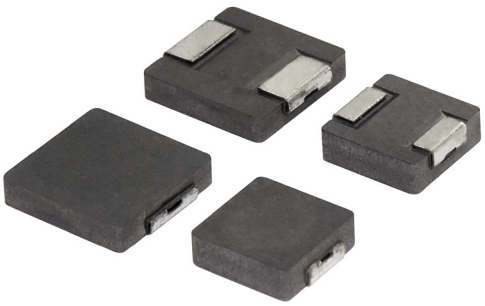
SLPPI05 Series

High Power Inductors

Signal Transformer is introducing the beginning of a new family of low-profile high-power inductors (SLPPI) with the release of SLPPI05. Height profiles of 0.8 mm to 1.8 mm, small footprint of 5.5 mm x 5.2 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}): 2.2 A to 15.5 A max
  The current which will cause L0 (zero amperage inductance) to drop approximately 30% typical
- Temperature rise current (I_{RMS}): 1.5 A to 9.5 A max
  The current which will cause a temperature rise of approximately $\Delta T = 40°C$
- Inductance range: 0.47 µH to 10 µH
- Operating temperature range: -55 °C to +125 °C
- Inductance tolerance: ±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

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RoHS Compliant

REACH COMPLIANCE

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Please read our datasheet & drawing disclaimer here.

PRODUCT IDENTIFICATION

SLPPI 05 - 12 - 4R7 M - TR

Type / Product Series
SLPPI = Signal Low Profile Power Inductors

Size
05 = 5.0 mm

Profile
10 = 1.0 mm
12 = 1.2 mm
15 = 1.5 mm
18 = 1.8 mm
02 = 2.0 mm

Packaging
TR = Tape & Reel
No code = Bulk

Inductance Tolerance
M = ±20%

Inductance *
4R7 = 4.7 µH

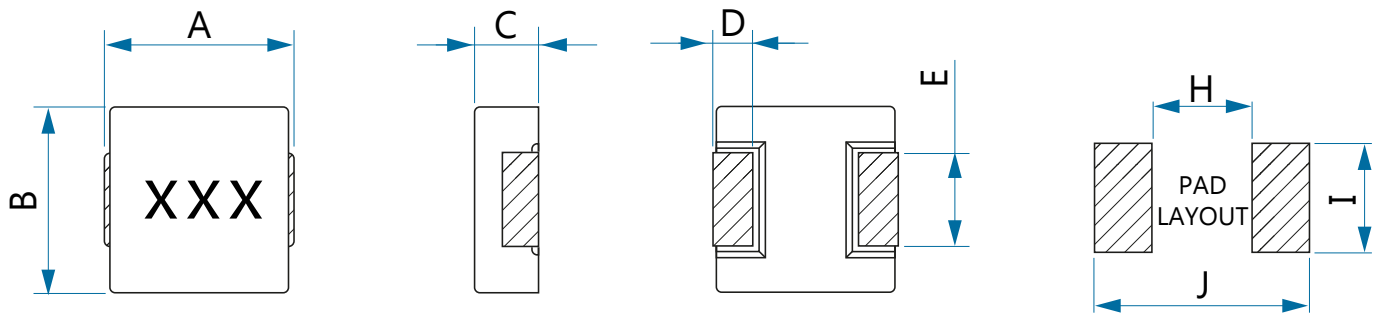
* Note: Expressed by three figures. The unit is micro henry (µH). The first and second figures are significant digits, the third figure expresses the number of zeros which follow the two figures (100 = 10 µH)

If there is a decimal point, it is expressed by the capital letter "R" (3R9 = 3.9 µH). In that case, all figures are significant digits.

MECHANICAL SPECIFICATIONS

Dimensions are in mm.

SERIES	A	B	C	D	E	H	I	J
SLPPI05-10	5.5 ± 0.2	5.2 ± 0.2	0.8 ± 0.2	1.02 ± 0.3	2.5 ± 0.2	2.16	2.79	5.99
SLPPI05-12	5.5 ± 0.2	5.2 ± 0.2	1.0 ± 0.2	1.02 ± 0.3	2.5 ± 0.2	2.16	2.79	5.99
SLPPI05-15	5.5 ± 0.2	5.2 ± 0.2	1.3 ± 0.2	1.02 ± 0.3	2.5 ± 0.2	2.16	2.79	5.99
SLPPI05-18	5.5 ± 0.2	5.2 ± 0.2	1.6 ± 0.2	1.02 ± 0.3	2.5 ± 0.2	2.16	2.79	5.99
SLPPI05-02	5.5 ± 0.2	5.2 ± 0.2	1.8 ± 0.2	1.02 ± 0.3	2.5 ± 0.2	2.16	2.79	5.99



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ELECTRICAL SPECIFICATIONS

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

Part Number	Inductance L (µH)	Inductance Tolerance (± %)	DCR Typ (mΩ)	DCR Max (mΩ)	ISAT (Max) (A)	IRMS (Max) (A)
SLPPI05-10-1R0M	1.0	20	42.8	52.0	7.8	3.0
SLPPI05-10-2R2M	2.2	20	87.0	105	3.8	2.5
SLPPI05-10-4R7M	4.7	20	158	190	3.5	2.0
SLPPI05-12-1R0M	1.0	20	27.6	31.8	8.2	4.8
SLPPI05-12-2R2M	2.2	20	55.0	66.0	4.2	3.5
SLPPI05-12-4R7M	4.7	20	130	156	3.5	2.0
SLPPI05-12-100M	10.0	20	272	326	2.2	1.5
SLPPI05-15-R68M	0.68	20	11.6	14.5	13.0	8.0
SLPPI05-15-1R0M	1.0	20	18.8	22.6	9.5	6.0
SLPPI05-15-1R5M	1.5	20	28.0	34.0	8.2	5.0
SLPPI05-15-2R2M	2.2	20	41.4	49.5	6.0	3.4
SLPPI05-15-4R7M	4.7	20	80.0	96.0	4.2	2.6
SLPPI05-15-100M	10.0	20	149	170	3.0	2.0
SLPPI05-18-R47M	0.47	20	7.4	8.9	15.5	9.5
SLPPI05-18-2R2M	2.2	20	29.2	35.0	7.4	4.7
SLPPI05-18-4R7M	4.7	20	61.8	72.8	4.0	3.0
SLPPI05-18-6R8M	6.8	20	71.5	86.0	3.0	2.8
SLPPI05-18-100M	10.0	20	126	149	2.9	2.4
SLPPI05-02-1R0M	1.0	20	13.7	16.5	10.6	6.8
SLPPI05-02-3R3M	3.3	20	49.4	59.3	6.5	3.5
SLPPI05-02-4R7M	4.7	20	54.0	65.0	4.0	3.2
SLPPI05-02-100M	10.0	20	135	162	3.3	2.0

Notes:

1. Test Condition: 1 MHz, 1.0 Vrms.
2. ISAT (Max): DC current (A) that will cause L0 to drop 30% max.
3. IRMS (Max): DC current (A) that will cause an ΔT 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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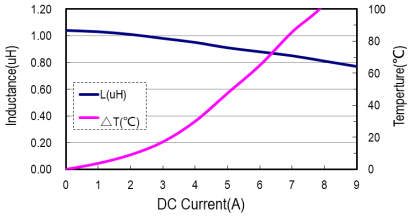
TYPICAL PERFORMANCE CURVES

SLPPI05-10-1R0M



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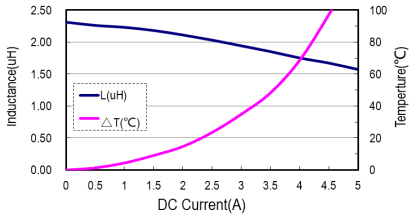

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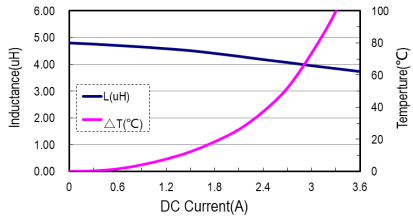

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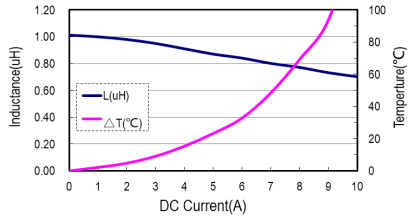

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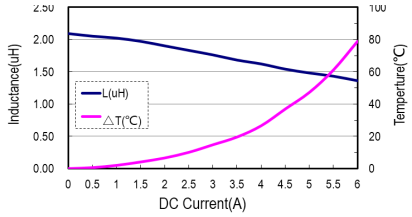

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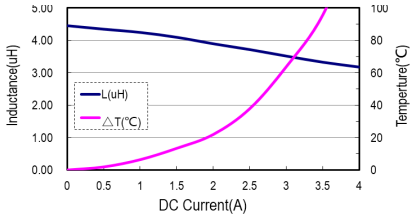
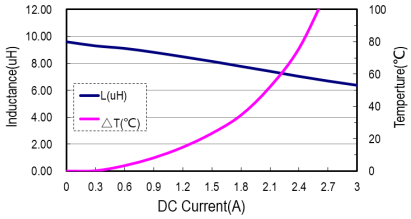


SLPPI05-12-100M



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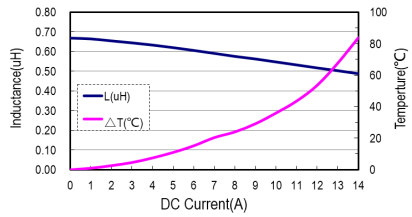

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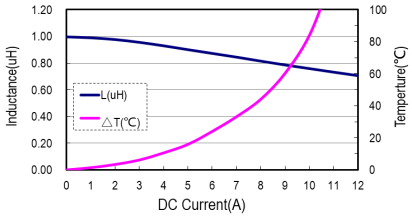

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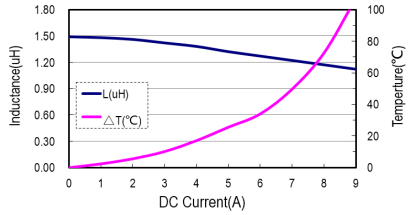

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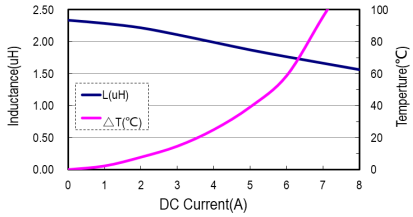

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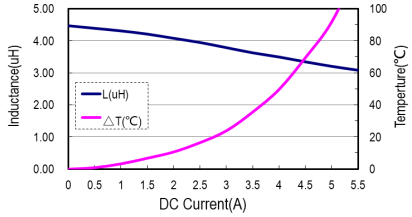
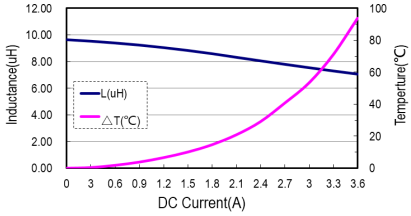
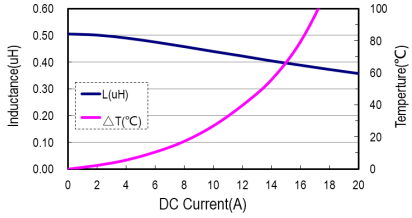


SLPPI05-15-100M



SLPPI05-18-R47M



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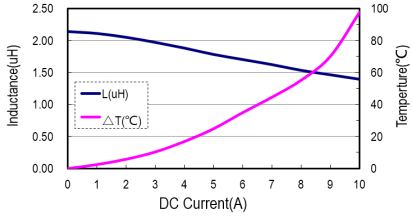

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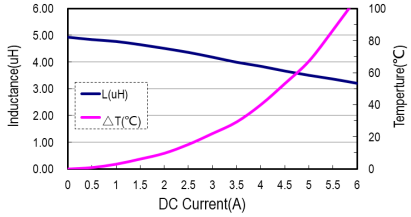
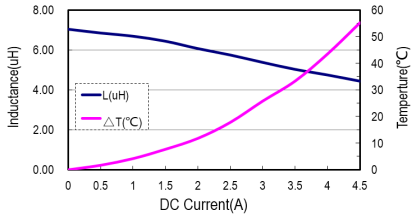


SLPPI05-18-6R8M



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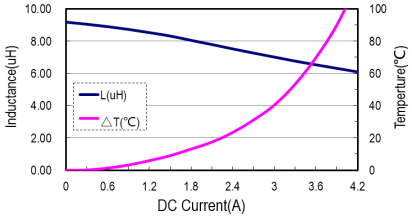

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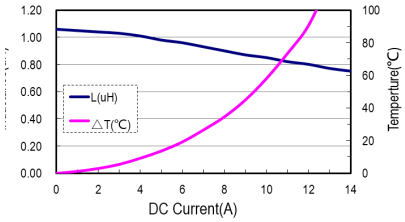
SLPPI05-02-1R0M



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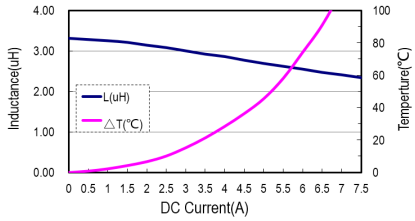

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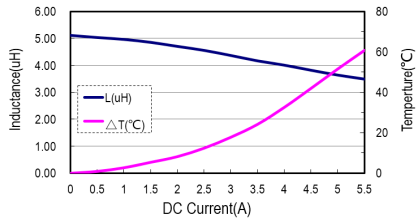
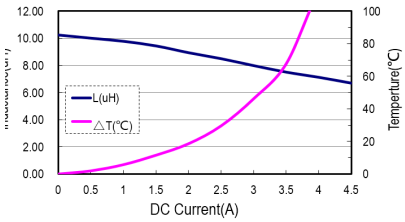


SLPPI05-02-100M



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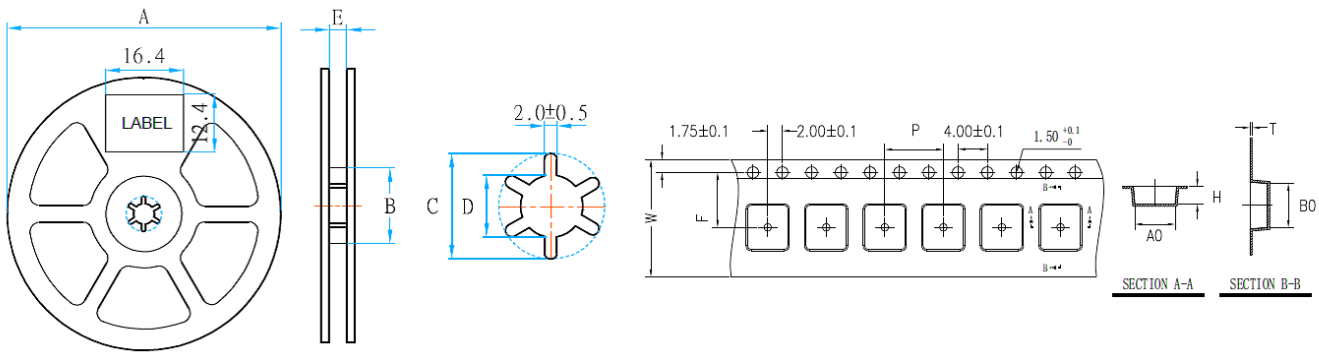
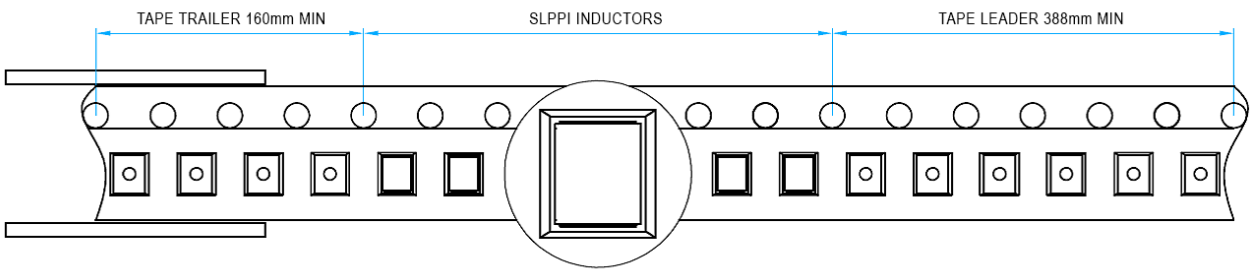
TAPE AND REEL SPECIFICATIONS

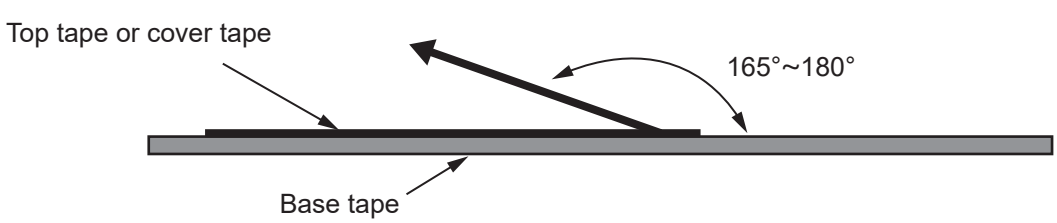




Series	Reel dimensions (mm)					Tape dimensions (mm)							Reel (pcs)
	A	B	C	D	E	W	P	F	H	T	A0	B0	
SLPPI05-10	330±1	100±0.5	20.2 min	13+0.5/-0.2	16.4+2/-0	16±0.3	8±0.1	7.5±0.1	1.4±0.1	0.3±0.05	5.40±0.1	5.90±0.1	4000
SLPPI05-12	330±1	100±0.5	20.2 min	13+0.5/-0.2	16.4+2/-0	16±0.3	8±0.1	7.5±0.1	1.4±0.1	0.3±0.05	5.40±0.1	5.90±0.1	4000
SLPPI05-15	330±1	100±0.5	20.2 min	13+0.5/-0.2	16.4+2/-0	16±0.3	8±0.1	7.5±0.1	1.7±0.1	0.3±0.05	5.40±0.1	5.90±0.1	4000
SLPPI05-18	330±1	100±0.5	20.2 min	13+0.5/-0.2	16.4+2/-0	16±0.3	8±0.1	7.5±0.1	2.4±0.1	0.3±0.05	5.50±0.1	6.00±0.1	3000
SLPPI05-02	330±1	100±0.5	20.2 min	13+0.5/-0.2	16.4+2/-0	16±0.3	8±0.1	7.5±0.1	2.4±0.1	0.3±0.05	5.50±0.1	6.00±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:

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