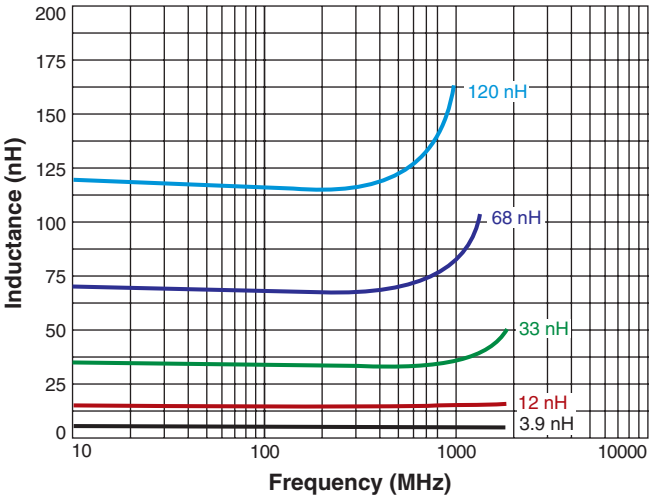
Outgassing Compliant Chip Inductors AE312RAA

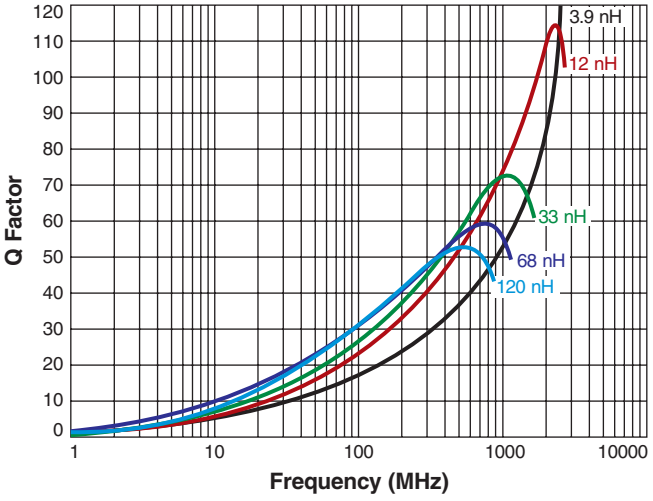
Small size, exceptional Q and high SRFs make these inductors ideal for high frequency applications where size is at a premium. They also have excellent DCR and current carrying characteristics.

This robust version of Coilcraft's standard 0603CS series features high temperature materials that pass NASA low outgassing specifications and allows operation in ambient temperatures up to 155°C. The leach-resistant base metalization with tin-lead (Sn-Pb) terminations ensures the best possible board adhesion.

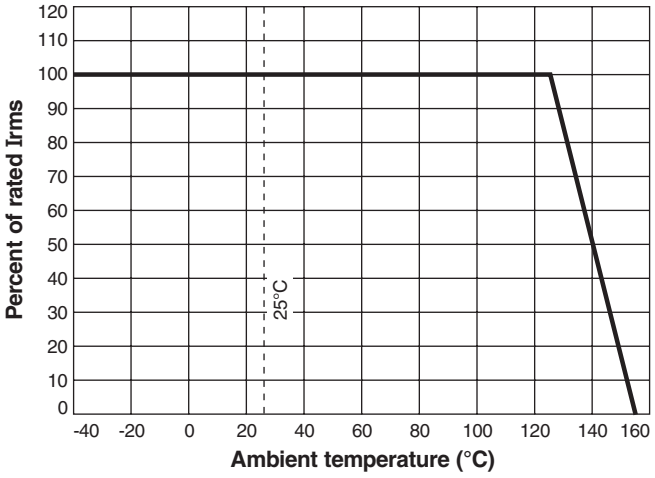
Typical L vs Frequency

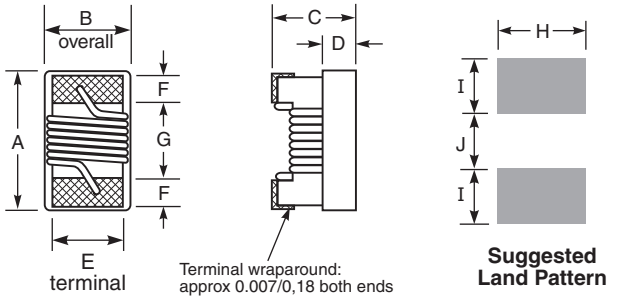


Typical Q vs Frequency



Current Derating





A max	B max	C max	D ref	E	F	G	H	I	J
0.071	0.044	0.040	0.015	0.030	0.013	0.034	0.040	0.025	0.025
1,80	1,12	1,02	0,38	0,76	0,33	0,86	1,02	0,64	0,64

Note: Dimensions are before solder application. For maximum overall dimensions including solder, add 0.0025 in / 0,064 mm to **B** and 0.006 in / 0,15 mm to **A** and **C**.

Core material Ceramic

Terminations Tin-lead (63/37) over silver-platinum-glass frit

Ambient temperature –55°C to +125°C with Imax current, +125°C to +155°C with derated current

Storage temperature Component: –55°C to +155°C. Packaging: –55°C to +80°C

Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Temperature Coefficient of Inductance (TCL) +25 to +155 ppm/°C

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

Enhanced crush-resistant packaging 2000 per 7″ reel
Paper tape: 8 mm wide, 1.0 mm thick, 4 mm pocket spacing

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AE312RAA Series (0603)

Part number[1]	Inductance[2] (nH)	Percent tolerance	Q min[3]	900 MHz L typ	900 MHz Q typ	1.7 GHz L typ	1.7 GHz Q typ	SRF min[4] (MHz)	DCR max[5] (Ohms)	Imax (mA)
AE312RAA1N6JSZ	1.6 @ 250 MHz	5	26	1.67	49	1.65	63	>5000	0.022	700
AE312RAA1N8JSZ	1.8 @ 250 MHz	5	21	1.83	35	1.86	50	>5000	0.045	700
AE312RAA3N3_SZ	3.3 @ 250 MHz	5,2	35	3.31	75	3.38	88	>5000	0.045	700
AE312RAA3N6_SZ	3.6 @ 250 MHz	5,2	18	3.72	53	3.71	65	>5000	0.063	700
AE312RAA3N9_SZ	3.9 @ 250 MHz	5,2	20	3.95	49	3.96	67	>5000	0.080	700
AE312RAA4N3_SZ	4.3 @ 250 MHz	5,2	29	4.32	50	4.33	70	>5000	0.063	700
AE312RAA4N7_SZ	4.7 @ 250 MHz	5,2	18	4.72	47	4.75	57	>5000	0.116	605
AE312RAA5N1_SZ	5.1 @ 250 MHz	5,2	20	4.93	47	4.95	56	>5000	0.140	510
AE312RAA5N6_SZ	5.6 @ 250 MHz	5,2,1	25	5.77	63	6.05	80	4760	0.075	700
AE312RAA6N8_SZ	6.8 @ 250 MHz	5,2,1	28	6.75	60	7.10	81	4660	0.110	700
AE312RAA7N5_SZ	7.5 @ 250 MHz	5,2,1	23	7.70	60	7.82	65	4320	0.106	700
AE312RAA8N2_SZ	8.2 @ 250 MHz	5,2,1	26	8.25	82	8.37	87	3880	0.115	700
AE312RAA8N7_SZ	8.7 @ 250 MHz	5,2,1	27	8.86	62	9.32	58	3680	0.109	700
AE312RAA9N5_SZ	9.5 @ 250 MHz	5,2,1	22	9.70	59	9.92	61	4100	0.135	700
AE312RAA10N_SZ	10 @ 250 MHz	5,2,1	28	10.0	66	10.6	83	3860	0.130	700
AE312RAA11N_SZ	11 @ 250 MHz	5,2,1	26	11.0	53	11.5	56	3640	0.130	700
AE312RAA12N_SZ	12 @ 250 MHz	5,2,1	29	12.3	72	13.5	83	3220	0.130	620
AE312RAA15N_SZ	15 @ 250 MHz	5,2,1	28	15.4	64	16.8	89	3020	0.170	600
AE312RAA16N_SZ	16 @ 250 MHz	5,2,1	29	16.2	55	17.3	52	3040	0.170	600
AE312RAA18N_SZ	18 @ 250 MHz	5,2,1	29	18.7	70	21.4	69	2680	0.170	600
AE312RAA22N_SZ	22 @ 250 MHz	5,2,1	31	22.8	73	26.1	71	2380	0.190	560
AE312RAA23N_SZ	23 @ 250 MHz	5,2,1	39	24.1	71	28.0	67	2380	0.190	560
AE312RAA24N_SZ	24 @ 250 MHz	5,2,1	36	24.5	45	28.7	39	2380	0.190	560
AE312RAA27N_SZ	27 @ 250 MHz	5,2,1	32	29.2	74	34.6	65	2380	0.220	530
AE312RAA30N_SZ	30 @ 250 MHz	5,2,1	32	31.4	47	39.9	28	2240	0.220	500
AE312RAA33N_SZ	33 @ 250 MHz	5,2,1	33	36.0	67	49.5	42	1900	0.220	500
AE312RAA36N_SZ	36 @ 250 MHz	5,2,1	32	39.4	47	52.7	24	1960	0.250	460
AE312RAA39N_SZ	39 @ 250 MHz	5,2,1	36	42.7	60	60.2	40	1740	0.250	460
AE312RAA43N_SZ	43 @ 250 MHz	5,2,1	28	47.0	44	64.9	21	1580	0.280	440
AE312RAA47N_SZ	47 @ 200 MHz	5,2,1	35	52.2	62	77.2	35	1560	0.280	440
AE312RAA51N_SZ	51 @ 200 MHz	5,2,1	38	55.5	69	82.2	34	1560	0.270	420
AE312RAA56N_SZ	56 @ 200 MHz	5,2,1	37	62.5	56	97	26	1480	0.310	420
AE312RAA68N_SZ	68 @ 200 MHz	5,2,1	35	80.5	54	168	21	1380	0.340	410
AE312RAA72N_SZ	72 @ 200 MHz	5,2,1	35	82.0	53	135	20	1360	0.490	340
AE312RAA82N_SZ	82 @ 150 MHz	5,2,1	29	96.2	54	177	21	1300	0.540	340
AE312RAAR10_SZ	100 @ 150 MHz	5,2,1	28	124	49	—	—	1140	0.580	310
AE312RAAR11_SZ	110 @ 150 MHz	5,2,1	30	138	43	—	—	1080	0.610	310
AE312RAAR12_SZ	120 @ 150 MHz	5,2,1	28	166	39	—	—	1020	0.650	270
AE312RAAR15_SZ	150 @ 150 MHz	5,2,1	28	250	25	—	—	900	0.915	250
AE312RAAR18_SZ	180 @ 100 MHz	5,2,1	25	305	22	—	—	820	1.25	210

1. When ordering, please specify **tolerance** and **testing** codes:

   AE312RAAR39JSZ

   Tolerance: **F** = 1% **G** = 2% **J** = 5%
   Testing: **Z** = COTS
   H = Screening per Coilcraft CP-SA-10001
   N = Screening per Coilcraft CP-SA-10003
2. Inductance measured using a Coilcraft SMD-A test fixture and Coilcraft-provided correlation pieces with an Agilent/HP 4286A impedance analyzer or equivalent.
3. Q measured at the same frequency as inductance using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.
4. SRF measured using an Agilent/HP 8753ES network analyzer and a Coilcraft CCF1232 test fixture.
5. DCR measured on a Keithley 580 micro-ohmmeter and a Coilcraft CCF1010 test fixture.
6. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

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