

PRELIMINARY

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 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_SZ ²	3.0 @ 50 MHz	5	57 @ 1000 MHz	>5.00	38	1.8
AE413RAD4N1_SZ	4.1 @ 50 MHz	5	75 @ 1000 MHz	>5.00	50	1.8
AE413RAD7N8_SZ ²	7.8 @ 50 MHz	5	51 @ 500 MHz	3.80	50	1.6
AE413RAD10N_SZ	10 @ 50 MHz	5,2	60 @ 500 MHz	3.20	60	1.5
AE413RAD12N_SZ	12 @ 50 MHz	5,2	57 @ 500 MHz	2.40	60	1.5
AE413RAD18N_SZ	18 @ 50 MHz	5,2	62 @ 350 MHz	2.10	70	1.4
AE413RAD22N_SZ	22 @ 50 MHz	5,2	62 @ 350 MHz	2.05	70	1.4
AE413RAD33N_SZ	33 @ 50 MHz	5,2	49 @ 150 MHz	1.70	90	1.2
AE413RAD36N_SZ	36 @ 50 MHz	5,2	57 @ 150 MHz	1.40	90	1.1
AE413RAD39N_SZ	39 @ 50 MHz	5,2	45 @ 150 MHz	1.30	90	1.1
AE413RAD47N_SZ	47 @ 50 MHz	5,2,1	45 @ 150 MHz	1.45	120	0.95
AE413RAD56N_SZ	56 @ 50 MHz	5,2,1	43 @ 150 MHz	1.08	120	0.95
AE413RAD68N_SZ	68 @ 50 MHz	5,2,1	54 @ 150 MHz	1.15	130	0.85
AE413RAD82N_SZ	82 @ 50 MHz	5,2,1	54 @ 150 MHz	1.06	160	0.80
AE413RADR10_SZ	100 @ 50 MHz	5,2,1	51 @ 150 MHz	0.82	160	0.80

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

AE413RADR10JSZ

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

Termination: S = Tin-lead (63/37) over leach-resistant silver-platinum-glass frit

Special order: L = RoHS compliant silver-palladium-platinum-glass frit

Testing: Z = Unscreened

H = Group A screening per Coilcraft CP-SA-10001

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

- Part is wound on low profile coilform.
- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer or equivalent with Coilcraft-provided correlation pieces.
- Q measured using an Agilent/HP 4291A with an Agilent/HP 16197A test fixture or equivalents.
- SRF measured using an Agilent/HP 8753ES network analyzer or equivalent and a Coilcraft SMD-D test fixture.
- DCR measured on a Keithley 580 micro-ohmmeter or equivalent and a Coilcraft CCF858 test fixture.
- Electrical specifications at 25°C.

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

Core material Ceramic

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

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.

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

COILCRAFT ACCURATE
PRECISION REPEATABLE
MEASUREMENTS
SEE WEB SITE **TEST FIXTURES**

Document AE190-1 Revised 07/28/17



CRITICAL PRODUCTS & SERVICES

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

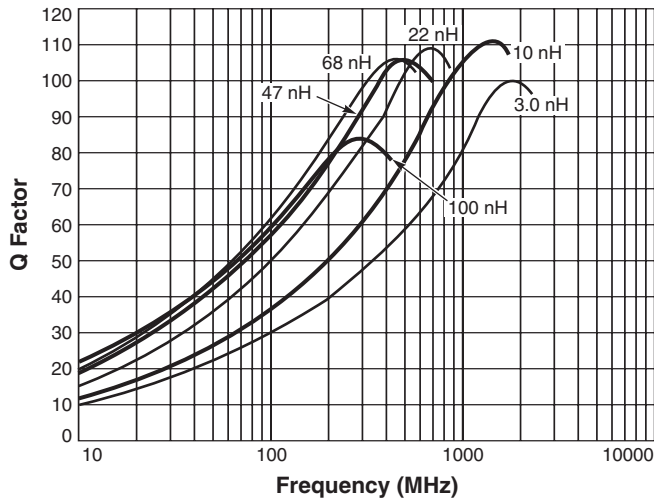
Fax 847-639-1508
Email cps@coilcraft.com
www.coilcraft-cps.com

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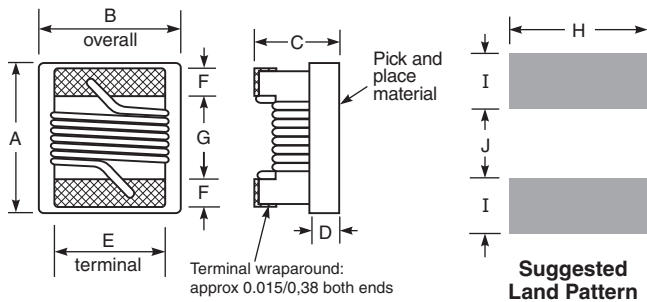
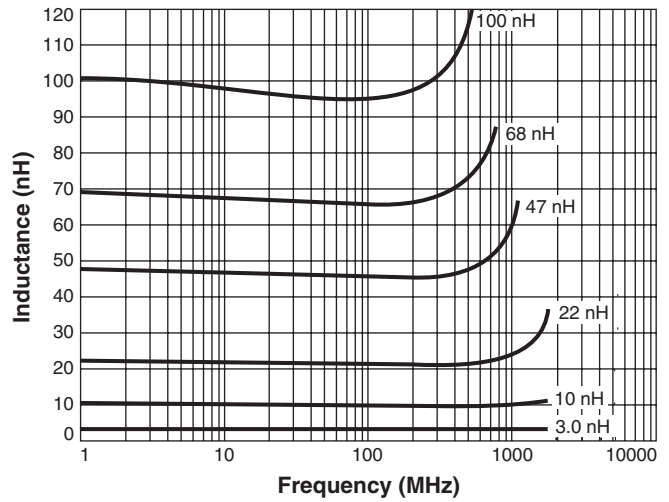
PRELIMINARY

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

*Low profile parts: 0.050/1,27

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

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

Document AE190-2 Revised 07/28/17

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.