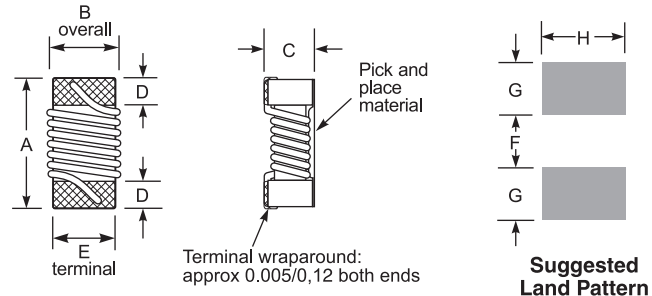


# Low Profile Chip Inductors CP235RAK

- Maximum height reduced to 0.45 mm – 30% lower profile than competitive products
- 23 inductance values from 1.2 to 56 nH
- Excellent Q Factor performance – up to 83 at 2.4 GHz
- Very high self-resonant frequencies – as high as 27.5 GHz
- High current handling capability – up to 2.3 A



Amax	Bmax	Cmax	D	E	F	G	H
0.044	0.024	0.018	0.006	0.020	0.024	0.014	0.026
1,11	0,61	0,45	0,15	0,51	0,61	0,36	0,66

**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.

**Core material** Ceramic

**Terminations** Matte tin over nickel over silver-platinum-glass frit.

**Weight** 0.6 – 0.8 mg

**Ambient temperature** –40°C to +125°C with Irms current

**Maximum part temperature** +140°C (ambient + temp rise).

**Storage temperature** Component: –55°C to +140°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

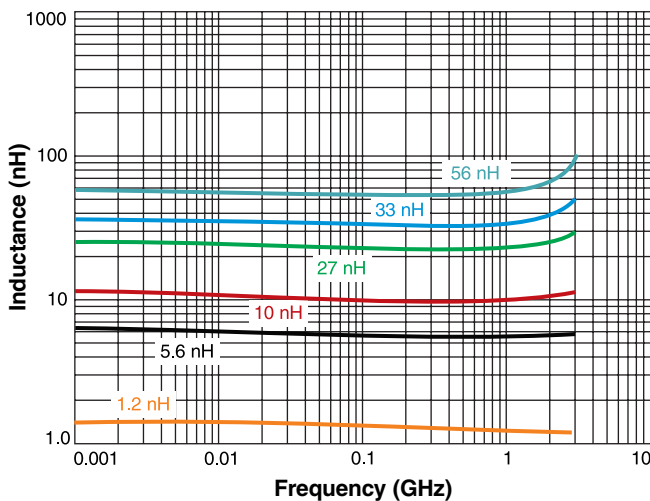
**Temperature Coefficient of Inductance (TCL)** +25 to +125 ppm/°C

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

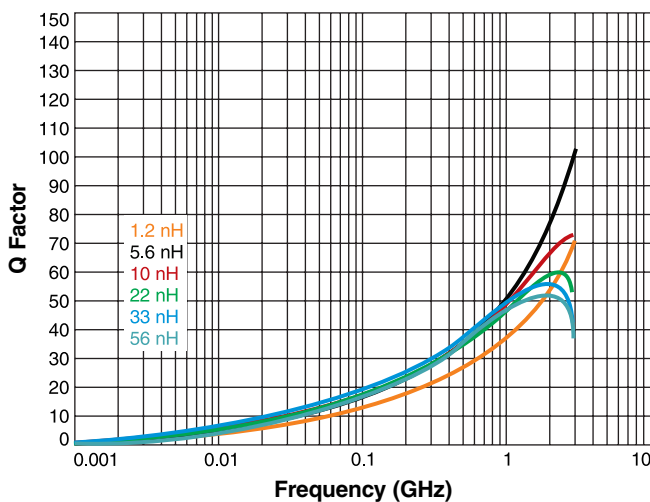
**Packaging** 2000/7" reel; Paper tape: 8 mm wide, 0.6 mm thick, 2 mm pocket spacing

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

## Typical L vs Frequency



## Typical Q vs Frequency



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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.

# CP235RAK Series (1005)

Part number <sup>1</sup>	L <sup>2</sup> (nH)	Percent tolerance <sup>3</sup>	Q min 250 MHz	Q typ <sup>4</sup>			SRF min <sup>5</sup> (GHz)	DCR max <sup>6</sup> (mOhms)	IDC max (mA)
				900 MHz	1.7 GHz	2.4 GHz			
CP235RAK1N2JRZ	1.2	<b>5</b>	15	33	47	58	5.0	35	700
CP235RAK2N0_RZ	2.0	<b>5,3,2</b>	16	40	56	70	5.0	40	700
CP235RAK3N0_RZ	3.0	<b>5,3,2</b>	16	40	60	76	5.0	50	700
CP235RAK3N9_RZ	3.9	<b>5,3,2</b>	19	46	66	83	5.0	70	700
CP235RAK4N7_RZ	4.7	<b>5,3,2</b>	17	42	59	73	5.0	60	700
CP235RAK5N6_RZ	5.6	<b>5,3,2</b>	19	47	68	83	5.0	80	700
CP235RAK6N8_RZ	6.8	<b>5,3,2</b>	21	48	68	82	5.0	70	700
CP235RAK7N5_RZ	7.5	<b>5,3,2</b>	20	47	66	81	5.0	80	700
CP235RAK8N2_RZ	8.2	<b>5,3,2</b>	20	49	68	84	5.0	80	700
CP235RAK9N0_RZ	9.0	<b>5,3,2</b>	21	50	68	82	5.0	100	680
CP235RAK9N5_RZ	9.5	<b>5,3,2</b>	20	47	64	77	5.0	100	680
CP235RAK10N_RZ	10	<b>5,3,2</b>	20	46	61	70	5.0	110	630
CP235RAK12N_RZ	12	<b>5,3,2</b>	19	45	60	68	5.0	135	590
CP235RAK15N_RZ	15	<b>5,3,2</b>	21	48	63	69	5.0	150	560
CP235RAK16N_RZ	16	<b>5,3,2</b>	20	44	58	65	5.0	165	530
CP235RAK18N_RZ	18	<b>5,3,2</b>	19	45	59	64	5.0	240	530
CP235RAK20N_RZ	20	<b>5,3,2</b>	20	45	57	61	5.0	300	470
CP235RAK22N_RZ	22	<b>5,3,2</b>	19	44	56	60	4.5	260	420
CP235RAK27N_RZ	27	<b>5,3,2</b>	21	45	55	58	4.0	360	350
CP235RAK33N_RZ	33	<b>5,3,2</b>	21	46	56	53	3.9	400	320
CP235RAK39N_RZ	39	<b>5,3,2</b>	18	49	58	—	3.5	825	180
CP235RAK47N_RZ	47	<b>5,3,2</b>	19	43	49	—	3.3	900	180
CP235RAK56N_RZ	56	<b>5,3,2</b>	20	45	53	—	3.1	1250	140

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

**CP235RAK56NJRZ**

**Tolerance:** G = 2% H = 3% J = 5%

**Termination:** R = Matte tin over nickel over silver-platinum-glass frit.

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

Q = Tin-silver-copper (95.5/4/0.5) over tin over nickel over silver-platinum-glass frit.

**Screening:** Z = Unscreened

H = Coilcraft CP-SA-10001 Group A

- Screening performed to the document's latest revision.
- Lot qualification (Group B) available.
- Custom testing also available.
- Country of origin restrictions available; prefix options G or F.

2. Inductance measured at 250 MHz, 0.1 Vrms, 0 Adc using Coilcraft SMD-A fixture in Agilent/HP 4287A impedance analyzer.

3. Tolerances in bold are stocked for immediate shipment.

4. Q is measured using Agilent/HP4991A with Agilent/HP 16197 test fixture.

5. SRF is measured on an Agilent 8753ES (or equivalent) with a Coilcraft CCF1232 test fixture.

6. DCR is measured on a Keithly 580 micro-ohmmeter (or equivalent) with a Coilcraft CCF1010 test fixture.

7. Electrical specifications at 25°C.

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



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.