



# HIGH CURRENT

# Chip Inductors - 0603HC Series (1608)

With their high current ratings and ultra-small size, these chip inductors are ideal for today's high frequency, low voltage applications like mobile phones. They feature continuous current ratings up to 2.4 Amps DC and will handle transient currents up to 50% higher. At low

inductance values, their Q factors are also higher than our standard 0603CS Series.

Coilcraft **Designer's Kit C339** contains samples of all 5% inductance tolerance parts. To order, contact Coilcraft or visit <http://order.coilcraft.com>.

Part number <sup>1</sup>	Inductance <sup>2</sup> (nH)	Percent tolerance <sup>3</sup>	Q min <sup>4</sup>	900 MHz		1.7 GHz		SRF min <sup>5</sup> (MHz)	DCR max <sup>6</sup> (Ohms)	I <sub>rms</sub> <sup>7</sup> (A)	Color code
				L typ	Q typ	L typ	Q typ				
0603HC-1N6X_L_	1.6	<b>5</b>	24	1.67	49	1.65	63	12500	0.030	2.4	Black
0603HC-3N6X_L_	3.6	<b>5</b>	24	3.65	70	3.75	90	5900	0.048	2.3	Brown
0603HC-3N9X_L_	3.9	<b>5</b>	25	3.74	70	3.90	90	5900	0.054	2.2	Red
0603HC-6N8X_L_	6.8	<b>5</b>	35	6.72	70	7.10	75	5800	0.054	2.1	Orange
0603HC-7N5X_L_	7.5	<b>5</b>	38	7.33	70	7.90	68	3700	0.059	2.1	Yellow
0603HC-10NX_L_	10	<b>5,2</b>	38	9.70	73	10.5	57	3700	0.071	2.0	Green
0603HC-12NX_L_	12	<b>5,2</b>	38	12.3	68	14.5	41	3000	0.075	2.0	Blue
0603HC-15NX_L_	15	<b>5,2</b>	38	15.5	65	17.6	40	2800	0.080	1.9	Violet
0603HC-18NX_L_	18	<b>5,2</b>	40	19.5	62	25.0	40	2800	0.099	1.9	Gray
0603HC-22NX_L_	22	<b>5,2</b>	42	24.0	61	31.5	26	2400	0.099	1.8	White
0603HC-24NX_L_	24	<b>5,2</b>	42	25.8	55	35.0	21	2400	0.105	1.8	Black

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

0603HC-24NX J L W

**Tolerance:** G = 2% J = 5% (Table shows stock tolerances in bold.)

**Termination:** L = RoHS compliant silver-palladium-platinum-glass frit.  
Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or  
S = non-RoHS tin-lead (63/37).

**Packaging:** W = 7" machine-ready reel. EIA-481 punched paper tape (2000 parts per full reel).

U = Less than full reel. In tape, but not machine ready.  
To have a leader and trailer added (\$25 charge), use code letter W instead.

- Inductance measured at 250 MHz using Coilcraft SMD-A fixture in Agilent/HP 4286 impedance analyzer with Coilcraft-provided correlation pieces.
- Tolerances in bold are stocked for immediate shipment.
- Q measured at 250 MHz using Agilent/HP 4291A with Agilent/HP 16193 test fixture.
- SRF measured using Agilent/HP 8720D network analyzer and Coilcraft

SMD-D test fixture.

- DCR measured on micro-ohmmeter and Coilcraft CCF858 test fixture.
  - Current that causes a 20°C temperature rise from 25°C ambient.
  - Ambient temperature range:** -40°C to +125°C with I<sub>rms</sub> current +125°C to +145°C with derated current
  - Storage temperature range:** Component: -40°C to +145°C  
Packaging: -55°C to +80°C
  - Resistance to soldering heat:** Three reflows at >217°C for 90 seconds (+260°C ±5°C for 20 – 40 seconds), allowing parts to cool to room temperature between.
  - Electrical specifications at 25°C.
  - Temperature coefficient of inductance: +25 to +125 ppm/°C.
- See Qualification Standards section for environmental and test data. Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

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

**Coilcraft**<sup>®</sup>

Specifications subject to change without notice.  
Please check our website for latest information.

Document 218-1 Revised 09/21/07

1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469  
E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>

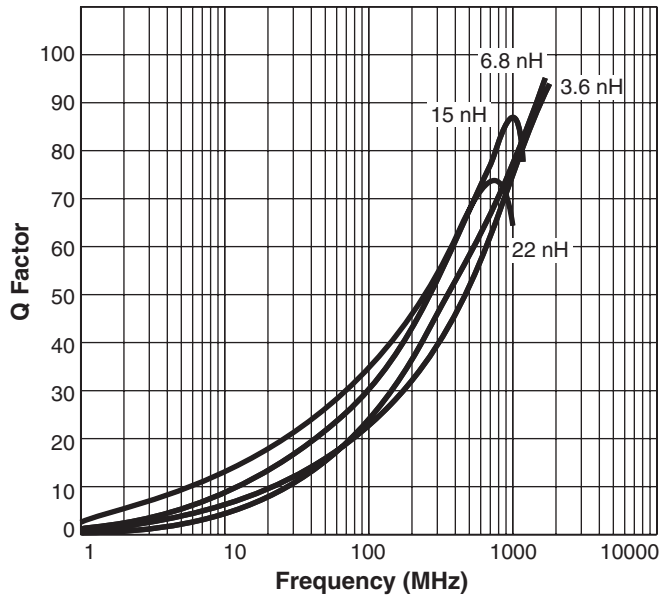


# HIGH CURRENT

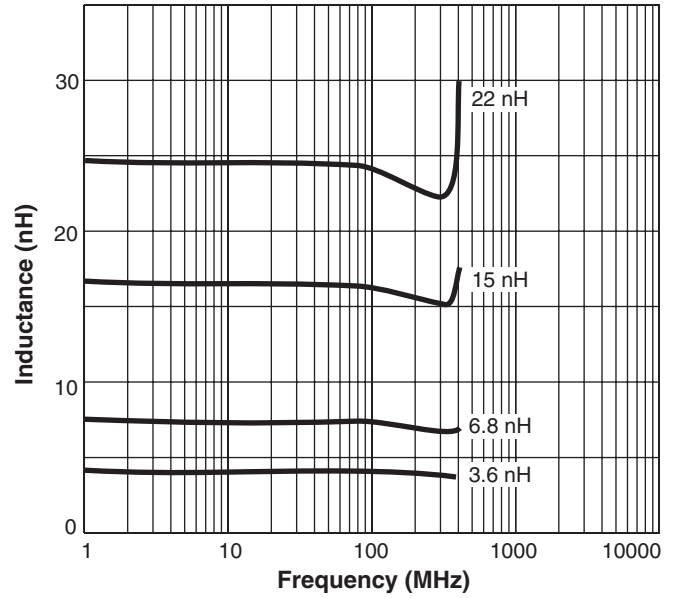
## 0603HC (1608) Chip Inductors

**S-Parameter files**  
ON OUR WEB SITE OR CD  
**SPICE models**  
ON OUR WEB SITE OR CD

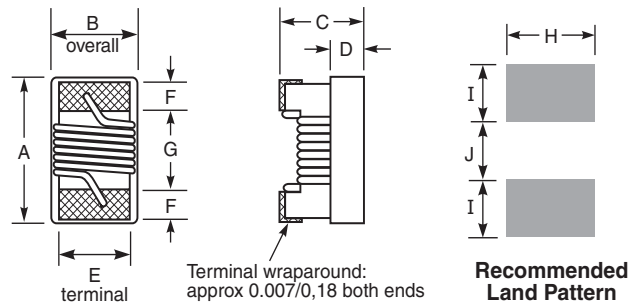
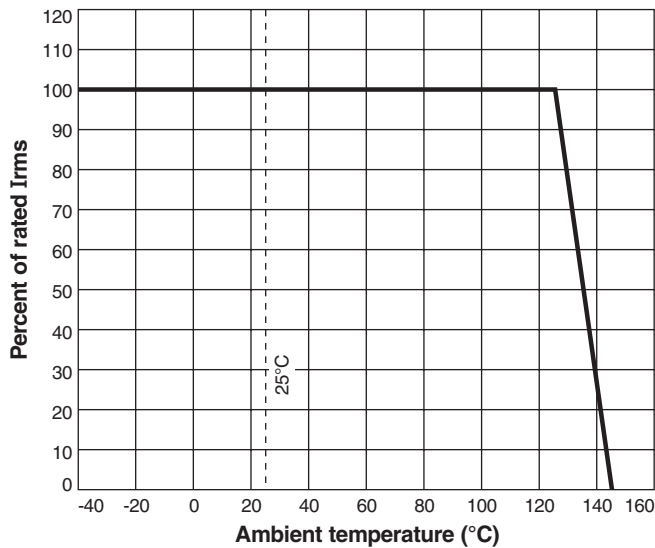
### Typical Q vs Frequency



### Typical L vs Frequency



### Irms Derating



A	B	C	D	E	F	G	H	I	J
max	max	max	ref						
0,071	0,044	0,040	0,015	0,030	0,013	0,034	0,040	0,025	0,025
1,80	1,12	1,02	0,38	0,76	0,33	0,86	1,02	0,64	0,64

**Weight:** 3.3 – 3.7 mg  
**Tape and reel:** 2000/7" reel 8 mm tape width  
For packaging data see Tape and Reel Specifications section.



Specifications subject to change without notice.  
Please check our website for latest information.

Document 218-2 Revised 09/21/07

1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>