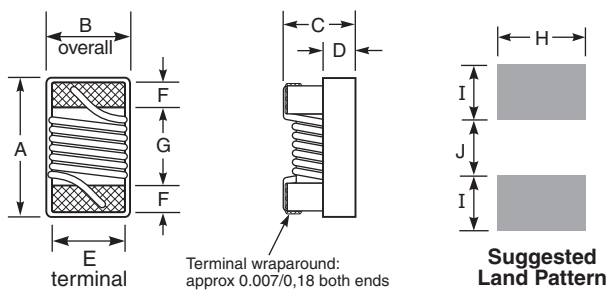


**PRELIMINARY**

# Aerospace Grade Chip Inductors AE235RAG

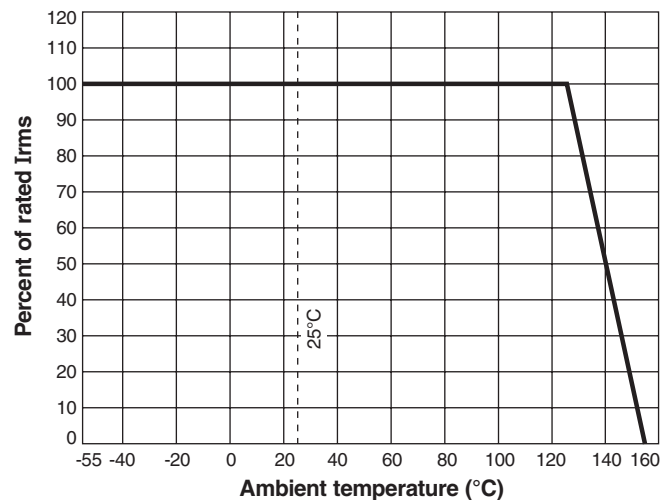
- Higher Q and lower DCR than other 0402 inductors
- Very high SRF values – as high as 16 GHz
- Excellent current handling capability – up to 2300 mA
- High temperature materials allow operation in ambient temperatures up to 155°C.
- Passes NASA low outgassing specifications
- Leach-resistant base metalization with tin-lead (Sn-Pb) terminations ensures the best possible board adhesion



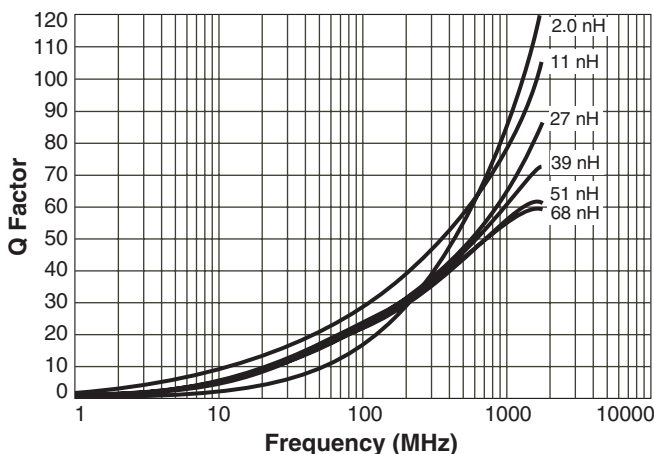
	A max	B	C max				
1–51 nH	0.043	0.026 ±0.002	0.024	inches			
	1,09	0,66 ±0,051	0,61	mm			
	A max	B	C max				
56–220 nH	0.044	0.026 ±0.002	0.026	inches			
	1,12	0,66 ±0,051	0,66	mm			
D	E	F	G	H	I	J	
0.010	0.020	0.008	0.024	0.026	0.014	0.020	inches
0,25	0,51	0,20	0,61	0,66	0,36	0,51	mm

**Core material** Ceramic**Terminations** Tin-lead (63/37) over silver-platinum-glass frit**Ambient temperature** –55°C to +125°C with I<sub>max</sub> current, +125°C to +155°C with derated current**Storage temperature** Component: –55°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 +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

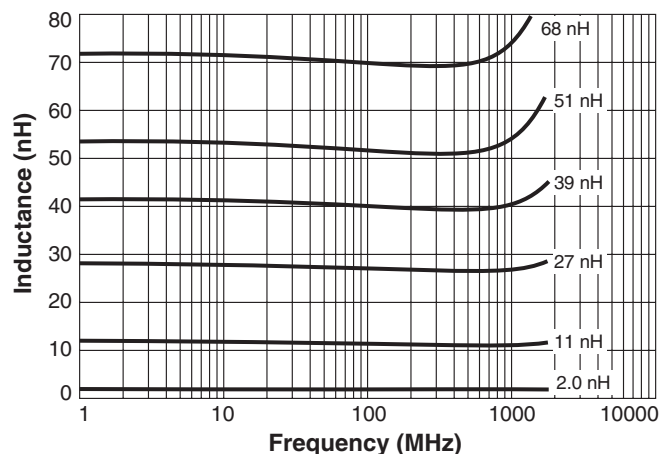
## Current Derating



## Typical Q vs Frequency



## Typical L vs Frequency



**Coilcraft CPS**  
CRITICAL PRODUCTS & SERVICES

These parts are preproduction products for electrical evaluation only.  
Specification subject to change without notice.

Document AE526-1 Revised 06/25/09

1102 Silver Lake Road  
Cary IL 60013

Phone 800-981-0363  
Fax 847-639-1508

E-mail cp@coilcraft.com  
Web www.coilcraft-cps.com

**PRELIMINARY****AE235RAG Series (0402)**

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance	900 MHz		1.7 GHz		SRF min <sup>4</sup> (GHz)	DCR max <sup>5</sup> (Ohms)	Imax (mA)
			L typ	Q typ <sup>3</sup>	L typ	Q typ <sup>3</sup>			
AE235RAG1N0JSZ	1.0	5	0.97	46	0.99	72	16.1	0.030	2300
AE235RAG2N0JSZ	2.0	5	1.96	58	1.98	85	14.0	0.038	2100
AE235RAG2N2JSZ	2.2	5	2.17	60	2.17	86	13.3	0.038	2100
AE235RAG2N4_SZ	2.4	5.2	2.37	60	2.38	83	13.2	0.042	2000
AE235RAG2N7_SZ	2.7	5.2	2.66	62	2.68	85	13.1	0.056	1500
AE235RAG3N3_SZ	3.3	5.2	3.26	66	3.28	95	10.3	0.045	1700
AE235RAG3N6_SZ	3.6	5.2	3.56	65	3.58	94	10.1	0.045	1700
AE235RAG3N9_SZ	3.9	5.2	3.87	64	3.91	98	7.80	0.045	1700
AE235RAG4N3_SZ	4.3	5.2	4.26	63	4.33	90	5.70	0.040	1600
AE235RAG4N7_SZ	4.7	5.2	4.67	58	4.74	83	5.70	0.060	1500
AE235RAG5N1_SZ	5.1	5.2	5.07	54	5.16	76	5.90	0.100	1200
AE235RAG5N6_SZ	5.6	5.2	5.56	73	5.66	105	6.50	0.048	1600
AE235RAG6N2_SZ	6.2	5.2	6.18	73	6.25	100	5.00	0.050	1600
AE235RAG6N8_SZ	6.8	5.2	6.78	68	6.97	94	4.80	0.055	1500
AE235RAG7N5_SZ	7.5	5.2	7.49	60	7.77	82	4.20	0.080	1400
AE235RAG8N2_SZ	8.2	5.2	8.10	68	8.40	95	4.20	0.054	1500
AE235RAG8N7_SZ	8.7	5.2	8.73	66	9.04	95	3.90	0.058	1500
AE235RAG9N0_SZ	9.0	5.2	8.99	67	9.21	92	3.95	0.070	1400
AE235RAG9N5_SZ	9.5	5.2	9.52	64	9.97	90	3.80	0.075	1400
AE235RAG10N_SZ	10	5.2	9.98	62	10.4	90	3.70	0.085	1300
AE235RAG11N_SZ	11	5.2	11.0	68	11.6	98	3.70	0.065	1400
AE235RAG12N_SZ	12	5.2	12.0	66	12.6	100	3.50	0.070	1200
AE235RAG13N_SZ	13	5.2	13.1	62	13.9	82	3.40	0.140	870
AE235RAG15N_SZ	15	5.2	15.1	62	16.0	85	3.20	0.078	1100
AE235RAG16N_SZ	16	5.2	16.2	57	17.3	77	3.00	0.130	850
AE235RAG18N_SZ	18	5.2	18.2	58	19.5	74	3.00	0.120	900
AE235RAG19N_SZ	19	5.2	19.2	61	20.7	88	2.70	0.145	850
AE235RAG20N_SZ	20	5.2	20.3	58	22.0	76	2.70	0.155	780
AE235RAG21N_SZ	21	5.2	21.3	48	23.2	62	2.60	0.460	450
AE235RAG22N_SZ	22	5.2	22.3	60	24.4	74	2.60	0.160	800
AE235RAG23N_SZ	23	5.2	23.3	60	25.5	77	2.50	0.160	800
AE235RAG24N_SZ	24	5.2	24.5	55	27.1	71	2.60	0.170	700
AE235RAG25N_SZ	25	5.2	25.5	57	28.3	73	2.50	0.170	700
AE235RAG26N_SZ	26	5.2	26.6	56	29.3	74	2.60	0.170	700
AE235RAG27N_SZ	27	5.2	27.3	62	29.5	86	2.60	0.275	450
AE235RAG30N_SZ	30	5.2	30.8	61	35.0	87	2.40	0.275	450
AE235RAG33N_SZ	33	5.2	34.0	61	38.3	80	2.30	0.330	490
AE235RAG36N_SZ	36	5.2	37.1	59	42.2	76	2.20	0.360	480
AE235RAG37N_SZ	37	5.2	38.2	57	44.0	72	2.10	0.480	470
AE235RAG39N_SZ	39	5.2	40.5	56	47.0	84	2.10	0.380	450
AE235RAG40N_SZ	40	5.2	41.3	56	47.4	75	2.10	0.380	450
AE235RAG43N_SZ	43	5.2	45.0	52	54.1	68	2.00	0.520	450
AE235RAG47N_SZ	47	5.2	49.0	48	58.9	62	1.90	0.580	420
AE235RAG51N_SZ	51	5.2	49.1	52	58.8	59	1.85	0.700	360
AE235RAG56N_SZ	56	5.2	58.8	56	72.2	64	1.80	0.900	330
AE235RAG68N_SZ	68	5.2	72.2	56	91.4	64	1.70	1.00	320
AE235RAG82N_SZ	82	5.2	89.7	52	—	—	1.50	1.10	315
AE235RAGR10_SZ	100	5.2	—	—	—	—	1.40	1.20	310
AE235RAGR12_SZ	120	5.2	—	—	—	—	1.20	1.20	310
AE235RAGR15_SZ	150	5.2	—	—	—	—	1.00	2.0	240
AE235RAGR18_SZ	180	5.2	—	—	—	—	0.95	2.1	240
AE235RAGR22_SZ	220	5.2	—	—	—	—	0.90	3.1	160

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

**AE235RAGR10 G SZ**

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

**Testing:** Z = Coilcraft Critical Products Environmental Stress Conditions Testing.

H = Coilcraft Qual + Coilcraft Hi-Rel Burn-in

P = Coilcraft Qual + MIL-STD-981 Class S Group A screening

N = Coilcraft Qual + MIL-STD-981 Class B Group A screening

C = Coilcraft Qual + MIL-STD-981 Class S Group A screening + MIL-STD-981 Class S Group B qualification

W = Coilcraft Qual + MIL-STD-981 Class B Group A screening + MIL-STD-981 Class S Group B qualification

2. Inductance measured at 250 MHz using a Coilcraft SMD-F fixture in an Agilent/HP 4286 impedance analyzer with Coilcraft-provided correlation pieces.

3. Q measured using an Agilent/HP 4287A with an Agilent/HP 16197 test fixture.

4. SRF measured using an Agilent/HP 8722ES network analyzer and a Coilcraft SMD-D test fixture.

5. DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.

6. Electrical specifications at 25°C.

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



These parts are preproduction products for electrical evaluation only.  
Specification subject to change without notice.

Document AE526-2 Revised 06/25/09

CRITICAL PRODUCTS & SERVICES

1102 Silver Lake Road  
Cary IL 60013

Phone 800-981-0363  
Fax 847-639-1508

E-mail cp@coilcraft.com  
Web www.coilcraft-cps.com