

PRELIMINARY

Aerospace Grade Chip Inductors AE413RAE

This robust version of Coilcraft's standard 1008HS 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)
AE413RAE100JSZ	10 @ 50 MHz	5	50 @ 500 MHz	4100	0.08	1000
AE413RAE120JSZ	12 @ 50 MHz	5	50 @ 500 MHz	3300	0.09	1000
AE413RAE150JSZ	15 @ 50 MHz	5	50 @ 500 MHz	2500	0.10	1000
AE413RAE180JSZ	18 @ 50 MHz	5	50 @ 350 MHz	2500	0.11	1000
AE413RAE220JSZ	22 @ 50 MHz	5	55 @ 350 MHz	2400	0.12	1000
AE413RAE270_SZ	27 @ 50 MHz	5,2	55 @ 350 MHz	1600	0.13	1000
AE413RAE330_SZ	33 @ 50 MHz	5,2	60 @ 350 MHz	1600	0.14	1000
AE413RAE390_SZ	39 @ 50 MHz	5,2	60 @ 350 MHz	1500	0.15	1000
AE413RAE470_SZ	47 @ 50 MHz	5,2,1	65 @ 350 MHz	1500	0.16	1000
AE413RAE560_SZ	56 @ 50 MHz	5,2,1	65 @ 350 MHz	1300	0.18	1000
AE413RAE680_SZ	68 @ 50 MHz	5,2,1	65 @ 350 MHz	1300	0.20	1000
AE413RAE820_SZ	82 @ 50 MHz	5,2,1	60 @ 350 MHz	1000	0.22	1000
AE413RAE101_SZ	100 @ 25 MHz	5,2,1	60 @ 350 MHz	1000	0.56	650
AE413RAE121_SZ	120 @ 25 MHz	5,2,1	60 @ 350 MHz	950	0.63	650
AE413RAE151_SZ	150 @ 25 MHz	5,2,1	45 @ 100 MHz	850	0.70	580
AE413RAE181_SZ	180 @ 25 MHz	5,2,1	45 @ 100 MHz	750	0.77	620
AE413RAE221_SZ	220 @ 25 MHz	5,2,1	45 @ 100 MHz	700	0.84	500
AE413RAE271_SZ	270 @ 25 MHz	5,2,1	45 @ 100 MHz	600	0.91	500
AE413RAE331_SZ	330 @ 25 MHz	5,2,1	45 @ 100 MHz	570	1.05	450
AE413RAE391_SZ	390 @ 25 MHz	5,2,1	45 @ 100 MHz	500	1.12	470
AE413RAE471_SZ	470 @ 25 MHz	5,2,1	45 @ 100 MHz	450	1.19	470
AE413RAE561_SZ	560 @ 25 MHz	5,2,1	45 @ 100 MHz	415	1.33	400
AE413RAE621_SZ	620 @ 25 MHz	5,2,1	45 @ 100 MHz	375	1.40	300
AE413RAE681_SZ	680 @ 25 MHz	5,2,1	45 @ 100 MHz	375	1.47	400
AE413RAE751_SZ	750 @ 25 MHz	5,2,1	45 @ 100 MHz	360	1.54	360
AE413RAE821_SZ	820 @ 25 MHz	5,2,1	45 @ 100 MHz	350	1.61	400
AE413RAE911_SZ	910 @ 25 MHz	5,2,1	35 @ 50 MHz	320	1.68	380
AE413RAE102_SZ	1000 @ 25 MHz	5,2	35 @ 50 MHz	290	1.75	370

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

AE413RAE102JSZ

Tolerance: F = 1% 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

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

3. Q measured using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.

4. SRF measured using an Agilent/HP 8753D network analyzer and a Coilcraft SMD-D test fixture.

5. DCR measured on a Cambridge Technology micro-ohmmeter and a Coilcraft CCF840 test fixture.

6. 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, 0.23 mm thick, 4 mm pocket spacing, 1.8 mm pocket depth

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



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

Document AE160-1 Revised 06/01/09

CRITICAL PRODUCTS & SERVICES

1102 Silver Lake Road
Cary IL 60013

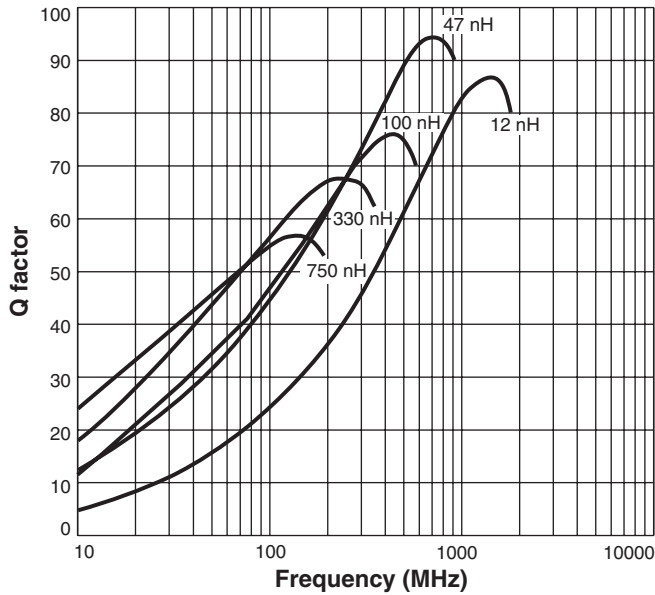
Phone 800-981-0363
Fax 847-639-1508

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

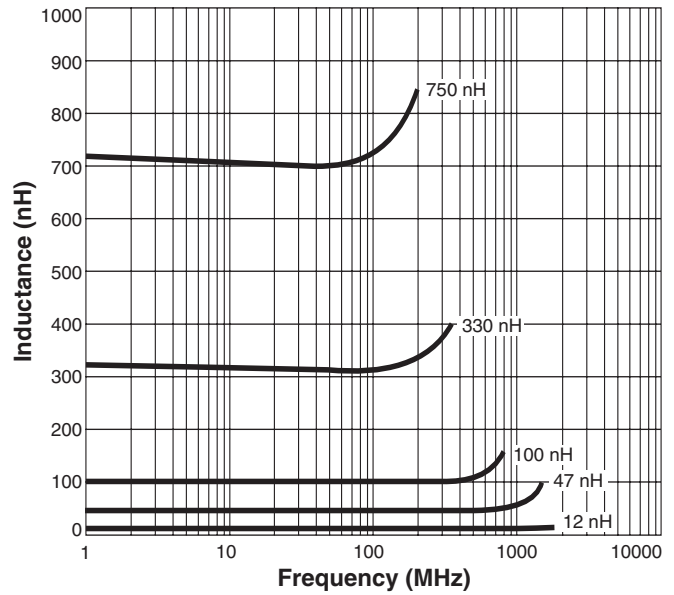
PRELIMINARY

AE413RAE Series (1008)

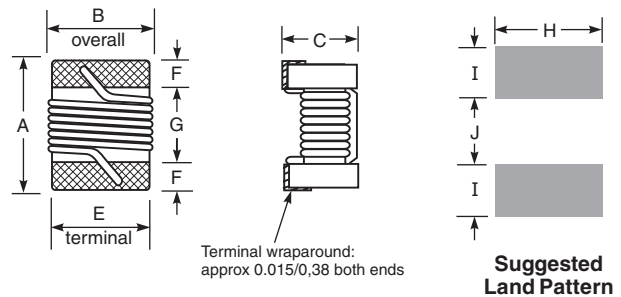
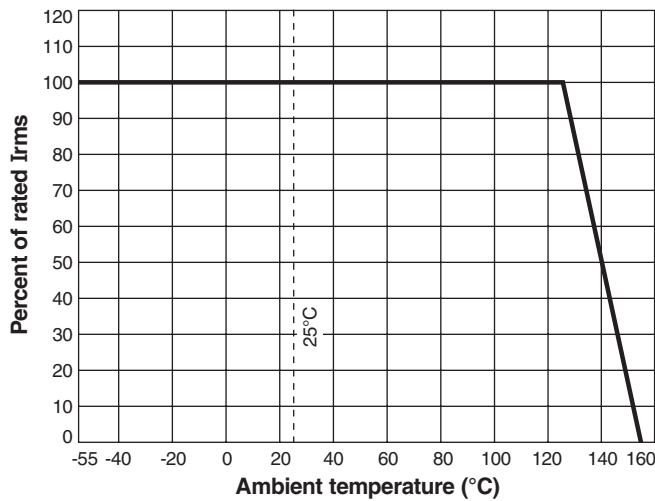
Typical Q vs Frequency



Typical L vs Frequency



Current Derating



A max	B max	C max	E	F	G	H	I	J	inches
0.105	0.095	0.080	0.080	0.020	0.060	0.100	0.040	0.050	
2,67	2,41	2,03	2,03	0,51	1,52	2,54	1,02	1,27	mm

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