



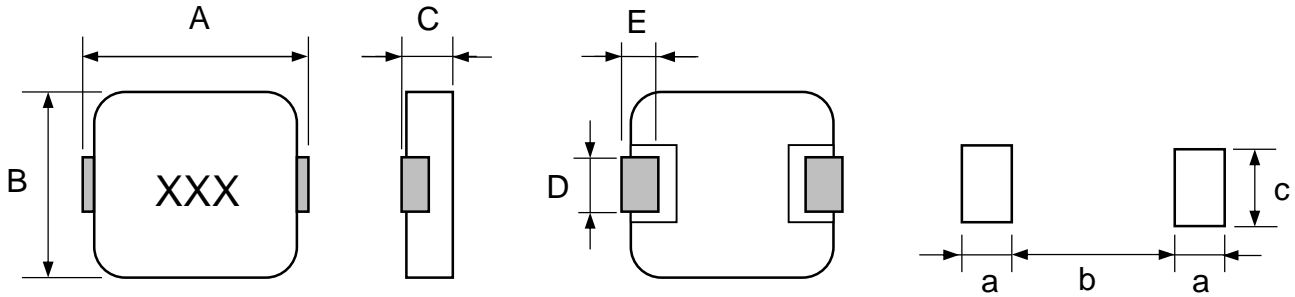
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Shielded SMT Power Inductor SPI0402-1205N Series

■ SHAPES AND DIMENSIONS



Unit: mm

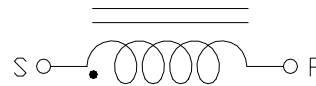
P/N	A	B	C	D	E
SPI0402N	4.7±0.3	4.2±0.3	1.8±0.2	1.7±0.5	1.0±0.5
SPI0502N	5.7±0.3	5.0±0.3	1.8±0.2	1.7±0.5	1.2±0.5
SPI0503N	5.7±0.3	5.0±0.3	2.8±0.2	1.7±0.5	1.2±0.5
SPI0618N	7.3±0.3	6.6±0.3	1.6±0.2	2.9±0.5	1.6±0.5
SPI0624N	7.3±0.3	6.6±0.3	2.2±0.2	2.9±0.5	1.6±0.5
SPI0603N	7.3±0.3	6.6±0.3	2.8±0.2	2.9±0.5	1.6±0.5
SPI1003N	11.2±0.3	10.3±0.3	2.8±0.2	2.9±0.5	2.2±0.5
SPI1004N	11.2±0.3	10.3±0.3	3.8±0.2	2.9±0.5	2.2±0.5
SPI1005N	11.2±0.3	10.3±0.3	4.8±0.2	2.9±0.5	2.2±0.5
SPI1205N	13.5±0.3	12.6±0.3	4.8±0.2	3.6±0.5	2.3±0.5

Recommend PAD Layout

a Ref.	b Ref.	c Ref.
1.5	2.5	2.2
2.0	3.0	2.5
2.0	3.0	2.5
2.5	3.7	3.5
2.5	3.7	3.5
2.5	3.7	3.5
3.5	6.0	4.0
3.5	6.0	4.0
3.5	6.0	4.0
2.9	7.9	5.0

Marking : XXX = Inductance

Equivalent circuit





■ PART NUMBER CODE

SPI 0402 N - 4R7 M A
1 2 3 4 5 6

1. Series Name
2. Size Code
3. Type Code
4. Inductance(R=Decimal Point) Unit : μH ; 4R7 =4.7 μH
5. Inductance tolerance: "M" $\pm 20\%$
6. Soldering : A=Lead Free

■ ELECTRICAL CHARACTERISTICS

1. Test equipments
 - 1.1. L : CH-1062A LCR Meter
 - 1.2. DCR: CH-16502BC Impedance Meter.
 - 1.3. Isat : CH-3302 LCR Meter + CH-1320 Bias.
 - 1.4. Irms : Digital Thermometer DM6801A.
 - 1.5. Operating temperature range from -55°C to 125°C
- * Equivalent measurement equipment may be used.



2. Part Number and Characteristics Table

Part Number	Inductance (μH) $\pm 20\%$	Tolerance ($\pm\%$)	DCR @25°C (m Ω) Max.	Temperature Rise Current (A) Max.	Saturation Current (A) Max.
SPI0402N-R10MA	0.10	20	4.0	12.0	22.0
SPI0402N-R22MA	0.22	20	6.6	9.0	12.5
SPI0402N-R47MA	0.47	20	14.0	7.0	9.5
SPI0402N-R68MA	0.68	20	21.0	5.2	8.0
SPI0402N-1R0MA	1.00	20	27.0	4.5	7.0
SPI0402N-1R5MA	1.50	20	46.0	4.0	6.0
SPI0402N-2R2MA	2.20	20	58.0	3.0	5.0
SPI0402N-3R3MA	3.30	20	87.0	2.5	4.0
SPI0402N-4R7MA	4.70	20	105.0	2.2	3.0

Note:

- Initial Inductance: Testing at 100KHz/0.25V.
- Saturation Current: DC current that will cause initial Inductance to drop approximately 30%.
- Temperature Rise Current: DC current that will cause an approximate ΔT of 40°C.
- All test data is referenced to 25°C ambient.



Part Number	Inductance (μH) \pm 20%	Tolerance ($\pm\%$)	DCR @25°C (m Ω) Max.	Temperature Rise Current (A) Max.	Saturation Current (A) Max.
SPI0502N-R47MA	0.47	20	9.0	10.5	15.5
SPI0502N-R56MA	0.56	20	10.0	9.5	15.0
SPI0502N-1R0MA	1.00	20	17.0	8.0	9.0
SPI0502N-1R2MA	1.20	20	20.0	7.5	8.0
SPI0502N-2R2MA	2.20	20	35.0	5.0	6.5
SPI0502N-3R3MA	3.30	20	58.0	4.5	5.0
SPI0502N-4R7MA	4.70	20	85.0	3.5	4.0
SPI0502N-6R8MA	6.80	20	120.0	2.8	3.4
SPI0502N-100MA	10.0	20	155.0	2.5	3.0

Note:

- Initial Inductance: Testing at 100KHz/0.25V.
- Saturation Current: DC current that will cause initial Inductance to drop approximately 30%.
- Temperature Rise Current: DC current that will cause an approximate ΔT of 40°C.
- All test data is referenced to 25°C ambient.



Part Number	Inductance (μH) ± 20%	Tolerance (±%)	DCR @25°C (mΩ) Max.	Temperature Rise Current (A) Max.	Saturation Current (A) Max.
SPI0503N-R10MA	0.10	20	2.5	32.0	34.0
SPI0503N-R12MA	0.12	20	2.6	30.0	32.0
SPI0503N-R20MA	0.20	20	3.9	21.0	15.0
SPI0503N-R35MA	0.35	20	5.0	16.5	14.5
SPI0503N-R68MA	0.68	20	9.0	8.5	14.0
SPI0503N-1R0MA	1.00	20	14.0	7.0	11.0
SPI0503N-1R2MA	1.20	20	16.0	6.5	11.0
SPI0503N-1R5MA	1.50	20	25.0	6.0	10.0
SPI0503N-2R2MA	2.20	20	35.0	5.5	9.0
SPI0503N-3R3MA	3.30	20	38.0	5.0	7.0
SPI0503N-4R7MA	4.70	20	60.0	4.0	5.0
SPI0503N-6R8MA	6.80	20	110.0	3.0	3.5
SPI0503N-100MA	10.0	20	125.0	3.0	3.0

Note:

- Initial Inductance: Testing at 100KHz/0.25V.
- Saturation Current: DC current that will cause initial Inductance to drop approximately 30%.
- Temperature Rise Current: DC current that will cause an approximate ΔT of 40°C.
- All test data is referenced to 25°C ambient.



Part Number	Inductance (μH) \pm 20%	Tolerance ($\pm\%$)	DCR @25°C (m Ω) Max.	Temperature Rise Current (A) Max.	Saturation Current (A) Max.
SPI0618N-R10MA	0.10	20	2.5	18.0	45.0
SPI0618N-R22MA	0.22	20	5.2	14.0	29.0
SPI0618N-R33MA	0.33	20	6.8	12.0	22.0
SPI0618N-R47MA	0.47	20	8.4	11.0	18.0
SPI0618N-R68MA	0.68	20	12.7	9.0	17.0
SPI0618N-1R0MA	1.00	20	17.0	7.0	14.0
SPI0618N-1R5MA	1.50	20	26.0	6.5	12.0
SPI0618N-2R0MA	2.00	20	32.0	5.0	10.0
SPI0618N-2R2MA	2.20	20	35.0	5.0	8.0
SPI0618N-3R3MA	3.30	20	60.0	4.5	7.0
SPI0618N-4R7MA	4.70	20	70.0	3.5	5.0
SPI0618N-6R8MA	6.80	20	110.0	2.8	3.5
SPI0618N-8R2MA	8.20	20	135.0	2.5	3.0
SPI0618N-100MA	10.0	20	155.0	2.3	2.5

Note:

- Initial Inductance: Testing at 100KHz/0.25V.
- Saturation Current: DC current that will cause initial Inductance to drop approximately 30%.
- Temperature Rise Current: DC current that will cause an approximate ΔT of 40°C.
- All test data is referenced to 25°C ambient.



Part Number	Inductance (μH) ± 20%	Tolerance (±%)	DCR @25°C (mΩ) Max.	Temperature Rise Current (A) Max.	Saturation Current (A) Max.
SPI0624N-R33MA	0.33	20	4.1	18.0	24.5
SPI0624N-R47MA	0.47	20	5.1	15.0	22.0
SPI0624N-R56MA	0.56	20	6.5	13.0	17.0
SPI0624N-R68MA	0.68	20	7.2	12.0	16.0
SPI0624N-1R0MA	1.00	20	13.5	9.0	15.0
SPI0624N-1R5MA	1.50	20	20.0	8.0	15.0
SPI0624N-2R2MA	2.20	20	28.0	7.0	14.0
SPI0624N-3R3MA	3.30	20	39.0	5.5	10.0
SPI0624N-4R7MA	4.70	20	50.0	5.0	8.0
SPI0624N-5R6MA	5.60	20	60.0	4.5	6.5
SPI0624N-6R8MA	6.80	20	70.0	4.0	6.0
SPI0624N-8R2MA	8.20	20	90.0	3.5	5.0
SPI0624N-100MA	10.0	20	101.0	3.1	4.0

Note:

- Initial Inductance: Testing at 100KHz/0.25V.
- Saturation Current: DC current that will cause initial Inductance to drop approximately 30%.
- Temperature Rise Current: DC current that will cause an approximate ΔT of 40°C.
- All test data is referenced to 25°C ambient.



Part Number	Inductance (μH) \pm 20%	Tolerance ($\pm\%$)	DCR @25°C (m Ω) Max.	Temperature Rise Current (A) Max.	Saturation Current (A) Max.
SPI0603N-R33MA	0.33	20	3.5	21.0	25.0
SPI0603N-R47MA	0.47	20	4.1	18.0	20.0
SPI0603N-R56MA	0.56	20	4.5	16.5	18.0
SPI0603N-R68MA	0.68	20	5.3	16.0	17.0
SPI0603N-R82MA	0.82	20	6.0	14.0	16.0
SPI0603N-1R0MA	1.00	20	7.4	12.0	15.0
SPI0603N-1R5MA	1.50	20	10.0	10.0	14.0
SPI0603N-2R2MA	2.20	20	15.0	8.0	10.0
SPI0603N-3R3MA	3.30	20	22.0	6.5	9.5
SPI0603N-4R7MA	4.70	20	33.0	5.5	6.5
SPI0603N-5R6MA	5.60	20	42.0	5.5	6.0
SPI0603N-6R8MA	6.80	20	50.0	4.5	6.0
SPI0603N-8R2MA	8.20	20	60.0	4.3	5.8
SPI0603N-100MA	10.0	20	68.0	4.0	5.5
SPI0603N-150MA	15.0	20	150.0	3.0	4.0
SPI0603N-220MA	22.0	20	210.0	2.5	3.0

Note:

- Initial Inductance: Testing at 100KHz/0.25V.
- Saturation Current: DC current that will cause initial Inductance to drop approximately 30%.
- Temperature Rise Current: DC current that will cause an approximate ΔT of 40°C.
- All test data is referenced to 25°C ambient.



Part Number	Inductance (μH) \pm 20%	Tolerance ($\pm\%$)	DCR @25°C (m Ω) Max.	Temperature Rise Current (A) Max.	Saturation Current (A) Max.
SPI1003N-R33MA	0.33	20	1.6	23.0	32.0
SPI1003N-R36MA	0.36	20	1.6	23.0	28.0
SPI1003N-R47MA	0.47	20	2.5	23.0	26.0
SPI1003N-R56MA	0.56	20	3.0	22.0	24.0
SPI1003N-R68MA	0.68	20	3.4	21.0	23.0
SPI1003N-1R0MA	1.00	20	6.0	15.0	21.0
SPI1003N-1R5MA	1.50	20	7.5	13.5	20.0
SPI1003N-2R2MA	2.20	20	9.0	13.0	16.0
SPI1003N-3R3MA	3.30	20	16.0	9.0	14.0
SPI1003N-4R7MA	4.70	20	25.0	7.0	13.0
SPI1003N-8R2MA	8.20	20	45.0	5.0	8.5
SPI1003N-100MA	10.0	20	55.0	5.0	7.5

Note:

- Initial Inductance: Testing at 100KHz/0.25V.
- Saturation Current: DC current that will cause initial Inductance to drop approximately 30%.
- Temperature Rise Current: DC current that will cause an approximate ΔT of 40°C.
- All test data is referenced to 25°C ambient.



Part Number	Inductance (μH) \pm 20%	Tolerance ($\pm\%$)	DCR @25°C (m Ω) Max.	Temperature Rise Current (A) Max.	Saturation Current (A) Max.
SPI1004N-R22MA	0.22	20	1.00	35.00	60.00
SPI1004N-R36MA	0.36	20	1.20	30.00	50.00
SPI1004N-R45MA	0.45	20	1.30	29.00	45.00
SPI1004N-R47MA	0.47	20	1.68	28.00	40.00
SPI1004N-R56MA	0.56	20	1.80	25.00	33.00
SPI1004N-R68MA	0.68	20	2.40	23.00	32.00
SPI1004N-1R0MA	1.00	20	3.30	18.00	28.00
SPI1004N-1R5MA	1.50	20	4.20	16.00	23.00
SPI1004N-2R2MA	2.20	20	7.00	12.00	18.00
SPI1004N-3R3MA	3.30	20	11.80	10.00	16.00
SPI1004N-4R7MA	4.70	20	20.00	8.50	15.00
SPI1004N-5R6MA	5.60	20	23.00	8.00	14.00
SPI1004N-6R8MA	6.80	20	25.00	7.50	12.00
SPI1004N-8R2MA	8.20	20	27.00	7.00	9.00
SPI1004N-100MA	10.0	20	30.00	6.25	8.50
SPI1004N-150MA	15.0	20	45.00	6.00	7.00
SPI1004N-220MA	22.0	20	66.00	5.00	5.50
SPI1004N-330MA	33.0	20	92.00	4.40	5.00
SPI1004N-470MA	47.0	20	145.0	3.30	3.50
SPI1004N-680MA	68.0	20	195.0	2.30	3.00

Note:

- Initial Inductance: Testing at 100KHz/0.25V.
- Saturation Current: DC current that will cause initial Inductance to drop approximately 30%.
- Temperature Rise Current: DC current that will cause an approximate ΔT of 40°C.
- All test data is referenced to 25°C ambient.



Part Number	Inductance (μH) \pm 20%	Tolerance ($\pm\%$)	DCR @25°C (m Ω) Max.	Temperature Rise Current (A) Max.	Saturation Current (A) Max.
SPI1005N-R22MA	0.22	20	0.80	42.0	40.0
SPI1005N-R36MA	0.36	20	1.20	40.0	35.0
SPI1005N-R47MA	0.47	20	1.68	32.0	30.0
SPI1005N-R68MA	0.68	20	2.00	29.2	28.0
SPI1005N-1R0MA	1.00	20	2.50	25.0	24.0
SPI1005N-1R5MA	1.50	20	3.50	20.0	21.0
SPI1005N-2R2MA	2.20	20	4.00	18.0	20.0
SPI1005N-3R3MA	3.30	20	10.0	12.0	15.0
SPI1005N-4R7MA	4.70	20	12.0	10.0	13.5
SPI1005N-6R8MA	6.80	20	21.0	9.0	12.5
SPI1005N-8R2MA	8.20	20	25.0	8.0	10.0
SPI1005N-100MA	10.0	20	30.0	7.0	8.5

Note:

- Initial Inductance: Testing at 100KHz/0.25V.
- Saturation Current: DC current that will cause initial Inductance to drop approximately 30%.
- Temperature Rise Current: DC current that will cause an approximate ΔT of 40°C.
- All test data is referenced to 25°C ambient.



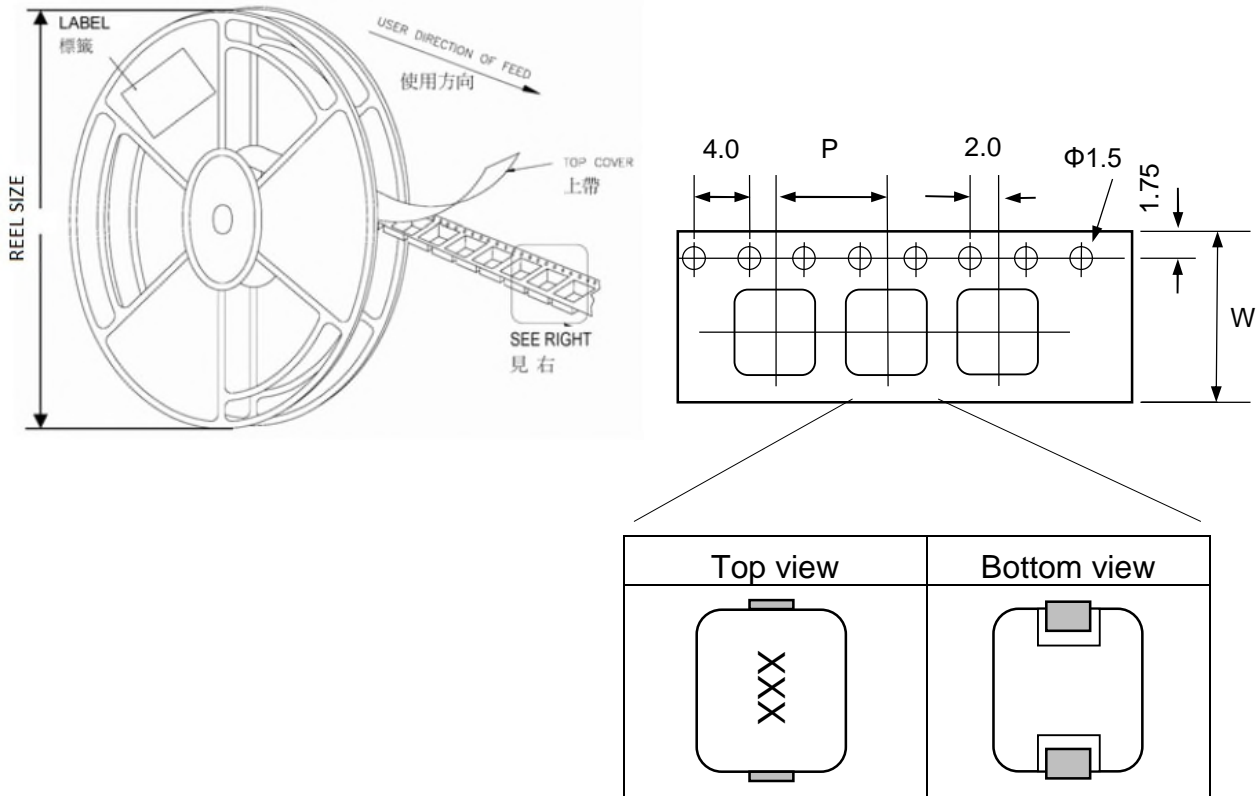
Part Number	Inductance (μH) ± 20%	Tolerance (±%)	DCR @25°C (mΩ) Max.	Temperature Rise Current (A) Max.	Saturation Current (A) Max.
SPI1205N-R33MA	0.33	20	1.00	60.0	42.0
SPI1205N-R47MA	0.47	20	1.30	45.0	38.0
SPI1205N-R68MA	0.68	20	1.50	43.0	36.0
SPI1205N-R82MA	0.82	20	1.85	42.0	31.0
SPI1205N-1R0MA	1.00	20	2.15	40.0	29.0
SPI1205N-1R5MA	1.50	20	3.20	36.0	23.0
SPI1205N-2R2MA	2.20	20	5.00	28.0	20.0
SPI1205N-3R3MA	3.30	20	9.20	24.0	15.0
SPI1205N-4R7MA	4.70	20	12.5	20.0	12.0
SPI1205N-5R6MA	5.60	20	13.0	16.0	11.5
SPI1205N-6R8MA	6.80	20	14.0	15.0	11.0
SPI1205N-8R2MA	8.20	20	20.0	13.0	10.0
SPI1205N-100MA	10.0	20	22.0	12.0	9.5

Note:

- Initial Inductance: Testing at 100KHz/0.25V.
- Saturation Current: DC current that will cause initial Inductance to drop approximately 30%.
- Temperature Rise Current: DC current that will cause an approximate ΔT of 40°C.
- All test data is referenced to 25°C ambient.



REEL DIMENSIONS AND PACKAGING QUANTITY



Unit: mm

TYPE	W	P	REEL SIZE	PCS / REEL
SPI0402N	12	8	330 mm (13")	3500
SPI0502N	12	8	330 mm (13")	3000
SPI0503N	12	8	330 mm (13")	2500
SPI0618N	16	12	330 mm (13")	2000
SPI0624N	16	12	330 mm (13")	2000
SPI0603N	16	12	330 mm (13")	1500
SPI1003N	24	16	330 mm (13")	1000
SPI1004N	24	16	330 mm (13")	1000
SPI1005N	24	16	330 mm (13")	800
SPI1205N	24	16	330 mm (13")	500