

Outgassing Compliant Chip Inductors AR312RAA

- Exceptional Q and high SRFs
- DCR and current carrying characteristics
- Outstanding self-resonant frequency
- Tight inductance tolerance
- High temperature materials allow operation in ambient temperatures up to 155°C.
- Passes NASA low outgassing specifications
- Standard tin-lead (Sn-Pb) terminations over leach-resistant base metalization ensures the best possible board adhesion

Core material Ceramic

Terminations Tin-lead (63/37) over silver-platinum-glass frit. Other terminations are also available.

Ambient temperature -65°C to +125°C with I_{max} current

Maximum part temperature +155°C (ambient + temp rise)

Storage temperature Component: -65°C to +155°C.

Tape and reel packaging: -55°C to +80°C

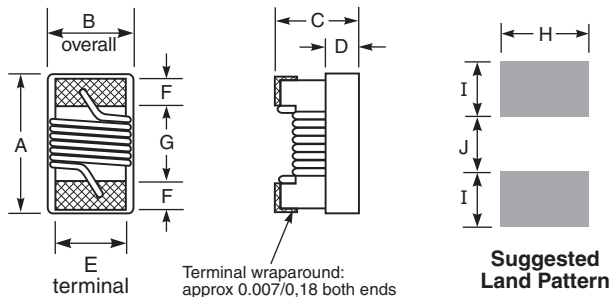
Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

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

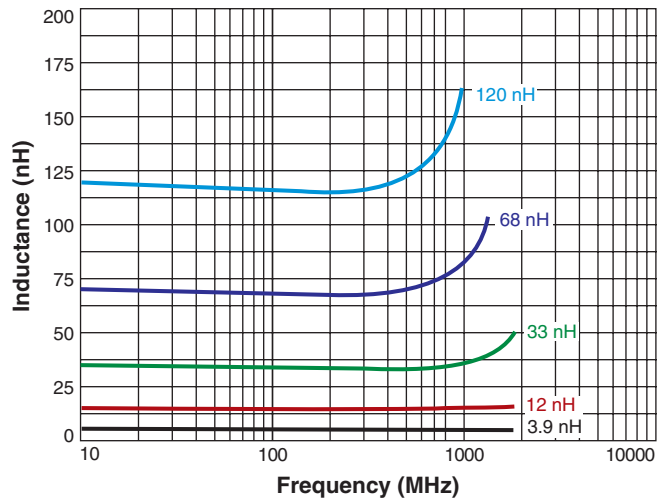
Paper tape: 8 mm wide, 1.0 mm thick, 4 mm pocket spacing



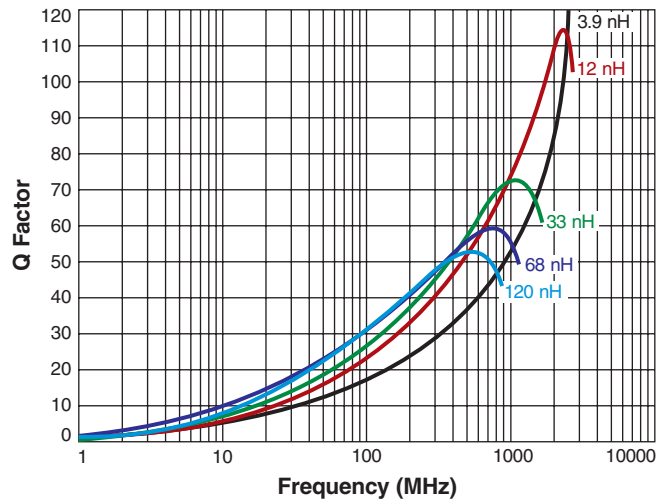
A	B	C	D	E	F	G	H	I	J
max	max	max	ref						
0,071	0,044	0,040	0,015	0,030	0,013	0,034	0,040	0,025	0,025
1,80	1,12	1,02	0,38	0,76	0,33	0,86	1,02	0,64	0,64

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.

Typical L vs Frequency



Typical Q vs Frequency



AR312RAA 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)	I _{max} (mA)
				L typ	Q typ	L typ	Q typ			
AR312RAA1N6JSZ	1.6 @ 250 MHz	5	26	1.67	49	1.65	63	>5000	0.022	700
AR312RAA1N8JSZ	1.8 @ 250 MHz	5	21	1.83	35	1.86	50	>5000	0.045	700
AR312RAA2N2JSZ ⁶	2.2 @ 250 MHz	5	11	2.22	31	2.24	44	>5000	0.24	100
AR312RAA3N3_SZ	3.3 @ 250 MHz	5,2	35	3.31	75	3.38	88	>5000	0.045	700
AR312RAA3N6_SZ	3.6 @ 250 MHz	5,2	18	3.72	53	3.71	65	>5000	0.063	700
AR312RAA3N9_SZ	3.9 @ 250 MHz	5,2	20	3.95	49	3.96	67	>5000	0.080	700
AR312RAA4N3_SZ	4.3 @ 250 MHz	5,2	29	4.32	50	4.33	70	>5000	0.063	700
AR312RAA4N7_SZ ⁶	4.7 @ 250 MHz	5,2	18	4.72	47	4.75	57	>5000	0.116	605
AR312RAA5N1_SZ ⁶	5.1 @ 250 MHz	5,2	20	4.93	47	4.95	56	>5000	0.140	510
AR312RAA5N6_SZ	5.6 @ 250 MHz	5,2,1	25	5.77	63	6.05	80	4760	0.075	700
AR312RAA6N8_SZ	6.8 @ 250 MHz	5,2,1	28	6.75	60	7.10	81	4660	0.110	700
AR312RAA7N5_SZ	7.5 @ 250 MHz	5,2,1	23	7.70	60	7.82	65	4320	0.106	700
AR312RAA8N2_SZ	8.2 @ 250 MHz	5,2,1	26	8.25	82	8.37	87	3880	0.115	700
AR312RAA8N7_SZ	8.7 @ 250 MHz	5,2,1	27	8.86	62	9.32	58	3680	0.109	700
AR312RAA9N5_SZ	9.5 @ 250 MHz	5,2,1	22	9.70	59	9.92	61	4100	0.135	700
AR312RAA10N_SZ	10 @ 250 MHz	5,2,1	28	10.0	66	10.6	83	3860	0.130	700
AR312RAA11N_SZ	11 @ 250 MHz	5,2,1	26	11.0	53	11.5	56	3640	0.130	700
AR312RAA12N_SZ	12 @ 250 MHz	5,2,1	29	12.3	72	13.5	83	3220	0.130	620
AR312RAA15N_SZ	15 @ 250 MHz	5,2,1	28	15.4	64	16.8	89	3020	0.170	600
AR312RAA16N_SZ	16 @ 250 MHz	5,2,1	29	16.2	55	17.3	52	3040	0.170	600
AR312RAA18N_SZ	18 @ 250 MHz	5,2,1	29	18.7	70	21.4	69	2680	0.170	600
AR312RAA22N_SZ	22 @ 250 MHz	5,2,1	31	22.8	73	26.1	71	2380	0.190	560
AR312RAA23N_SZ	23 @ 250 MHz	5,2,1	39	24.1	71	28.0	67	2380	0.190	560
AR312RAA24N_SZ	24 @ 250 MHz	5,2,1	36	24.5	45	28.7	39	2380	0.190	560
AR312RAA27N_SZ	27 @ 250 MHz	5,2,1	32	29.2	74	34.6	65	2380	0.220	530
AR312RAA30N_SZ	30 @ 250 MHz	5,2,1	32	31.4	47	39.9	28	2240	0.220	500
AR312RAA33N_SZ	33 @ 250 MHz	5,2,1	33	36.0	67	49.5	42	1900	0.220	500
AR312RAA36N_SZ	36 @ 250 MHz	5,2,1	32	39.4	47	52.7	24	1960	0.250	460
AR312RAA39N_SZ	39 @ 250 MHz	5,2,1	36	42.7	60	60.2	40	1740	0.250	460
AR312RAA43N_SZ	43 @ 250 MHz	5,2,1	28	47.0	44	64.9	21	1580	0.280	440
AR312RAA47N_SZ	47 @ 200 MHz	5,2,1	35	52.2	62	77.2	35	1560	0.280	440
AR312RAA51N_SZ	51 @ 200 MHz	5,2,1	38	55.5	69	82.2	34	1560	0.300	420
AR312RAA56N_SZ	56 @ 200 MHz	5,2,1	37	62.5	56	97	26	1480	0.310	420
AR312RAA68N_SZ	68 @ 200 MHz	5,2,1	35	80.5	54	168	21	1380	0.340	410
AR312RAA72N_SZ ⁶	72 @ 150 MHz	5,2,1	35	82.0	53	135	20	1360	0.490	340
AR312RAA82N_SZ ⁶	82 @ 150 MHz	5,2,1	29	96.2	54	177	21	1300	0.540	340
AR312RAAR10_SZ ⁶	100 @ 150 MHz	5,2,1	28	124	49	—	—	1140	0.580	310
AR312RAAR11_SZ ⁶	110 @ 150 MHz	5,2,1	30	138	43	—	—	1080	0.610	310
AR312RAAR12_SZ ⁶	120 @ 150 MHz	5,2,1	28	166	39	—	—	1020	0.650	270
AR312RAAR15_SZ ⁶	150 @ 150 MHz	5,2,1	28	250	25	—	—	900	0.915	250
AR312RAAR18_SZ ⁶	180 @ 100 MHz	5,2,1	25	305	22	—	—	820	1.25	210
AR312RAAR20_SZ ⁶	200 @ 100 MHz	5,2,1	25	—	—	—	—	800	1.98	170
AR312RAAR21_SZ ⁶	210 @ 100 MHz	5,2,1	27	—	—	—	—	780	2.06	160
AR312RAAR22_SZ ⁶	220 @ 100 MHz	5,2,1	25	—	—	—	—	760	2.10	160
AR312RAAR25_SZ ⁶	250 @ 100 MHz	5,2,1	25	—	—	—	—	742	3.55	120
AR312RAAR27_SZ ⁶	270 @ 100 MHz	5,2,1	26	—	—	—	—	700	2.30	150
AR312RAAR33_SZ ⁶	330 @ 100 MHz	5,2,1	25	—	—	—	—	620	3.89	100
AR312RAAR39_SZ ⁶	390 @ 100 MHz	5,2,1	25	—	—	—	—	580	4.35	100

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

AR312RAAR39JSZ

Tolerance: F = 1% G = 2% J = 5%

Termination: S = Tin-lead (63/37) over leach-resistant silver-platinum-glass frit

A = Gold over nickel over moly-mag
C = Tin-lead (63/37) over gold over nickel over moly-mag
L = Silver-palladium-platinum-glass frit

Testing: Z = Unscreened

H = Group A screening per Coilcraft CP-SA-10001

T = Screening per MIL-STD-981

U = Screening per EEE-INST-002

F = Screening per ESCC 3201

All screening performed to the document's latest revision

Custom screening also available

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. Part is not compliant with MIL-STD-981 Family 50, Class S due to wire gauge

7. Electrical specifications at 25°C.

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



CRITICAL PRODUCTS & SERVICES

1102 Silver Lake Road
Cary, IL 60013
Phone 800-981-0363

Fax 847-639-1508
Email cps@coilcraft.com
www.coilcraft-cps.com

Document AR195-2 Revised 05/16/17

This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.