

Outgassing Compliant Chip Inductors AR235RAG

- Higher Q and lower DCR than other 0402 inductors
- Very high SRF values – up to 5 GHz+
- Excellent current handling capability – up to 700 mA
- High temperature materials allow operation in ambient temperatures up to 155°C.
- Passes NASA low outgassing specifications
- Standard tin-lead (Sn-Pb) terminations ensures the best possible board adhesion. Note: Nickel barrier termination (tin-lead over tin over nickel over silver-platinum-glass frit, termination code P) is recommended for hand soldering applications.

Core material Ceramic

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

Weight 0.65 – 1.3 mg

Ambient temperature –55°C to +125°C with I_{max} current

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

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

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

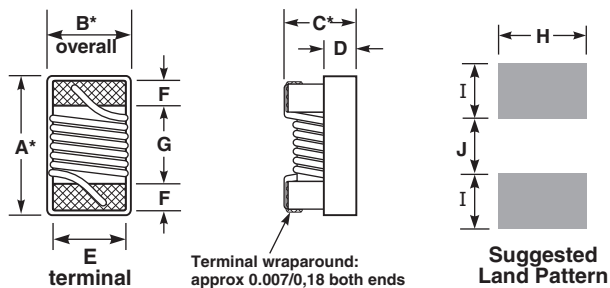
Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Temperature Coefficient of Inductance (TCL) +25 to +125 ppm/°C

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

Enhanced crush-resistant packaging 2000 per 7" reel.

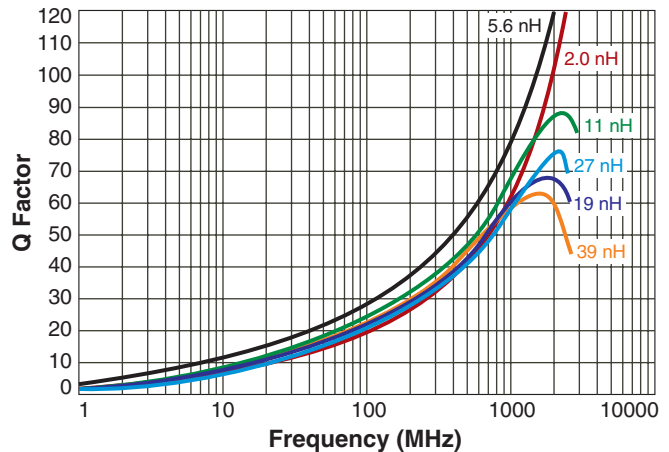
Paper tape: 8 mm wide, 0.66 mm thick, 2 mm pocket spacing



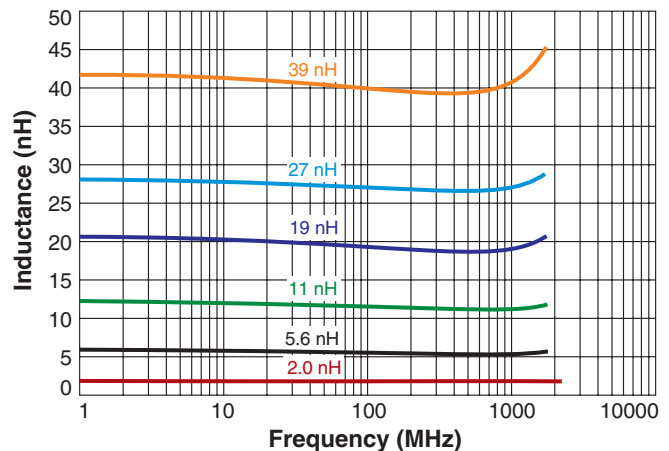
*Dimensions are before solder application.
For maximum overall dimensions including solder, add 0.0025 in / 0.064 mm to B and 0.006 in / 0.15 mm to A and C.

	A max	B	C max				
1–51 nH	0.045	0.020 – 0.028	0.024	inches			
	1,14	0,51 – 0,71	0,61	mm			
	A max	B	C max				
56–220 nH	0.044	0.020 – 0.028	0.026	inches			
	1,12	0,51 – 0,71	0,66	mm			
D	E	F	G	H	I	J	
0.010	0.020	0.008	0.024	0.026	0.014	0.020	inches
0,25	0,51	0,20	0,61	0,66	0,36	0,51	mm

Typical Q vs Frequency



Typical L vs Frequency



Coilcraft CPS
CRITICAL PRODUCTS & SERVICES

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

© Coilcraft, Inc. 2022

Document AR526-1 Revised 07/06/22

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

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.

AR235RAG Series (0402)

Part number ¹	Inductance ² (nH)	Percent tolerance	Test freq (MHz)	Q min at test freq	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			
AR235RAG1N0JPZ	1.0	5	250	18	0.97	46	0.99	72	>5.00	0.030	700
AR235RAG2N0JPZ	2.0	5	250	21	1.96	58	1.98	85	>5.00	0.038	700
AR235RAG2N2JPZ	2.2	5	250	24	2.17	60	2.17	86	>5.00	0.038	700
AR235RAG2N4_PZ	2.4	5,2	250	26	2.37	60	2.38	83	>5.00	0.042	700
AR235RAG2N7_PZ ⁶	2.7	5,2	250	18	2.66	62	2.68	85	>5.00	0.090	510
AR235RAG3N3_PZ	3.3	5,2	250	26	3.26	66	3.28	95	>5.00	0.045	700
AR235RAG3N6_PZ	3.6	5,2	250	31	3.56	65	3.58	94	>5.00	0.045	700
AR235RAG3N9_PZ	3.9	5,2	250	31	3.87	64	3.91	98	>5.00	0.045	700
AR235RAG4N3_PZ	4.3	5,2	250	25	4.26	63	4.33	90	>5.00	0.055	700
AR235RAG4N7_PZ ⁶	4.7	5,2	250	24	4.67	58	4.74	83	>5.00	0.085	700
AR235RAG5N1_PZ ⁶	5.1	5,2	250	18	5.07	54	5.16	76	>5.00	0.125	510
AR235RAG5N6_PZ	5.6	5,2	250	29	5.56	73	5.66	105	4.70	0.055	700
AR235RAG6N2_PZ	6.2	5,2	250	27	6.18	73	6.25	100	4.20	0.055	700
AR235RAG6N8_PZ	6.8	5,2	250	27	6.78	68	6.97	94	4.00	0.070	700
AR235RAG7N5_PZ ⁶	7.5	5,2	250	23	7.49	60	7.77	82	3.80	0.100	690
AR235RAG8N2_PZ	8.2	5,2	250	27	8.10	68	8.40	95	3.80	0.065	700
AR235RAG8N7_PZ	8.7	5,2	250	26	8.73	66	9.04	95	3.40	0.070	700
AR235RAG9N0_PZ	9.0	5,2	250	30	8.99	67	9.21	92	3.60	0.080	700
AR235RAG9N5_PZ	9.5	5,2	250	25	9.52	64	9.97	90	3.40	0.090	700
AR235RAG10N_PZ	10	5,2	250	24	9.98	62	10.4	90	3.20	0.110	700
AR235RAG11N_PZ	11	5,2	250	27	11.0	68	11.6	98	3.20	0.092	700
AR235RAG12N_PZ	12	5,2	250	27	12.0	66	12.6	100	3.00	0.100	700
AR235RAG13N_PZ ⁶	13	5,2	250	23	13.1	62	13.9	82	2.95	0.155	600
AR235RAG15N_PZ	15	5,2	250	25	15.1	62	16.0	85	2.70	0.115	700
AR235RAG16N_PZ ⁶	16	5,2	250	26	16.2	57	17.3	77	2.55	0.150	580
AR235RAG18N_PZ	18	5,2	250	25	18.2	58	19.5	74	2.40	0.125	650
AR235RAG19N_PZ	19	5,2	250	25	19.2	61	20.7	88	2.20	0.150	600
AR235RAG20N_PZ ⁶	20	5,2	250	24	20.3	58	22.0	76	2.15	0.185	520
AR235RAG21N_PZ ⁶	21	5,2	250	24	21.3	48	23.2	62	2.20	0.460	340
AR235RAG22N_PZ	22	5,2	250	26	22.3	60	24.4	74	1.80	0.165	570

Continued on next page

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

AR235RAG22NGPZ

Tolerance: G = 2% J = 5%

Termination: P = Tin-lead (63/37) over tin over nickel over silver-platinum-glass frit.
 C = Tin-lead (63/37) over gold over nickel over moly-mag.
 S = Tin-lead (63/37) over leach-resistant silver-platinum-glass frit.
 A = Gold over nickel over moly-mag
 L = Silver-palladium-platinum-glass frit

Screening: Z = Unscreened

- H = Coilcraft CP-SA-10001 Group A
 1 = EEE-INST-002 (Family 3) Level 1
 2 = EEE-INST-002 (Family 3) Level 2
 3 = EEE-INST-002 (Family 3) Level 3
 4 = MIL-STD-981 (Family 50) Class B
 5 = MIL-STD-981 (Family 50) Class S
 F = ESCC3201 (F4 operational life performed at 90°C)
- Screening performed to the document's latest revision.
 - Lot qualification (Group B) available.
 - Testing T and U have been replaced with more detailed codes 4, 5, and 1, 2, 3, respectively. Codes T and U can still be used, if necessary. Custom testing also available.
 - Country of origin restrictions available; prefix option G or F.

- Inductance measured at test frequency using a Coilcraft SMD-F fixture in an Agilent/HP 4286A impedance analyzer or equivalent with Coilcraft-provided correlation pieces.
 - Q measured using an Agilent/HP 4291A with an Agilent/HP 16197 test fixture or equivalents.
 - SRF measured using an Agilent/HP 8753ES network analyzer or equivalent and a Coilcraft CCF1232 test fixture.
 - DCR measured on a Keithley 580 micro-ohmmeter and a Coilcraft CCF1010 test fixture.
 - Part is not compliant with MIL-STD-981 Family 50, Class S due to wire gauge.
 - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

Notes about terminations

For hand soldering applications, the nickel barrier termination (tin-lead over tin over nickel over silver-platinum-glass frit, termination code P) is recommended. Exposed gold or tin in the terminations migrates into the solder.



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 AR526-2 Revised 07/06/22

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.

AR235RAG Series (0402)

Part number ¹	Inductance ² (nH)	Percent tolerance	Test freq (MHz)	Q min at test freq	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			
AR235RAG23N_PZ	23	5,2	250	25	23.3	60	25.5	77	1.75	0.165	520
AR235RAG24N_PZ ⁶	24	5,2	250	25	24.5	55	27.1	71	1.75	0.210	480
AR235RAG25N_PZ ⁶	25	5,2	250	24	25.5	57	28.3	73	1.75	0.260	440
AR235RAG26N_PZ ⁶	26	5,2	250	24	26.6	56	29.3	74	1.75	0.290	440
AR235RAG27N_PZ ⁶	27	5,2	250	24	27.3	62	29.5	86	1.75	0.350	340
AR235RAG30N_PZ ⁶	30	5,2	250	25	30.8	61	35.0	87	1.75	0.350	340
AR235RAG33N_PZ ⁶	33	5,2	250	25	34.0	61	38.3	80	1.65	0.310	340
AR235RAG36N_PZ ⁶	36	5,2	250	25	37.1	59	42.2	76	1.65	0.390	320
AR235RAG37N_PZ ⁶	37	5,2	250	25	38.2	57	44.0	72	1.65	0.480	300
AR235RAG39N_PZ ⁶	39	5,2	250	25	40.5	56	47.0	84	1.65	0.420	320
AR235RAG40N_PZ ⁶	40	5,2	250	24	41.3	56	47.4	75	1.65	0.420	320
AR235RAG43N_PZ ⁶	43	5,2	250	24	45.0	52	54.1	68	1.60	0.520	290
AR235RAG47N_PZ ⁶	47	5,2	250	24	49.0	48	58.9	62	1.60	0.580	270
AR235RAG51N_PZ ⁶	51	5,2	250	24	49.1	52	58.8	59	1.65	0.700	240
AR235RAG56N_PZ ⁶	56	5,2	250	23	58.8	56	72.2	64	1.65	0.900	250
AR235RAG68N_PZ ⁶	68	5,2	250	24	72.2	56	91.4	64	1.60	1.00	230
AR235RAG82N_PZ ⁶	82	5,2	250	24	89.7	52	–	–	1.60	1.10	200
AR235RAGR10_PZ ⁶	100	5,2	250	26	–	–	–	–	1.40	1.20	180
AR235RAGR12JPZ ⁶	120	5	250	26	–	–	–	–	1.40	1.20	170

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

AR235RAGR12JPZ

Tolerance: G = 2% J = 5%

Termination: P = Tin-lead (63/37) over tin over nickel over silver-platinum-glass frit.

C = Tin-lead (63/37) over gold over nickel over moly-mag.

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

A = Gold over nickel over moly-mag

L = Silver-palladium-platinum-glass frit

Screening: Z = Unscreened

H = Coilcraft CP-SA-10001 Group A

1 = EEE-INST-002 (Family 3) Level 1

2 = EEE-INST-002 (Family 3) Level 2

3 = EEE-INST-002 (Family 3) Level 3

4 = MIL-STD-981 (Family 50) Class B

5 = MIL-STD-981 (Family 50) Class S

F = ESCC3201 (F4 operational life performed at 90°C)

• Screening performed to the document's latest revision.

• Lot qualification (Group B) available.

• Testing T and U have been replaced with more detailed codes 4, 5, and 1, 2, 3, respectively. Codes T and U can still be used, if necessary. Custom testing also available.

• Country of origin restrictions available; prefix option G or F.

2. Inductance measured at test frequency using a Coilcraft SMD-F fixture in an Agilent/HP 4286A impedance analyzer or equivalent with Coilcraft-provided correlation pieces.

3. Q measured using an Agilent/HP 4291A with an Agilent/HP 16197 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 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.

Notes about terminations

For hand soldering applications, the nickel barrier termination (tin-lead over tin over nickel over silver-platinum-glass frit, termination code P) is recommended. Exposed gold or tin in the terminations migrates into the solder.



CRITICAL PRODUCTS & SERVICES

© Coilcraft, Inc. 2022

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

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

Document AR526-3 Revised 07/06/22

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.