

Outgassing Compliant Chip Inductors AE413RAD

This robust version of Coilcraft's standard 1008HQ series features high temperature materials that pass NASA low outgassing specifications and allow operation in ambient temperatures up to 155°C. The standard tin-lead (Sn-Pb)

terminations over leach-resistant base metalization ensures the best possible board adhesion.

All parts are qualified and compliant with MIL-STD-981 Family 50, Class S

Part number ¹	Inductance ³ (nH)	Percent tolerance	Q min ⁴	SRF min ⁵ (GHz)	DCR max ⁶ (mOhms)	Imax (A)
AE413RAD3N0_PZ ²	3.0 @ 50 MHz	5	57 @ 1000 MHz	>5.00	38	1.8
AE413RAD4N1_PZ	4.1 @ 50 MHz	5	75 @ 1000 MHz	>5.00	50	1.8
AE413RAD7N8_PZ ²	7.8 @ 50 MHz	5	51 @ 500 MHz	3.80	50	1.6
AE413RAD10N_PZ	10 @ 50 MHz	5,2	60 @ 500 MHz	3.20	60	1.5
AE413RAD12N_PZ	12 @ 50 MHz	5,2	57 @ 500 MHz	2.40	60	1.5
AE413RAD18N_PZ	18 @ 50 MHz	5,2	62 @ 350 MHz	2.10	70	1.4
AE413RAD22N_PZ	22 @ 50 MHz	5,2	62 @ 350 MHz	2.05	70	1.4
AE413RAD33N_PZ	33 @ 50 MHz	5,2	49 @ 150 MHz	1.70	90	1.2
AE413RAD36N_PZ	36 @ 50 MHz	5,2	57 @ 150 MHz	1.40	90	1.1
AE413RAD39N_PZ	39 @ 50 MHz	5,2	45 @ 150 MHz	1.30	90	1.1
AE413RAD47N_PZ	47 @ 50 MHz	5,2,1	45 @ 150 MHz	1.45	120	0.95
AE413RAD56N_PZ	56 @ 50 MHz	5,2,1	43 @ 150 MHz	1.08	120	0.95
AE413RAD68N_PZ	68 @ 50 MHz	5,2,1	54 @ 150 MHz	1.15	130	0.85
AE413RAD82N_PZ	82 @ 50 MHz	5,2,1	54 @ 150 MHz	1.06	160	0.80
AE413RADR10_PZ	100 @ 50 MHz	5,2,1	51 @ 150 MHz	0.82	160	0.80

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

AE413RADR10JPZ

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

Termination: 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.

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

• 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. Part is wound on low profile coilform.

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

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 or equivalent and a Coilcraft SMD-D test fixture.

6. DCR measured on a Keithley 580 micro-ohmmeter or equivalent and a Coilcraft CCF858 test fixture.

7. Electrical specifications at 25°C.

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

Core material Ceramic

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

Ambient temperature -55°C to +125°C with Imax 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 +155 ppm/°C

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

Enhanced crush-resistant packaging 2000/7" reel

Standard height parts: Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.8 mm pocket depth

Low profile parts: Plastic tape: 8 mm wide, 0.3 mm thick, 4 mm pocket spacing, 1.6 mm pocket depth

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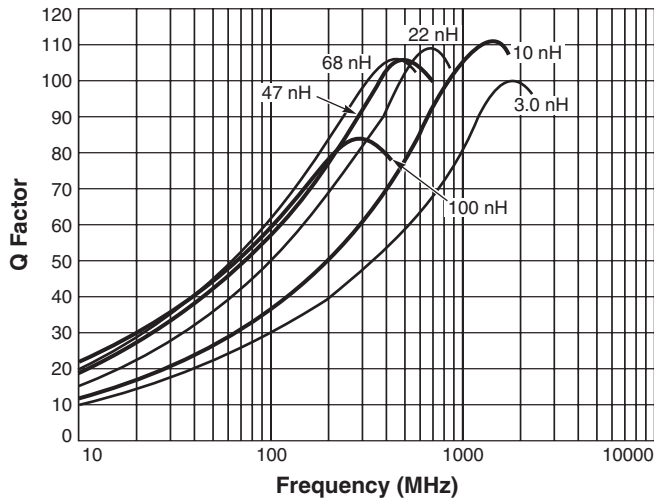
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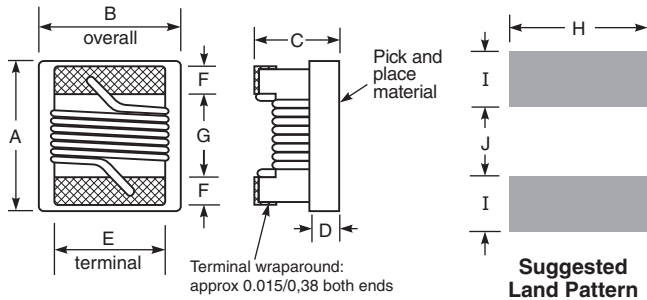
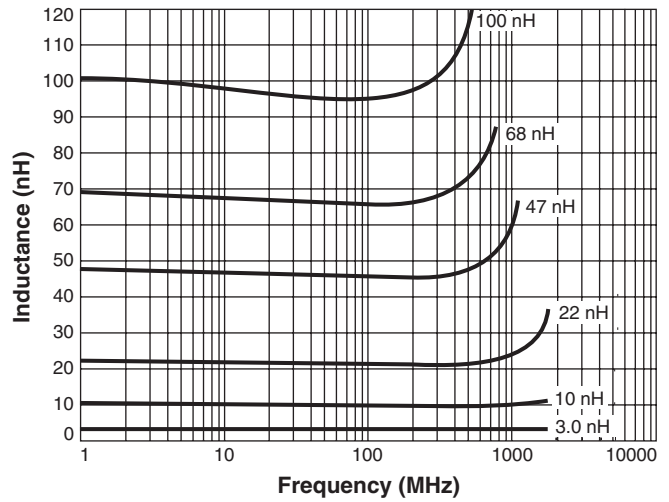
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AE413RAD Series (1008)

Typical Q vs Frequency



Typical L vs Frequency



A	B	C	D	E	F	G	H	I	J
max	max	max*	ref						
0,115	0,110	0,080	0,020	0,080	0,020	0,060	0,100	0,040	0,050
2,92	2,79	2,03	0,51	2,03	0,51	1,52	2,54	1,02	1,27

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**.



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