

PRELIMINARY

Aerospace Grade Chip Inductors AE413RAK

- The 0.055" profile makes these parts ideal for low clearance applications.
- Much higher SRF values than ferrite alternatives
- High reliability and stability

This robust version of Coilcraft's standard 1008CT series features high temperature materials that pass NASA low outgassing specifications and allow operation in ambient temperatures up to 155°C. The leach-resistant base metalization with tin-lead (Sn-Pb) terminations ensures the best possible board adhesion.

Part number ¹	Inductance ² (nH)	Percent tolerance	Q min ³	SRF min ⁴ (MHz)	DCR max ⁵ (Ohms)	I _{max} (mA)
AE413RAK040_SZ	4.7 @ 50 MHz	5	28 @ 500 MHz	7500	0.15	600
AE413RAK080_SZ	8.2 @ 50 MHz	5,2	40 @ 500 MHz	5000	0.22	600
AE413RAK100_SZ	10 @ 50 MHz	5	40 @ 500 MHz	2700	0.25	600
AE413RAK150_SZ	15 @ 50 MHz	5,2	40 @ 500 MHz	3000	0.22	600
AE413RAK200_SZ	20 @ 50 MHz	5,2	50 @ 500 MHz	2400	0.33	600
AE413RAK300_SZ	30 @ 50 MHz	5,2	50 @ 500 MHz	2400	0.38	600
AE413RAK400_SZ	40 @ 50 MHz	5,2	60 @ 500 MHz	2000	0.43	600
AE413RAK500_SZ	50 @ 50 MHz	5,2	60 @ 500 MHz	1900	0.48	600
AE413RAK600_SZ	60 @ 50 MHz	5,2,1	60 @ 500 MHz	1800	0.52	600
AE413RAK700_SZ	70 @ 50 MHz	5,2,1	60 @ 500 MHz	1700	0.55	510
AE413RAK800_SZ	80 @ 50 MHz	5,2,1	60 @ 500 MHz	1400	0.56	510
AE413RAK900_SZ	90 @ 50 MHz	5,2	65 @ 500 MHz	1400	0.61	500
AE413RAK101_SZ	100 @ 50 MHz	5,2	60 @ 500 MHz	1000	0.63	480

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

AE413RAK101 G SZ

Tolerance: 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

- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
 - Q measured at using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.
 - SRF measured using an Agilent/HP 8720D network analyzer and a Coilcraft SMD-D test fixture.
 - DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF840 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

Ambient temperature -55°C to +125°C with I_{max} 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 +155 ppm/°C

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

Enhanced crush-resistant packaging 2000 per 7" reel
Plastic tape: 8 mm wide, 0.3 mm thick, 4 mm pocket spacing,
1.6 mm pocket depth

COILCRAFT ACCURATE
PRECISION REPEATABLE
MEASUREMENTS
SEE INDEX **TEST FIXTURES**

Coilcraft **CPS**
CRITICAL PRODUCTS & SERVICES

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

Document AE102-1 Revised 06/01/09

1102 Silver Lake Road
Cary IL 60013

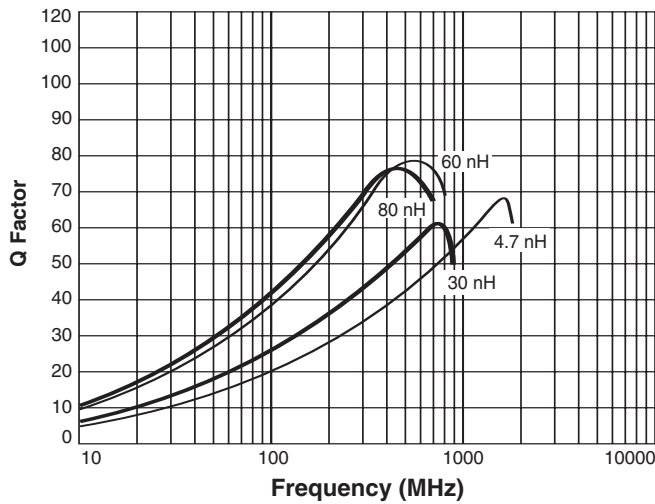
Phone 800-981-0363
Fax 847-639-1508

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

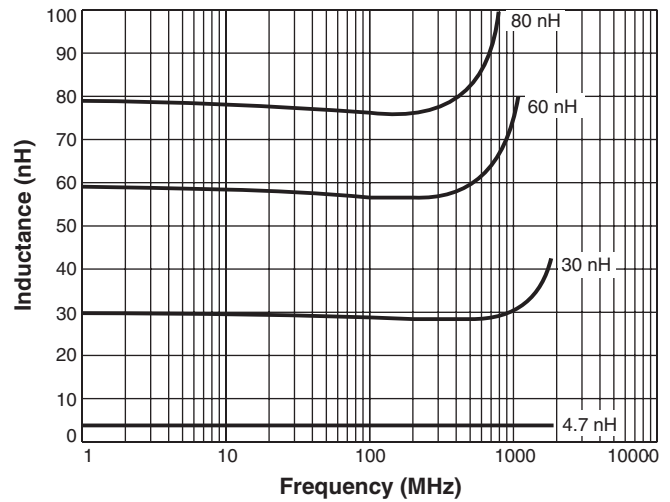
PRELIMINARY

AE413RAK Series (1008)

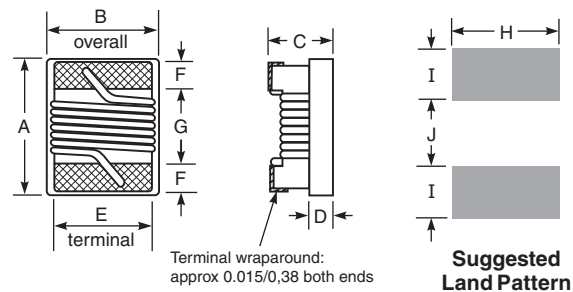
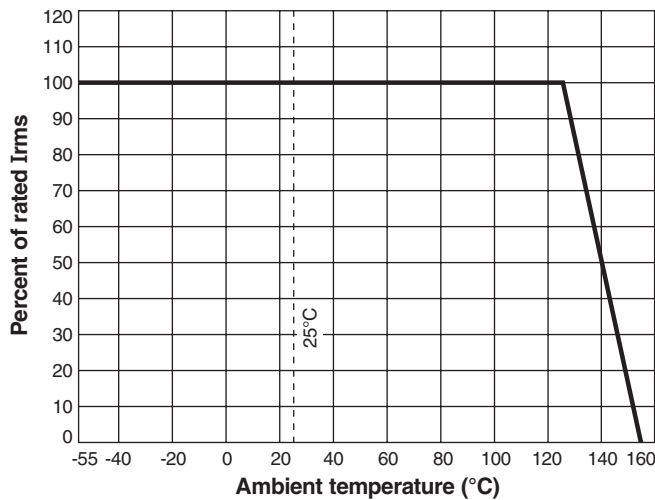
Typical Q vs Frequency



Typical L vs Frequency



Current Derating



A	B	C	D	E	F	G	H	I	J
max	max	max	ref						
0.115	0.110	0.050	0.020	0.080	0.020	0.060	0.100	0.040	0.050
2,92	2,79	1,27	0,51	2,03	0,51	1,52	2,54	1,02	1,27

All dimensions are without solder applied to the terminations. For maximum dimensions with solder, add 0.006 inches / 0,152 mm.