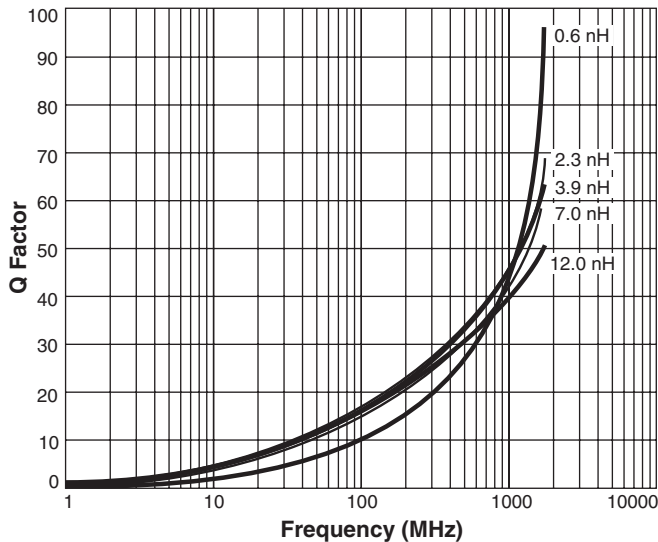


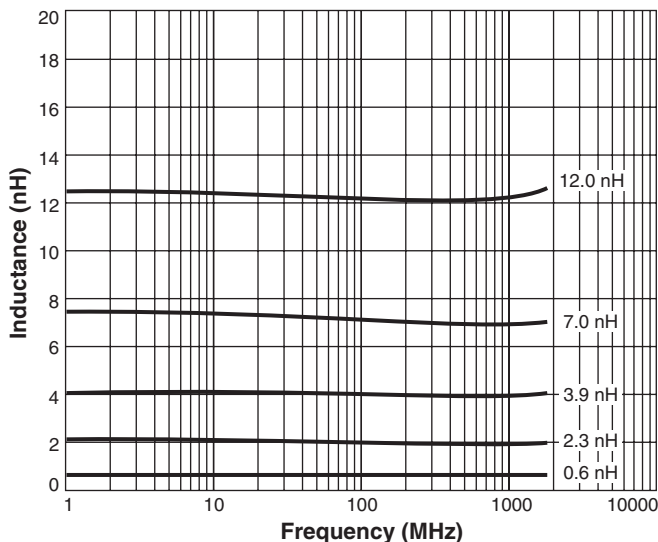
# Chip Inductors for Critical Applications AR145RAN

- 0201 size; world's smallest wirewound inductor
- 38 inductance values from 0.5 to 12 nH

## Typical Q vs Frequency



## Typical L vs Frequency



**Core material** Ceramic

**Terminations** Tin-lead (63/37) over tin over nickel over silver-platinum-glass frit. Other terminations available at additional cost.

**Weight** 0.14 – 0.24 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.

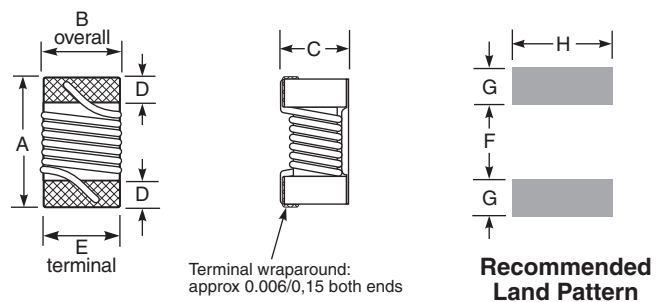
Packaging: –55°C to +80°C

**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)

**Packaging** 2000 per 7" reel. Paper tape: 8 mm wide, 0.6 mm thick, 2 mm pocket spacing



Amax	B max	Cmax	D	E	F	G	H	
0.023	0.018	0.0177	0.004	0.015	0.009	0.007	0.018	inches
0,58	0,46	0,45	0,10	0,38	0,23	0,18	0,46	mm

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**.

# AR145RAN Series (0201)

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance	Q min <sup>3</sup> at 250 MHz	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>			
AR145RAN0N5KPZ	0.5	10	14	0.50	29	0.49	43	5	0.025	500
AR145RAN0N6KPZ	0.6	10	10	0.58	31	0.58	51	5	0.030	500
AR145RAN1N2JPZ	1.2	5	12	1.16	42	1.16	60	5	0.042	500
AR145RAN1N3JPZ	1.3	5	12	1.24	38	1.24	57	5	0.055	500
AR145RAN1N4JPZ <sup>7</sup>	1.4	5	9	1.35	27	1.34	37	5	0.095	375
AR145RAN2N2JPZ	2.2	5	15	2.23	32	2.23	32	5	0.070	500
AR145RAN2N3JPZ	2.3	5	14	2.28	45	2.28	64	5	0.070	500
AR145RAN2N4JPZ	2.4	5	13	2.36	35	2.36	53	5	0.090	490
AR145RAN3N3JPZ	3.3	5	15	3.31	42	3.32	62	5	0.080	500
AR145RAN3N4JPZ	3.4	5	15	3.38	42	3.42	62	5	0.080	500
AR145RAN3N5JPZ	3.5	5	14	3.41	44	3.45	64	5	0.080	500
AR145RAN3N6JPZ	3.6	5	14	3.53	40	3.57	61	5	0.105	495
AR145RAN3N7JPZ	3.7	5	15	3.65	39	3.66	58	5	0.105	495
AR145RAN3N8JPZ	3.8	5	13	3.81	38	3.81	60	5	0.180	290
AR145RAN4N8JPZ	4.8	5	15	4.83	34	4.83	50	5	0.096	500
AR145RAN4N9JPZ	4.9	5	12	4.72	33	4.71	52	5	0.130	450
AR145RAN5N0JPZ	5.0	5	13	4.90	34	4.90	54	5	0.130	450
AR145RAN5N1JPZ	5.1	5	15	4.96	35	4.96	54	5	0.130	450
AR145RAN5N2JPZ	5.2	5	15	5.21	36	5.21	55	5	0.170	300
AR145RAN5N3JPZ	5.3	5	15	5.15	36	5.15	57	5	0.130	450
AR145RAN5N4JPZ	5.4	5	15	5.30	36	5.31	56	5	0.130	450
AR145RAN6N7JPZ	6.7	5	15	6.71	40	6.72	59	5	0.150	410
AR145RAN6N8JPZ	6.8	5	15	6.52	35	6.52	52	5	0.150	410
AR145RAN6N9JPZ	6.9	5	15	6.70	36	6.73	54	5	0.150	410
AR145RAN7N0JPZ	7.0	5	15	6.97	39	6.97	60	5	0.210	270
AR145RAN7N1JPZ	7.1	5	15	6.91	36	6.90	54	5	0.250	270
AR145RAN7N2JPZ	7.2	5	15	6.97	36	6.97	55	5	0.250	270
AR145RAN7N3JPZ	7.3	5	15	7.05	37	7.04	56	5	0.250	270
AR145RAN7N4JPZ	7.4	5	18	7.29	40	7.30	61	5	0.250	270
AR145RAN7N6JPZ <sup>7</sup>	7.6	5	16	7.32	39	7.31	59	5	0.300	200
AR145RAN7N7JPZ <sup>7</sup>	7.7	5	17	7.38	39	7.37	60	5	0.300	200
AR145RAN7N8JPZ <sup>7</sup>	7.8	5	16	7.49	38	7.49	58	5	0.300	200
AR145RAN7N9JPZ <sup>7</sup>	7.9	5	16	7.56	38	7.56	58	5	0.300	200
AR145RAN8N0JPZ <sup>7</sup>	8.0	5	15	7.65	35	7.68	53	5	0.300	200
AR145RAN8N1JPZ <sup>7</sup>	8.1	5	15	7.74	37	7.75	59	5	0.300	200
AR145RAN8N2JPZ <sup>7</sup>	8.2	5	17	8.14	37	8.22	53	5	0.270	200
AR145RAN8N3JPZ <sup>7</sup>	8.3	5	15	7.93	36	7.95	57	5	0.300	200
AR145RAN12NJPZ <sup>7</sup>	12	5	15	12.15	39	12.20	56	5	0.360	165

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

### AR145RAN12NJPZ

**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.

A = Gold over nickel over moly-mag.

**Screening:** Z = Unscreened

H = Coilcraft CP-SA-10001 Group A

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

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

• Screening performed to the document's latest revision.

• Lot qualification (Group B) available.

• Custom testing also available.

• Country of origin restrictions available; prefix option G.

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

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

4. SRF is measured on an Agilent 8753ES (or equivalent) with a Coilcraft CCF1235 test fixture.

5. DCR is measured on a Keithley 580 Micro-ohmmeter (or equivalent) with a Coilcraft CCF1099 test fixture.

6. Electrical specifications at 25°C.

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

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



CRITICAL PRODUCTS & SERVICES

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

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

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