

Outgassing Compliant Chip Inductors AR312RAG

- Higher Q and lower DCR than other 0603 inductors
- Highest SRF values – as high as 16 GHz
- 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 ensure the best possible board adhesion

Core material Ceramic

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

Weight 2.0 – 4.0 mg

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.

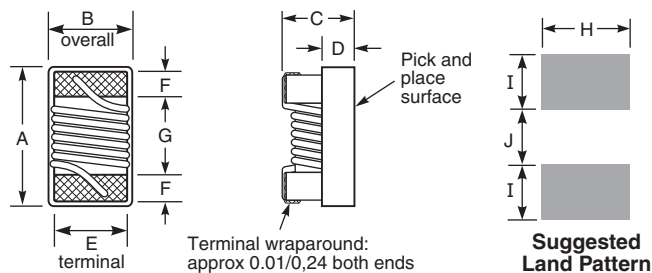
Tape and reel packaging: –55°C to +80°C

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)

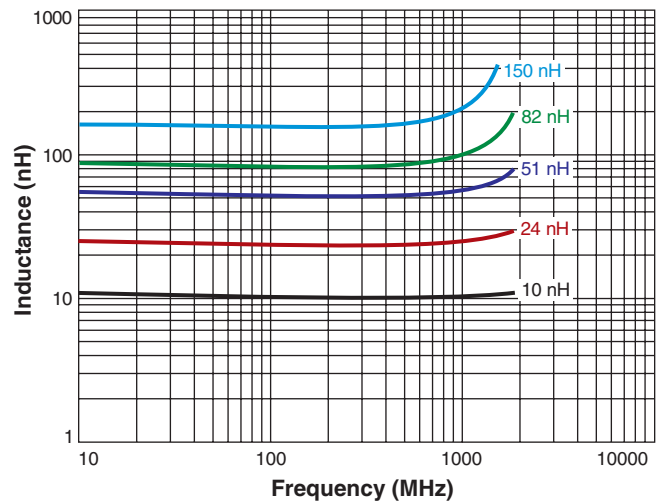
Enhanced crush-resistant packaging 2000 per 7" reel.
Paper tape: 8 mm wide, 1 mm thick, 4 mm pocket spacing



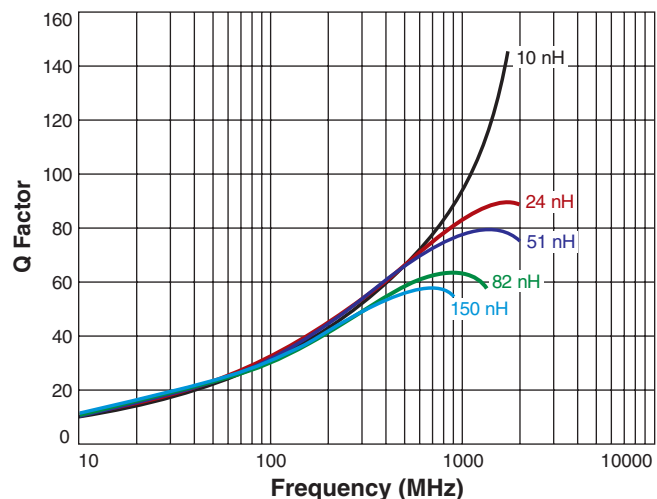
A	B	C	D	E	F	G	H	I	J
max	min-max	max							
0,069	0,034-0,043	0,034	0,015	0,029	0,013	0,038	0,040	0,027	0,028
1,75	0,86-1,09	0,86	0,38	0,74	0,33	0,96	1,02	0,69	0,71

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



AR312RAG Series (0603)

Part number ¹	Inductance ² (nH)	Percent tolerance	L test freq (MHz)	Q min ³ at 250 MHz	900 MHz		1.7 GHz		SRF min ⁴ (GHz)	DCR max ⁵ (Ohms)	I _{max} (mA)
					L typ	Q typ ³	L typ	Q typ ³			
AR312RAG1N8JSZ	1.8	5	250	17	1.77	40	1.77	65	>5.00	0.035	800
AR312RAG2N2JSZ ⁶	2.2	5	250	10	2.14	25	2.12	35	>5.00	0.205	250
AR312RAG3N3_SZ	3.3	5,2	250	35	3.28	67	3.32	104	>5.00	0.030	800
AR312RAG3N6_SZ	3.6	5,2	250	32	3.59	70	3.62	116	>5.00	0.033	800
AR312RAG3N9_SZ	3.9	5,2	250	33	3.88	68	3.95	108	>5.00	0.045	800
AR312RAG4N3_SZ	4.3	5,2	250	28	4.29	58	4.31	91	>5.00	0.080	710
AR312RAG4N7_SZ	4.7	5,2	250	22	4.65	48	4.71	75	>5.00	0.100	720
AR312RAG5N1_SZ	5.1	5,2	250	38	5.08	84	5.12	140	>5.00	0.042	800
AR312RAG5N6_SZ	5.6	5,2	250	43	5.6	87	5.73	145	>5.00	0.042	800
AR312RAG6N0_SZ	6.0	5,2	250	40	5.92	94	6.12	154	4.80	0.053	800
AR312RAG6N8_SZ	6.8	5,2	250	34	6.83	88	7.05	143	4.64	0.050	800
AR312RAG7N2_SZ	7.2	5,2	250	36	7.25	96	7.38	139	4.32	0.080	800
AR312RAG7N5_SZ	7.5	5,2	250	32	7.55	81	7.85	112	4.24	0.100	800
AR312RAG8N2_SZ	8.2	5,2	250	37	8.21	96	8.39	148	4.72	0.054	800
AR312RAG8N7_SZ	8.7	5,2	250	33	8.73	97	9.00	149	4.40	0.054	800
AR312RAG9N1_SZ	9.1	5,2	250	38	9.18	76	9.64	109	4.08	0.054	800
AR312RAG9N5_SZ	9.5	5,2	250	40	9.56	98	9.99	149	3.92	0.053	800
AR312RAG10N_SZ	10	5,2	250	38	10.16	90	10.64	142	3.44	0.054	800
AR312RAG11N_SZ	11	5,2	250	36	11.06	78	11.82	108	3.28	0.075	800
AR312RAG12N_SZ	12	5,2	250	32	12.26	69	13.20	91	3.28	0.110	750
AR312RAG15N_SZ	15	5,2	250	36	15.41	83	17.20	124	2.88	0.085	800
AR312RAG16N_SZ	16	5,2	250	32	16.37	77	18.70	116	2.80	0.095	790
AR312RAG18N_SZ	18	5,2	250	34	18.56	76	20.90	100	2.64	0.075	800
AR312RAG22N_SZ	22	5,2	250	30	22.7	77	25.90	88	2.52	0.140	600
AR312RAG23N_SZ	23	5,2	250	36	24.0	69	29.53	80	2.40	0.195	560
AR312RAG24N_SZ	24	5,2	250	43	24.9	77	28.9	91	2.36	0.085	800
AR312RAG27N_SZ	27	5,2	250	34	28.4	74	34.0	84	2.24	0.150	620
AR312RAG30N_SZ	30	5,2	250	40	31.5	82	37.9	82	2.24	0.130	720
AR312RAG33N_SZ	33	5,2	250	38	34.9	76	42.9	80	2.16	0.170	560
AR312RAG36N_SZ ⁶	36	5,2	250	36	38.5	69	50.0	64	2.00	0.225	480

Continued on next page

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

AR312RAG36NGSZ

Tolerance: 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 at specified test frequency using a Coilcraft SMD-A test fixture and Coilcraft-provided correlation pieces with an Agilent/HP 4286A impedance analyzer or equivalent.

3. Q measured using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.

4. SRF measured using an Agilent/HP 8753ES network analyzer or equivalent and a Coilcraft CCF1232 test fixture.

5. DCR measured on a Keithley 580 micro-ohmmeter or equivalent and a Coilcraft CCF1010 test fixture.

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

7. Electrical specifications at 25°C.

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



CRITICAL PRODUCTS & SERVICES

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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.

AR312RAG Series (0603)

Part number ¹	Inductance ² (nH)	Percent tolerance	L test freq (MHz)	Q min ³ at 250 MHz	900 MHz		1.7 GHz		SRF min ⁴ (GHz)	DCR max ⁵ (Ohms)	I _{max} (mA)
					L typ	Q typ ³	L typ	Q typ ³			
AR312RAG39N_SZ	39	5,2	250	38	41.5	78	51.9	74	1.96	0.190	540
AR312RAG43N_SZ	43	5,2	250	36	45.7	83	58.1	76	1.96	0.170	630
AR312RAG47N_SZ	47	5,2	200	39	50.6	77	66.9	72	1.84	0.270	440
AR312RAG51N_SZ	51	5,2	200	37	54.6	73	71.3	62	1.84	0.280	440
AR312RAG56N_SZ	56	5,2	200	36	60.3	74	79.9	56	1.76	0.30	420
AR312RAG68N_SZ	68	5,2	200	37	75.5	73	113.3	49	1.60	0.33	400
AR312RAG72N_SZ ⁶	72	5,2	150	36	80.8	69	—	—	1.52	0.42	380
AR312RAG75N_SZ ⁶	75	5,2	150	36	84.6	71	—	—	1.52	0.52	340
AR312RAG82N_SZ ⁶	82	5,2	150	36	94.0	62	—	—	1.44	0.46	350
AR312RAG91N_SZ ⁶	91	5,2	150	36	103.0	64	—	—	1.32	0.58	310
AR312RAGR10_SZ ⁶	100	5,2	150	36	114.0	69	—	—	1.36	0.54	340
AR312RAGR11_SZ ⁶	110	5,2	150	35	126.2	63	—	—	1.28	0.58	310
AR312RAGR12_SZ ⁶	120	5,2	150	36	142.4	61	—	—	1.24	0.72	280
AR312RAGR15_SZ ⁶	150	5,2	150	36	188.8	57	—	—	1.08	0.82	260
AR312RAGR18_SZ ⁶	180	5,2	100	36	232.2	50	—	—	1.04	1.50	190
AR312RAGR20_SZ ⁶	200	5,2	100	36	265.0	47	—	—	1.00	2.00	180
AR312RAGR21_SZ ⁶	210	5,2	100	36	288.0	45	—	—	0.96	2.00	170
AR312RAGR22_SZ ⁶	220	5,2	100	36	315.0	41	—	—	0.88	2.00	170
AR312RAGR27_SZ ⁶	270	5,2	100	35	—	—	—	—	0.84	2.40	170
AR312RAGR30_SZ ⁶	300	5,2	100	35	—	—	—	—	0.79	2.40	220

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