

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.

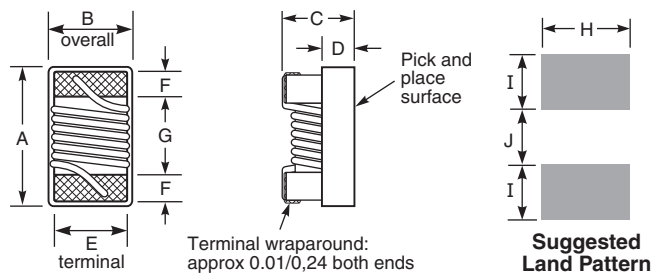
Tape and reel packaging: –55°C to +80°C

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)

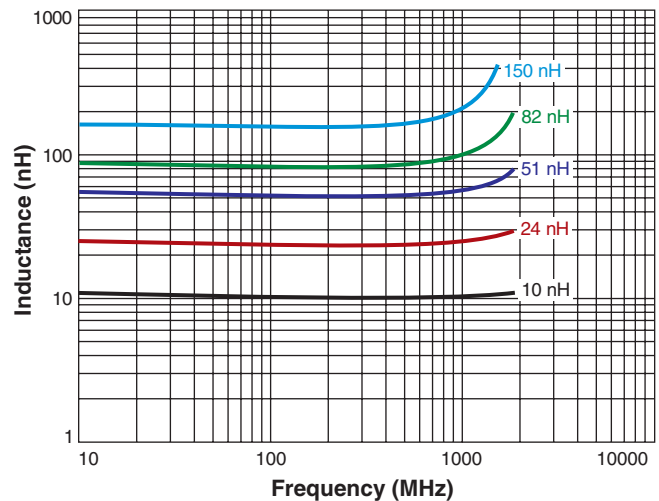
Enhanced crush-resistant packaging 2000 per 7" reel.
Paper tape: 8 mm wide, 1 mm thick, 4 mm pocket spacing



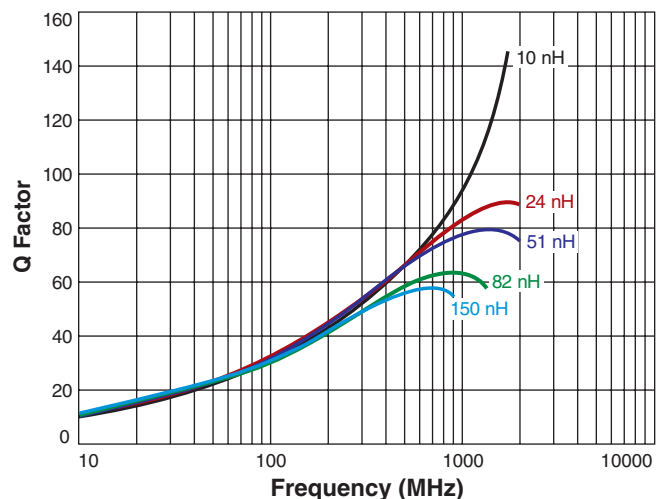
A	B	C	D	E	F	G	H	I	J
max	min-max	max							
0,069	0,034-0,043	0,034	0,015	0,029	0,013	0,038	0,040	0,027	0,028
1,75	0,86-1,09	0,86	0,38	0,74	0,33	0,96	1,02	0,69	0,71

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, Class S due to wire gauge.

7. Electrical specifications at 25°C.

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

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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CRITICAL PRODUCTS & SERVICES

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Document AR537-3 Revised 05/16/17

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