upgraded version of Agilent HP4284A) with HP42841A Current Source
- **DCR:** Milli-ohm meter

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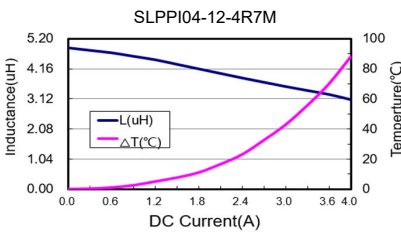
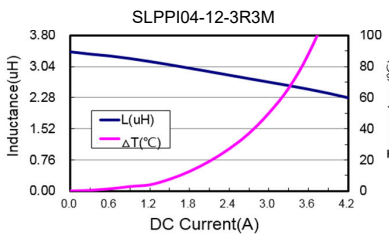
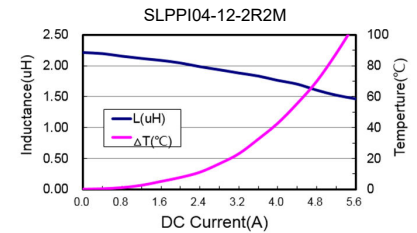
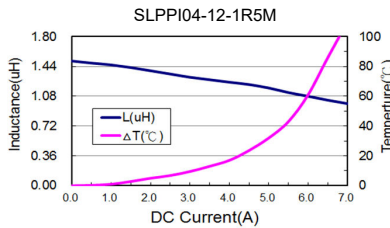
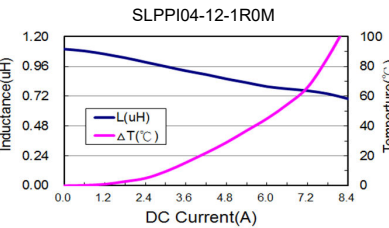
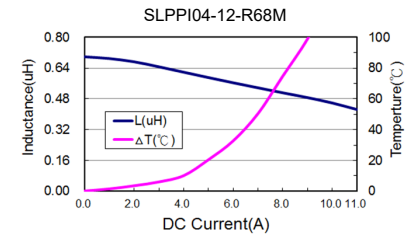
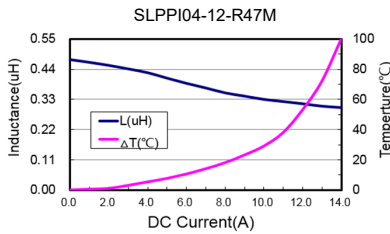
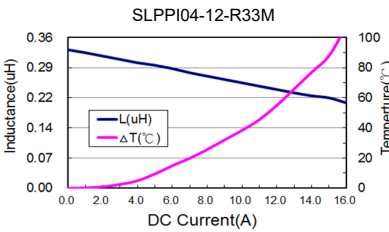
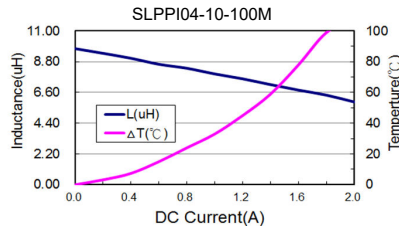
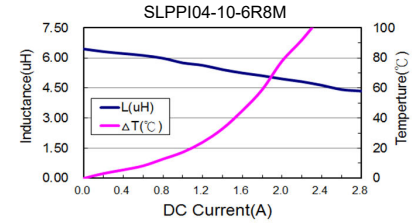
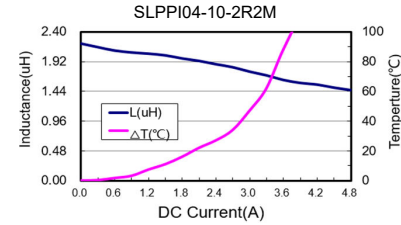
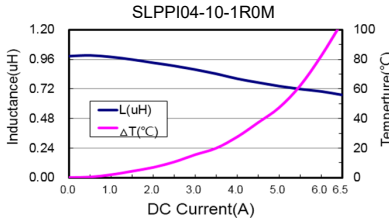
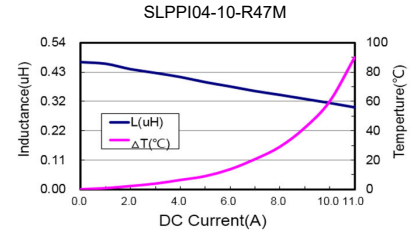
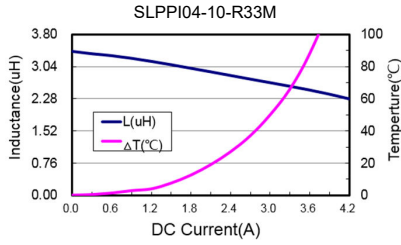
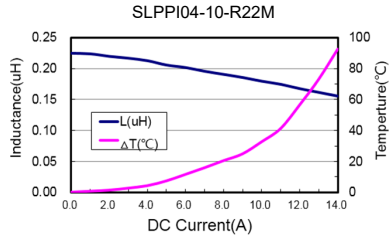


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## SLPPI04 SERIES - TYPICAL PERFORMANCE CURVES



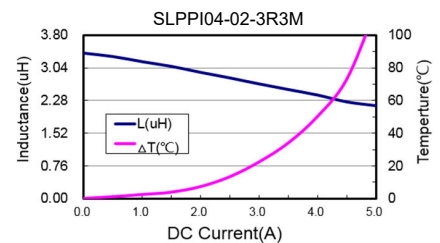
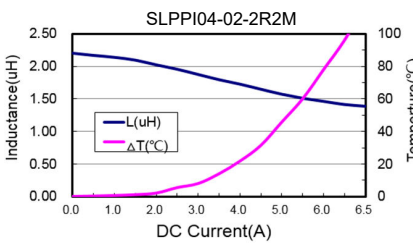
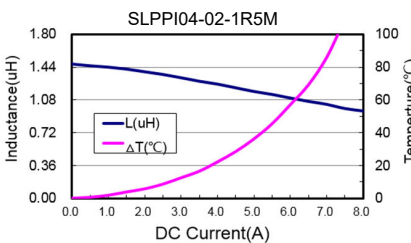
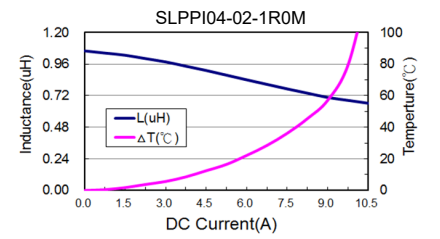
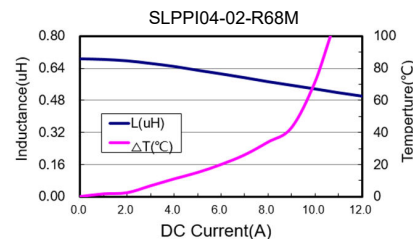
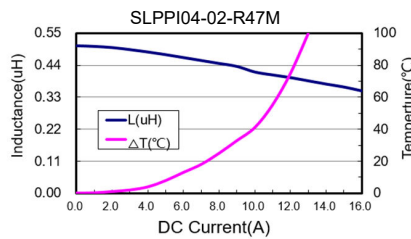
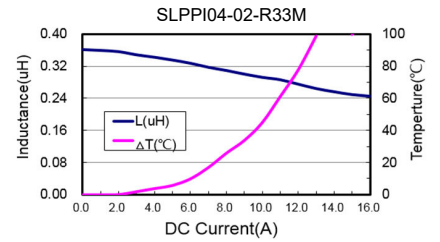
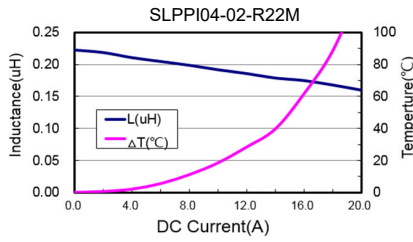
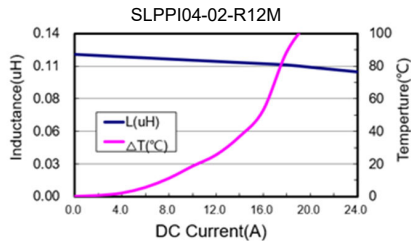
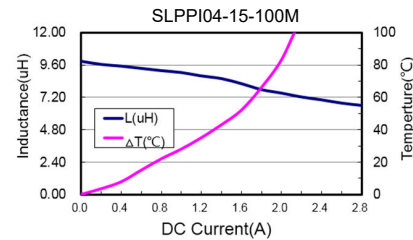
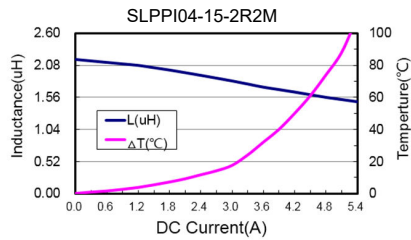
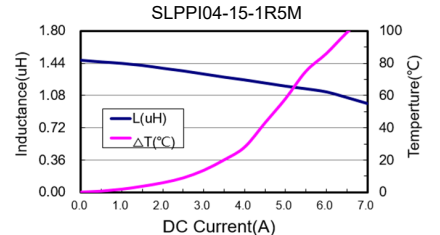
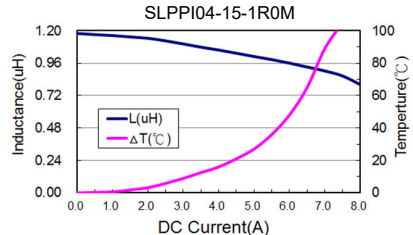
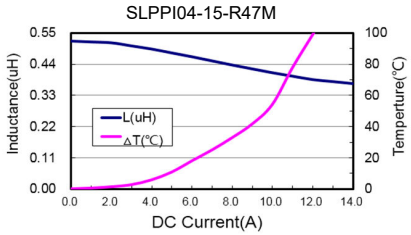
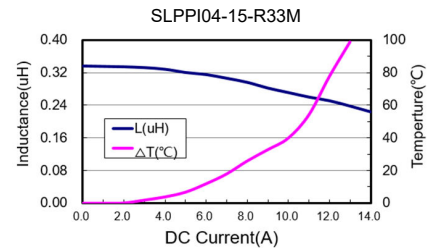
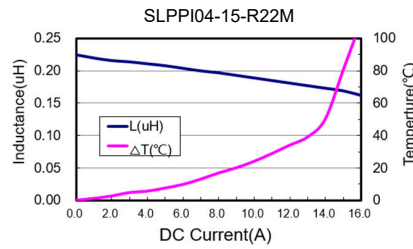
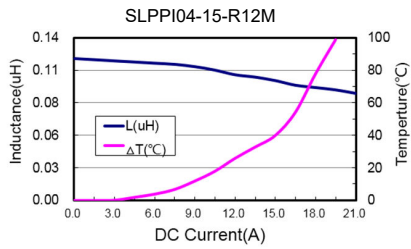
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# SLPPI03 / SLPPI04 Series

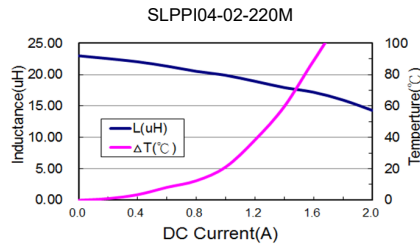
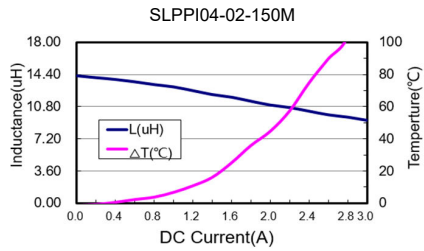
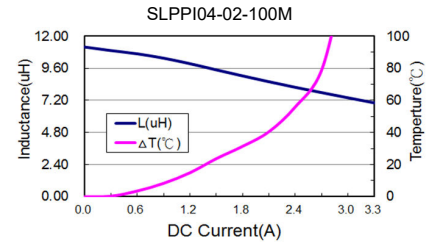
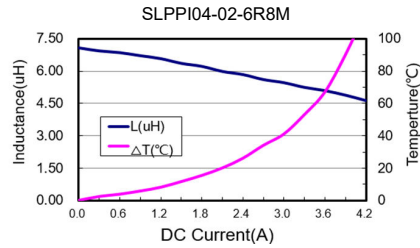
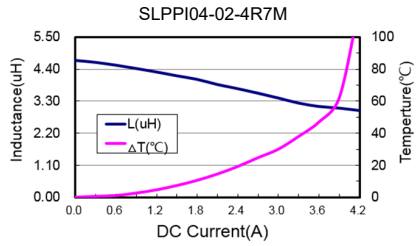


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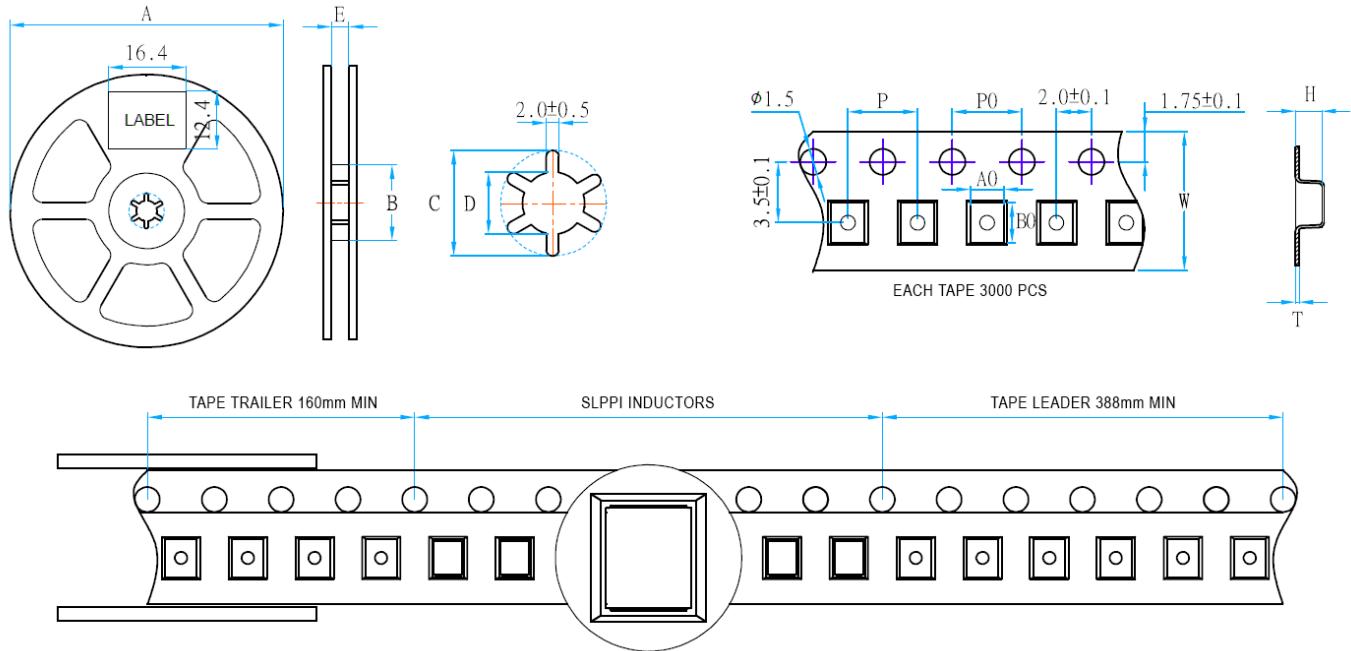
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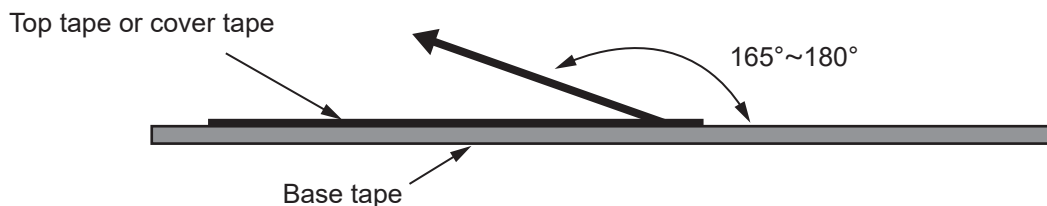
## TAPE AND REEL SPECIFICATIONS



Series	Reel dimensions (mm)					Tape dimensions (mm)							Reel (pcs)
	A	B	C	D	E	W	P	P0	H	T	A0	B0	
SLPPI03-10	330±1	100±0.5	20.2 min	13+0.5/-0.2	12.4+2/-0	12±0.3	8±0.1	4±0.1	1.5±0.1	0.3±0.05	3.4±0.1	3.8±0.1	4000
SLPPI03-12	330±1	100±0.5	20.2 min	13+0.5/-0.2	12.4+2/-0	12±0.3	8±0.1	4±0.1	1.5±0.1	0.3±0.05	3.4±0.1	3.8±0.1	4000
SLPPI03-15	330±1	100±0.5	20.2 min	13+0.5/-0.2	12.4+2/-0	12±0.3	8±0.1	4±0.1	2.3±0.1	0.3±0.05	3.4±0.1	3.8±0.1	3000
SLPPI03-02	330±1	100±0.5	20.2 min	13+0.5/-0.2	12.4+2/-0	12±0.3	8±0.1	4±0.1	2.3±0.1	0.3±0.05	3.4±0.1	3.8±0.1	3000
SLPPI04-10	330±1	100±0.5	20.2 min	13+0.5/-0.2	12.4+2/-0	12±0.3	8±0.1	4±0.1	1.5±0.1	0.3±0.05	3.4±0.1	3.8±0.1	4000
SLPPI04-12	330±1	100±0.5	20.2 min	13+0.5/-0.2	12.4+2/-0	12±0.3	8±0.1	4±0.1	1.5±0.1	0.3±0.05	3.4±0.1	3.8±0.1	4000
SLPPI04-15	330±1	100±0.5	20.2 min	13+0.5/-0.2	12.4+2/-0	12±0.3	8±0.1	4±0.1	2.3±0.1	0.3±0.05	3.4±0.1	3.8±0.1	3000
SLPPI04-02	330±1	100±0.5	20.2 min	13+0.5/-0.2	12.4+2/-0	12±0.3	8±0.1	4±0.1	2.3±0.1	0.3±0.05	3.4±0.1	3.8±0.1	3000

### Peel force of top cover tape

- The peel speed shall be about 300 mm/minute
- The peel force of top cover tape shall be between 10 g to 120 g.
- The cover bond should not be damaged and bond the tape when it peeled off.



**Note:** Do not place the product in humid environment and keep it under seal with desiccant if it is not used up all a once.

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## About Signal Transformer

Signal Transformer is known as the world's leader of wire wound magnetic solutions since 1959. With over 50 years of experience manufacturing transformers, chokes, inductors and custom or modified standard products. Signal offers not only the most comprehensive line of certified standard power conversion products, with our vast engineering, manufacturing and regulatory resources; Signal Transformer excels in the design and manufacturer of cost effective, specialized platforms.



**For more information,  
please contact us:**

128 Atlantic Avenue  
Lynbrook, NY 11563

**Toll Free +1 866-239-5777**

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