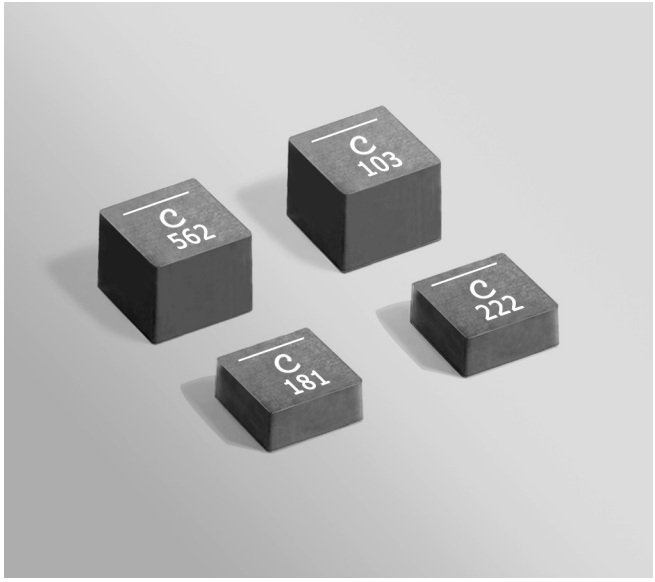
RoHS COMPLIANT

Halogen Free

AEC Q200 +125°C

Shielded Power Inductors – XAL50xx



- High current; very low DCR; soft saturation
- AEC-200 Grade 1 qualified (–40°C to +125°C ambient)

Designer's Kit C445 contains 3 of each value

Core material Composite

Environmental RoHS compliant, halogen free

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

Weight **XAL5030**: 0.44 – 0.51 g; **XAL5050**: 0.74 – 0.80 g

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: –40°C to +165°C.
Tape and reel packaging: –40°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)

Failures in Time (FIT) / Mean Time Between Failures (MTBF)
38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

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
XAL5030-161ME_	0.16	2.15	2.36	183	31.0	14.2	22.2
XAL5030-331ME_	0.33	3.20	3.52	108	26.0	13.8	19.2
XAL5030-601ME_	0.60	4.11	4.52	75	19.8	13.6	17.7
XAL5030-801ME_	0.80	5.14	5.65	63	18.5	10.0	13.0
XAL5030-102ME_	1.0	8.50	9.40	68	14.0	8.7	11.1
XAL5030-122ME_	1.2	11.40	12.40	45	12.5	7.9	10.4
XAL5030-222ME_	2.2	13.20	14.50	38	9.2	7.2	9.7
XAL5030-332ME_	3.3	21.20	23.30	28	8.7	5.9	8.1
XAL5030-472ME_	4.7	36.00	40.00	23	6.7	4.3	5.9
XAL5050-562ME_	5.6	23.45	25.80	25	6.3	5.3	7.2
XAL5050-682ME_	6.8	26.75	29.45	21	6.0	4.7	6.4
XAL5050-822ME_	8.2	31.75	34.95	18	5.6	4.5	6.1
XAL5050-103ME_	10	40.90	45.00	15	4.9	3.6	4.9
XAL5050-153ME_	15	69.70	76.70	13	3.7	2.9	3.9
XAL5050-223ME_	22	90.60	99.65	11	3.6	2.5	3.4

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** code:

   XAL5030-472MEC

   Termination: **E** = Halogen free component. RoHS compliant tin-silver over copper terminations.
   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.
   B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter C instead.
   D = 13″ machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked
2. Inductance tested at 1 MHz, 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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HIGH TEMPERATURE

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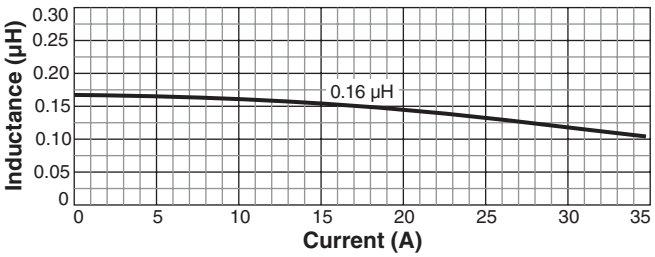
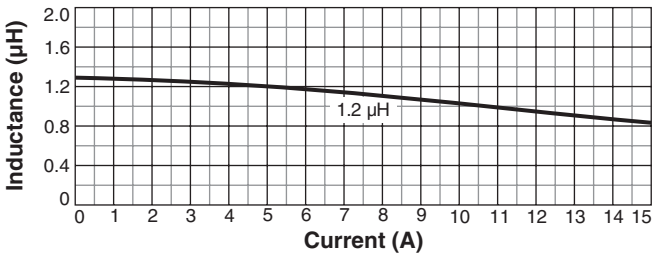
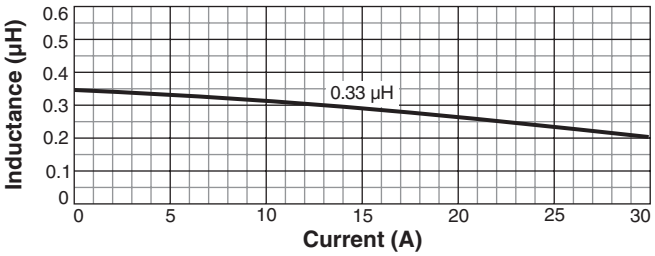
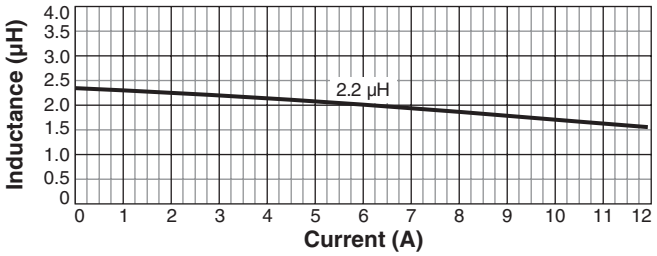
Shielded Power Inductors – XAL50xx

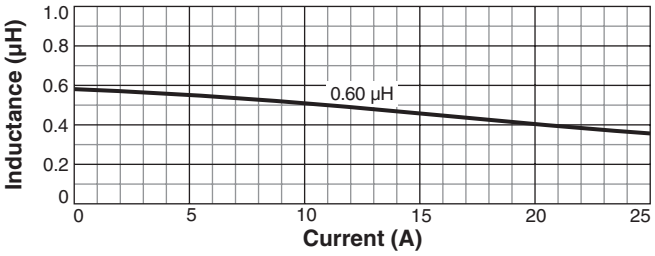
L vs Current

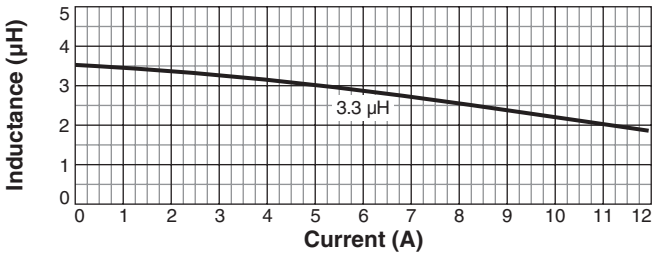


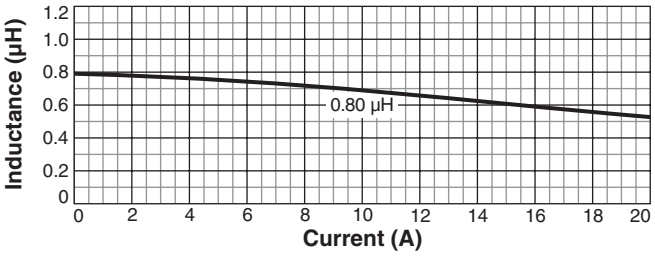


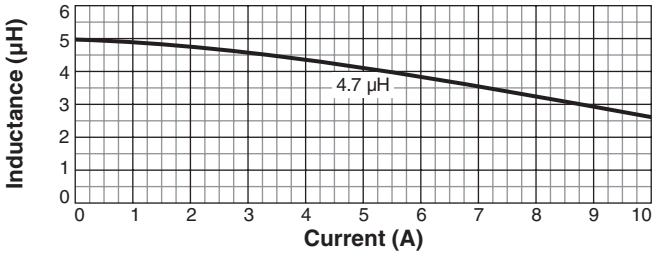


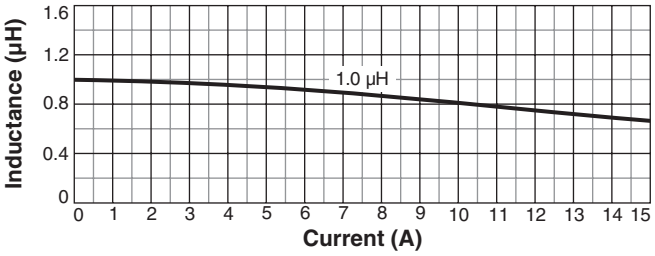


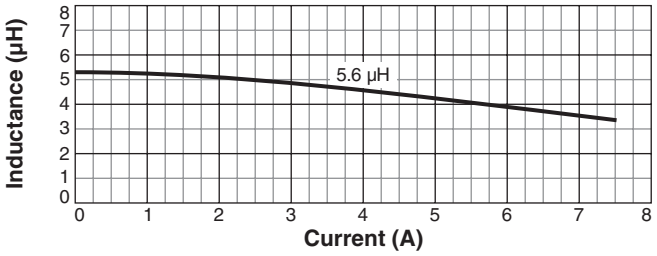












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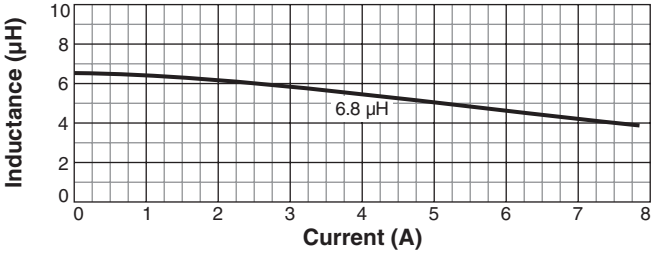
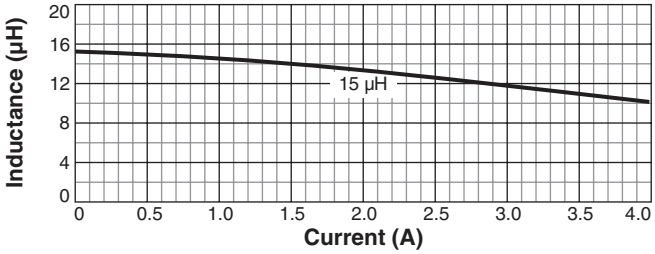
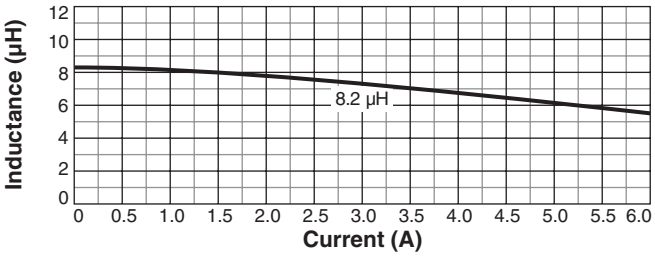
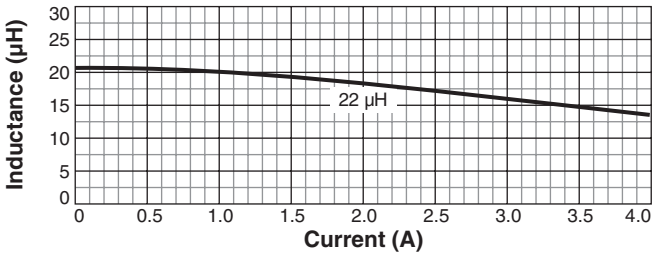
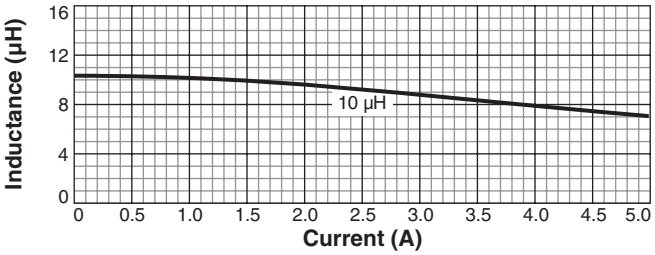
L vs Current











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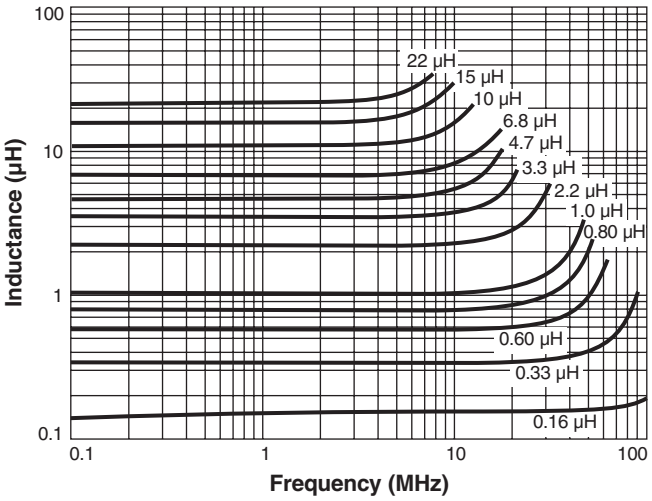
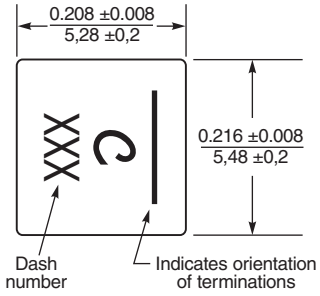
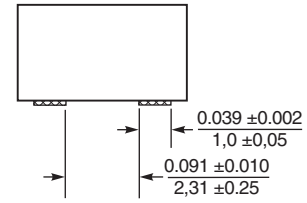
HIGH TEMPERATURE

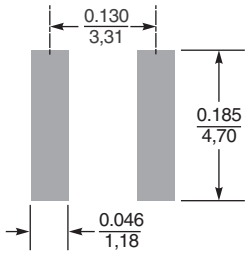
Shielded Power Inductors – XAL50xx

Typical L vs Frequency



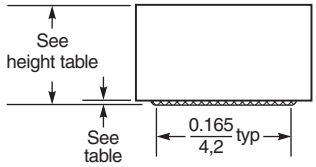






Recommended Land Pattern

Dimensions are in inches / mm



Dash number	Height* max (in / mm)	Terminal thickness (typ) (in / mm)
-161	0.122 / 3.1	0.0079 / 0.20
-331	0.122 / 3.1	0.0079 / 0.20
-601	0.122 / 3.1	0.0079 / 0.20
-801	0.122 / 3.1	0.0079 / 0.20
-102	0.122 / 3.1	0.0047 / 0.12
-122	0.122 / 3.1	0.0047 / 0.12
-222	0.122 / 3.1	0.0047 / 0.12
-332	0.122 / 3.1	0.0039 / 0.10
-472	0.122 / 3.1	0.0028 / 0.07
-562	0.201 / 5.1	0.0047 / 0.12
-682	0.201 / 5.1	0.0047 / 0.12
-822	0.201 / 5.1	0.0047 / 0.12
-103	0.201 / 5.1	0.0039 / 0.10
-153	0.201 / 5.1	0.0028 / 0.07
-223	0.201 / 5.1	0.0028 / 0.07

* 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
XAL5030 400/7″ reel; 1500/13″ reel Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 3.18 mm pocket depth
XAL5050 250/7″ reel; 750/13″ reel Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 5.21 mm pocket depth

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