

SMD Coil SMAR SERIES

FEATURES:

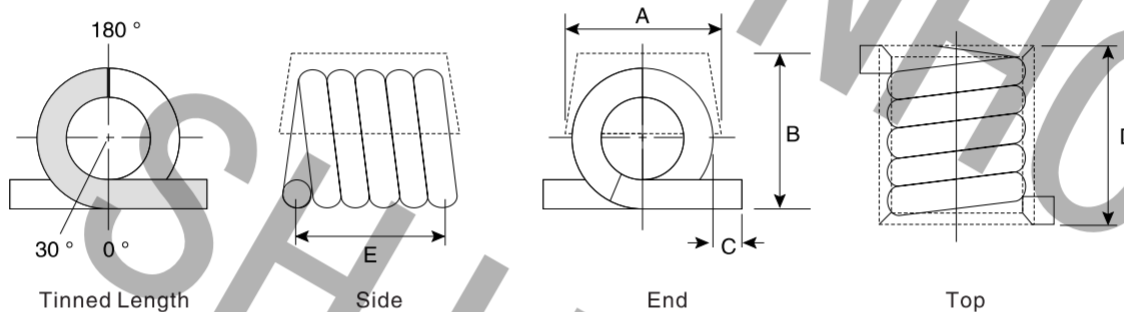
- Air Core Construction
- High Q
- High Current
- Excellent SRF
- Many inductance values ranging from 1.65nH to 538nH
- Inductance Tolerance 2%, 5%, 10%
- Rated Current 1.5A to 4.0A
- Operating temperature: -40°C ~ +125°C
- Storage temperature: -40°C ~ +85°C

APPLICATIONS:

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

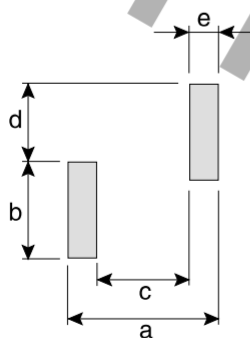


PHYSICAL CHARACTERISTICS:



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

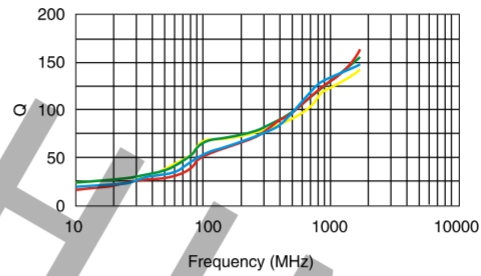
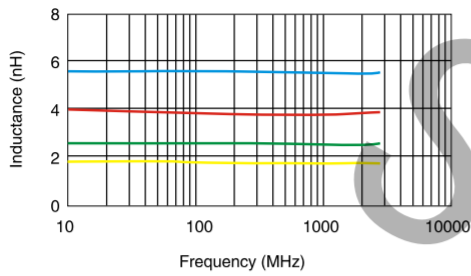
ELECTRICAL CHARACTERISTICS: @25°C

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

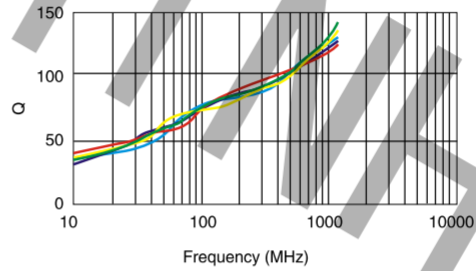
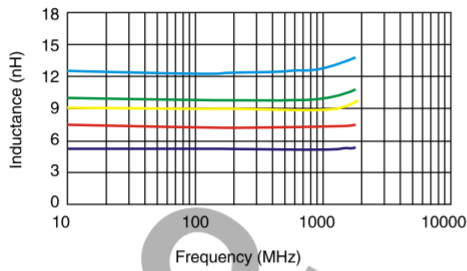
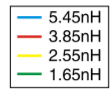
□ Inductance Tolerance: G: ± 2%, J: ± 5%, K: ± 10%

Inductance vs. Frequency

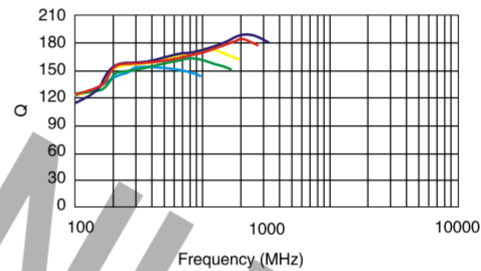
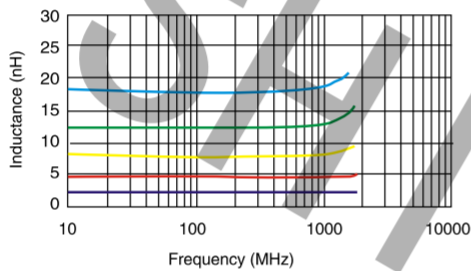
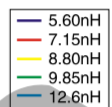
Typical Q vs. Frequency



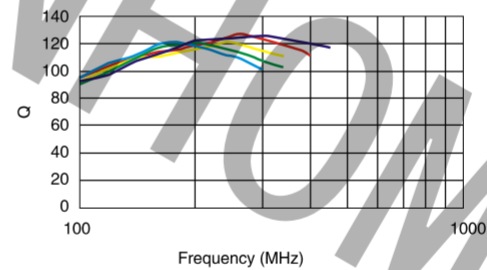
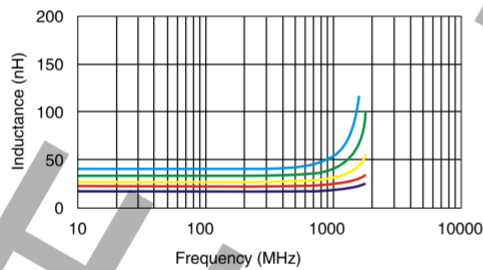
SMAR1422



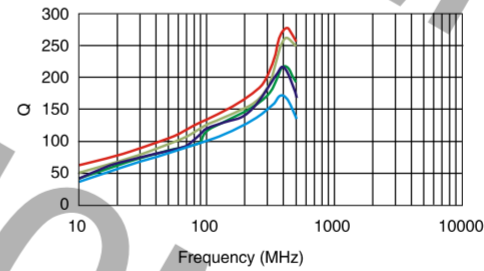
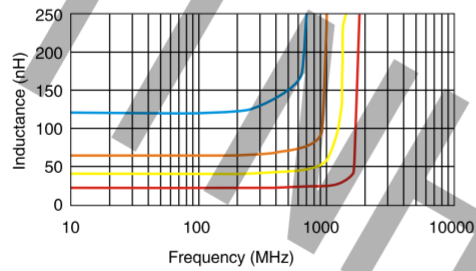
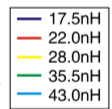
SMAR1440



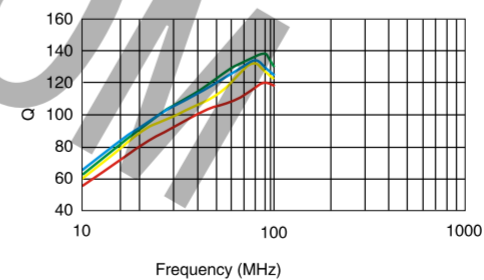
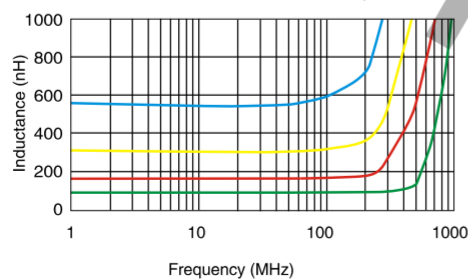
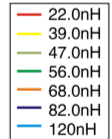
SMAR3037



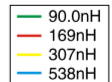
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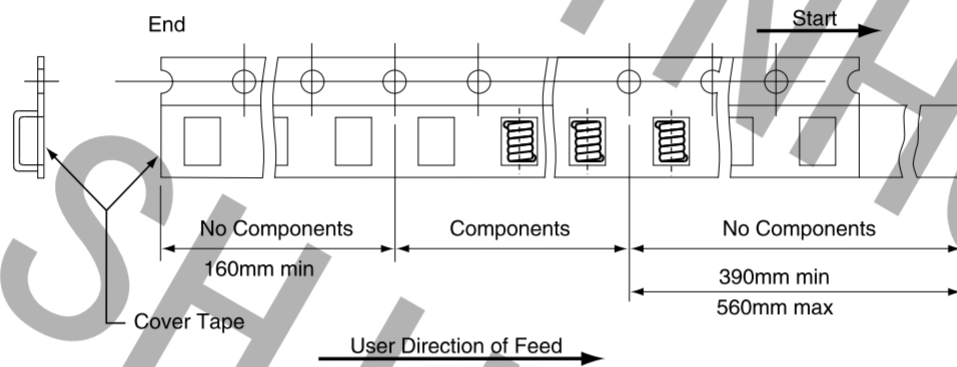
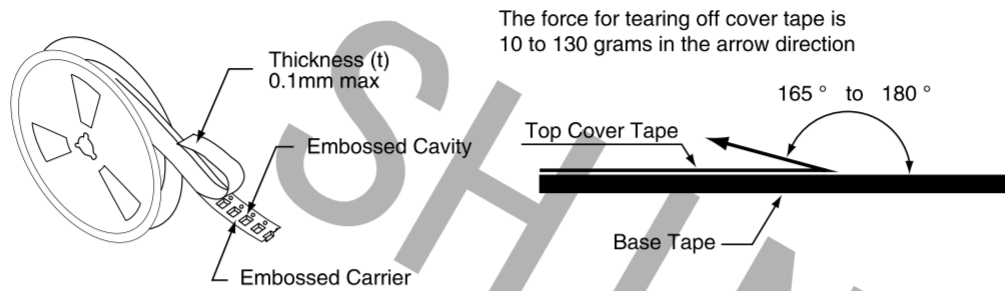
SMAR3848



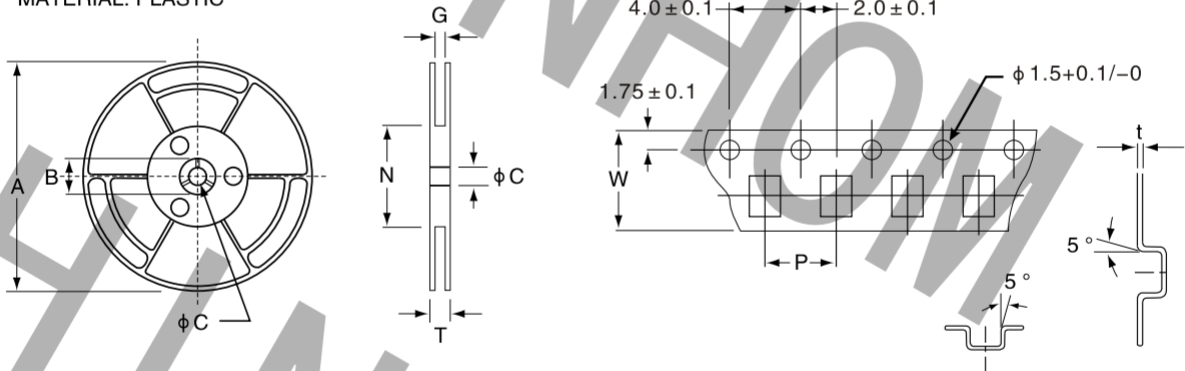
SMAR6310



PACKAGING SPECIFICATIONS

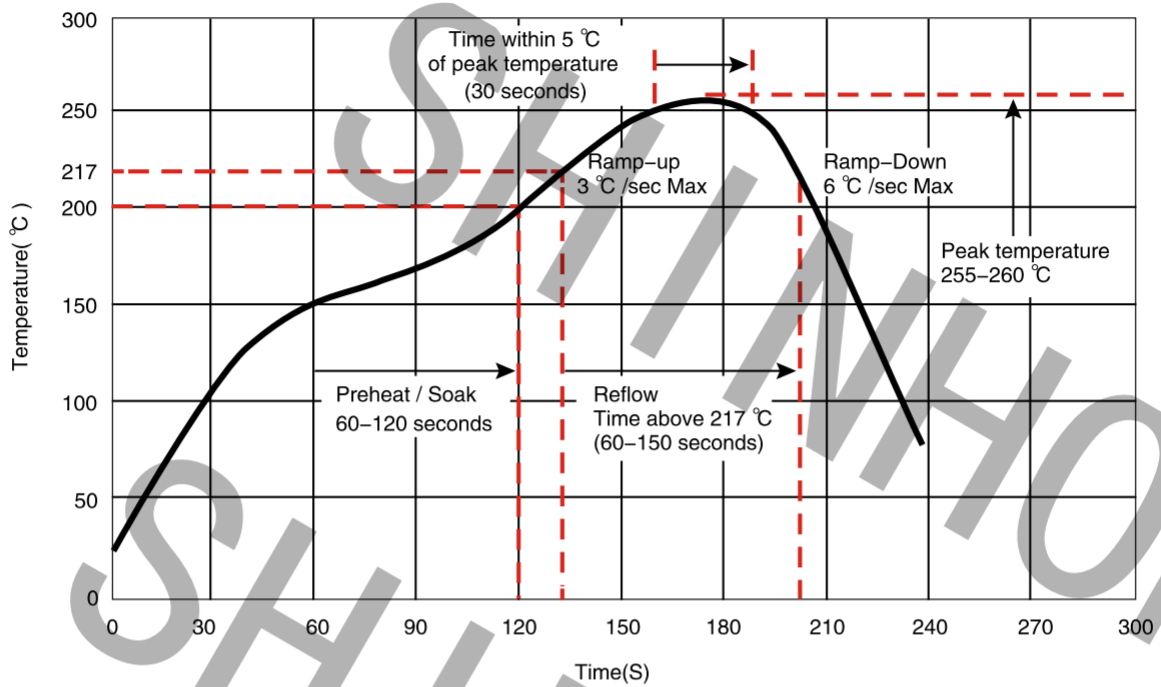


MATERIAL: PLASTIC



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

TYPICAL RoHS REFLOW PROFILE



SMD Coil

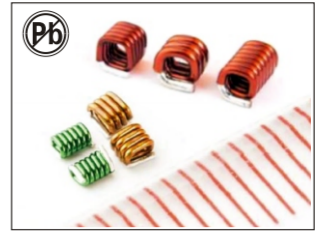
SMAR SERIES

FEATURES:

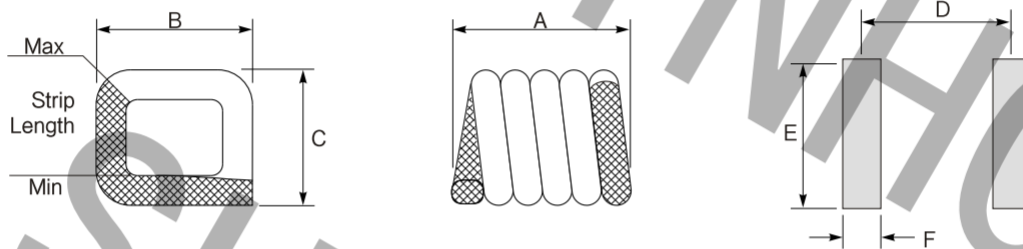
- Inductance values from 5.5 nH up to 27.3 nH.
- Excellent Quality Factor- up to 130.
- High self-resonant frequency.
- Ultra-miniature size, high currents up to 4.4 Amps.
- All value available in 2%, 5% tolerance.
- Ag-solder coated leads ensure reliable soldering.
- Flat top and bottom for reliable 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)
SMAR0806-5N5□	1.35	1.83	1.40	0.96	2.60	0.51	9.9
SMAR0806-6N0□	1.30	1.83	1.40	0.99	2.60	0.51	8.5
SMAR0806-8N9□	1.63	1.83	1.40	1.27	2.60	0.51	10.8
SMAR0806-12N□	1.93	1.83	1.40	1.63	2.60	0.51	13.6
SMAR0806-16N□	2.29	1.83	1.40	1.96	2.60	0.51	16.1
SMAR0806-19N□	2.59	1.83	1.40	2.3	2.60	0.51	18.7
SMAR0807-6N9□	1.30	1.83	1.52	1.02	2.60	0.51	9.1
SMAR0807-10N□	1.63	1.83	1.52	1.32	2.60	0.51	11.5
SMAR0807-11N□	1.55	1.83	1.52	1.24	2.60	0.51	11.5
SMAR0807-14N□	1.93	1.83	1.52	1.57	2.60	0.51	14.0
SMAR0807-17N□	2.29	1.83	1.52	1.93	2.60	0.51	16.8
SMAR0807-22N□	2.59	1.83	1.52	2.30	2.60	0.51	19.4
SMAR0908-8N1□	1.47	2.14	1.83	1.12	2.80	0.64	12.8
SMAR0908-12N□	1.85	2.14	1.83	1.45	2.80	0.64	16.9
SMAR0908-14N□	1.55	2.14	1.83	1.24	2.80	0.64	13.5
SMAR0908-17N□	2.21	2.14	1.83	1.83	2.80	0.64	21.1
SMAR0908-22N□	2.56	2.14	1.83	2.18	2.80	0.64	24.7
SMAR0908-23N□	2.24	2.14	1.83	1.90	2.80	0.64	19.2
SMAR0908-25N□	2.97	2.14	1.83	2.57	2.80	0.64	27.6
SMAR0908-27N□	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

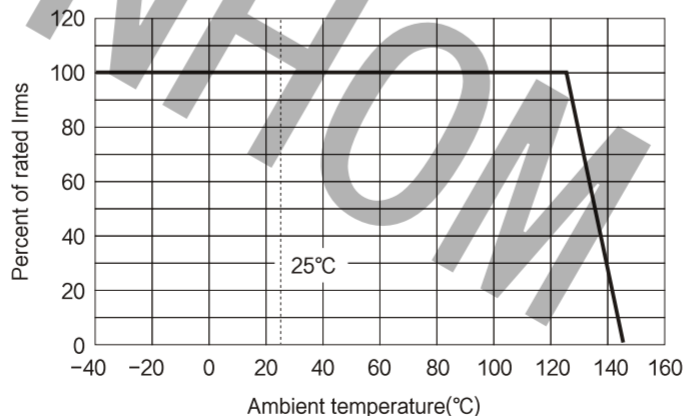
Part No.	Inductance (nH)	Tol ± %	Q Typ.	SRF(GHz) Typ.	DCR(mΩ) Max	Irms (A)
SMAR0806-5N5□	5.5	2,5	60	4.9	3.4	2.9
SMAR0806-6N0□	6.0	2,5	64	5.2	6.0	2.9
SMAR0806-8N9□	8.9	2,5	90	4.3	7.0	2.9
SMAR0806-12N□	12.0	2,5	90	4.8	8.0	2.9
SMAR0806-16N□	16.0	2,5	90	4.4	9.0	2.9
SMAR0806-19N□	19.0	2,5	90	4.0	10.0	2.9
SMAR0807-6N9□	6.9	2,5	100	4.6	6.0	2.7
SMAR0807-10N□	10.0	2,5	100	4.0	7.0	2.7
SMAR0807-11N□	11.0	2,5	90	3.6	6.3	2.7
SMAR0807-14N□	14.0	2,5	100	4.3	8.0	2.7
SMAR0807-17N□	17.0	2,5	100	4.0	9.0	2.7
SMAR0807-22N□	22.0	2,5	100	3.5	10.0	2.7
SMAR0908-8N1□	8.1	2,5	130	5.2	6.0	4.4
SMAR0908-12N□	12.0	2,5	130	4.3	7.0	4.4
SMAR0908-14N□	14.0	2,5	90	3.0	7.2	4.4
SMAR0908-17N□	17.0	2,5	130	3.4	8.0	4.4
SMAR0908-22N□	22.0	2,5	130	3.7	9.0	4.4
SMAR0908-23N□	23.0	2,5	130	2.6	10.0	4.4
SMAR0908-25N□	25.0	2,5	130	2.5	10.0	4.4
SMAR0908-27N□	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.

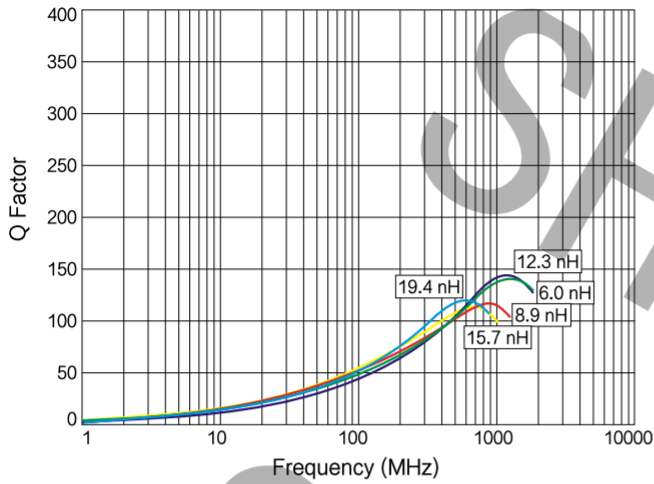
Irms derating



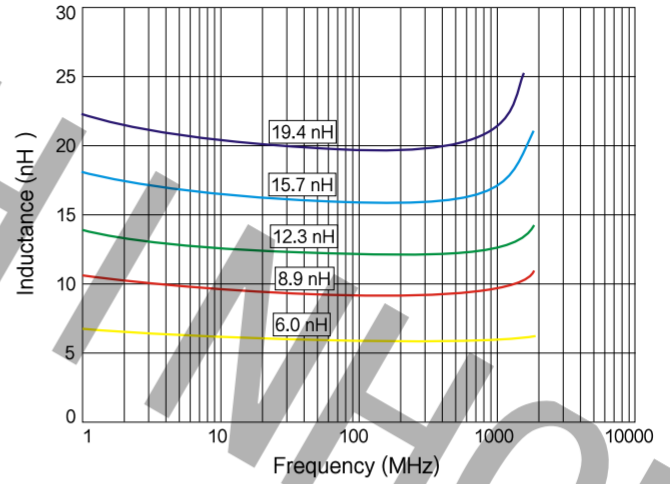
Typical Q vs Frequency

Typical L vs Frequency

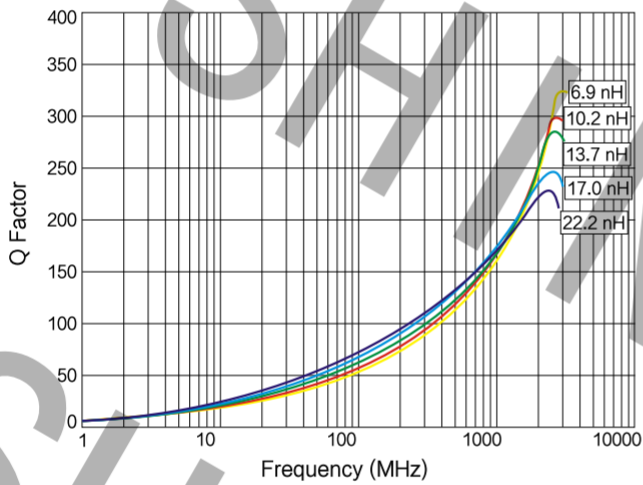
SMAR0806



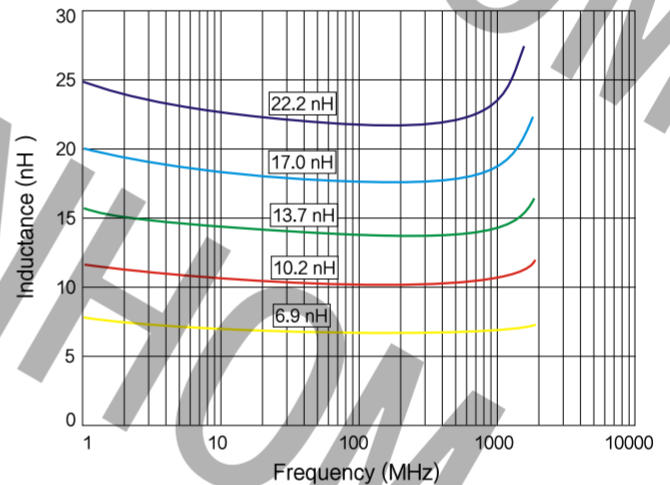
SMAR0806



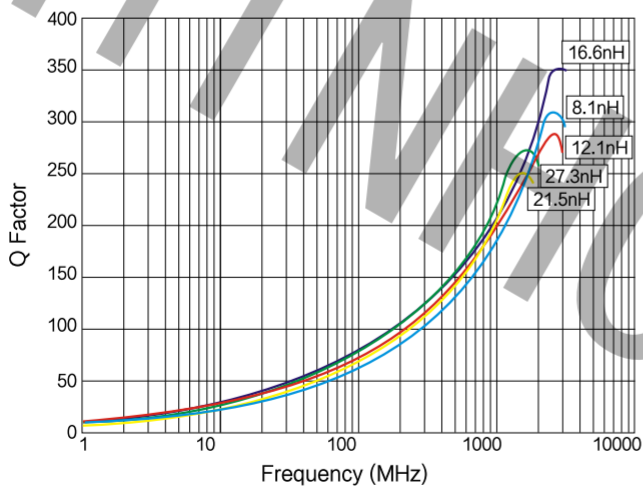
SMAR0807



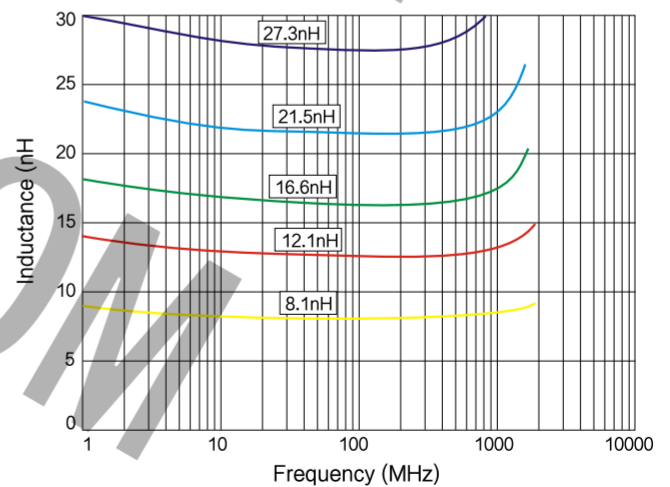
SMAR0807



SMAR0908



SMAR0908



SMD Coil

SMAR1111 SERIES

FEATURES:

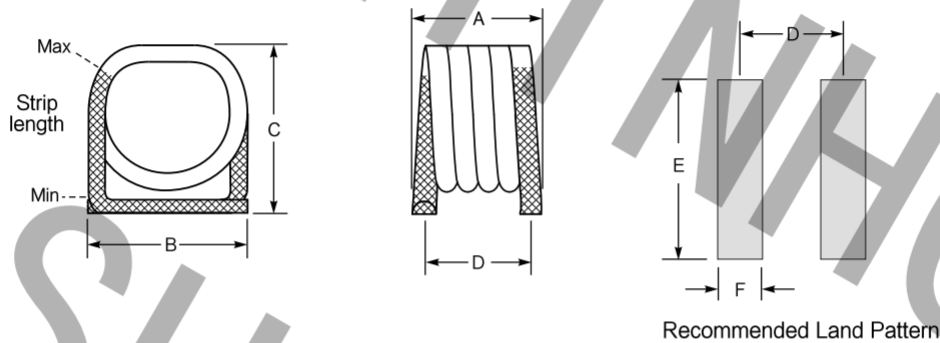
- Excellent Q factors ~210 at 400 MHz
- Inductance values from 27 to 47 nH
- Flat top and bottom for reliable pick and place and mechanical stability
- RoHS compliant

APPLICATIONS:

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



PHYSICAL CHARACTERISTICS:



Part No.	A ± 0.254	B ± 0.381	C ± 0.127	D	E	F
SMAR1111-27N□	2.67	2.67	2.79	2.29	3.05	1.02
SMAR1111-30N□	2.67	2.67	2.79	2.29	3.05	1.02
SMAR1111-33N□	2.92	2.67	2.79	2.54	3.05	1.02
SMAR1111-36N□	2.92	2.67	2.79	2.54	3.05	1.02
SMAR1111-39N□	2.92	2.67	2.79	2.54	3.05	1.02
SMAR1111-43N□	3.30	2.67	2.79	2.79	3.05	1.02
SMAR1111-47N□	3.30	2.67	2.79	2.79	3.05	1.02

ELECTRICAL CHARACTERISTICS: @25°C

Part No.	Inductance (nH)	Tol ± %	Q Typ.	SRF(GHz) Typ.	DCR(mΩ) Max	I _{rms} (A)
SMAR1111-27N□	27	2,5	200	2.6	8.1	5.5
SMAR1111-30N□	30	2,5	200	2.4	8.3	5.5
SMAR1111-33N□	33	2,5	200	2.3	9.5	4.8
SMAR1111-36N□	36	2,5	200	2.3	9.8	4.8
SMAR1111-39N□	39	2,5	200	2.2	10.0	4.8
SMAR1111-43N□	43	2,5	200	2.2	10.8	4.4
SMAR1111-47N□	47	2,5	200	2.2	11.3	4.4

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

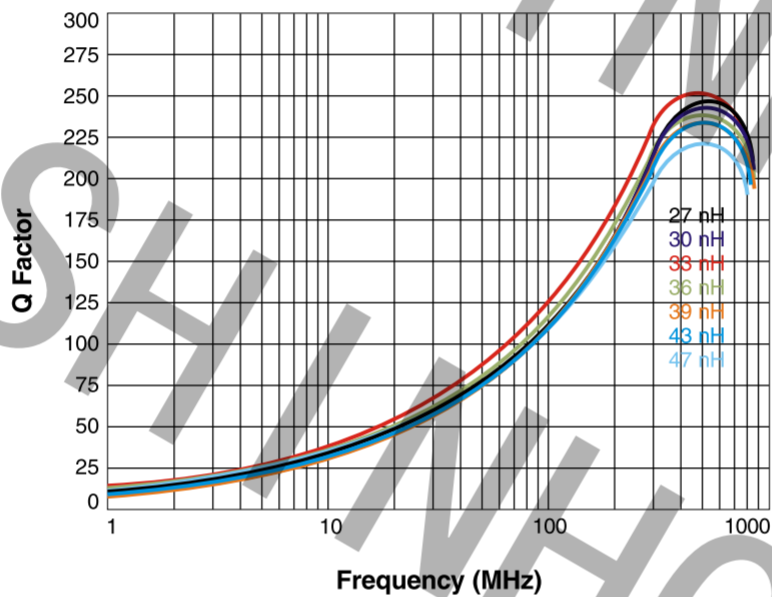
Packaging code

600/7" reel; 2500/13" reel; Plastic tape: 12 mm wide, 0.35 mm thick, 8 mm pocket spacing, 3.05 mm pocket depth

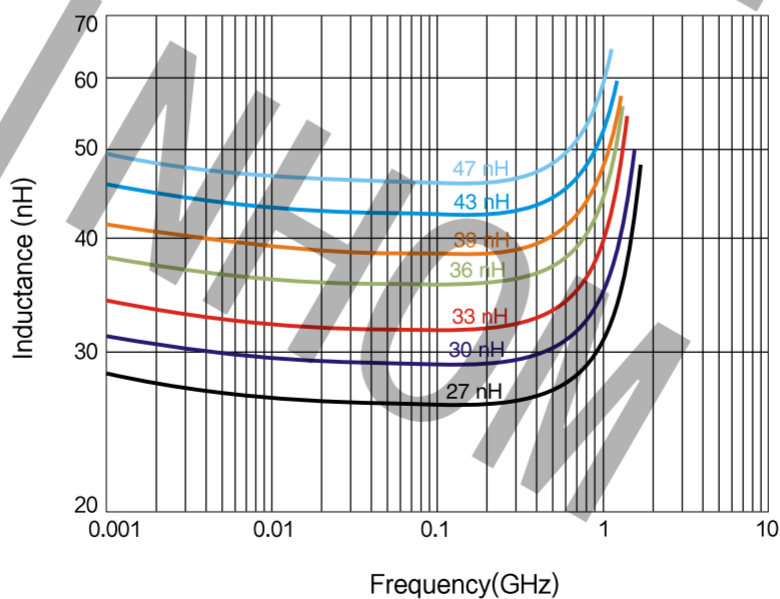
Notes:

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. Current that causes a 20°C temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings
5. Electrical specifications at 25°C
6. Operating temperature: -40°C ~ +145°C, (Including coil's self temperature rise).
7. Ambient temperature: -40°C ~ +125°C. (with Irms current)
8. Storage temperature(on tape & reel packing): -40°C ~ +80°C; 75% RH max.

Typical Q vs Frequency



Typical L vs Frequency



SMD Coil SMAR SERIES

FEATURES:

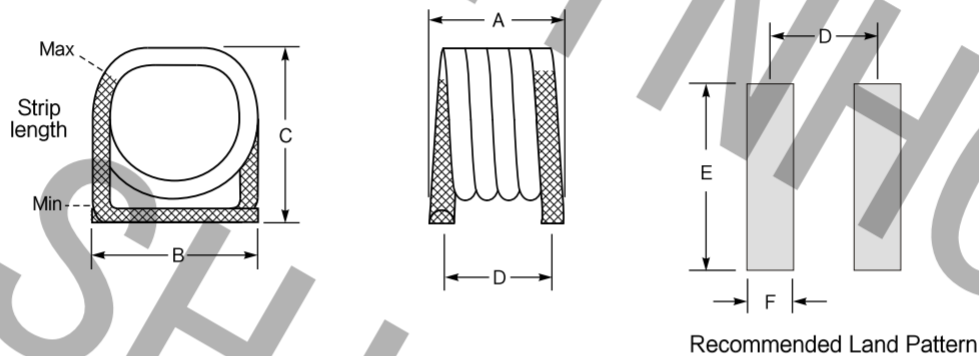
- Excellent Q factors –up to 230 at 400 MHz
- Current handling as high as 5.7 Amps
- Inductance values from 47 to 500 nH
- Flat top and bottom for reliable pick and place and mechanical stability
- RoHS compliant.

APPLICATIONS:

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



PHYSICAL CHARACTERISTICS:



Part No.	A	B	C	D	E	F	Weight (mg)
SMAR1515-47N□	4.06 ± 0.254	3.56 ± 0.178	3.73 ± 0.178	3.56	4.45	1.78	110
SMAR1515-68N□	5.33 ± 0.254	3.56 ± 0.178	3.73 ± 0.178	4.83	4.45	1.78	145
SMAR1515-82N□	8.84 ± 0.254	3.56 ± 0.178	3.73 ± 0.178	5.33	4.45	1.78	165
SMAR2222-90N□	5.21 ± 0.381	5.46 ± 0.254	5.69 ± 0.254	4.45	6.48	2.16	280
SMAR2222-R11□	6.35 ± 0.381	5.59 ± 0.254	5.69 ± 0.254	5.84	6.73	2.16	330
SMAR2222-R13□	6.73 ± 0.381	5.59 ± 0.254	5.69 ± 0.254	6.22	6.73	2.16	371
SMAR2222-R16□	7.37 ± 0.381	5.59 ± 0.254	5.69 ± 0.254	6.60	6.73	2.16	425
SMAR2222-R18□	8.13 ± 0.381	5.59 ± 0.254	5.69 ± 0.254	7.37	6.73	2.16	460
SMAR2222-R22□	9.91 ± 0.381	5.59 ± 0.254	5.69 ± 0.254	9.14	6.73	2.16	550
SMAR2222-R27□	11.68 ± 0.381	5.59 ± 0.254	5.69 ± 0.254	10.67	6.73	2.16	640
SMAR2222-R30□	11.94 ± 0.381	5.72 ± 0.254	5.69 ± 0.254	11.18	6.73	2.16	650
SMAR2929-R33□	10.29 ± 0.381	7.49 ± 0.254	7.24 ± 0.254	9.53	8.26	2.29	855
SMAR2929-R36□	11.30 ± 0.381	7.49 ± 0.254	7.24 ± 0.254	10.541	8.26	2.29	928
SMAR2929-R39□	12.32 ± 0.381	7.49 ± 0.254	7.24 ± 0.254	11.56	8.26	2.29	990
SMAR2929-R43□	13.21 ± 0.381	7.49 ± 0.254	7.24 ± 0.254	12.45	8.26	2.29	1072
SMAR2929-R50□	14.00 ± 0.381	7.49 ± 0.254	7.24 ± 0.254	13.21	8.26	2.29	1160

ELECTRICAL CHARACTERISTICS: @25°C

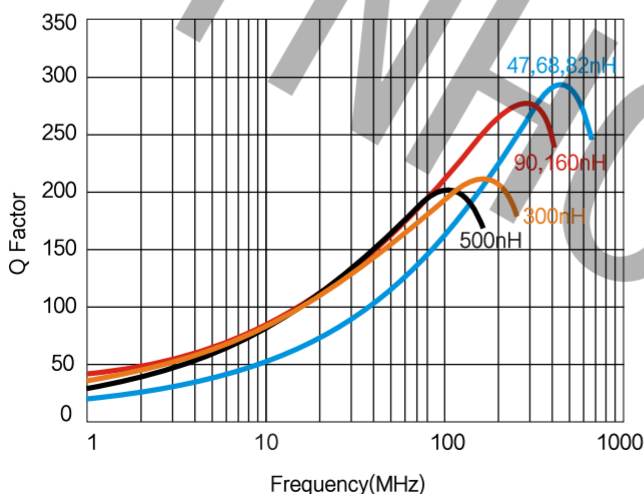
Part No.	Inductance (nH)	Tol ± %	Q Typ.	SRF(GHz) Typ.	DCR(mΩ) Max	Irms (A)
SMAR1515-47N□	47	2,5	230	1.87	6.35	4.9
SMAR1515-68N□	68	2,5	230	2.13	8.6	5.5
SMAR1515-82N□	82	2,5	230	1.79	9.4	5.6
SMAR2222-90N□	90	2,5	140	1.15	5.5	5.0
SMAR2222-R11□	110	2,5	140	1.0	6.5	5.7
SMAR2222-R13□	130	2,5	140	1.0	7.5	5.4
SMAR2222-R16□	160	2,5	140	1.0	8.25	5.7
SMAR2222-R18□	180	2,5	140	1.1	9.5	5.0
SMAR2222-R22□	220	2,5	140	1.0	11.0	5.0
SMAR2222-R27□	270	2,5	140	0.8	12.5	4.3
SMAR2222-R30□	300	2,5	150	0.72	13.8	3.7
SMAR2929-R33□	330	2,5	180	0.66	12.5	4.7
SMAR2929-R36□	360	2,5	180	0.62	13.5	4.5
SMAR2929-R39□	390	2,5	180	0.59	14.5	4.4
SMAR2929-R43□	430	2,5	180	0.55	15.5	4.2
SMAR2929-R50□	500	2,5	180	0.5	16.5	4.3

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

Notes:

- Inductance measured at 400MHz, 0.1Vrms, 0 A(SMAR1515) , 50MHz, 0.1Vrms, 0A(SMAR2222,SMAR2929)using HP4287A LCR meter or equivalent .
- Q measured at 400MHz(SMAR1515) , 50MHz(SMAR2222,SMAR2929)using HP4287A LCR meter or equivalent.
- SRF measured using HP8753 network analyzer.
- Current that causes a 20°C temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings
- Electrical specifications at 25°C
- Operating temperature: -40°C ~ +145°C, (Including coil's self temperature rise).
- Ambient temperature: -40°C ~ +125°C. (with Irms current)
- Storage temperature(on tape & reel packing): -40°C ~ +80°C; 75% RH max.

Typical Q vs Frequency



Typical L vs Frequency

