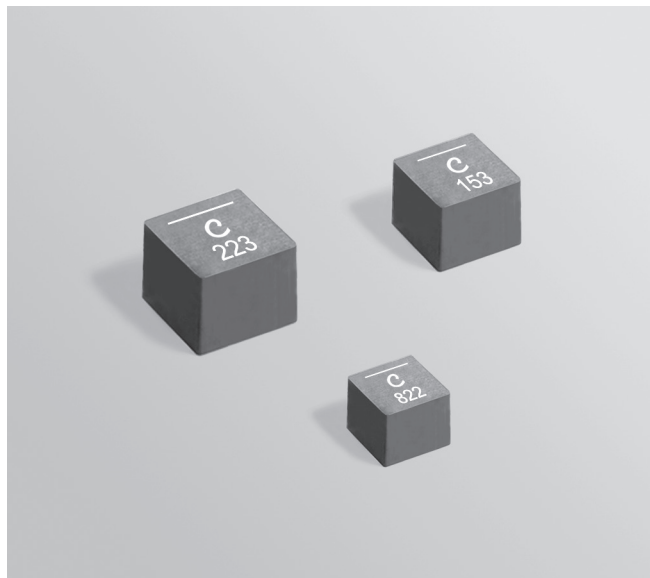


Shielded Power Inductors – High L



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

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.

Weight XAL4040 0.37 g; XAL5050 0.80 g; XAL6060 1.3 g

Ambient temperature –40°C to +125°C with Irms current, +125°C to +165°C with derated current.

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 with pure water or alcohol only. For other solvents, 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		Max dimensions (mm) L × W × H
		typ	max			20°C rise	40°C rise	
XAL4040-822ME_	8.2	60.8	66.9	27	4.0	2.4	3.4	4.3 × 4.3 × 4.1
XAL4040-103ME_	10	84.0	92.4	24	3.0	2.2	3.1	4.3 × 4.3 × 4.1
XAL4040-153ME_	15	109	120	20	2.8	2.0	2.8	4.3 × 4.3 × 4.1
XAL5050-103ME_	10	40.90	45.00	15	4.9	3.6	4.9	5.68 × 5.48 × 5.1
XAL5050-153ME_	15	69.70	76.70	13	3.7	2.9	3.9	5.68 × 5.48 × 5.1
XAL5050-223ME_	22	90.60	99.65	11	3.6	2.5	3.4	5.68 × 5.48 × 5.1
XAL6060-153ME_	15	39.77	43.75	11	5.8	4.5	6.0	6.76 × 6.56 × 6.1
XAL6060-223ME_	22	55.12	60.63	9	5.6	3.6	5.0	6.76 × 6.56 × 6.1

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

XAL6060-223MEC

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.

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 100 kHz, 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 which the inductance drops 30% (typ) from its value without current.

6. Current that causes the specified temperature rise from 25°C ambient.

7. Electrical specifications at 25°C.

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

Irms Testing

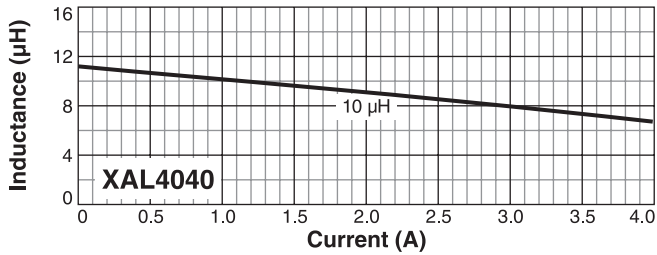
Irms testing was performed on 0.75 inch wide × 0.25 inch thick copper traces in still air.

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.

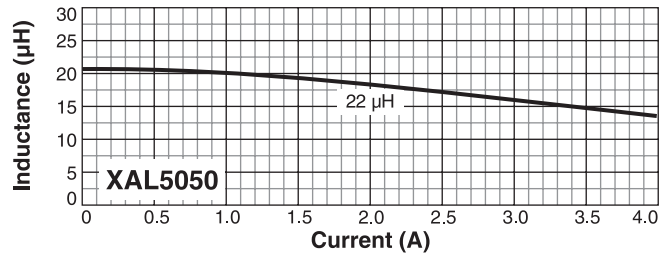
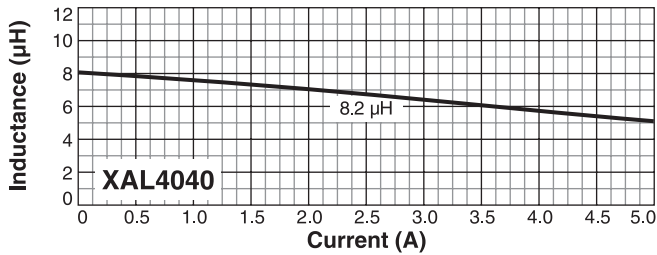
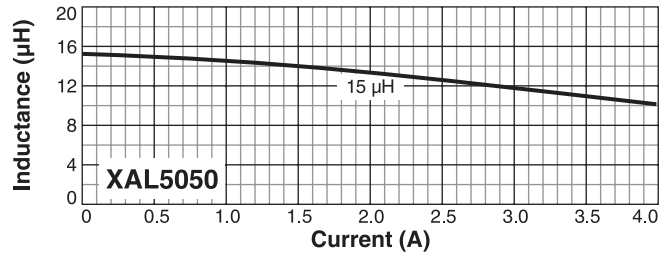
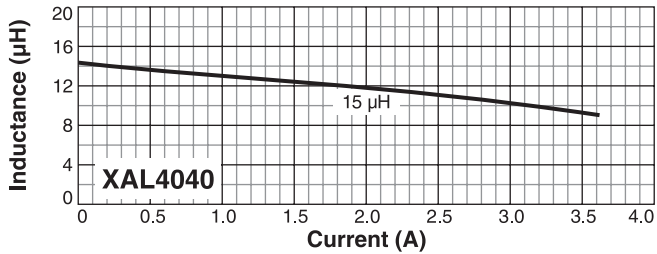
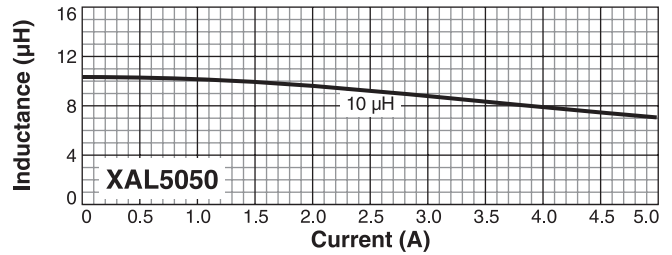


Shielded Power Inductors – XAL High L

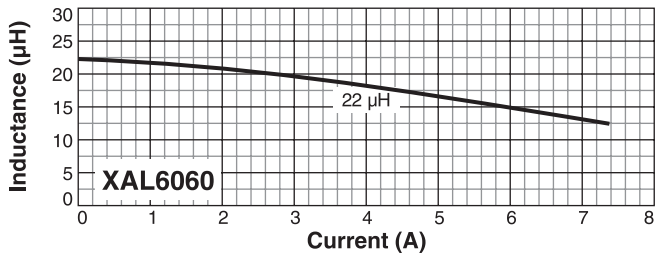
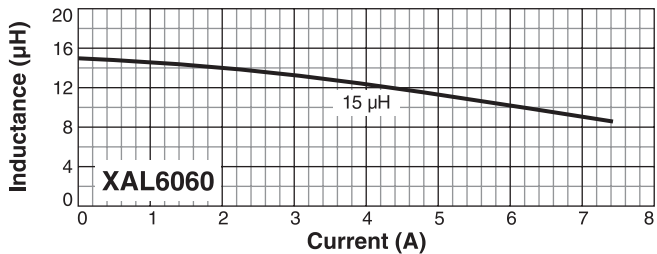
L vs Current



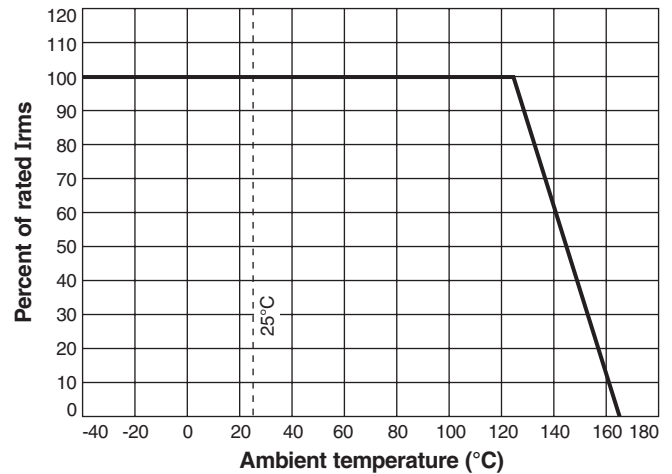
L vs Current



L vs Current



Irms Derating



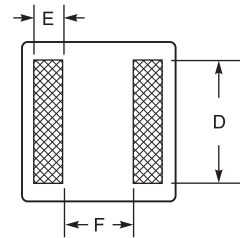
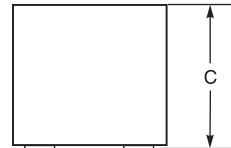
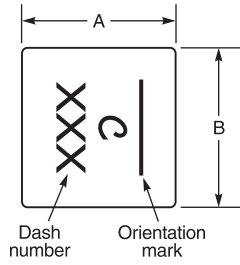
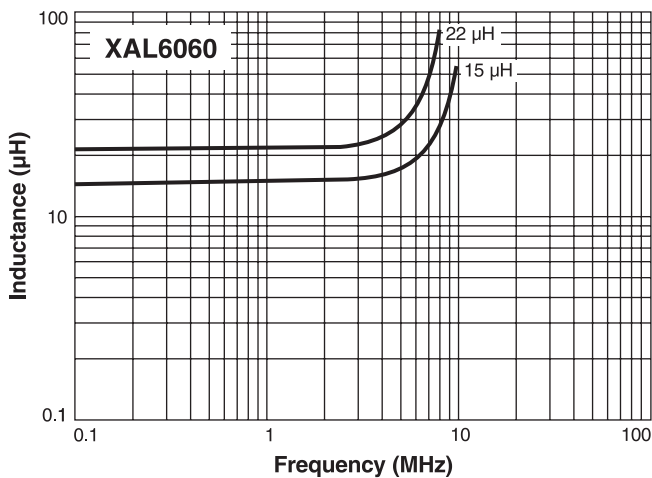
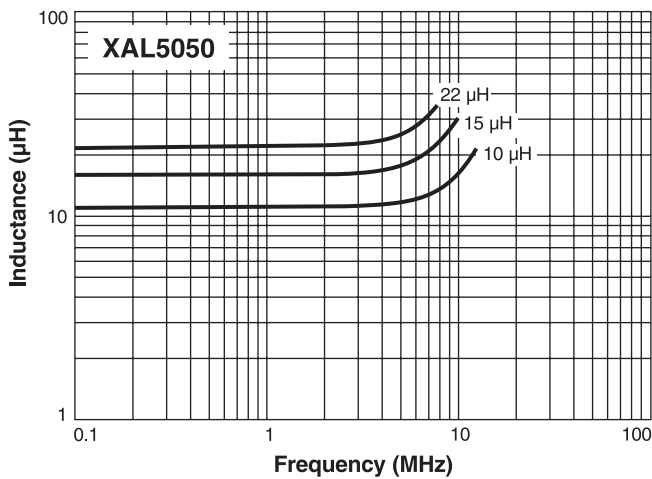
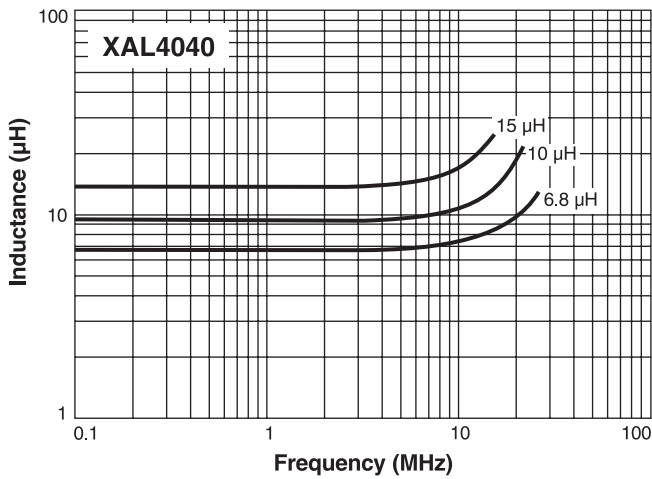
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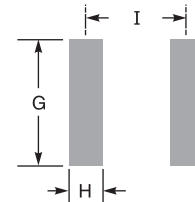


Shielded Power Inductors – XAL High L

Typical L vs Frequency



Recommended Land Pattern



Part number	A	B	C max	D ±0.20	E ±0.05	F ±0.25
XAL4040-xxx	4.0 ±0.3	4.0 ±0.3	4.1	3.36	0.82	1.57 mm
XAL5050-103	5.28 ±0.2	5.48 ±0.2	5.1	4.24	1.00	2.31 mm
XAL5050-153	5.28 ±0.2	5.48 ±0.2	5.1	4.18	1.00	2.31 mm
XAL5050-223	5.28 ±0.2	5.48 ±0.2	5.1	4.18	1.00	2.31 mm
XAL6060-xxx	6.36 ±0.2	6.56 ±0.2	6.1	5.08	1.25	2.79 mm

Part number	G	H	I
XAL4040-xxx	3.70	0.98	2.37 mm
XAL5050-103	4.34	1.18	3.31 mm
XAL5050-153	4.25	1.18	3.31 mm
XAL5050-223	4.25	1.18	3.31 mm
XAL6060-xxx	5.18	1.43	4.04 mm

Packaging

XAL4040: 500/7" reel; 2000/13" reel Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 4.27 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

XAL6060 250/7" reel; 750/13" reel Plastic tape: 16 mm wide, 0.3 mm thick, 8 mm pocket spacing, 6.23 mm pocket depth



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