

High-Reliability Chip Inductors MS450RAA

- Higher SRF values than 1812 size parts with ferrite cores
- 2% and 1% tolerances for all values
- 9 inductance values from 1.0 to 4.7 μH

Coilcraft MS450RAA ceramic chip inductors are ideal for applications requiring mid-range inductance and close tolerances ($\pm 5\%$). The SRFs of the parts in this series are up to three times higher than those of commonly available 1812 chip inductors made on ferrite cores.

Part number ¹	Inductance ² (μH)	Percent tolerance	Q min ³	SRF min ⁴ (MHz)	DCR max ⁵ (Ohms)	I _{max} (mA)
MS450RAA102JSZ	1.0 @ 7.9 MHz	5,2,1	59 @ 50 MHz	260	1.1	390
MS450RAA122JSZ	1.2 @ 7.9 MHz	5,2,1	54 @ 50 MHz	230	1.2	360
MS450RAA152_SZ	1.5 @ 7.9 MHz	5,2,1	57 @ 50 MHz	210	1.6	320
MS450RAA182JSZ	1.8 @ 7.9 MHz	5,2,1	57 @ 50 MHz	190	2.0	270
MS450RAA222JSZ	2.2 @ 7.9 MHz	5,2,1	52 @ 50 MHz	170	2.2	250
MS450RAA272JSZ	2.7 @ 7.9 MHz	5,2,1	53 @ 50 MHz	160	3.2	200
MS450RAA332JSZ	3.3 @ 7.9 MHz	5,2,1	53 @ 50 MHz	145	3.8	200
MS450RAA392_SZ	3.9 @ 7.9 MHz	5,2,1	53 @ 50 MHz	130	5.0	175
MS450RAA472JSZ	4.7 @ 7.9 MHz	5,2,1	32 @ 10 MHz	115	5.4	165

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

MS450RAA333JSZ

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

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

Special order:

T = Tin-silver-copper (95.5/4/0.5) over silver-platinum-glass frit.

P = Tin-lead (63/37) over tin over nickel over silver-platinum-glass frit.

Q = Tin-silver-copper (95.5/4/0.5) over tin over nickel over silver-platinum-glass frit.

2. Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286 impedance analyzer or equivalent with Coilcraft-provided correlation pieces.
3. Q measured at the same frequency as inductance using an Agilent/HP 4291A with an Agilent/HP 16193 test fixture or equivalents.
4. SRF measured using an Agilent/HP 8753ES network analyzer or equivalent and a Coilcraft SMD-D test fixture.
5. DCR measured on a micro-ohmmeter.
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. Other terminations available at an additional cost.

Weight: 200–230 mg

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

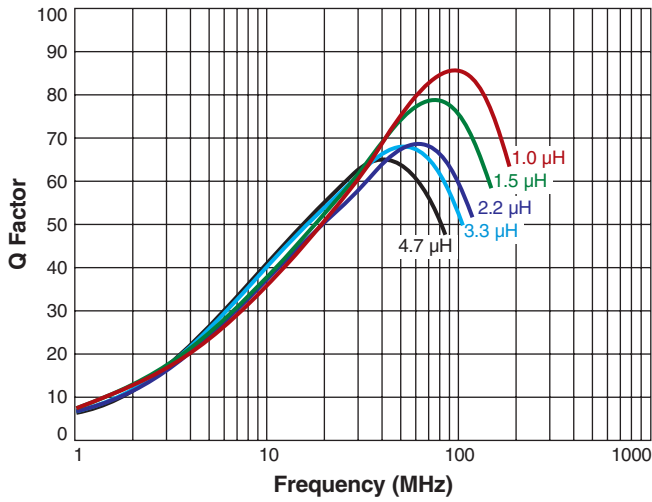
Temperature Coefficient of Inductance (TCL) +25 to +155 ppm/°C

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

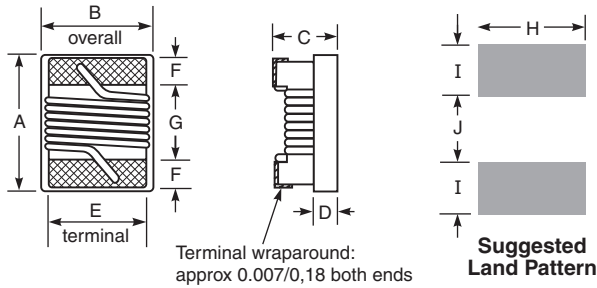
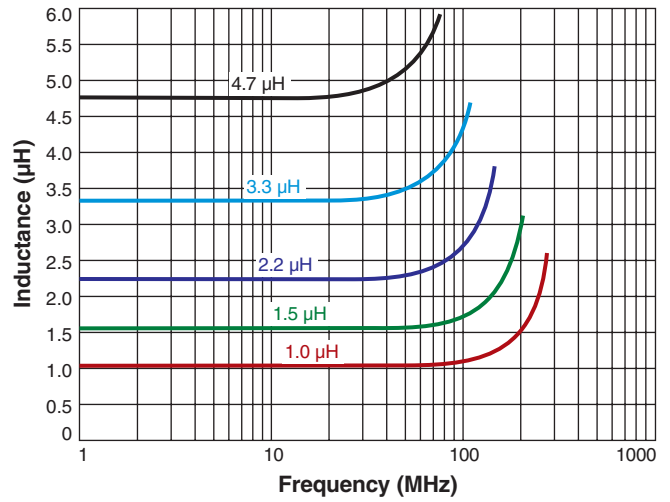
Enhanced crush-resistant packaging 600 per 7" reel
Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing,
3.7 mm pocket depth

MS450RAA Series (1812)

Typical Q vs Frequency



Typical L vs Frequency



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

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**.