

**PRELIMINARY**

# Aerospace Grade Chip Inductors AE413RAM

- Ferrite construction provides lowest DCR and highest current rating of our 1008 size inductors.
- Available in 14 inductance values from 0.9 to 10  $\mu\text{H}$ , all at 10% tolerance.

This robust version of Coilcraft's standard 1008AF 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 <sup>1</sup>	Inductance <sup>2</sup> $\pm 10\%$ ( $\mu\text{H}$ )	Q typ <sup>3</sup>	SRF min <sup>4</sup> (MHz)	DCR max <sup>5</sup> (Ohms)	Isat <sup>6</sup> (A)	Imax (A)
AE413RAM901KSZ	0.9	25	415	0.100	1.4	1.3
AE413RAM112KSZ	1.1	24	376	0.105	1.3	1.2
AE413RAM132KSZ	1.3	37	198	0.110	1.2	1.1
AE413RAM152KSZ	1.5	22	135	0.125	1.1	1.0
AE413RAM192KSZ	1.9	29	126	0.140	1.0	1.0
AE413RAM222KSZ	2.2	21	106	0.155	0.95	0.95
AE413RAM272KSZ	2.7	22	70	0.190	0.80	0.90
AE413RAM332KSZ	3.3	21	59	0.210	0.75	0.80
AE413RAM392KSZ	3.9	21	55	0.220	0.70	0.80
AE413RAM472KSZ	4.7	27	48	0.435	0.70	0.65
AE413RAM582KSZ	5.8	21	37	0.280	0.55	0.75
AE413RAM682KSZ	6.8	20	33	0.315	0.50	0.70
AE413RAM822KSZ	8.2	20	34	0.395	0.50	0.65
AE413RAM103KSZ	10.0	22	26	0.480	0.45	0.55

1. When ordering, please specify **testing** code:

**AE413RAK103KSZ**

**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 at 2.5 MHz using Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.

3. Q measured at 2.5 MHz using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture.

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

5. DCR measured on a Cambridge Technology Micro-ohmmeter.

6. DC current at which the inductance drops 10% (typ.) from its value without current.

7. Electrical specifications at 25°C.

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

**Core material** Ferrite

**Terminations** Tin-lead (63/37) over silver-platinum-glass frit

**Ambient temperature** -55°C to +125°C with I<sub>max</sub> 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)** +100 to +350 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, 2.0 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.

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1102 Silver Lake Road  
Cary IL 60013

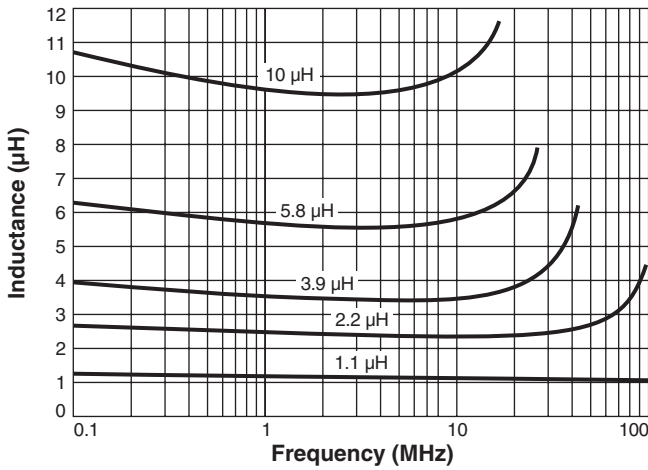
Phone 800-981-0363  
Fax 847-639-1508

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

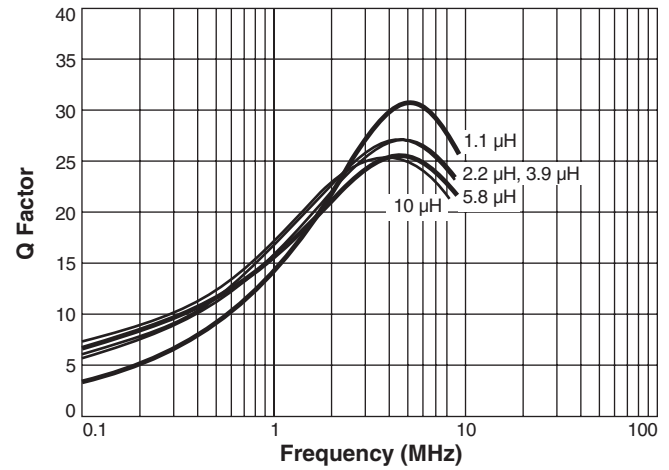
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# AE413RAM Series (1008)

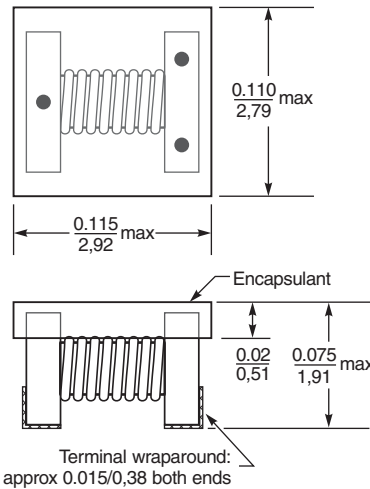
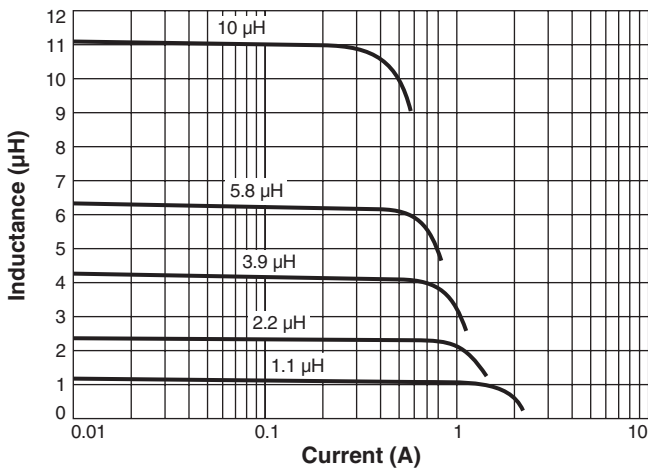
## Typical L vs Frequency



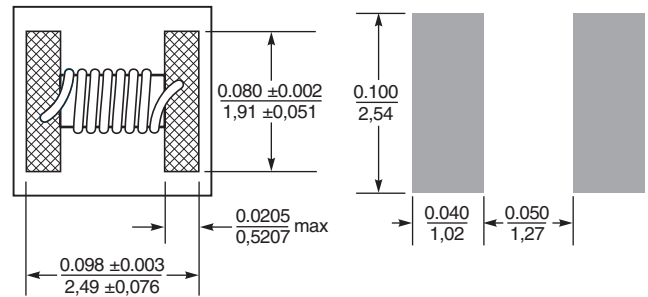
## Typical Q vs Frequency



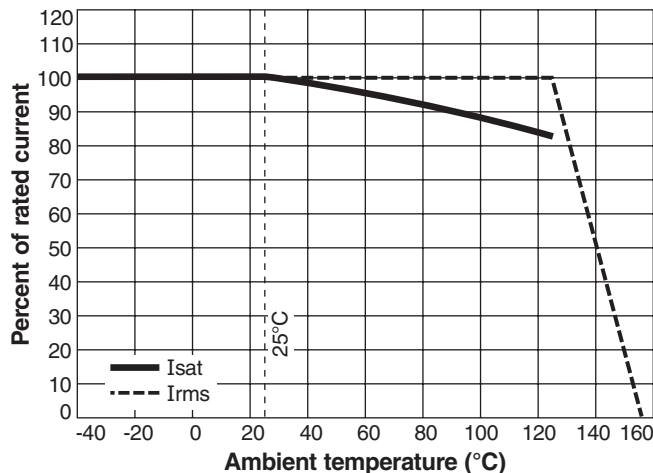
## Typical L vs Current



### Suggested Land Pattern



## Typical Current Derating



Dimensions are in inches / mm

All dimensions are without solder applied to the terminations. For maximum dimensions with solder, add 0.006 inches / 0.152 mm.