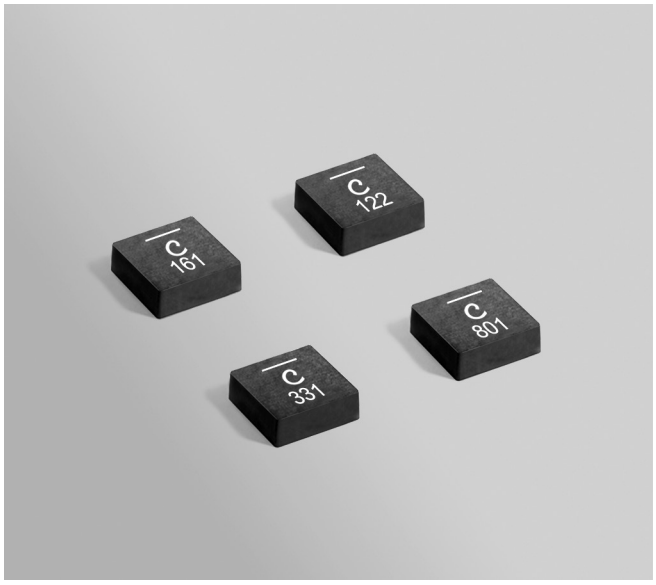
RoHS COMPLIANT

Halogen Free

AEC Q200 +125°C

Shielded Power Inductors – XAL5020



- High current and very low DCR
- Soft saturation makes them ideal for VRM/VRD applications.
- AEC-200 Grade 1 qualified (–40°C to +125°C ambient)

Core material Composite
Environmental RoHS compliant, halogen free
Terminations RoHS compliant tin-silver over copper. Other terminations available at additional cost.
Weight 0.28 – 0.29 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
Packaging 1000/7″ reel; 3500/13″ reel Plastic tape: 12 mm wide, 0.2 mm thick, 8 mm pocket spacing, 2.16 mm pocket depth
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
XAL5020-161ME_	0.16	4.11	5.00	205	24.2	13.9	18.8
XAL5020-331ME_	0.33	6.40	7.68	110	17.1	10.5	14.4
XAL5020-561ME_	0.56	8.30	9.54	80	14.1	9.9	13.9
XAL5020-801ME_	0.80	10.3	11.8	64	12.0	9.4	13.0
XAL5020-122ME_	1.2	17.8	20.5	50	9.5	6.8	9.4

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 **packaging** code:

   XAL5020-122MEC

   Packaging: C = 7″ machine-ready reel. EIA-481 embossed plastic tape (1000 parts per full reel).
   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 (3500 parts per full reel).
2. Inductance tested at 1 MHz, 0.1 Vrms, 0 Adc.
3. DCR measured on a micro-ohmmeter.
4. SRF measured using an 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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NEW!

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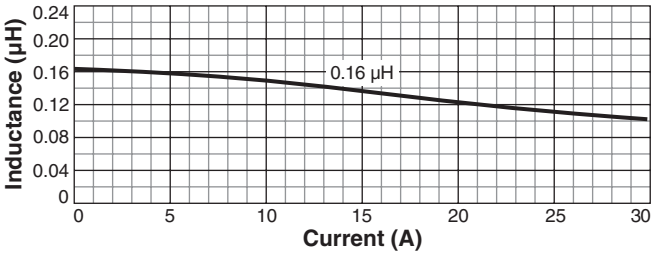
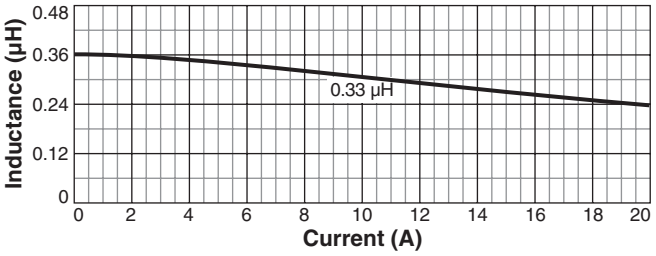
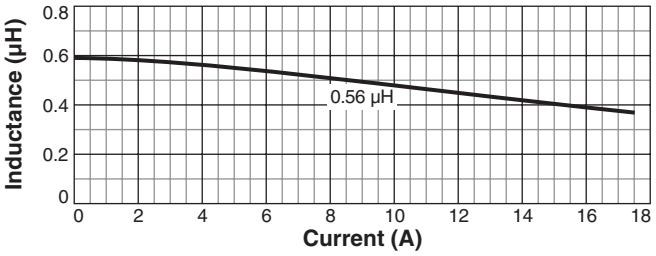
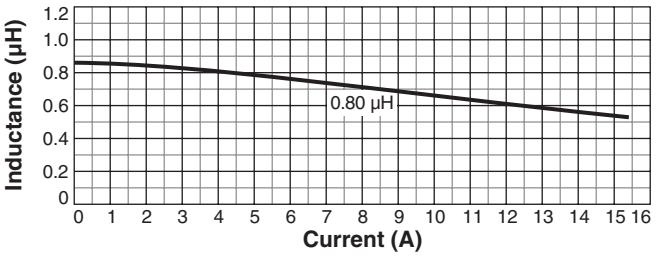
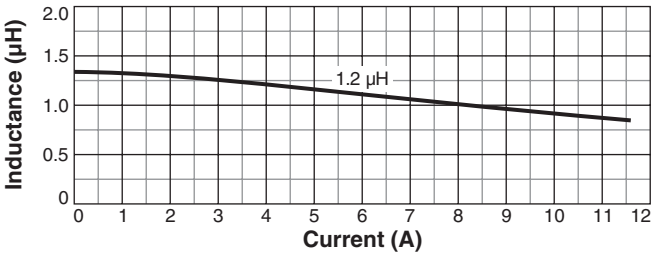
L vs Current



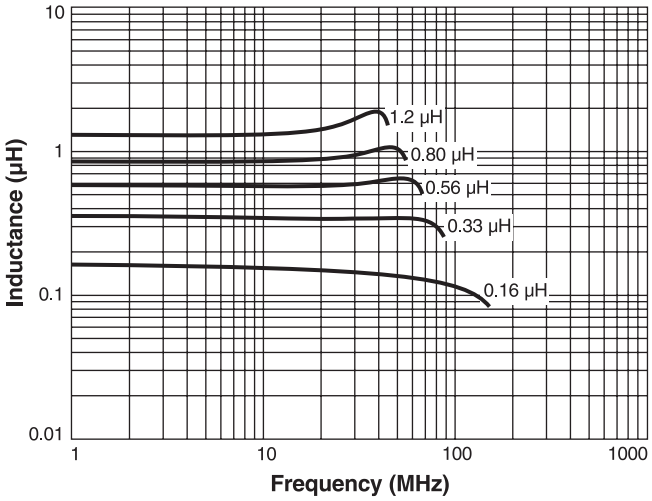


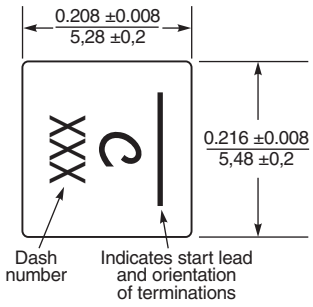


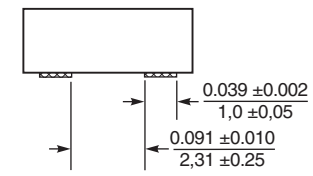


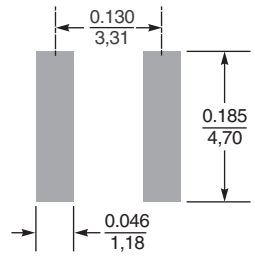


L vs Frequency

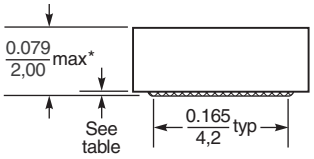








Recommended Land Pattern



Dash number	Terminal thickness (typ) (in / mm)
-161	0.0039 / 0.10
-331	0.0039 / 0.10
-561	0.0039 / 0.10
-801	0.0039 / 0.10
-122	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.

Dimensions are in inches / mm

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