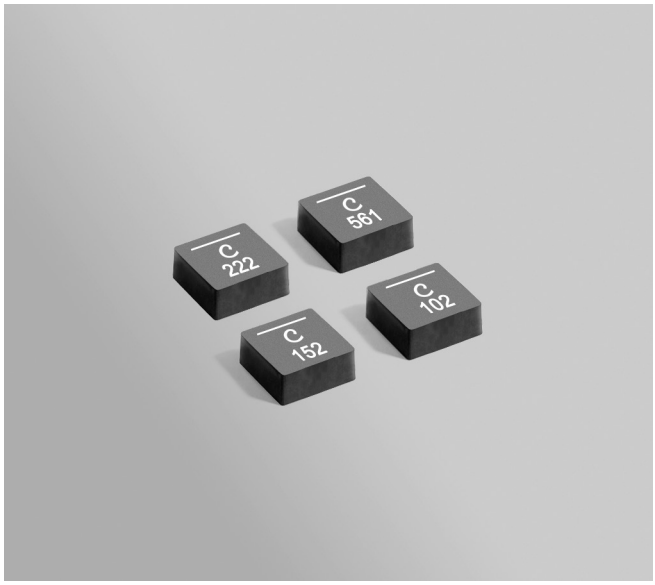
RoHS/ REACH COMPLIANT

Halogen Free

AEC Q200 +125°C

Shielded Power Inductor XEL4020



- Extremely low DCR and ultra low AC losses for high switching frequencies (2 to 5 MHz)
- AEC-Q200 Grade 1 qualified (–40°C to +125°C ambient)
- Superior current handling with soft saturation characteristics
- Can withstand high current spike

Core material Composite
Environment RoHS compliant, halogen free
Terminations RoHS compliant tin-silver (96.5/3.5) over copper. Other terminations available at additional cost.
Weight 0.17 g
Operating voltage 0 – 80 V
Ambient temperature –40°C to +125°C with (40°C) Irms current.
Maximum part temperature +165°C (ambient + temp rise).
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)
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
XEL4020-800ME_	0.08	1.50	1.80	305	33.2	15.5	21.4
XEL4020-101ME_	0.10	2.04	2.50	280	28.5	14.6	19.9
XEL4020-201ME_	0.20	3.04	3.35	180	19.7	14.0	17.2
XEL4020-331ME_	0.33	5.18	5.70	124	15.7	11.9	15.4
XEL4020-561ME_	0.56	8.00	8.80	90	11.3	9.9	13.8
XEL4020-821ME_	0.82	11.80	13.00	69	10.2	8.1	11.5
XEL4020-102ME_	1.0	13.25	14.60	68	9.0	6.7	9.6
XEL4020-122ME_	1.2	17.75	19.50	59	8.1	6.6	9.0
XEL4020-152ME_	1.5	21.45	23.60	54	7.4	5.2	7.5
XEL4020-222ME_	2.2	35.20	38.70	41	5.9	4.0	5.5

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:

XEL4020-222MEC

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 (1000 parts per full reel). 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 (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 Agilent/HP 4395A or equivalent.
5. DC current at 25°C that causes an inductance drop of 30% (typ) from its value without current.
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.
7. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

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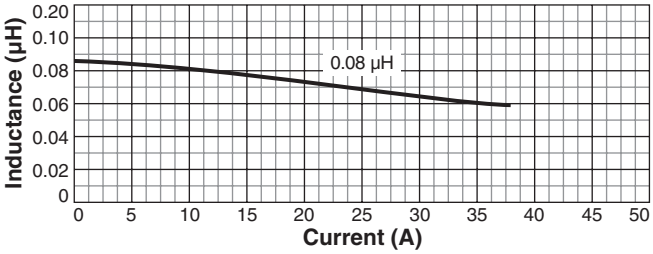
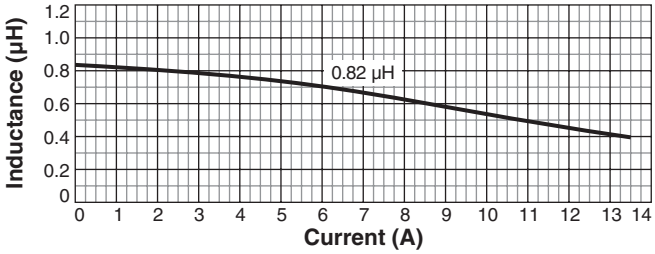
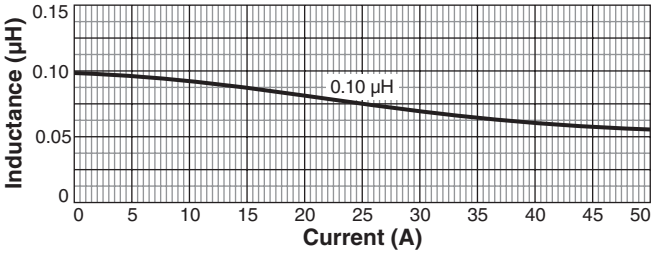
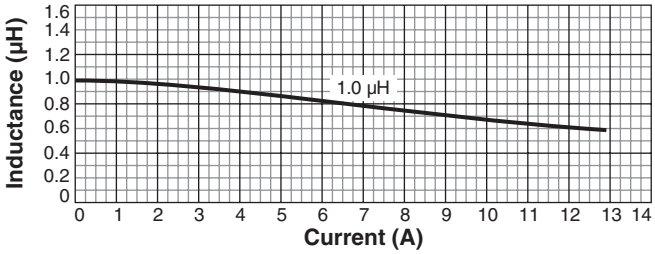
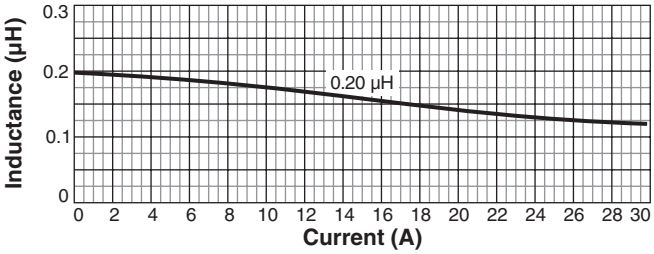
L vs Current

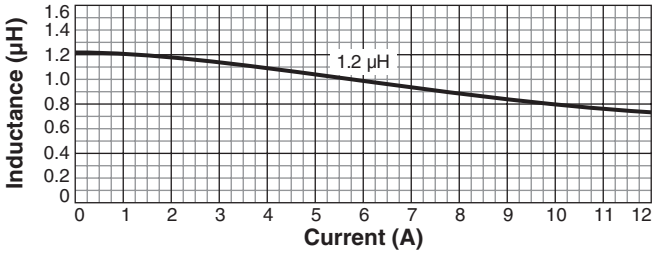


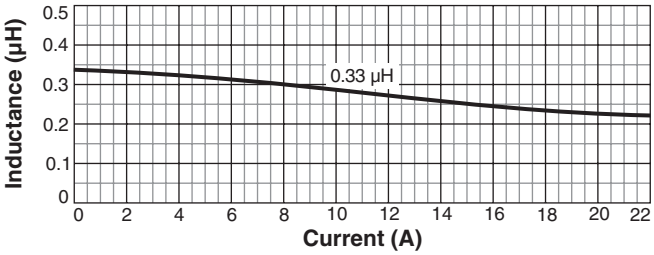


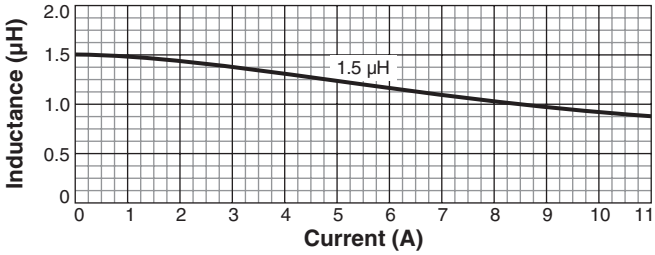


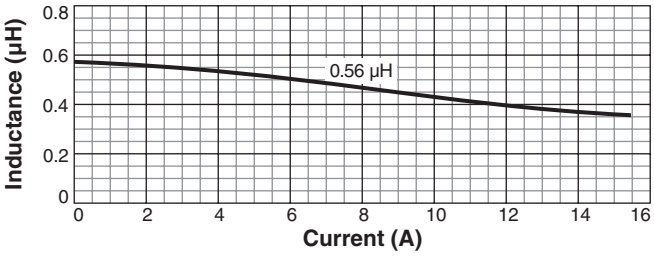


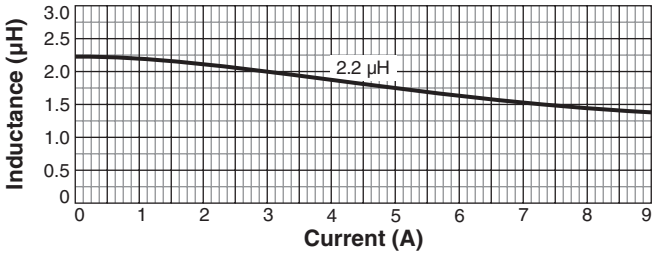












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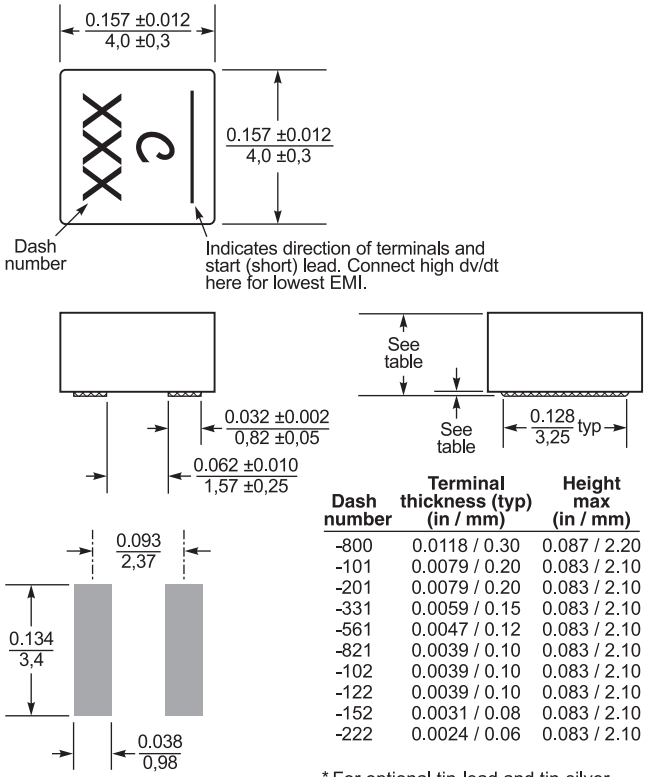


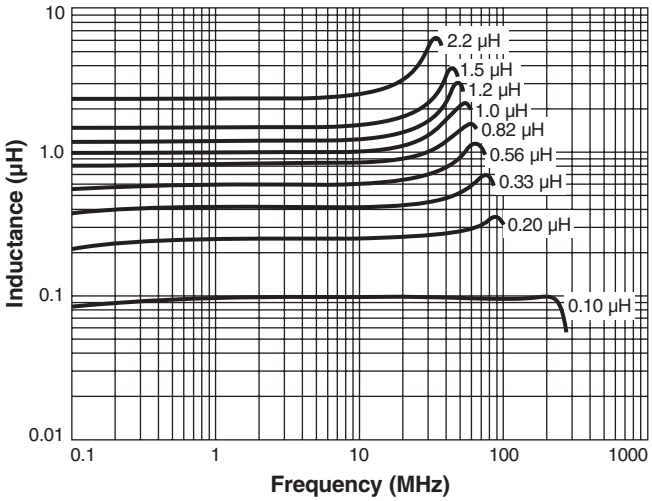
Recommended Land Pattern

Dimensions are in inches / mm

Dash number	Terminal thickness (typ) (in / mm)	Height max (in / mm)
-800	0.0118 / 0.30	0.087 / 2.20
-101	0.0079 / 0.20	0.083 / 2.10
-201	0.0079 / 0.20	0.083 / 2.10
-331	0.0059 / 0.15	0.083 / 2.10
-561	0.0047 / 0.12	0.083 / 2.10
-821	0.0039 / 0.10	0.083 / 2.10
-102	0.0039 / 0.10	0.083 / 2.10
-122	0.0039 / 0.10	0.083 / 2.10
-152	0.0031 / 0.08	0.083 / 2.10
-222	0.0024 / 0.06	0.083 / 2.10

* 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.

L vs Frequency



Packaging 1000/7″ reel; 3500/13″ reel Plastic tape: 12 mm wide, 0.23 mm thick, 8 mm pocket spacing, 2.1 mm pocket depth

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