

# Outgassing Compliant Chip Inductors AR235RAA

- Exceptionally high Q factors
- 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 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.

**Ambient temperature** -65°C to +125°C with I<sub>max</sub> current

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

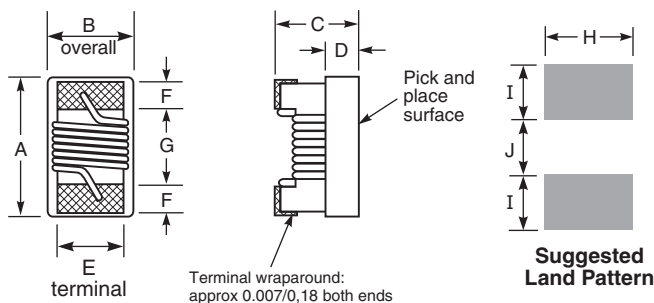
**Storage temperature** Component: -65°C to +155°C.  
Packaging: -55°C to +80°C

**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)

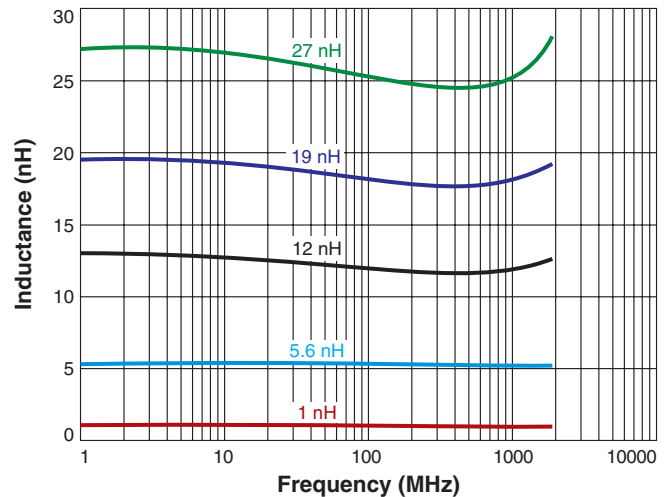
**Enhanced crush-resistant packaging** 2000 per 7" reel  
Paper tape: 8 mm wide, 0.68 mm thick, 2 mm pocket spacing



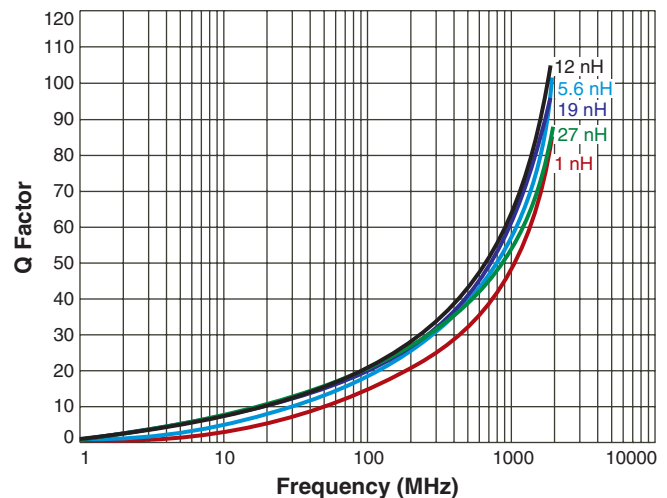
A	B	C	D	E	F	G	H	I	J
max	max	max	ref						
0.047	0.025	0.026	0.010	0.020	0.009	0.022	0.026	0.014	0.018
1,19	0,64	0,66	0,25	0,51	0,23	0,56	0,66	0,36	0,46

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



# AR235RAA Series (0402)

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance	Q min <sup>3</sup>	900 MHz		1.7 GHz		SRF min <sup>5</sup> (GHz)	DCR max <sup>6</sup> (Ohms)	I <sub>max</sub> (mA)
				L typ	Q typ <sup>4</sup>	L typ	Q typ <sup>4</sup>			
AR235RAA1N0JPZ	1.0	5	20	1.02	77	1.02	69	>5.00	0.045	600
AR235RAA1N2JPZ <sup>7</sup>	1.2	5	12	1.17	28	1.17	38	>5.00	0.050	600
AR235RAA1N8JPZ	1.8	5	20	1.78	54	1.78	75	>5.00	0.070	600
AR235RAA1N9JPZ	1.9	5	20	1.72	68	1.74	82	>5.00	0.070	600
AR235RAA2N0_PZ	2.0	5,2	20	1.93	54	1.93	75	>5.00	0.070	600
AR235RAA2N2_PZ	2.2	5,2	20	2.19	59	2.23	100	>5.00	0.070	600
AR235RAA2N4_PZ <sup>7</sup>	2.4	5,2	20	2.24	51	2.27	68	>5.00	0.068	600
AR235RAA2N7_PZ <sup>7</sup>	2.7	5,2,1	16	2.58	42	2.60	61	>5.00	0.120	425
AR235RAA3N3_PZ	3.3	5,2,1	20	3.10	65	3.12	87	>5.00	0.066	600
AR235RAA3N6_PZ	3.6	5,2,1	20	3.56	45	3.62	71	>5.00	0.066	600
AR235RAA3N9_PZ	3.9	5,2,1	20	3.89	50	4.00	75	>5.00	0.066	600
AR235RAA4N3_PZ <sup>7</sup>	4.3	5,2,1	20	4.19	47	4.30	71	>5.00	0.091	600
AR235RAA4N7_PZ <sup>7</sup>	4.7	5,2,1	20	4.55	48	4.68	68	4.77	0.130	600
AR235RAA5N1_PZ	5.1	5,2,1	20	5.15	56	5.25	82	4.80	0.083	600
AR235RAA5N6_PZ	5.6	5,2,1	20	5.16	54	5.28	81	4.80	0.083	600
AR235RAA6N2_PZ	6.2	5,2,1	20	6.16	52	6.37	76	4.80	0.083	600
AR235RAA6N8_PZ	6.8	5,2,1	20	6.56	63	6.93	78	4.80	0.083	600
AR235RAA7N5_PZ	7.5	5,2,1	22	7.91	60	8.22	88	4.80	0.104	600
AR235RAA8N2_PZ	8.2	5,2,1	22	8.50	57	8.85	84	4.40	0.104	600
AR235RAA8N7_PZ <sup>7</sup>	8.7	5,2,1	20	8.78	54	9.21	73	3.80	0.195	480
AR235RAA9N0_PZ	9.0	5,2,1	22	9.07	62	9.53	78	4.66	0.100	600
AR235RAA9N5_PZ <sup>7</sup>	9.5	5,2,1	20	9.42	54	9.98	69	3.48	0.195	480
AR235RAA10N_PZ <sup>7</sup>	10.0	5,2,1	21	9.8	50	10.10	67	3.68	0.195	480
AR235RAA11N_PZ	11.0	5,2,1	24	10.7	52	11.20	78	3.48	0.120	580
AR235RAA12N_PZ	12.0	5,2,1	24	11.9	53	12.70	71	3.60	0.120	580

Continued on next page

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

AR235RAA12NGPZ

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

**Termination:** See **Notes about terminations**

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

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

N = Group A screening per Coilcraft CP-SA-10003

J = Group A screening per Coilcraft CP-SA-10006

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 250 MHz using a Coilcraft SMD-F test fixture and Coilcraft-provided correlation pieces with an Agilent/HP 4286A impedance analyzer or equivalent.

3. Q measured at 250 MHz using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.

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

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

6. DCR measured on a Keithley 580 micro-ohmmeter and a Coilcraft CCF1010 test fixture.

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

8. 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

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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.

# AR235RAA Series (0402)

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance	Q min <sup>3</sup>	900 MHz		1.7 GHz		SRF min <sup>5</sup> (GHz)	DCR max <sup>6</sup> (Ohms)	I <sub>max</sub> (mA)
				L typ	Q typ <sup>4</sup>	L typ	Q typ <sup>4</sup>			
AR235RAA13N_PZ <sup>7</sup>	13.0	5,2,1	20	13.4	51	14.63	57	3.28	0.210	440
AR235RAA15N_PZ <sup>7</sup>	15.0	5,2,1	22	14.6	55	15.50	77	3.10	0.172	500
AR235RAA16N_PZ <sup>7</sup>	16.0	5,2,1	23	16.6	46	18.86	47	3.05	0.220	480
AR235RAA18N_PZ <sup>7</sup>	18.0	5,2,1	24	18.3	57	20.28	62	2.68	0.230	420
AR235RAA19N_PZ <sup>7</sup>	19.0	5,2,1	24	19.1	50	21.10	67	3.00	0.202	460
AR235RAA20N_PZ <sup>7</sup>	20.0	5,2,1	24	20.7	52	23.66	53	2.90	0.250	400
AR235RAA22N_PZ <sup>7</sup>	22.0	5,2,1	24	23.2	53	26.75	53	2.80	0.300	380
AR235RAA23N_PZ <sup>7</sup>	23.0	5,2,1	24	23.8	49	26.90	64	2.72	0.300	400
AR235RAA24N_PZ <sup>7</sup>	24.0	5,2,1	24	25.1	51	29.50	50	2.60	0.300	390
AR235RAA27N_PZ <sup>7</sup>	27.0	5,2,1	24	28.7	49	33.50	63	2.48	0.298	380
AR235RAA30N_PZ <sup>7</sup>	30.0	5,2,1	24	31.1	46	38.50	39	2.35	0.300	340
AR235RAA33N_PZ <sup>7</sup>	33.0	5,2,1	20	34.9	31	41.74	32	2.30	0.300	340
AR235RAA36N_PZ <sup>7</sup>	36.0	5,2,1	24	39.5	44	48.40	53	2.20	0.440	310
AR235RAA39N_PZ <sup>7</sup>	39.0	5,3,2	24	41.7	47	50.23	45	2.10	0.550	200
AR235RAA40N_PZ <sup>7</sup>	40.0	5,2,1	24	39.0	44	47.40	33	2.24	0.440	290
AR235RAA43N_PZ <sup>7</sup>	43.0	5,2,1	22	45.8	46	61.55	34	2.03	0.81	100
AR235RAA47N_PZ <sup>7</sup>	47.0	5,2,1	20	50.0	38	—	—	2.10	0.83	150
AR235RAA51N_PZ <sup>7</sup>	51.0	5,2,1	19	56.6	40	—	—	1.75	0.82	100
AR235RAA56N_PZ <sup>7</sup>	56.0	5,2,1	22	62.8	42	—	—	1.76	0.97	100
AR235RAA68N_PZ <sup>7</sup>	68.0	5,2,1	22	78.2	36	—	—	1.62	1.12	100
AR235RAA82N_PZ <sup>7</sup>	82.0	5,2,1	25	—	—	—	—	1.26	1.55	50
AR235RAAR10_PZ <sup>7</sup>	100	5,2,1	25	—	—	—	—	1.16	2.00	50
AR235RAAR12_PZ <sup>7</sup>	120	5,2,1	22	—	—	—	—	1.20	2.20	50

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