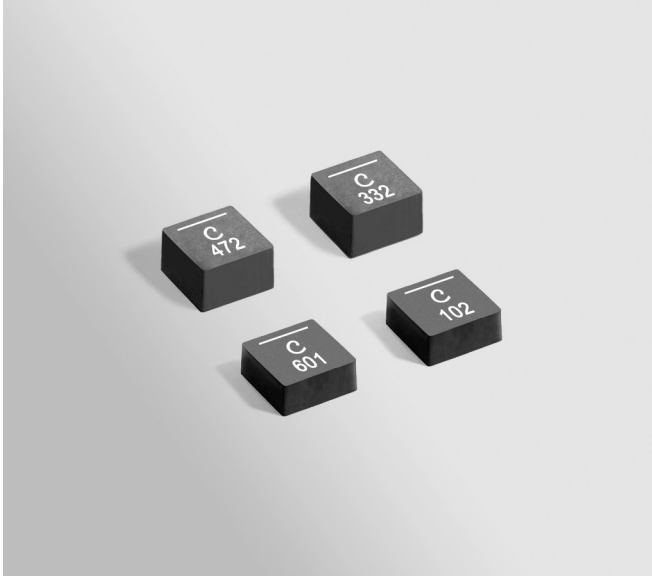
RoHS/ REACH COMPLIANT

Halogen Free

AEC Q200 +125°C

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] typ	DCR (mOhms)[3] max	SRF typ[4] (MHz)	Isat[5] (A)	Irms (A)[6] 20°C rise	Irms (A)[6] 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 × 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:

XAL4040-153MEC

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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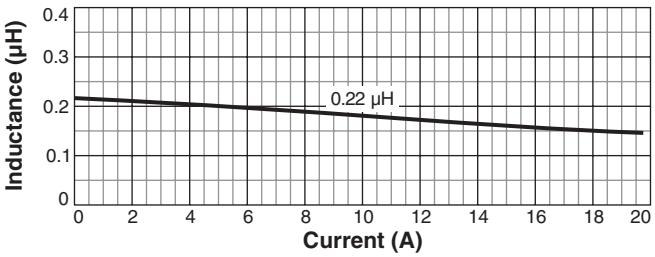
RoHS/ REACH COMPLIANT

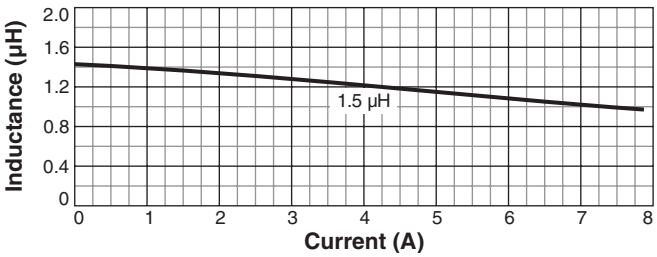
Halogen Free

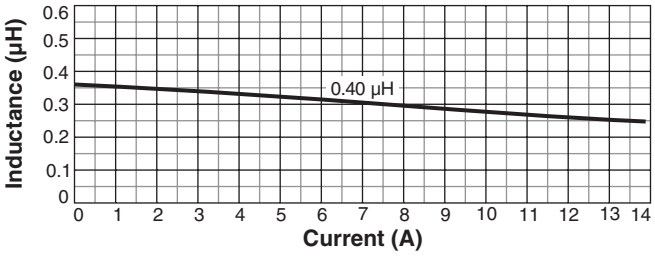
AEC Q200 +125°C

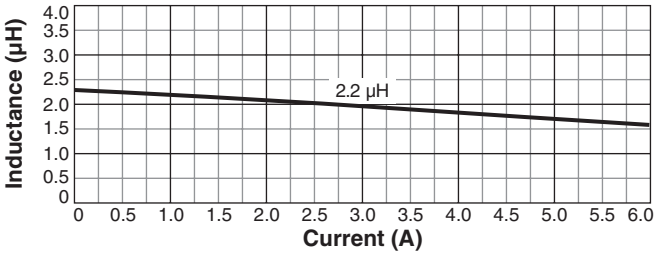
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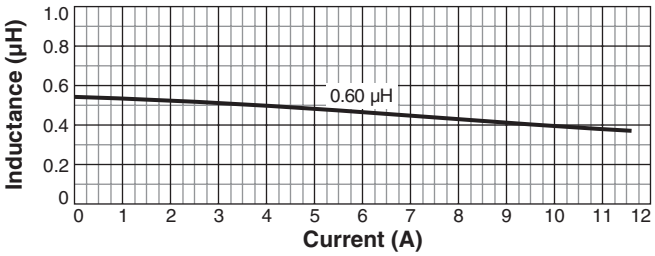
L vs Current

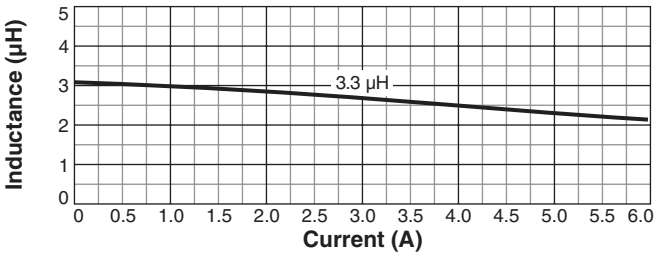


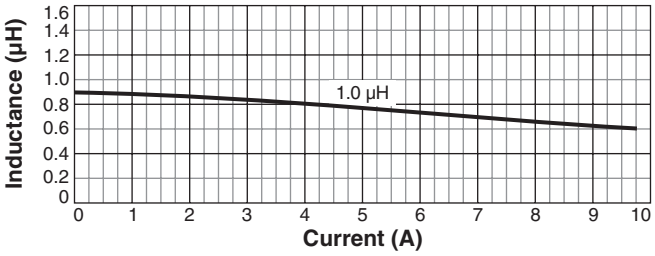


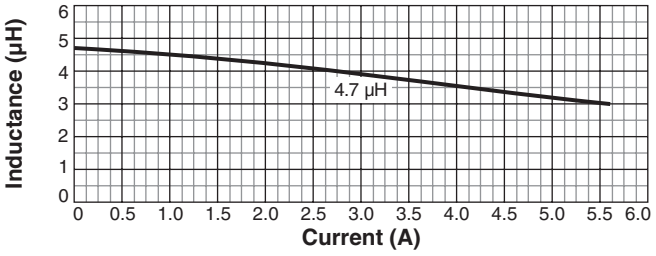


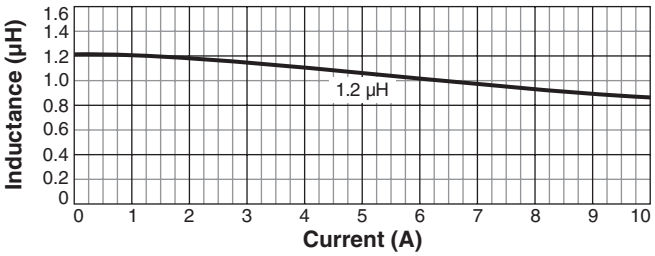


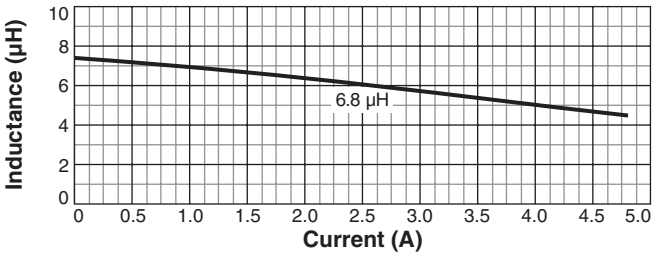












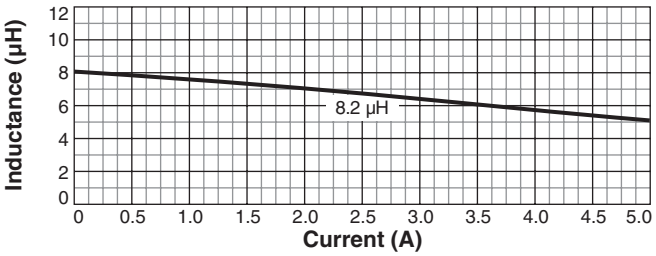
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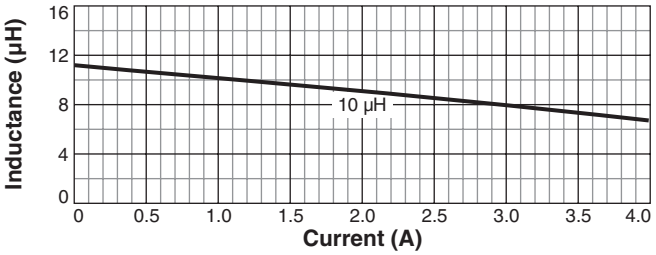
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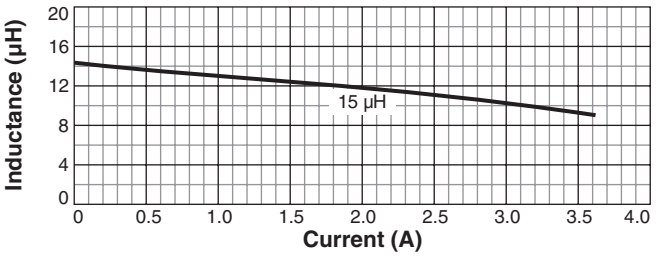
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L vs Current







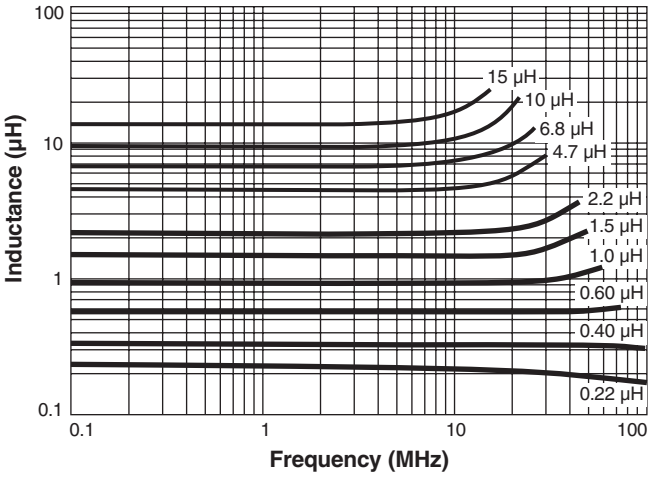
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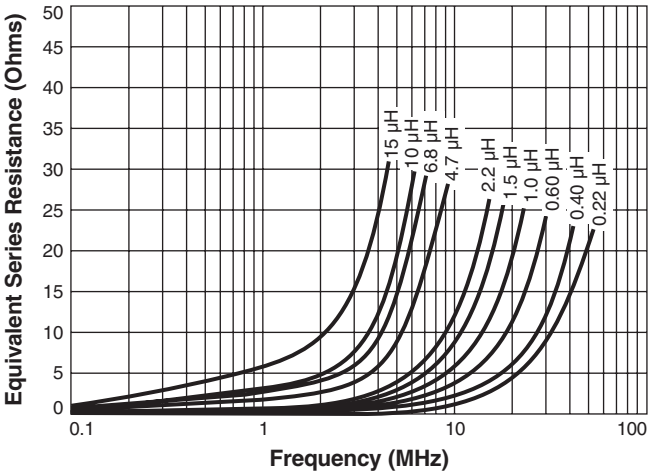
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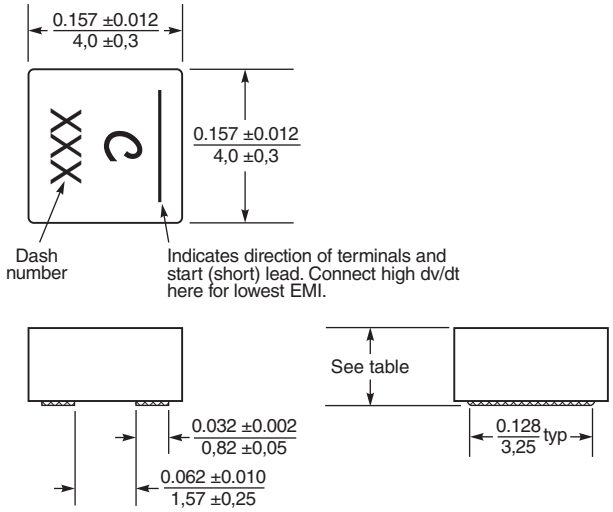
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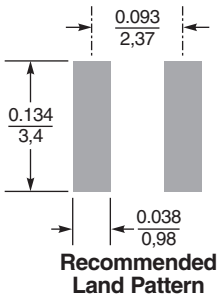
Typical L vs Frequency



Typical ESR vs Frequency







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.

Dimensions are in inches / 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

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