

**PRELIMINARY**

# Chip Inductors – M1206CS Series (3216)

The M1206CS inductors feature high SRF and excellent Q values. Their ceramic cores make 1% tolerances practical and economical and ensure the utmost in thermal stability, predictability and consistency.

This robust version of Coilcraft's standard 1206CS series features a high temperature encapsulant that allows operation in ambient temperatures up to 155°C and a leach-resistant base metalization with 63/37 tin-lead terminations that ensures the best possible board adhesion.

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance	Q min <sup>3</sup>	SRF min <sup>4</sup> (MHz)	DCR max <sup>5</sup> (Ohms)	I <sub>rms</sub> <sup>6</sup> (mA)
M1206CS-030X_	3.3 @ 100 MHz	5	30 @ 300 MHz	6200	0.050	1000
M1206CS-060X_	6.8 @ 100 MHz	5	30 @ 300 MHz	5500	0.070	1000
M1206CS-100X_	10 @ 100 MHz	5	40 @ 300 MHz	4000	0.080	1000
M1206CS-120X_	12 @ 100 MHz	5,2	40 @ 300 MHz	3200	0.080	1000
M1206CS-150X_	15 @ 100 MHz	5,2	40 @ 300 MHz	3200	0.100	1000
M1206CS-180X_	18 @ 100 MHz	5,2	50 @ 300 MHz	2800	0.100	1000
M1206CS-220X_	22 @ 100 MHz	5,2	50 @ 300 MHz	2200	0.100	1000
M1206CS-270X_	27 @ 100 MHz	5,2	50 @ 300 MHz	1800	0.110	1000
M1206CS-330X_	33 @ 100 MHz	5,2	55 @ 300 MHz	1800	0.110	1000
M1206CS-390X_	39 @ 100 MHz	5,2	55 @ 300 MHz	1800	0.120	1000
M1206CS-470X_	47 @ 100 MHz	5,2	55 @ 300 MHz	1500	0.130	1000
M1206CS-560X_	56 @ 100 MHz	5,2,1	55 @ 300 MHz	1450	0.140	1000
M1206CS-680X_	68 @ 100 MHz	5,2,1	55 @ 300 MHz	1200	0.260	900
M1206CS-820X_	82 @ 100 MHz	5,2,1	55 @ 300 MHz	1200	0.210	900
M1206CS-101X_	100 @ 100 MHz	5,2,1	55 @ 300 MHz	1100	0.260	850
M1206CS-121X_	120 @ 100 MHz	5,2,1	60 @ 300 MHz	1100	0.260	800
M1206CS-151X_	150 @ 100 MHz	5,2,1	60 @ 300 MHz	950	0.310	750
M1206CS-181X_	180 @ 50 MHz	5,2,1	60 @ 300 MHz	900	0.430	700
M1206CS-221X_	220 @ 50 MHz	5,2,1	60 @ 300 MHz	760	0.500	670
M1206CS-271X_	270 @ 50 MHz	5,2,1	55 @ 300 MHz	730	0.560	630
M1206CS-331X_	330 @ 50 MHz	5,2,1	45 @ 150 MHz	650	0.620	590
M1206CS-391X_	390 @ 50 MHz	5,2,1	45 @ 150 MHz	600	0.750	530
M1206CS-471X_	470 @ 50 MHz	5,2,1	45 @ 150 MHz	550	1.30	490
M1206CS-561X_	560 @ 35 MHz	5,2,1	45 @ 150 MHz	470	1.34	460
M1206CS-621X_	620 @ 35 MHz	5,2,1	45 @ 150 MHz	470	1.58	460
M1206CS-681X_	680 @ 35 MHz	5,2,1	45 @ 150 MHz	450	1.58	430
M1206CS-751X_	750 @ 35 MHz	5,2,1	45 @ 150 MHz	440	2.25	320
M1206CS-821X_	820 @ 35 MHz	5,2,1	45 @ 150 MHz	420	1.82	400
M1206CS-911X_	910 @ 35 MHz	5,2,1	45 @ 150 MHz	410	2.95	310
M1206CS-102X_	1000 @ 35 MHz	5,2,1	45 @ 150 MHz	400	2.80	320
M1206CS-122X_	1200 @ 35 MHz	5,2,1	45 @ 150 MHz	380	3.20	300

1. When ordering, please specify tolerance code:

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**M1206CS-122XJ**

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

- Inductance measured using a Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer with Coilcraft-provided correlation pieces.
- Q measured 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 fixture.
- Current that causes a 15°C temperature rise from 25°C ambient.
- Electrical specifications at 25°C.

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



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

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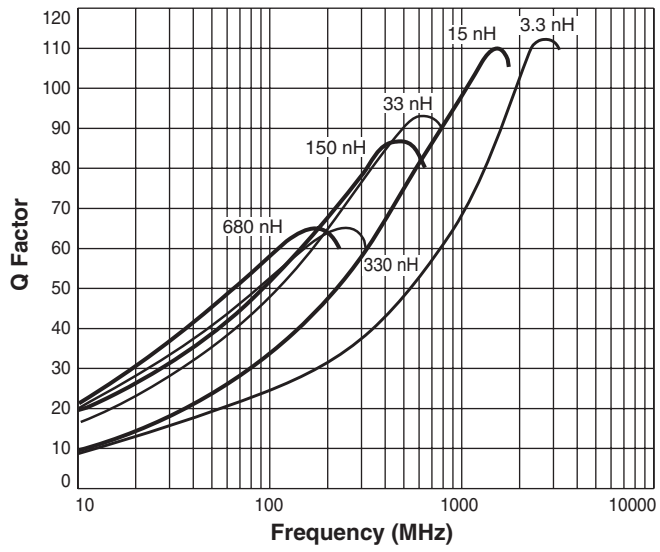
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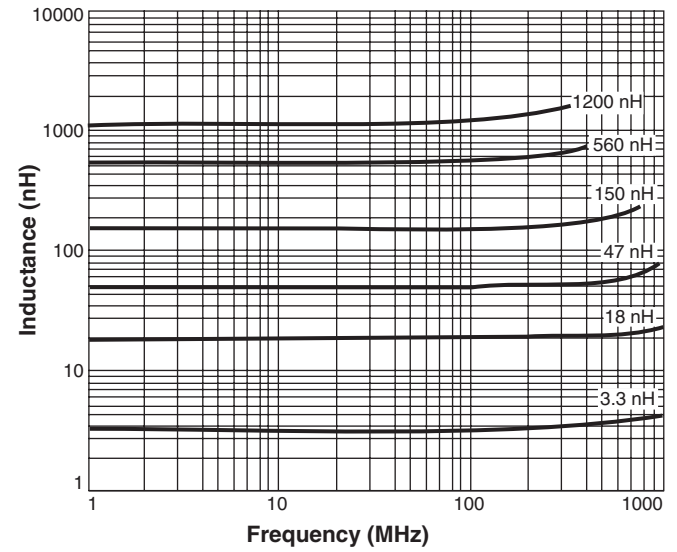
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# M1206CS Series (3216)

## Typical Q vs Frequency



## Typical L vs Frequency



**Core material** Ceramic

**Terminations** Tin-lead over silver-palladium-platinum-glass frit.

**Ambient temperature** -55°C to +140°C with I<sub>rms</sub> current, +140°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

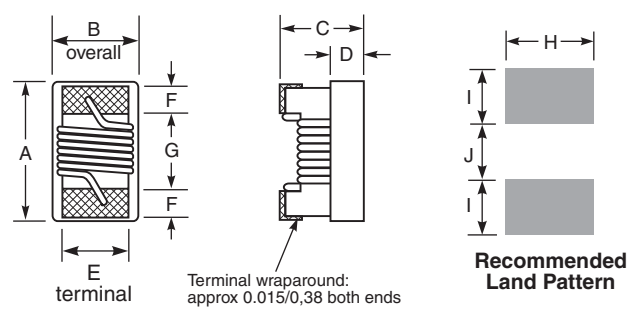
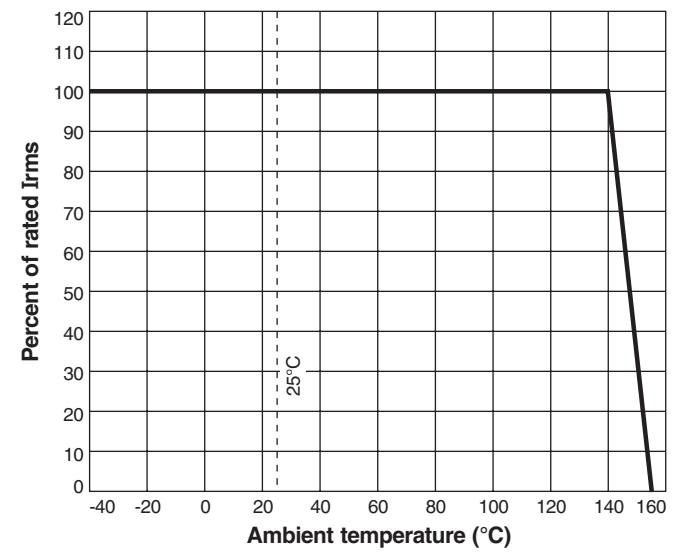
**Temperature Coefficient of Inductance (TCL)** +25 to +125 ppm/°C

**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

## I<sub>rms</sub> Derating



A max	B max	C max	D ref	E	F	G	H	I	J
0.140	0.085	0.060	0.020	0.056	0.020	0.080	0.076	0.040	0.070
3,56	2,16	1,52	0,51	1,42	0,51	2,03	1,93	1,02	1,78



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