



SMD AIR WOUND COILS

29XXX

Revision: A

Frontier Electronics Corp.[®]

<http://www.frontierusa.com>

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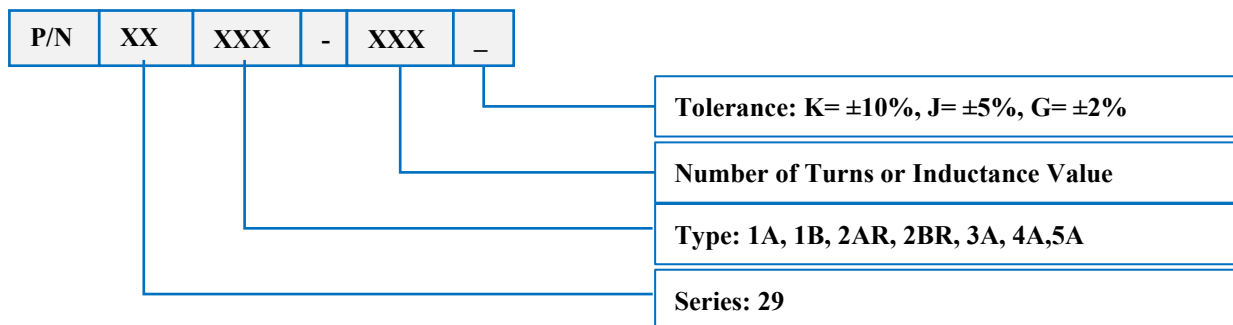
SMD Air Wound Coils Series

- | | |
|----------|---------|
| 1. 291A | 5. 293A |
| 2. 291B | 6. 294A |
| 3. 292AR | 7. 295A |
| 4. 292BR | |

General Information:

1. High Q
2. High self-resonance frequency
3. DCR measured with the 16502 milli-ohm meter
4. Inductance & Q measured with HP4291B Impedance Analyzer with HP16193 test fixture
5. SRF measured using the HP8753E Network Analyzer or equivalent
6. Operating temperature: -40°C to +125°C
7. Storage temperature: -25°C to +85°C
8. Temperature Rise (Typical): < 15°C (@ 20°C ambient & Rated Current)
9. MSL: Level 1
10. Inductance and Current range:
 - a. 291A/B: From 2.5 nH (4.0A) to 43.0 nH (4.0A)
 - b. 292AR/BR: From 1.65 nH (1.6 A) to 12.55 nH (1.6 A)
 - c. 293A: From 22 nH (3.0 A) to 120 nH (1.5 A)
 - d. 294A: From 90 nH (3.5 A) to 538 nH (2.0 A)
 - e. 295A: From 3.7 nH (7.0 A) to 17.5 nH (7.0 A)
11. SRF:
 - a. 291A/B: 1200 MHz to 12500 MHz
 - b. 292AR/BR: From 4600 MHz to 10000 MHz
 - c. 293A: From 1100 MHz to 3200 MHz
 - d. 294A: From 490 MHz to 1140 MHz
 - e. 295A: From 2200 MHz to 17500 MHz

P/N Coding:



Applications:

1. RF Filters (Low Pass, High Pass, Diplexers etc.)
2. Garage Door Openers
3. Radio Control devices
4. RF Amplifiers
5. 5G Systems

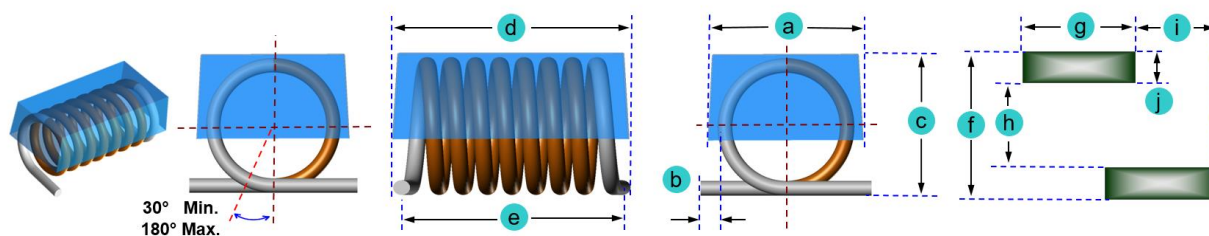
SERIES: 291A & 291B

Electrical Specifications:

P/N	Turns	L (nH)	Tol.	Q Min.	Test Freq. (MHz)	DCR max. (mΩ)	SRF min. (GHz)	I DC max. (A)
291A-01	1	2.5	K	145	150	1.1	12.5	4
291A-02	2	5.0	K, J	140	150	1.8	6.5	4
291A-03	3	8.0	J, G	140	150	2.6	5.0	4
291A-04	4	12.5	J, G	137	150	3.4	3.3	4
291A-05	5	18.5	J, G	132	150	3.9	2.5	4
291B-06	6	17.5	J, G	100	150	4.5	2.2	4
291B-07	7	22.0	J, G	102	150	5.2	2.1	4
291B-08	8	28.0	J, G	105	150	6.0	1.8	4
291B-09	9	35.5	J, G	112	150	6.8	1.5	4
291B-10	10	43.0	J, G	106	150	7.9	1.2	4

Dimensions: mm (Inch):

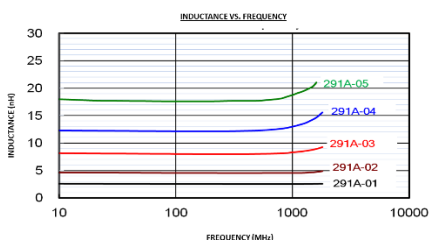
Series	a	b	c	d	e	f	g	h	i	i
291A	3.05 (0.120)	0.58 (0.023)	3.18 (0.125)	3.68 (0.145)	2.92 (0.115)	4.19 (0.165)	3.30 (0.130)	1.65 (0.065)	2.79 (0.110)	1.27 (0.05)
Tol.	Max.	±0.38 (0.015)	Max.	Max.	±0.25 (0.010)	Typ.	Typ.	Typ.	Typ.	Typ.
291B	3.05 (0.120)	0.58 (0.023)	3.18 (0.125)	6.86 (0.270)	5.84 (0.230)	7.24 (0.285)	3.30 (0.130)	4.70 (0.185)	2.79 (0.110)	1.27 (0.05)
Tol.	Max.	±0.38 (0.015)	Max.	Max.	±0.25 (0.010)	Typ.	Typ.	Typ.	Typ.	Typ.



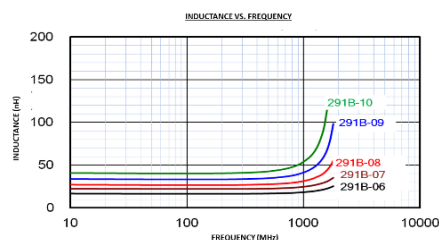
Characteristics Curves:

Inductance vs. Frequency

291A Series

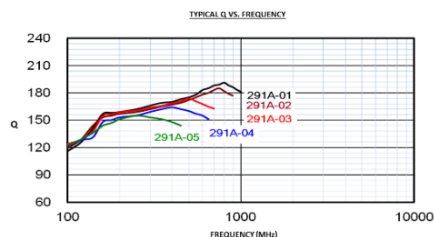


291B Series

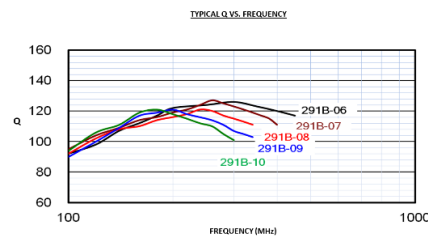


Q vs. Frequency

291A Series



291B Series



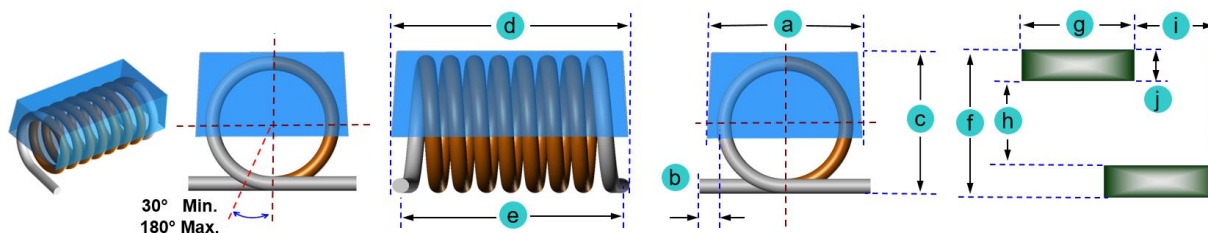
SERIES: 292AR & 292BR

Electrical Specifications:

P/N	Turns	L @100MHz (nH)	Tol.	Q Min.	Test Freq. (MHz)	DCR max. (mΩ)	SRF min. (GHz)	I DC max. (A)
292AR-02	2	1.65	K	100	800	4.0	10.0	1.6
292AR-03	3	2.55	K, J	100	800	5.0	8.2	1.6
292AR-04	4	3.85	K, J, G	100	800	6.0	7.5	1.6
292AR-05	5	5.45	J, G	100	800	8.0	7.0	1.6
292BR-06	6	5.60	J, G	100	800	9.0	6.5	1.6
292BR-07	7	7.15	J, G	100	800	10.0	6.0	1.6
292BR-08	8	8.80	J, G	100	800	12.0	6.0	1.6
292BR-09	9	9.85	J, G	100	800	13.0	5.2	1.6
292BR-10	10	12.55	J, G	100	800	14.0	4.6	1.6

Dimensions: mm (Inch):

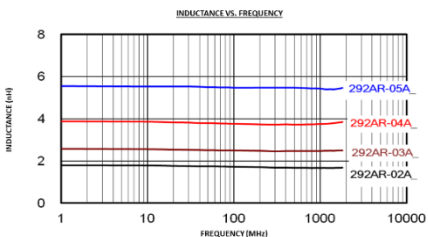
Series	a	b	c	d	e	f	g	h	I	j
292AR	1.42 (0.055)	0.89 (0.035)	1.37 (0.053)	2.21 (0.087)	1.83 (0.072)	2.62 (0.103)	2.46 (0.096)	1.04 (0.04)	1.02 (0.04)	0.79 (0.031)
Tol.	±0.13 (0.005)	±0.25 (0.009)	±0.15 (0.005)	±0.25 (0.009)	±0.25 (0.009)	Typ.	Typ.	Typ.	Typ.	Typ.
292BR	1.42 (0.055)	0.89 (0.035)	1.37 (0.053)	4.04 (0.159)	3.66 (0.144)	4.45 (0.175)	2.46 (0.096)	2.87 (0.112)	1.02 (0.04)	0.79 (0.031)
Tol.	±0.13 (0.005)	±0.25 (0.009)	±0.15 (0.005)	±0.3 (0.011)	±0.25 (0.009)	Typ.	Typ.	Typ.	Typ.	Typ.



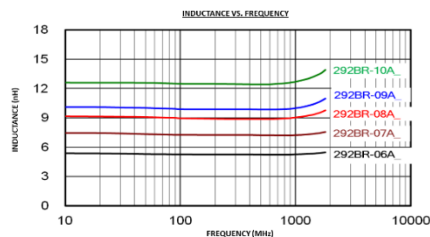
Characteristics Curves:

Inductance vs. Frequency

292AR Series

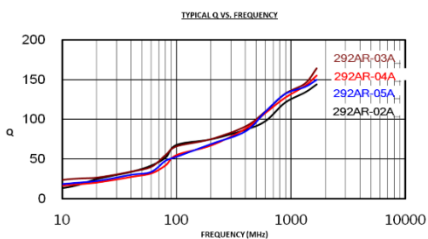


292BR Series

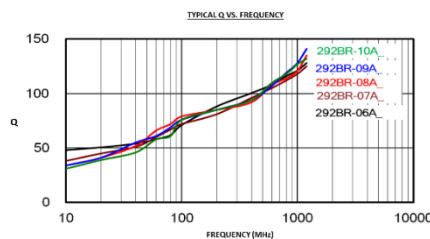


Q vs. Frequency

292AR Series



292BR Series



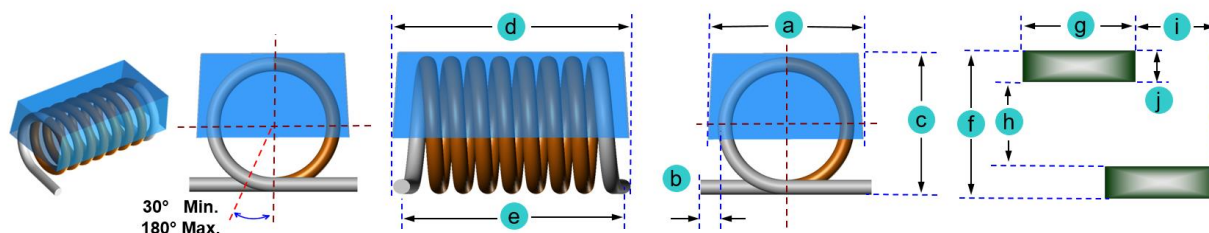
SERIES: 293A

Electrical Specifications:

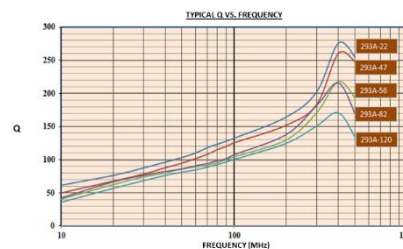
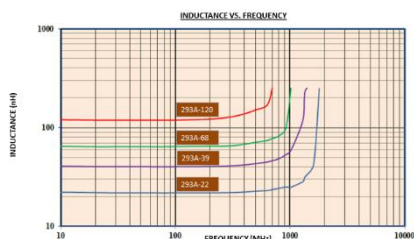
P/N	L (nH)	Tol.	Q Min.	Q Typ.	Test Freq. (MHz)	DCR max. (mΩ)	SRF min. (GHz)	I DC max. (A)
293A-22	22	J, G	100	135	150	4.2	3.2	3.0
293A-27	27	J, G	100	135	150	4.0	2.7	3.5
293A-33	33	J, G	100	130	150	4.8	2.5	3.0
293A-39	39	J, G	100	135	150	4.4	2.1	3.0
293A-47	47	J, G	100	135	150	5.6	2.1	3.0
293A-56	56	J, G	100	125	150	6.2	1.5	3.0
293A-68	68	J, G	100	120	150	8.2	1.5	2.5
293A-82	82	J, G	100	120	150	9.4	1.3	2.5
293A-100	100	J, G	100	115	150	12.3	1.2	1.7
293A-120	120	J, G	100	125	150	17.3	1.1	1.5

Dimensions: mm (Inch):

Series	a	b	c	d	e	f	g	h	i	j
293A	3.81 (0.150)	1.53 (0.060)	4.2 (0.165)	4.83 (0.190)	4.32 (0.170)	5.8 (0.228)	5.16 (0.203)	2.85 (0.112)	2.62 (0.103)	1.48 (0.058)
Tol.	Max.	±0.39 (0.015)	Max.	Max.	±0.39 (0.015)	Typ.	Typ.	Typ.	Typ.	Typ.



Characteristics Curves:



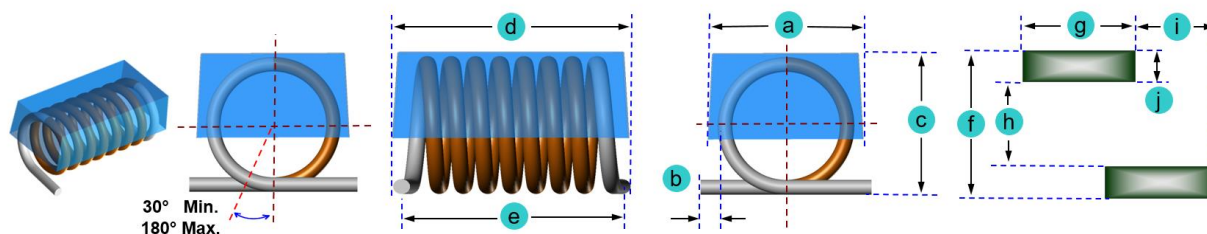
SERIES: 294A

Electrical Specifications:

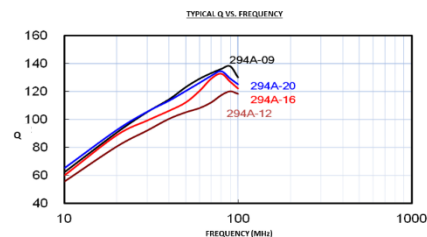
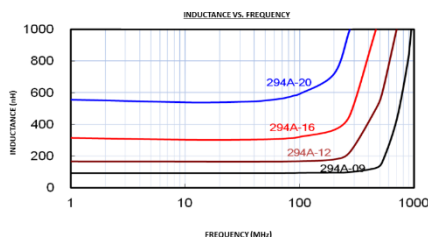
P/N	Turns	L (nH)	Tol.	Q Min.	Q Typ.	Test Freq. (MHz)	DCR Max. (mΩ)	SRF Min. (MHz)	I DC Max. (A)
294A-09	9	90	J, G	95	114	50	15	1140	3.5
294A-10	10	111	J, G	87	104	50	15	1020	3.5
294A-11	11	130	J, G	87	104	50	20	900	3.0
294A-12	12	169	J, G	95	114	50	25	875	3.0
294A-13	13	206	J, G	95	114	50	30	800	3.0
294A-14	14	222	J, G	92	110	50	35	730	3.0
294A-15	15	246	J, G	95	114	50	35	685	3.0
294A-16	16	307	J, G	95	114	50	35	660	3.0
294A-17	17	380	J, G	95	114	50	50	590	2.5
294A-18	18	422	J, G	95	114	50	60	540	2.5
294A-19	19	491	J, G	95	114	50	65	535	2.0
294A-20	20	538	J, G	87	104	50	90	490	2.0

Dimensions: mm (Inch):

Series	a	b	c	d	e	f	g	h	i	j
294A	6.35 (0.250)	1.02 (0.040)	5.9 (0.232)	10.55 (0.415)	7.98 (0.314)	10 (0.394)	4.7 (0.185)	5.95 (0.234)	2.42 (0.095)	2.04 (0.080)
Tol.	Max.	±0.39 (0.015)	Max.	Max.	±0.51 (0.02)	Typ.	Typ.	Typ.	Typ.	Typ.



Characteristics Curves:



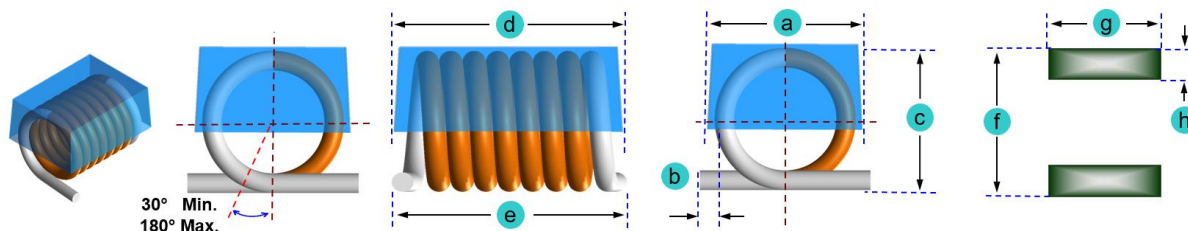
SERIES: 295A

Electrical Specifications:

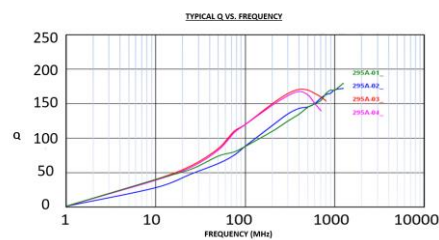
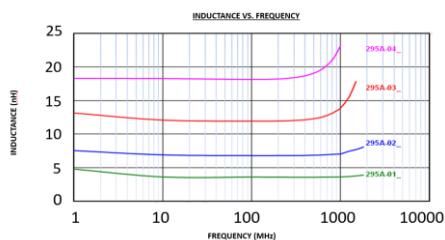
P/N	Turns	L (nH)	Tol.	Q Typ.	Test Freq. (MHz)	DCR Max. (mΩ)	SRF Min. (MHz)	I DC Max. (A)
295A-01_	1	3.7	J	100	150	2.0	17500	7.0
295A-02_	2	6.6	J	100	150	2.0	4000	7.0
295A-03_	3	12.0	J	140	150	2.0	2400	7.0
295A-04_	4	17.5	J	140	150	2.0	2200	7.0

Dimensions: mm (Inch):

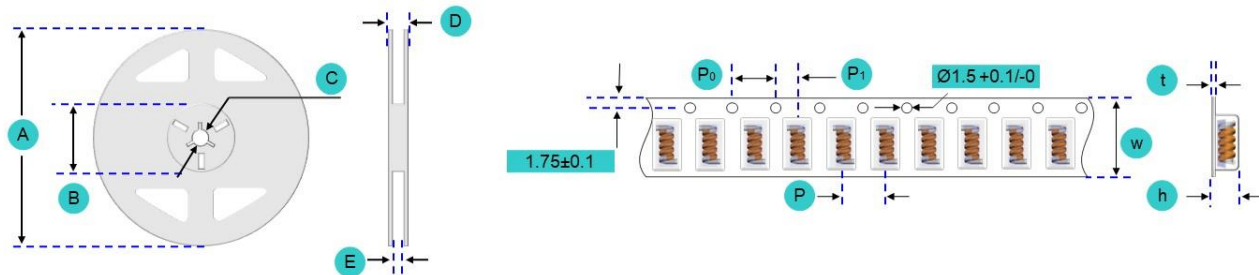
Series	a	b	c	d	e	f	g	h
295A-01	5.71 (0.225)	0.25 (0.010)	5.33 (0.210)	4.70 (0.185)	4.70 (0.185)	4.572 (0.18)	5.84 (0.23)	1.524 (0.06)
Tol.	Max	Typ.	Max	Max	Max	Typ.	Typ.	Typ.
295A-02	5.46 (0.215)	0.25 (0.010)	4.95 (0.195)	4.45 (0.175)	4.45 (0.175)	4.572 (0.18)	5.84 (0.23)	1.524 (0.06)
Tol.	Max	Typ.	Max	Max	Max	Typ.	Typ.	Typ.
295A-03	5.46 (0.215)	0.25 (0.010)	4.95 (0.195)	4.96 (0.195)	4.96 (0.195)	5.207 (0.21)	5.84 (0.23)	1.524 (0.06)
Tol.	Max	Typ.	Max	Max	Max.	Typ.	Typ.	Typ.
295A-04	5.59 (0.220)	0.25 (0.010)	4.95 (0.195)	5.84 (0.230)	5.84 (0.230)	5.969 (0.24)	5.84 (0.23)	1.524 (0.06)
Tol.	Max	Typ.	Max	Max	Max	Typ.	Typ.	Typ.



Characteristics Curves:



Tape & Reel Specifications



SMD Air Wound Coils

Series P/N	Reel dimensions (mm)					Tape dimensions (mm)						Parts per reel		Quantity per	
	A	B	C	D	E	W	P	P0	P1	h	t	7"	13"	Box	Carton
291A	180	75	13	16.5	12.5	12	8	4	2	3.30	0.25	500	---	2,000	12,000
291B	180	75	13	20.5	16.5	16	8	4	2	3.30	0.25	500	---	1,500	9,000
292AR	180	75	13	12.5	8.5	8	4	4	2	1.70	0.30	2,000	---	10,000	60,000
292BR	180	50	13	18.4	12.5	12	4	4	2	1.75	0.35	2,000	---	6,000	36,000
293A	340	100	13	25.5	16.5	16	12	4	2	4.40	0.30	---	1,000	1,000	10,000
294A	340	100	13	30.4	24.5	24	12	4	2	5.30	0.35	---	1,000	1,000	8,000
295A	340	100	13	18.4	12.5	12	12	4	2	5.70	0.40	---	1,000	3,000	9,000

SMD Solder Profile

