

**PRELIMINARY**

# Outgassing Compliant Chip Inductors AE450RAA

- Higher SRF values than 1812 size parts with ferrite cores
- 5% tolerances for all values
- 19 inductance values from 1.0 to 33  $\mu$ H

This robust version of Coilcraft's standard 1812CS 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> ( $\mu$ H)	Percent tolerance	Q min <sup>3</sup>	SRF min <sup>4</sup> (MHz)	DCR max <sup>5</sup> (Ohms)	I <sub>max</sub> (mA)
AE450RAA102JSZ	1.0 @ 7.9 MHz	5	59 @ 50 MHz	260	1.1	530
AE450RAA122JSZ	1.2 @ 7.9 MHz	5	54 @ 50 MHz	230	1.2	480
AE450RAA152_SZ	1.5 @ 7.9 MHz	5,2	57 @ 50 MHz	210	1.6	430
AE450RAA182JSZ	1.8 @ 7.9 MHz	5	57 @ 50 MHz	190	2.0	380
AE450RAA222JSZ	2.2 @ 7.9 MHz	5	52 @ 50 MHz	170	2.2	340
AE450RAA272JSZ	2.7 @ 7.9 MHz	5	53 @ 50 MHz	160	3.2	300
AE450RAA332JSZ	3.3 @ 7.9 MHz	5	53 @ 50 MHz	145	3.8	270
AE450RAA392_SZ	3.9 @ 7.9 MHz	5,2	53 @ 50 MHz	130	5.0	240
AE450RAA472JSZ	4.7 @ 7.9 MHz	5	32 @ 10 MHz	115	5.4	230
AE450RAA562JSZ	5.6 @ 7.9 MHz	5	32 @ 10 MHz	100	5.7	220
AE450RAA682JSZ	6.8 @ 7.9 MHz	5	32 @ 10 MHz	90	6.6	210
AE450RAA822JSZ	8.2 @ 7.9 MHz	5	32 @ 10 MHz	80	7.0	200
AE450RAA103JSZ	10.0 @ 7.9 MHz	5	32 @ 10 MHz	70	7.7	190
AE450RAA123JSZ	12.0 @ 2.5 MHz	5	26 @ 5 MHz	60	8.7	180
AE450RAA153JSZ	15.0 @ 2.5 MHz	5	26 @ 5 MHz	50	9.6	170
AE450RAA183JSZ	18.0 @ 2.5 MHz	5	28 @ 5 MHz	40	10.5	155
AE450RAA223_SZ	22.0 @ 2.5 MHz	5,2	28 @ 5 MHz	40	11.5	155
AE450RAA273JSZ	27.0 @ 2.5 MHz	5	28 @ 5 MHz	30	12.5	150
AE450RAA333_SZ	33.0 @ 2.5 MHz	5,2	24 @ 2.5 MHz	20	13.5	145

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

AE450RAA333 JSZ

**Tolerance:** G = 2% J = 5%

**Testing:** Z = COTS

H = Screening per Coilcraft CP-SA-10001

N = Screening per Coilcraft CP-SA-10003

C = Custom screening (please specify when ordering)

- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286 impedance analyzer or equivalent with Coilcraft-provided correlation pieces.
- Q measured at the same frequency as inductance using an Agilent/HP 4291A with an Agilent/HP 16193 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 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

**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)** +25 to +155 ppm/°C

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

**Enhanced crush-resistant packaging** 600 per 7" reel  
Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing,  
3.7 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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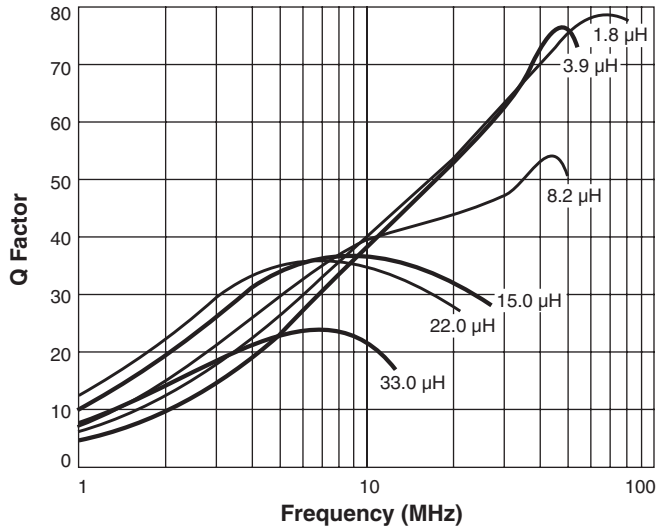
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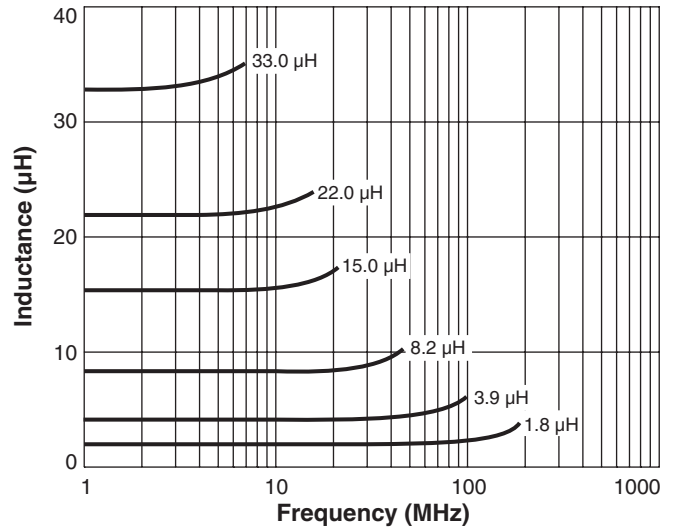
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# AE450RAA Series (1812)

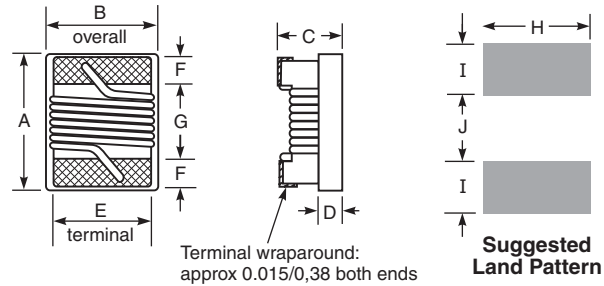
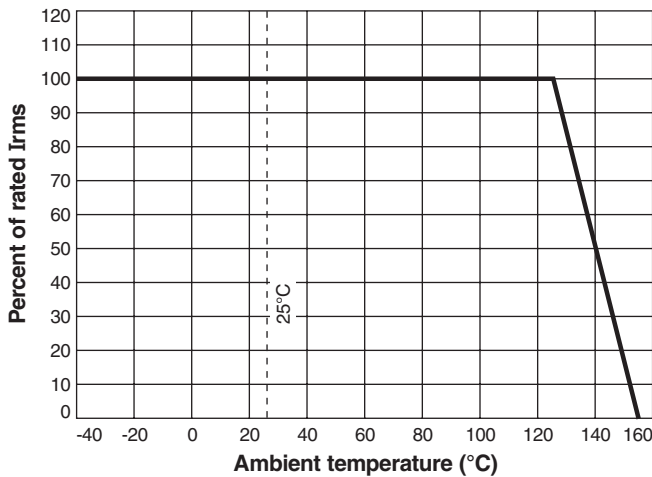
## Typical Q vs Frequency



## Typical L vs Frequency



## Current Derating



A max	B max	C max	D ref	E	F	G	H	I	J
0.195	0.150	0.135	0.070	0.100	0.025	0.128	0.120	0.045	0.118
4,95	3,81	3,43	1,78	2,54	0,64	3,25	3,05	1,14	3,00

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