

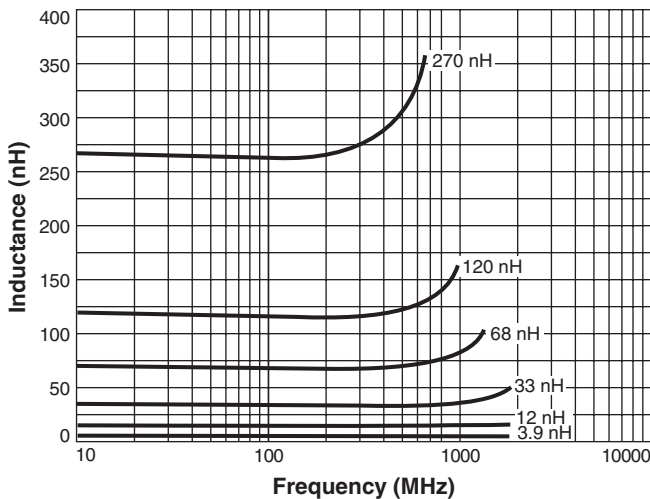
PRELIMINARY

Outgassing Compliant Chip Inductors AE312RAA

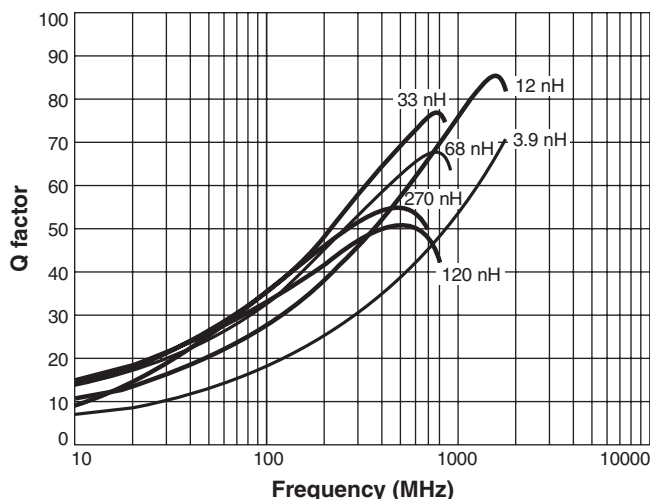
Small size, exceptional Q and high SRFs make these inductors ideal for high frequency applications where size is at a premium. They also have excellent DCR and current carrying characteristics.

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.

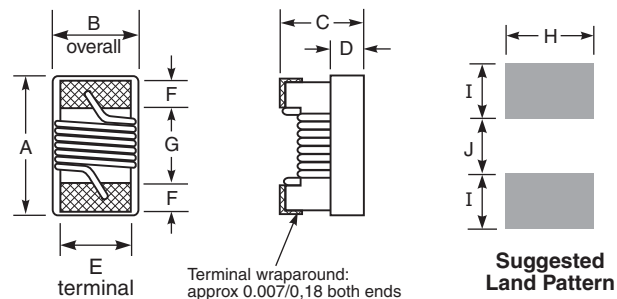
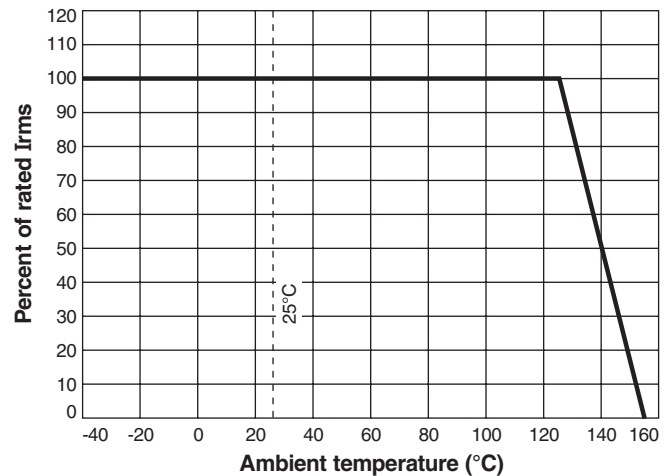
Typical L vs Frequency



Typical Q vs Frequency



Current Derating



A	B	C	D	E	F	G	H	I	J
max	max	max	ref						
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

All dimensions are without solder applied to the terminations. For maximum dimensions with solder, add 0.006 inches / 0,152 mm.

Core material Ceramic

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

Ambient temperature -55°C to +125°C with I max 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

Coilcraft **CPS**
CRITICAL PRODUCTS & SERVICES

These parts are preproduction products for electrical evaluation only.
Specification subject to change without notice.

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PRELIMINARY**AE312RAA Series (0603)**

Part number ¹	Inductance ² (nH)	Percent tolerance	Q min ³	900 MHz		1.7 GHz		SRF min ⁴ (MHz)	DCR max ⁵ (Ohms)	Imax (mA)
				L typ	Q typ	L typ	Q typ			
AE312RAA1N6JSZ	1.6 @ 250 MHz	5	26	1.67	49	1.65	63	12500	0.022	1800
AE312RAA1N8JSZ	1.8 @ 250 MHz	5	21	1.83	35	1.86	50	12500	0.045	700
AE312RAA2N2JSZ	2.2 @ 250 MHz	5	11	2.22	31	2.24	44	12500	0.240	100
AE312RAA3N3_SZ	3.3 @ 250 MHz	5,2	35	3.31	75	3.38	88	5900	0.045	700
AE312RAA3N6_SZ	3.6 @ 250 MHz	5,2	18	3.72	53	3.71	65	5900	0.063	1160
AE312RAA3N9_SZ	3.9 @ 250 MHz	5,2	20	3.95	49	3.96	67	6900	0.080	700
AE312RAA4N3_SZ	4.3 @ 250 MHz	5,2	29	4.32	50	4.33	70	5900	0.063	1160
AE312RAA4N7_SZ	4.7 @ 250 MHz	5,2	18	4.72	47	4.75	57	5800	0.116	700
AE312RAA5N1_SZ	5.1 @ 250 MHz	5,2	20	4.93	47	4.95	56	5700	0.140	700
AE312RAA5N6_SZ	5.6 @ 250 MHz	5,2	25	5.77	63	6.05	80	4760	0.075	700
AE312RAA6N8_SZ	6.8 @ 250 MHz	5,2	28	6.75	60	7.10	81	4660	0.110	700
AE312RAA7N5_SZ	7.5 @ 250 MHz	5,2	23	7.70	60	7.82	65	4320	0.106	800
AE312RAA8N2_SZ	8.2 @ 250 MHz	5,2	26	8.25	82	8.37	87	3880	0.115	700
AE312RAA8N7_SZ	8.7 @ 250 MHz	5,2	27	8.86	62	9.32	58	3680	0.109	700
AE312RAA9N5_SZ	9.5 @ 250 MHz	5,2	22	9.7	59	9.92	61	4100	0.135	700
AE312RAA10N_SZ	10 @ 250 MHz	5,2	28	10.0	66	10.6	83	3860	0.130	700
AE312RAA11N_SZ	11 @ 250 MHz	5,2	26	11.0	53	11.5	56	3640	0.130	700
AE312RAA12N_SZ	12 @ 250 MHz	5,2	29	12.3	72	13.5	83	3220	0.130	700
AE312RAA15N_SZ	15 @ 250 MHz	5,2	28	15.4	64	16.8	89	3020	0.170	700
AE312RAA16N_SZ	16 @ 250 MHz	5,2	29	16.2	55	17.3	52	3040	0.170	700
AE312RAA18N_SZ	18 @ 250 MHz	5,2	29	18.7	70	21.4	69	2680	0.170	700
AE312RAA22N_SZ	22 @ 250 MHz	5,2	31	22.8	73	26.1	71	2380	0.190	700
AE312RAA23N_SZ	23 @ 250 MHz	5,2	39	24.1	71	28.0	67	2380	0.190	700
AE312RAA24N_SZ	24 @ 250 MHz	5,2	36	24.5	45	28.7	39	2380	0.190	700
AE312RAA27N_SZ	27 @ 250 MHz	5,2	32	29.2	74	34.6	65	2380	0.220	600
AE312RAA30N_SZ	30 @ 250 MHz	5,2	32	31.4	47	39.9	28	2240	0.220	600
AE312RAA33N_SZ	33 @ 250 MHz	5,2	33	36.0	67	49.5	42	1900	0.220	600
AE312RAA36N_SZ	36 @ 250 MHz	5,2	32	39.4	47	52.7	24	1960	0.250	600
AE312RAA39N_SZ	39 @ 250 MHz	5,2	36	42.7	60	60.2	40	1740	0.250	600
AE312RAA43N_SZ	43 @ 250 MHz	5,2	28	47.0	44	64.9	21	1580	0.280	600
AE312RAA47N_SZ	47 @ 200 MHz	5,2	35	52.2	62	77.2	35	1560	0.280	600
AE312RAA51N_SZ	51 @ 200 MHz	5,2	38	55.5	69	82.2	34	1560	0.270	600
AE312RAA56N_SZ	56 @ 200 MHz	5,2	37	62.5	56	97.0	26	1480	0.310	600
AE312RAA68N_SZ	68 @ 200 MHz	5,2	35	80.5	54	168	21	1380	0.340	600
AE312RAA72N_SZ	72 @ 200 MHz	5,2	35	82.0	53	135	20	1360	0.490	400
AE312RAA82N_SZ	82 @ 150 MHz	5,2	29	96.2	54	177	21	1300	0.540	400
AE312RAAR10_SZ	100 @ 150 MHz	5,2	28	124	49	—	—	1140	0.580	400
AE312RAAR11_SZ	110 @ 150 MHz	5,2	30	138	43	—	—	1080	0.610	300
AE312RAAR12_SZ	120 @ 150 MHz	5,2	28	166	39	—	—	1020	0.650	300
AE312RAAR15_SZ	150 @ 150 MHz	5,2	28	250	25	—	—	900	0.915	280
AE312RAAR18_SZ	180 @ 100 MHz	5,2	25	305	22	—	—	820	1.25	240
AE312RAAR20_SZ	200 @ 100 MHz	5,2	25	—	—	—	—	800	1.98	200
AE312RAAR21_SZ	210 @ 100 MHz	5,2	26	—	—	—	—	780	2.06	200
AE312RAAR22_SZ	220 @ 100 MHz	5,2	26	—	—	—	—	760	2.10	200
AE312RAAR25_SZ	250 @ 100 MHz	5,2	24	—	—	—	—	740	3.55	120
AE312RAAR27_SZ	270 @ 100 MHz	5,2	26	—	—	—	—	700	2.30	170
AE312RAAR33_SZ	330 @ 100 MHz	5,2	26	—	—	—	—	620	3.89	100
AE312RAAR39_SZ	390 @ 100 MHz	5,2	27	—	—	—	—	580	4.35	100

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

AE312RAAR39JSZ

Tolerance: G = 2% J = 5%

Testing: Z = COTS

H = Screening per Coilcraft CP-SA-10001

N = Screening per Coilcraft CP-SA-10003

C = Custom screening (please specify when ordering)

- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286 impedance analyzer or equivalent with Coilcraft-provided correlation pieces.
- Q measured at the same frequency as inductance using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture or equivalents.
- For SRF ≤ 6 GHz, SRF measured using an Agilent/HP 8753ES network analyzer or equivalent and a Coilcraft SMD-D test fixture. For SRF > 6 GHz, SRF measured using an Agilent/HP 8753ES network analyzer or equivalent and a test fixture with an air gap.
- DCR measured on a Keithley micro-ohmmeter or equivalent and a Coilcraft CCF858 test fixture.
- Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



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