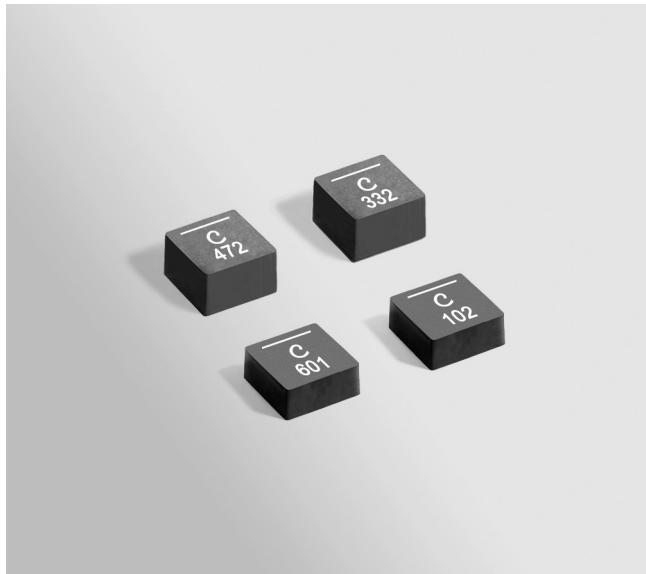




Shielded Power Inductors - XAL40xx



- High current and very low DCR
- AEC-Q200 Grade 1 (-40°C to +125°C)
- Soft saturation makes them ideal for VRM/VRD applications.

Designer's Kit C429 contains 5 of each value

Core material Composite

Core and winding loss See www.coilcraft.com/coreloss

Environmental RoHS compliant, halogen free

Terminations RoHS compliant tin-silver (96.5/3.5) over copper. Other terminations available at additional cost.

Operating voltage: 0 – 60 V

Ambient temperature -40°C to +125°C with (40°C rise) Irms current.

Maximum part temperature +165°C (ambient + temp rise). [Derating](#).

Storage temperature Component: -55°C to +165°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

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

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).

Part number ¹	Inductance ² ±20% (µH)	DCR (mOhms) ³		SRF typ ⁴ (MHz)	Isat ⁵ (A)	Irms (A) ⁶	
		typ	max			20°C rise	40°C rise
XAL4020-221ME_	0.22	5.81	6.40	191	18.7	12.0	16.8
XAL4020-401ME_	0.40	7.55	8.30	145	12.5	10.0	14.0
XAL4020-601ME_	0.60	9.50	10.45	106	10.4	7.9	11.7
XAL4020-102ME_	1.0	13.25	14.60	79	8.7	6.7	9.6
XAL4020-122ME_	1.2	17.75	19.50	69	7.9	6.6	9.0
XAL4020-152ME_	1.5	21.45	23.60	64	7.1	5.2	7.5
XAL4020-222ME_	2.2	35.20	38.70	52	5.6	4.0	5.5
XAL4030-332ME_	3.3	26.0	28.6	43	5.9	5.0	6.6
XAL4030-472ME_	4.7	40.1	44.1	36	4.6	3.9	5.1
XAL4030-682ME_	6.8	67.4	74.1	29	3.6	3.0	3.9
XAL4040-822ME_	8.2	60.8	66.9	27	4.0	2.4	3.4
XAL4040-103ME_	10	84.0	92.4	24	3.0	2.2	3.1
XAL4040-153ME_	15	109	120	20	2.9	2.0	2.8

Irms Testing

Irms testing was performed on 0.75 inch wide x 0.25 inch thick copper traces in still air.

Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.

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

XAL4040-153ME

Termination: E = RoHS compliant tin-silver over copper.

Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

Packaging: C = 7" machine-ready reel. EIA-481 embossed plastic tape. Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to C.

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked.

2. Inductance tested at 1 MHz, 0.1 Vrms, 0 Adc.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using Agilent/HP 4395A or equivalent.

5. DC current at 25°C that causes an inductance drop of 30% (typ) from its value without current.

[Click for temperature derating information.](#)

6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. [Click for temperature derating information.](#)

7. Electrical specifications at 25°C.

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



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Singapore +65-6484 8412 sales@coilcraft.com.sg

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This product may not be used in medical or high risk applications without prior Coilcraft approval

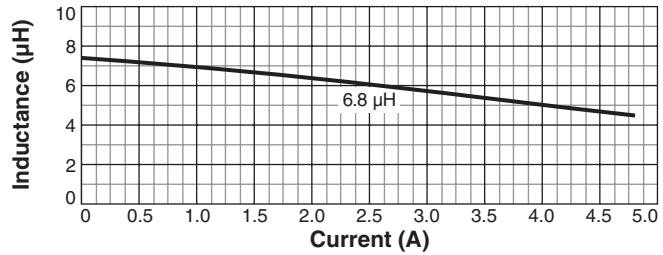
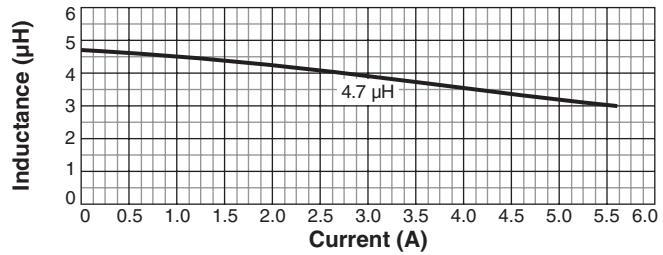
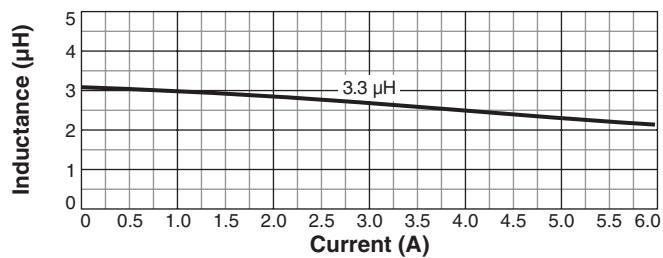
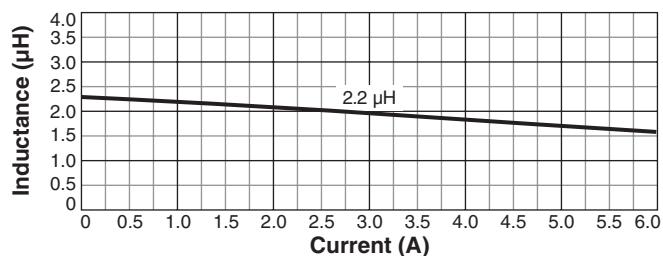
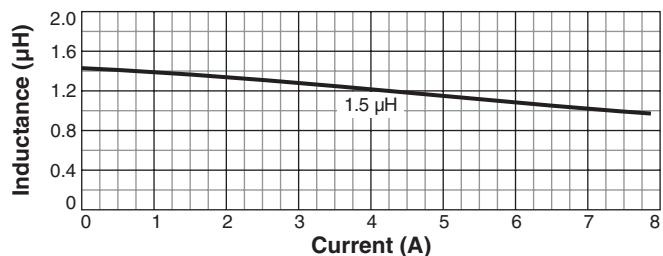
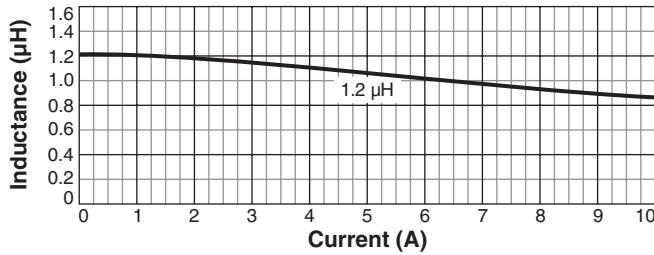
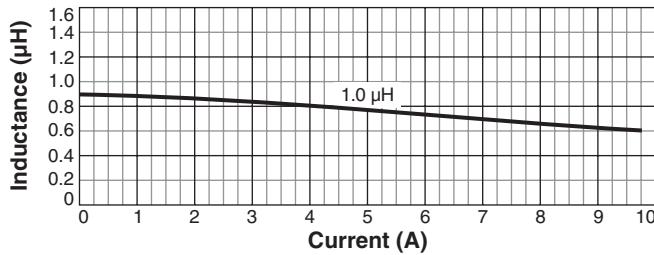
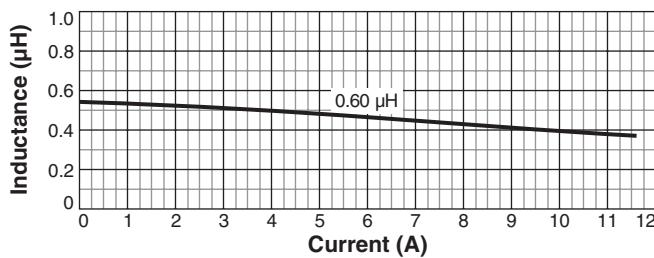
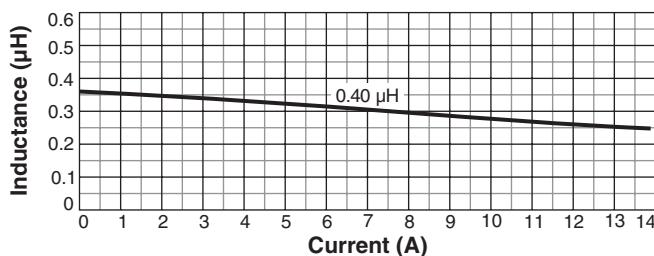
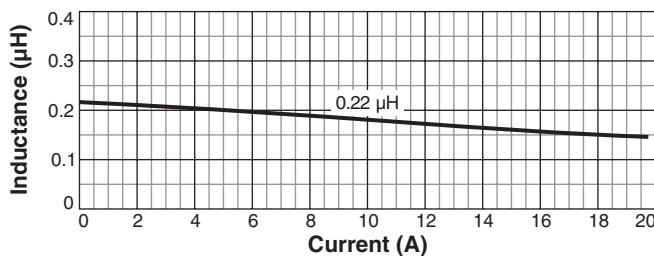
Specification subject to change without notice

Please check web site for latest information



Shielded Power Inductors - XAL40xx

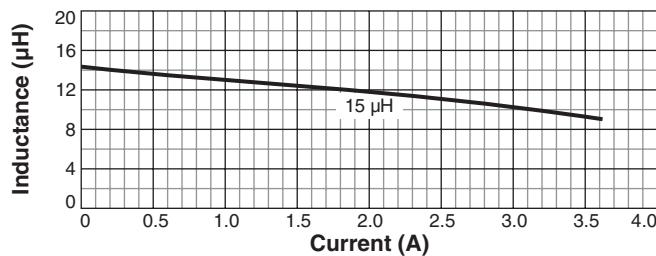
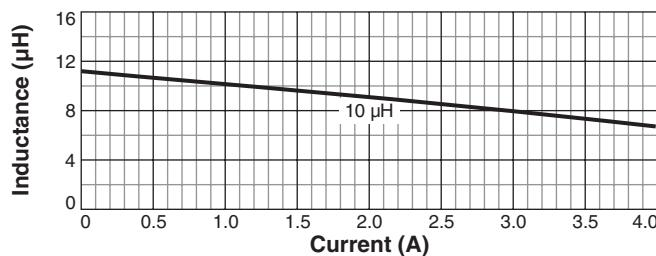
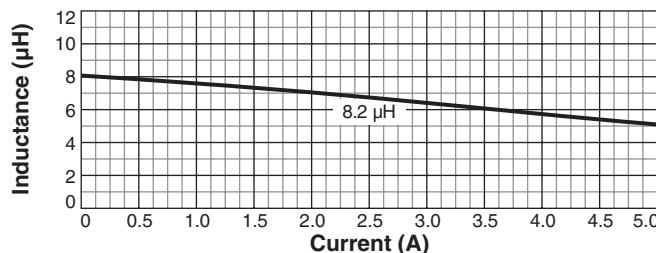
L vs Current





Shielded Power Inductors - XAL40xx

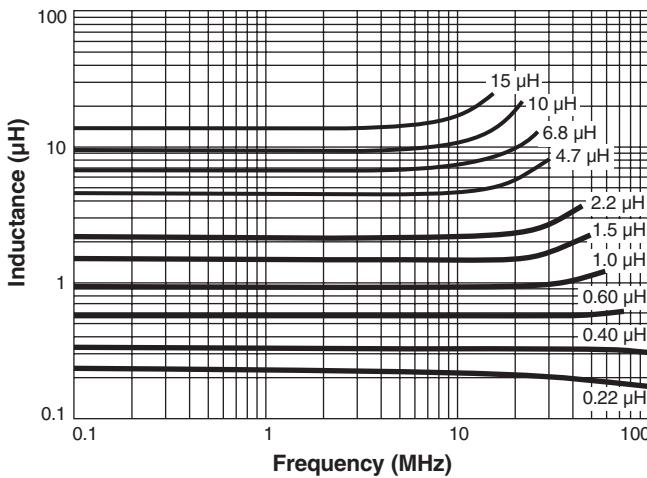
L vs Current



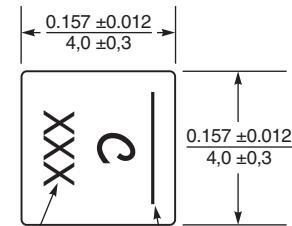
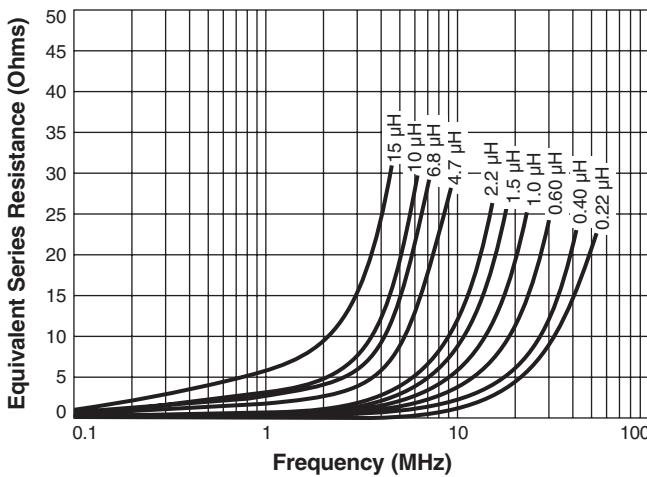


Shielded Power Inductors - XAL40xx

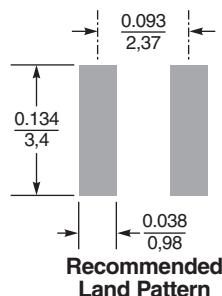
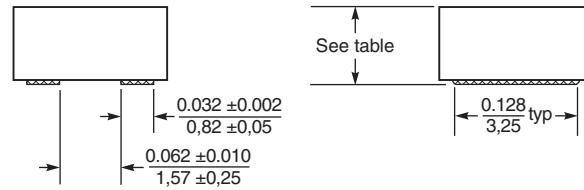
Typical L vs Frequency



Typical ESR vs Frequency



Dash number
Indicates direction of terminals and start (short) lead. Connect high dv/dt here for lowest EMI.



Dimensions are in inches
mm

Dash number	Height* max (in / mm)	Weight
-221	0.083 / 2.1	0.17 – 0.18 g
-401	0.083 / 2.1	0.17 – 0.18 g
-601	0.083 / 2.1	0.17 – 0.18 g
-102	0.083 / 2.1	0.17 – 0.18 g
-122	0.083 / 2.1	0.17 – 0.18 g
-152	0.083 / 2.1	0.17 – 0.18 g
-222	0.083 / 2.1	0.17 – 0.18 g
-332	0.122 / 3.1	0.26 – 0.28 g
-472	0.122 / 3.1	0.26 – 0.28 g
-682	0.122 / 3.1	0.26 – 0.28 g
-822	0.161 / 4.1	0.35 – 0.37 g
-103	0.161 / 4.1	0.35 – 0.37 g
-153	0.161 / 4.1	0.35 – 0.37 g

* For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.005 inch / 0.13 mm.

Packaging

XAL4020: 1000/7" reel; 3500/13" reel Plastic tape: 12 mm wide, 0.23 mm thick, 8 mm pocket spacing, 2.3 mm pocket depth

XAL4030: 500/7" reel; 2000/13" reel Plastic tape: 12 mm wide, 0.23 mm thick, 8 mm pocket spacing, 3.25 mm pocket depth

XAL4040: 500/7" reel; 2000/13" reel Plastic tape: 12 mm wide, 0.30 mm thick, 8 mm pocket spacing, 4.27 mm pocket depth