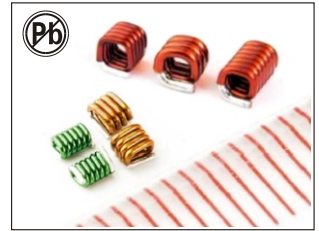


SMD Coil SMAR SERIES



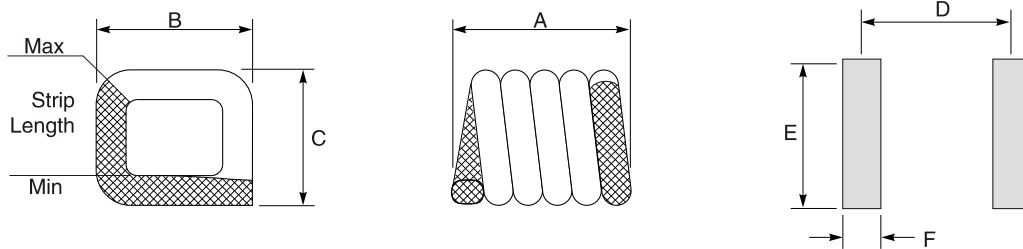
FEATURES:

- Inductance values from 5.5 nH up to 27.3 nH.
- Excellent Quality Factor– up to 130.
- High self–resonant frequency.
- Ultra–miniature size, high currents up to 4.4 Amps.
- All value available in 2%, 5% tolerance.
- Ag–solder coated leads ensure reliable soldering.
- Flat top and bottom for reliable pick and place and mechanical stability.

APPLICATIONS:

- Especially for RF applications.
- Ideal for high current applications.
- Broad band filter.
- RF–Decoupling.

PHYSICAL CHARACTERISTICS:



Part No.	A ± 0.15	B ± 0.15	C ± 0.15	D	E	F	Weight (mg)
SMAR1814–5N5□	1.35	1.83	1.40	0.96	2.60	0.51	9.9
SMAR1814–6N0□	1.30	1.83	1.40	0.99	2.60	0.51	8.5
SMAR1814–8N9□	1.63	1.83	1.40	1.27	2.60	0.51	10.8
SMAR1814–12N□	1.93	1.83	1.40	1.63	2.60	0.51	13.6
SMAR1814–16N□	2.29	1.83	1.40	1.96	2.60	0.51	16.1
SMAR1814–19N□	2.59	1.83	1.40	2.3	2.60	0.51	18.7
SMAR1815–6N9□	1.30	1.83	1.52	1.02	2.60	0.51	9.1
SMAR1815–10N□	1.63	1.83	1.52	1.32	2.60	0.51	11.5
SMAR1815–11N□	1.55	1.83	1.52	1.24	2.60	0.51	11.5
SMAR1815–14N□	1.93	1.83	1.52	1.57	2.60	0.51	14.0
SMAR1815–17N□	2.29	1.83	1.52	1.93	2.60	0.51	16.8
SMAR1815–22N□	2.59	1.83	1.52	2.30	2.60	0.51	19.4
SMAR2118–8N1□	1.47	2.14	1.83	1.12	2.80	0.64	12.8
SMAR2118–12N□	1.85	2.14	1.83	1.45	2.80	0.64	16.9
SMAR2118–14N□	1.55	2.14	1.83	1.24	2.80	0.64	13.5
SMAR2118–17N□	2.21	2.14	1.83	1.83	2.80	0.64	21.1
SMAR2118–22N□	2.56	2.14	1.83	2.18	2.80	0.64	24.7
SMAR2118–23N□	2.24	2.14	1.83	1.90	2.80	0.64	19.2
SMAR2118–25N□	2.97	2.14	1.83	2.57	2.80	0.64	27.6
SMAR2118–27N□	2.97	2.14	1.83	2.57	2.80	0.64	28.7

Packaging code

- S=7" machine–ready reel. EIA–48 Embossed plastic tape. 2000 pcs/reel
- S=13" machine–ready reel. EIA–48 Embossed plastic tape. 7500 pcs/reel

ELECTRICAL CHARACTERISTICS: @25°C

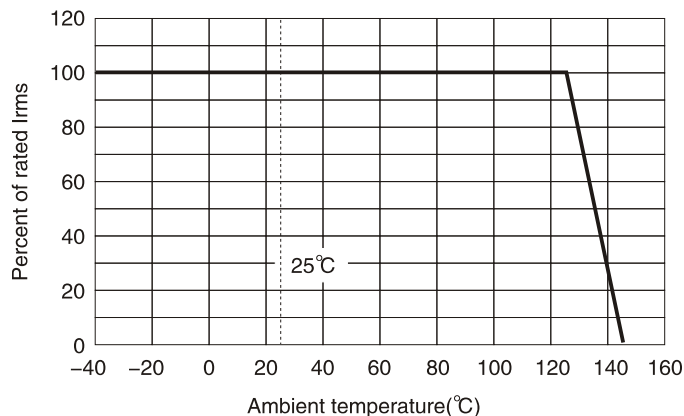
Part No.	Inductance (nH)	Tol ± %	Q Typ.	SRF(GHz) Typ.	DCR(mΩ) Max	Irms (A)
SMAR1814-5N5□	5.5	2,5	60	4.9	3.4	2.9
SMAR1814-6N0□	6.0	2,5	64	5.2	6.0	2.9
SMAR1814-8N9□	8.9	2,5	90	4.3	7.0	2.9
SMAR1814-12N□	12.0	2,5	90	4.8	8.0	2.9
SMAR1814-16N□	16.0	2,5	90	4.4	9.0	2.9
SMAR1814-19N□	19.0	2,5	90	4.0	10.0	2.9
SMAR1815-6N9□	6.9	2,5	100	4.6	6.0	2.7
SMAR1815-10N□	10.0	2,5	100	4.0	7.0	2.7
SMAR1815-11N□	11.0	2,5	90	3.6	6.3	2.7
SMAR1815-14N□	14.0	2,5	100	4.3	8.0	2.7
SMAR1815-17N□	17.0	2,5	100	4.0	9.0	2.7
SMAR1815-22N□	22.0	2,5	100	3.5	10.0	2.7
SMAR2118-8N1□	8.1	2,5	130	5.2	6.0	4.4
SMAR2118-12N□	12.0	2,5	130	4.3	7.0	4.4
SMAR2118-14N□	14.0	2,5	90	3.0	7.2	4.4
SMAR2118-17N□	17.0	2,5	130	3.4	8.0	4.4
SMAR2118-22N□	22.0	2,5	130	3.7	9.0	4.4
SMAR2118-23N□	23.0	2,5	130	2.6	10.0	4.4
SMAR2118-25N□	25.0	2,5	130	2.5	10.0	4.4
SMAR2118-27N□	27.0	2,5	130	3.2	10.0	4.4

□ Inductance Tolerance: G: ± 2%, J: ± 5%

Notes:

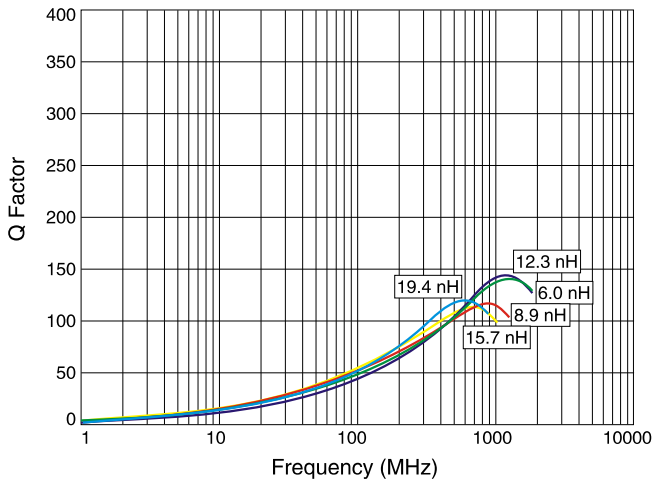
1. Inductance measured at 400MHz, 0.1Vrms, 0 A using HP4287A LCR meter or equivalent with 9699 test fixture.
2. Q measured at 400MHz, using HP4287A LCR meter or equivalent.
3. SRF measured using HP8753 network analyzer and SMD test fixture.
4. Irms: Current that causes a 20°C temperature rise from 25°C ambient.
5. Resistance to soldering heat : Max three 40s reflows at 260°C, parts cooled to room temperature between cycles.
6. Temperature Coefficient of Inductance: +5 to + 70ppm/°C.
7. Operating temperature: -40°C ~ +125°C, (Including coil's self temperature rise).
8. Ambient temperature: -40°C ~ +125°C. (referring to Irms)
9. Storage temperature(on tape & reel packing): -40°C ~ +80°C; 75% RH max.

Irms derating

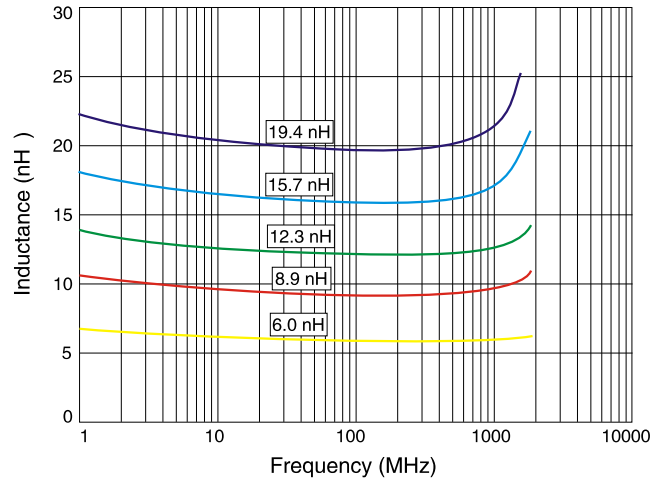


Typical Q vs Frequency **Typical L vs Frequency**

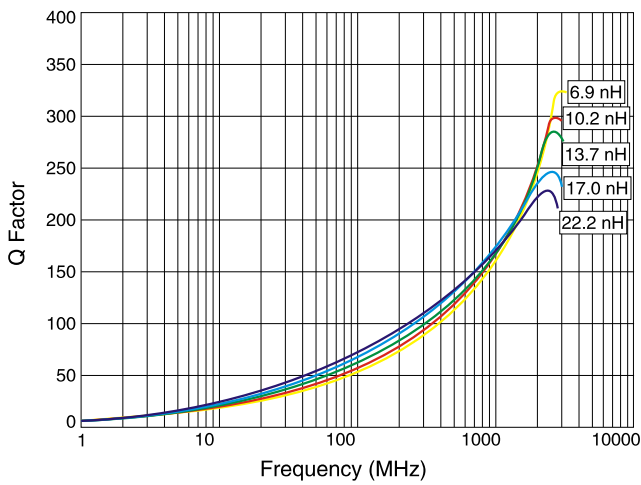
SMAR1814



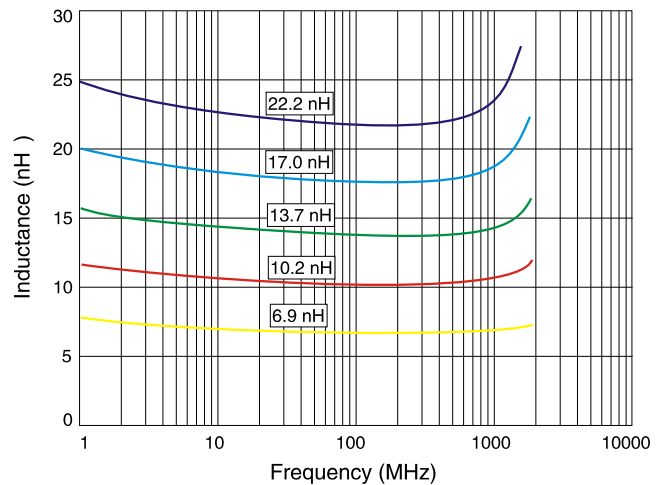
SMAR1814



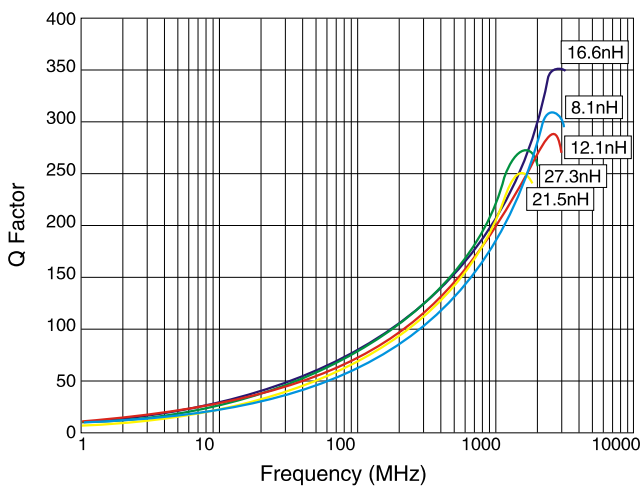
SMAR1815



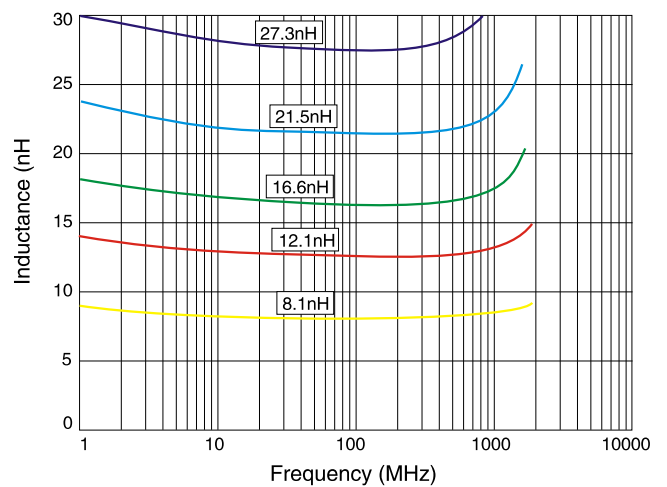
SMAR1815



SMAR2118



SMAR2118



SMD Coil SMAR SERIES



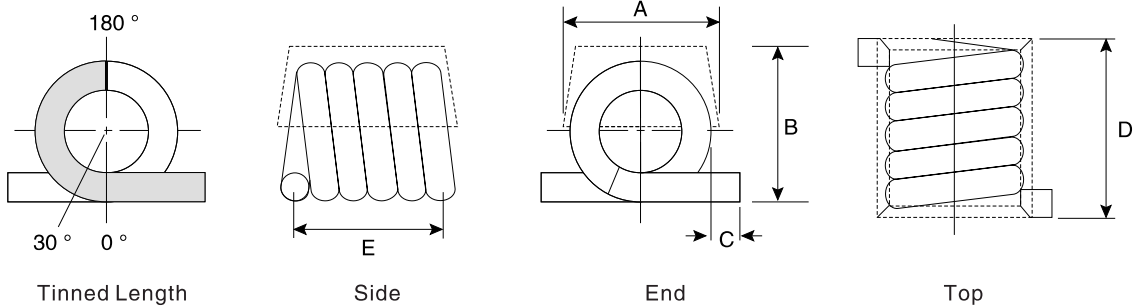
FEATURES:

- Air Core Construction
- High Q
- High Current
- Excellent SRF
- Many inductance values ranging from 1.65nH to 538nH
- Inductance Tolerance 2%, 5%, 10%
- Rated Current 1.5A to 4.0A
- Operating temperature: -40°C ~ +125°C
- Storage temperature: -40°C ~ +85°C

APPLICATIONS:

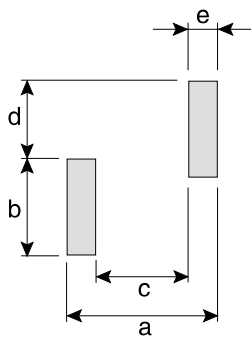
- RF Applications
- RF Circuits
- Broadband I/O Filtering
- Impedance Matching/Tuning
- Decoupling/Bypassing

PHYSICAL CHARACTERISTICS:



Part No.	A	B	C	D	E
SMAR1422	1.42 ± 0.13	1.37 ± 0.15	0.89 ± 0.25	2.21 ± 0.25	1.83 ± 0.25
SMAR1440	1.42 ± 0.13	1.37 ± 0.15	0.89 ± 0.25	4.04 ± 0.25	3.66 ± 0.3
SMAR3037	3.05Max	3.18Max	0.58 ± 0.38	3.68Max	2.92 ± 0.25
SMAR3068	3.05Max	3.18Max	0.58 ± 0.38	6.86Max	5.84 ± 0.25
SMAR3848	3.81Max	4.20Max	1.53 ± 0.39	4.83Max	4.32 ± 0.39
SMAR6310	6.35Max	5.90Max	1.02 ± 0.39	10.55Max	7.98 ± 0.51

RECOMMENDED LAND PATTERNS:



Part No.	a	b	c	d	e
SMAR1422	2.62	2.46	1.04	1.02	0.79
SMAR1440	4.45	2.46	2.87	1.02	0.79
SMAR3037	4.19	3.30	1.65	2.79	1.27
SMAR3068	7.24	3.30	4.70	2.79	1.27
SMAR3848	5.80	5.16	2.85	2.62	1.48
SMAR6310	10.0	4.70	2.95	2.42	2.04

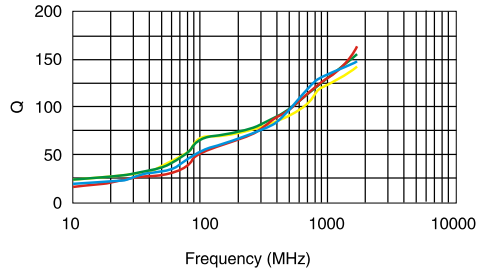
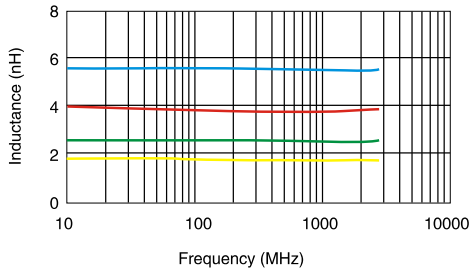
ELECTRICAL CHARACTERISTICS: @25°C

Part No.	Turns	Inductance (nH)	Tol ± %	Test freq. (MHz)	Q Typ.	SRF(GHz) Typ.	DCR(mΩ) Max	Irms (A)
SMAR1422-1N65□	2	1.65	10	800	100	10	4	1.6
SMAR1422-2N55□	3	2.55	5,10	800	100	8.2	5	1.6
SMAR1422-3N85□	4	3.85	2,5,10	800	100	7.5	6	1.6
SMAR1422-5N45□	5	5.45	2,5	800	100	7	8	1.6
SMAR1440-5N6□	6	5.6	2,5	800	100	6.5	9	1.6
SMAR1440-7N15□	7	7.15	2,5	800	100	6	10	1.6
SMAR1440-8N8□	8	8.8	2,5	800	100	6	12	1.6
SMAR1440-9N85□	9	9.85	2,5	800	100	5.2	13	1.6
SMAR1440-12N5□	10	12.55	2,5	800	100	4.6	14	1.6
SMAR3037-2N5□	1	2.5	10	150	145	12.5	1.1	4.0
SMAR3037-5N0□	2	5	5,10	150	140	6.5	1.8	4.0
SMAR3037-8N0□	3	8	2,5	150	140	5	2.6	4.0
SMAR3037-12N5□	4	12.5	2,5	150	137	3.3	3.4	4.0
SMAR3037-18N5□	5	18.5	2,5	150	132	2.5	3.9	4.0
SMAR3068-17N5□	6	17.5	2,5	150	100	2.2	4.5	4.0
SMAR3068-22N0□	7	22	2,5	150	102	2.1	5.2	4.0
SMAR3068-28N0□	8	28	2,5	150	105	1.8	6	4.0
SMAR3068-35N5□	9	35.5	2,5	150	112	1.5	6.8	4.0
SMAR3068-43N0□	10	43	2,5	150	106	1.2	7.9	4.0
SMAR3848-22N0□	4	22	2,5	150	100	3.2	4.2	3.0
SMAR3848-27N0□	5	27	2,5	150	100	2.7	4	3.5
SMAR3848-33N0□	5	33	2,5	150	100	2.5	4.8	3.0
SMAR3848-39N0□	6	39	2,5	150	100	2.1	4.4	3.0
SMAR3848-47N0□	6	47	2,5	150	100	2.1	5.6	3.0
SMAR3848-56N0□	7	56	2,5	150	100	1.5	6.2	3.0
SMAR3848-68N0□	7	68	2,5	150	100	1.5	8.2	2.5
SMAR3848-82N0□	8	82	2,5	150	100	1.3	9.4	2.5
SMAR3848-100N□	9	100	2,5	150	100	1.2	12.3	1.7
SMAR3848-120N□	9	120	2,5	150	100	1.1	17.3	1.5
SMAR6310-90N0□	9	90	2,5	50	95	1.14	15	3.5
SMAR6310-111N□	10	111	2,5	50	87	1.02	15	3.5
SMAR6310-130N□	11	130	2,5	50	87	0.900	20	3.0
SMAR6310-169N□	12	169	2,5	50	95	0.875	25	3.0
SMAR6310-206N□	13	206	2,5	50	95	0.800	30	3.0
SMAR6310-222N□	14	222	2,5	50	92	0.730	35	3.0
SMAR6310-246N□	15	246	2,5	50	95	0.685	35	3.0
SMAR6310-307N□	16	307	2,5	50	95	0.660	35	3.0
SMAR6310-380N□	17	380	2,5	50	95	0.590	50	2.5
SMAR6310-422N□	18	422	2,5	50	95	0.540	60	2.5
SMAR6310-491N□	19	491	2,5	50	95	0.535	65	2.0
SMAR6310-538N□	20	538	2,5	50	87	0.490	90	2.0

□ Inductance Tolerance: G: ± 2%, J: ± 5%, K: ± 10%

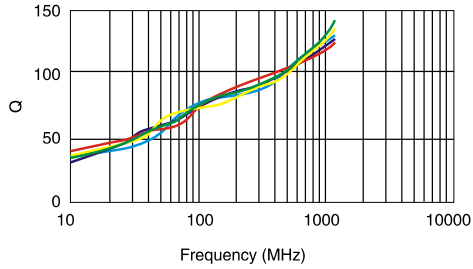
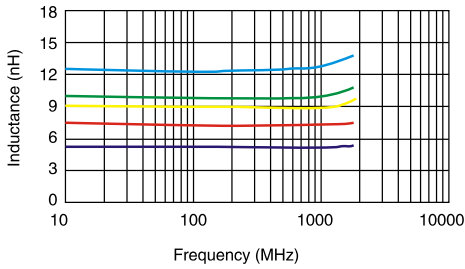
Inductance vs. Frequency

Typical Q vs. Frequency



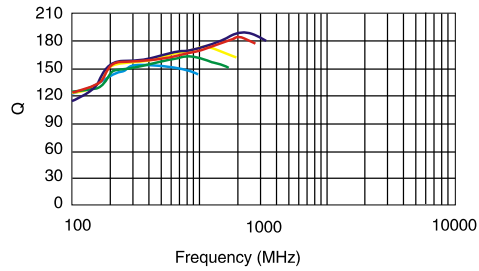
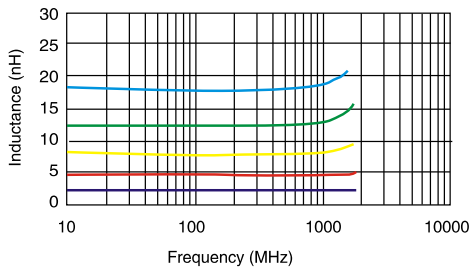
SMAR1422

- 5.45nH
- 3.85nH
- 2.55nH
- 1.65nH



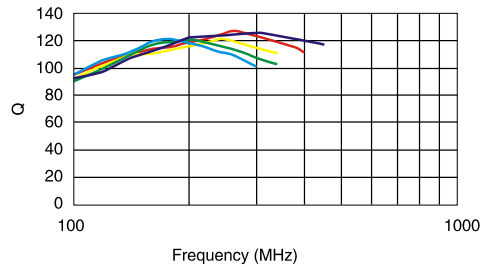
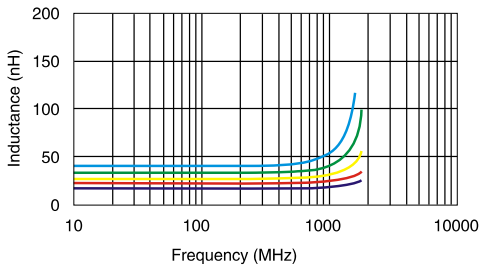
SMAR1440

- 5.60nH
- 7.15nH
- 8.80nH
- 9.85nH
- 12.6nH



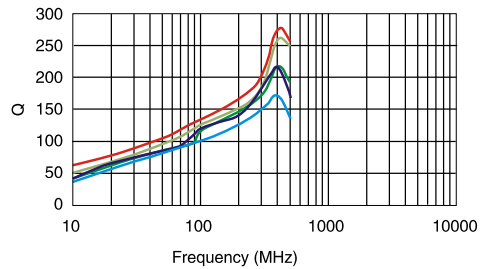
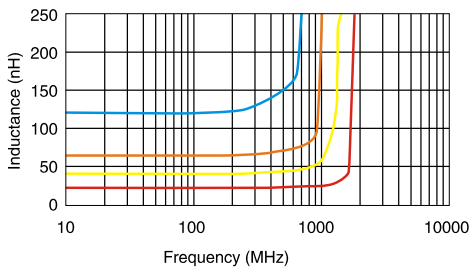
SMAR3037

- 2.50nH
- 5.00nH
- 8.00nH
- 12.5nH
- 18.5nH



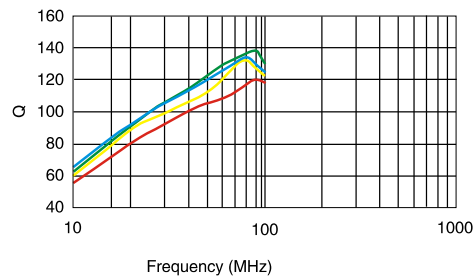
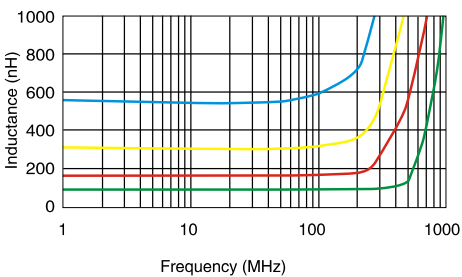
SMAR3068

- 17.5nH
- 22.0nH
- 28.0nH
- 35.5nH
- 43.0nH



SMAR3848

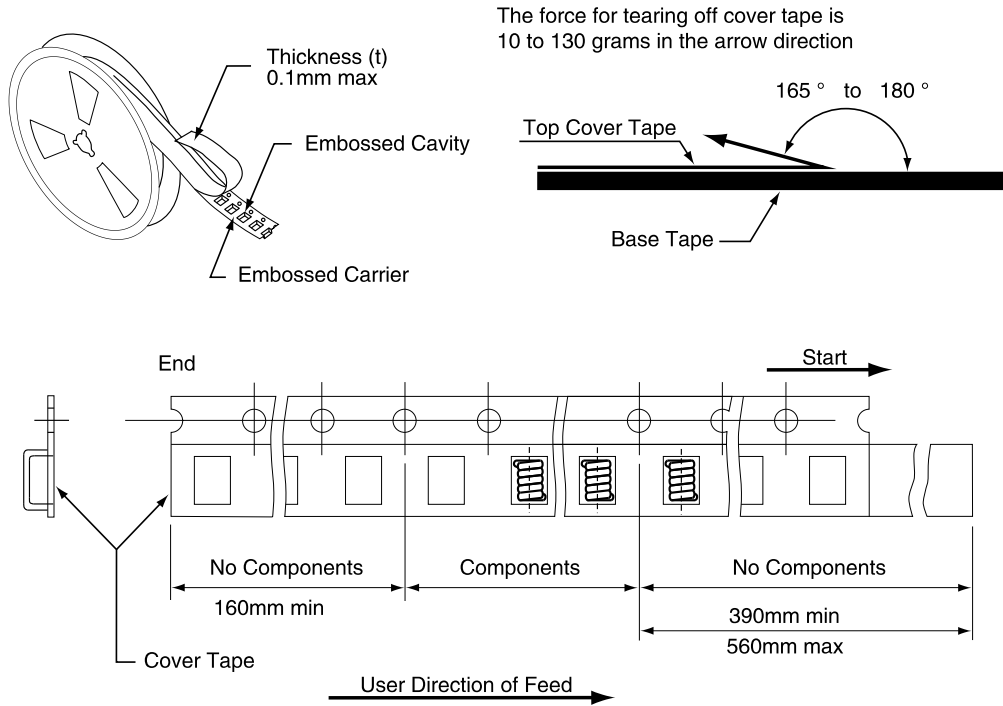
- 22.0nH
- 39.0nH
- 47.0nH
- 56.0nH
- 68.0nH
- 82.0nH
- 120nH



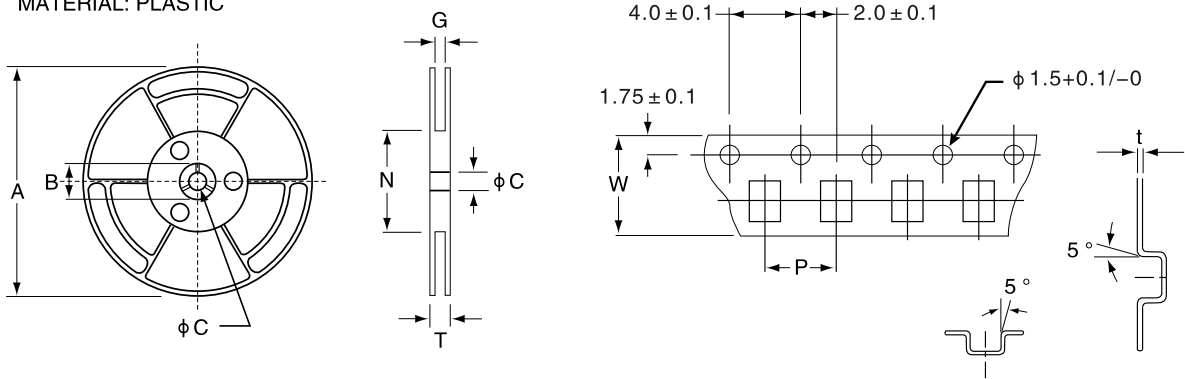
SMAR6310

- 90.0nH
- 169nH
- 307nH
- 538nH

PACKAGING SPECIFICATIONS

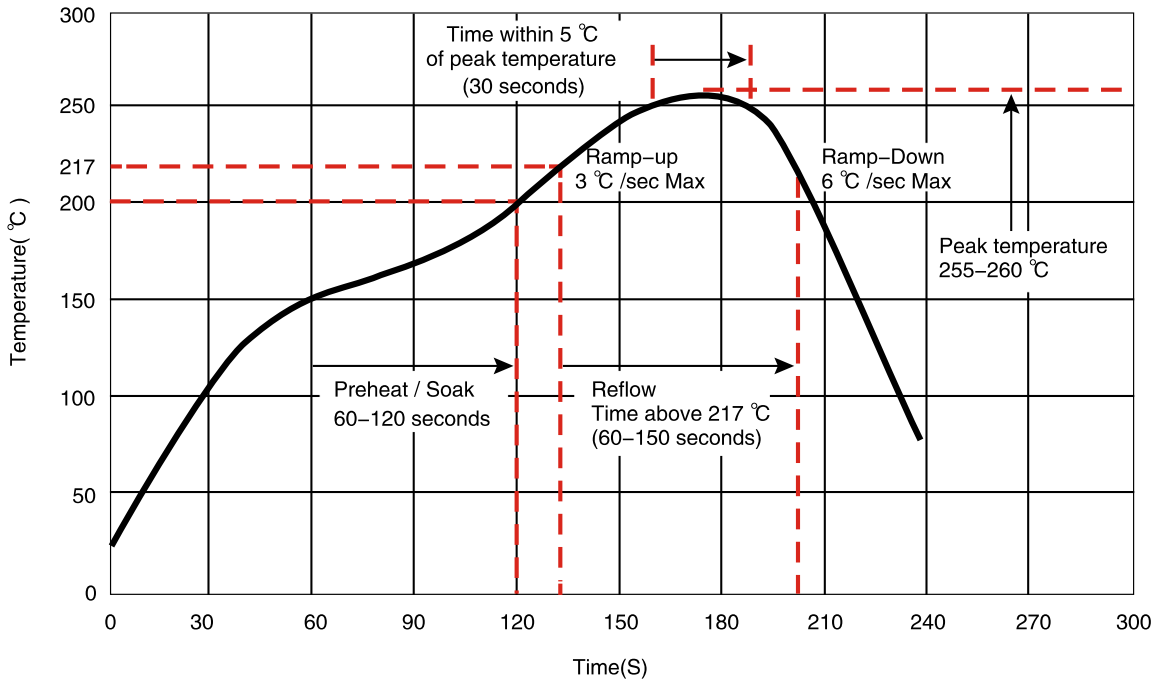


MATERIAL: PLASTIC



Part No.	A	B	C	N	G	T	W	P	t
SMAR1422	178 ± 2	21 ± 0.8	13 ± 0.8	75 ± 2	8.4 + 1.5 / - 0	12.5 + 1.5 / - 0	8 ± 0.3	4 ± 0.1	0.3 ± 0.05
SMAR1440	178 ± 2	21 ± 0.8	13 + 0.5 / - 0.2	50 Min	12.4 + 2 / - 0	18.4 Max	12 ± 0.3	4 ± 0.1	0.35 ± 0.05
SMAR3037	178 ± 2	25 ± 1	15 ± 0.5	75 ± 2	12.5 + 1.5 / - 0	16.4 + 1.5 / - 0	12 ± 0.2	8 ± 0.1	0.25 ± 0.05
SMAR3068	178 ± 2	50 ± 1	15 ± 0.5	75 ± 2	16.5 + 1.5 / - 0	20.4 + 1.5 / - 0	16 ± 0.2	8 ± 0.1	0.25 ± 0.05
SMAR3848	340 Max	20.2 Min	13 ± 0.5	100 Ref	16.5 ± 0.5	25.5 ± 0.5	16 ± 0.3	12 ± 0.1	0.3 ± 0.5
SMAR6310	340 Max	20.2 Min	13 ± 0.5	100 Ref	24.5 ± 0.5	30.4 ± 0.5	24 ± 0.3	12 ± 0.1	0.35 ± 0.05

TYPICAL RoHS REFLOW PROFILE

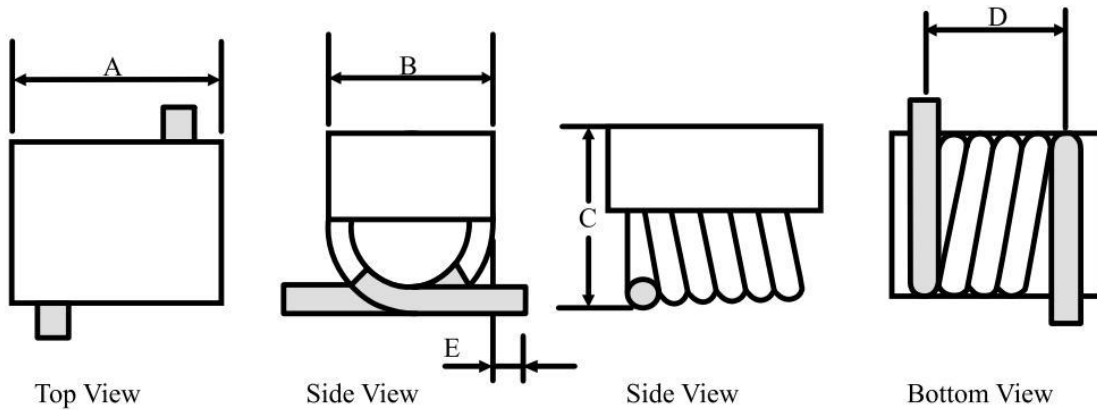


Air Core Coil Features

- Air core inductors feature high Q and current handling
- Acrylic top provides a flat surface for pick and place
- Solder coated leads ensure reliable soldering
- Operating temperature range: -40°C to +125°C
- Storage temperature range: -55°C to +145°C



Air Core Coil Inductor Dimensions & Configurations (Unit In mm)

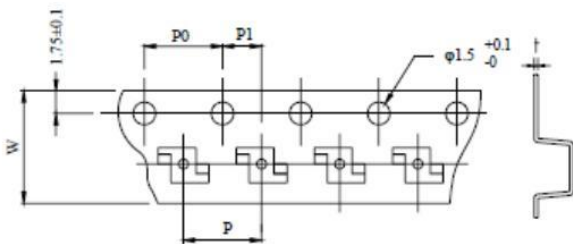


P/N Type	A	B	C	D	E
SMAR1210	3.3± 0.3	2.60± 0.2	2.70± 0.2	2.90± 0.3	0.70± 0.2

Specification

Part No.	(A)Max	(nH)	Q(min)	Test Freq (MHz)	DCR (mΩ)Max	SRF (GHz)	Coilcraft P/N	Würth P/N
SMAR1210 - 2N5G	4.0	2.5	145	150	1.1	>3.0	A01T	744913025
SMAR1210 - 5N0G	4.0	5.0	140	150	1.8	>3.0	A02T	744913050
SMAR1210 - 8N0G	4.0	8.0	140	150	2.6	>3.0	A03T	744913080
SMAR1210 - 12N5G	4.0	12.5	137	150	3.4	>3.0	A04T	744913112
SMAR1210 - 18N5G	4.0	18.5	132	150	3.9	>2.5	A05T	744913118

Tape & Reel Information



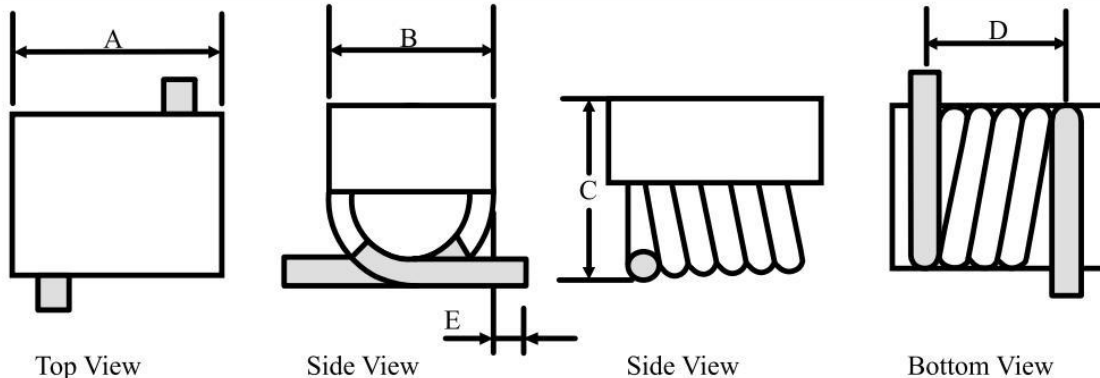
Parameter	Units	Value
Qty per reel	PCS	700
Reel Size	mm	330
Tape Width	mm	12.00
P	mm	8.00
P0	mm	4.00
P1	mm	2.00

Air Core Coil Features

- Air core inductors feature high Q and current handling
- Acrylic top provides a flat surface for pick and place
- Solder coated leads ensure reliable soldering
- Operating temperature range: -40 °C to +125 °C
- Storage temperature range: -55 °C to +145 °C



Air Core Coil Inductor Dimensions & Configurations (Unit In mm)

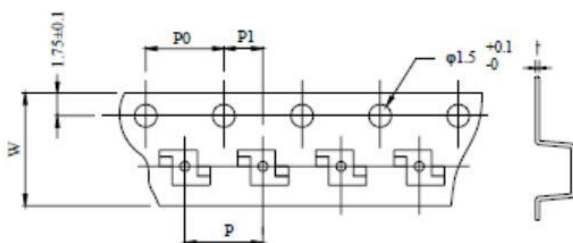


P/N Type	A	B	C	D	E
SMAR1812	4.90± 0.3	3.80± 0.2	3.50± 0.2	4.30± 0.4	1.00± 0.3

Specification

Part No.	(A)Max	(nH)	Q(min)	Test Freq (MHz)	DCR (mΩ)Max	SRF (GHz)	Coilcraft P/N	Würth P/N
SMAR1812- 22NG	3.0	22	100	150	4.2	3.20	1812SMS-22N	744912122
SMAR1812- 27NG	3.5	27	100	150	4.0	2.70	1812SMS-27N	744912127
SMAR1812 - 33NG	3.0	33	100	150	4.8	2.50	1812SMS-33N	744912133
SMAR1812 - 39NG	3.0	39	100	150	4.4	2.10	1812SMS-39N	744912139
SMAR1812 - 47NG	3.0	47	100	150	5.6	2.10	1812SMS-47N	744912147
SMAR1812 - 56NG	3.0	56	100	150	6.2	1.50	1812SMS-56N	744912156
SMAR1812 - 68NG	2.5	68	100	150	8.2	1.50	1812SMS-68N	744912168
SMAR1812 - 82NG	2.5	82	100	150	9.4	1.30	1812SMS-82N	744912182
SMAR1812 - 100NG	1.7	100	100	150	12.3	1.20	1812SMS-R10	744912210
SMAR1812- 120NG	1.5	120	100	150	17.3	1.10	1812SMS-R12	744912212
SMAR1812 - 150NG	1.2	150	100	150	33.0	0.75	1812SMS-R15	

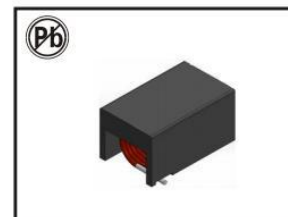
Tape & Reel Information



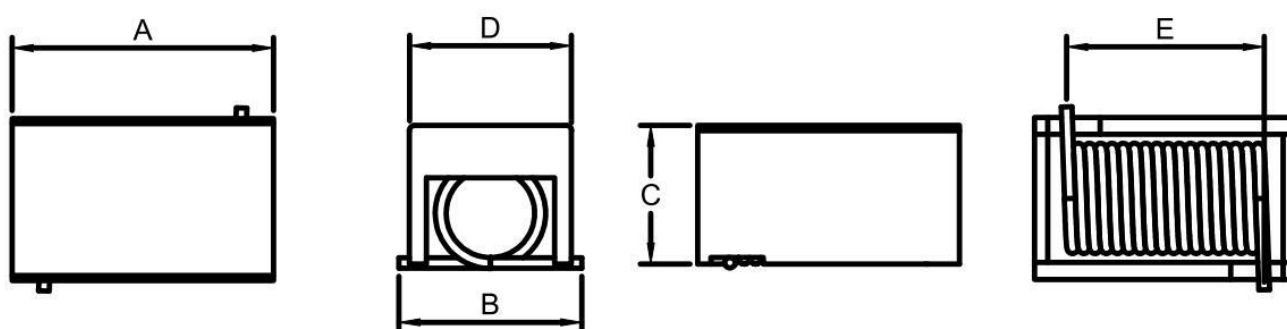
Parameter	Units	Value
Qty per reel	PCS	500
Reel Size	mm	330
Tape Width	mm	12.00
P	mm	12.00
Po	mm	4.00
P1	mm	6.00

Air Core Coil Features

- Air core inductors feature high Q and current handling
- Acrylic top provides a flat surface for pick and place
- Solder coated leads ensure reliable soldering
- Operating temperature range: -40°C to $+125^{\circ}\text{C}$
- Storage temperature range: -55°C to $+145^{\circ}\text{C}$



Air Core Coil Inductor Dimensions & Configurations (Unit In mm)



Top View

Side View

Side View

Bottom View

P/N Type	A	B	C	D	E
SMAR4024	10.5(max)	7.0(max)	6.0(max)	6.1±0.2	8.0±0.6

Specification

Part No.	(A)Max	(nH)	Q(min)	Test Freq (MHz)	DCR (mΩ)Max	SRF(GHz)	Coilcraft P/N	Würth P/N
SMAR4024 - 90NG	3.5	90	100	50	15	>1.0	132-09SM	744918190
SMAR4024 - 111NG	3.5	111	100	50	15	>1.0	132-10SM	744918211
SMAR4024 - 130NG	3.0	130	100	50	20	>0.9	132-11SM	744918213
SMAR4024 - 169NG	3.0	169	100	50	25	>0.8	132-12SM	744918217
SMAR4024 - 206NG	3.0	206	100	50	30	>0.7	132-13SM	744918220
SMAR4024 - 222NG	3.0	222	100	50	35	>0.6	132-14SM	744918222
SMAR4024 - 246NG	3.0	246	100	50	35	>0.6	132-15SM	744918224
SMAR4024 - 307NG	3.0	307	100	50	35	>0.5	132-16SM	744918230
SMAR4024 - 380NG	2.5	380	100	50	50	>0.5	132-17SM	744918238
SMAR4024 - 422NG	2.5	422	100	50	60	>0.4	132-18SM	744918242
SMAR4024 - 491NG	2.0	491	100	50	65	>0.4	132-19SM	744918249
SMAR4024 - 538NG	2.0	538	100	50	90	>0.4	132-20SM	744918254