

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 0.11 g
Maximum operating voltage 120 V
Ambient temperature -40°C to +125°C with (40°C) Irms current.
Maximum part temperature +165°C (ambient + temp rise).
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, 0.23 mm thick, 8 mm pocket spacing, 2.1 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		SRF typ ⁴ (MHz)	Isat ⁵ (A)	Irms (A) ⁶	
		typ	max			20°C rise	40°C rise
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 x 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).

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).

- Inductance tested at 1 MHz, 1 Vrms, 0 Adc.
- DCR measured on a micro-ohmmeter.
- SRF measured using Agilent/HP 4395A or equivalent.
- DC current at 25°C that causes an inductance drop of 30% (typ) from its value without current.
- Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
- Electrical specifications at 25°C.

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



www.coilcraft.com

US +1-847-639-6400 sales@coilcraft.com
UK +44-1236-730595 sales@coilcraft-europe.com
Taiwan +886-2-2264 3646 sales@coilcraft.com.tw
China +86-21-6218 8074 sales@coilcraft.com.cn
Singapore +65-6484 8412 sales@coilcraft.com.sg

Document 1302-1 Revised 08/30/17

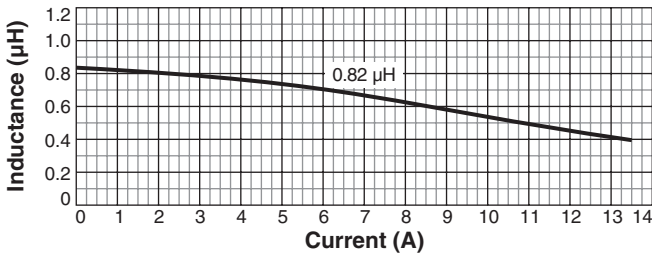
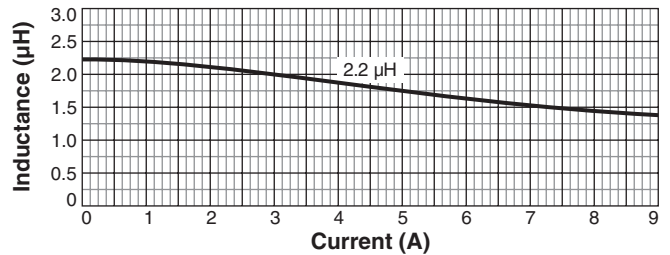
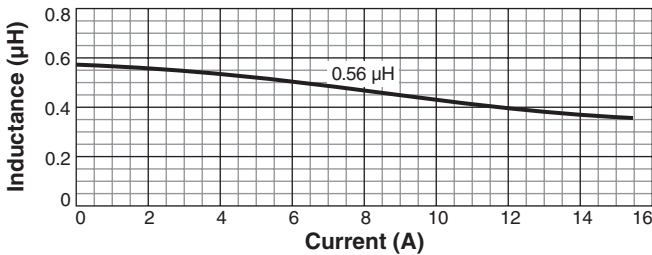
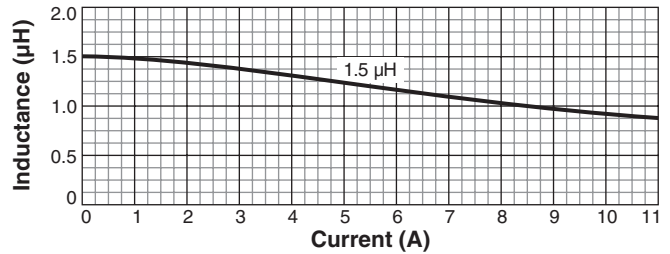
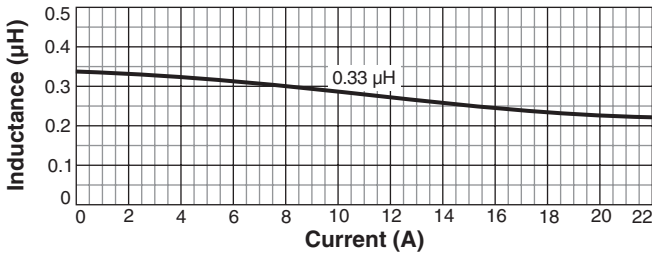
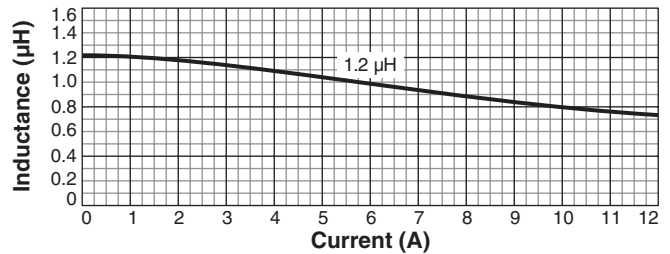
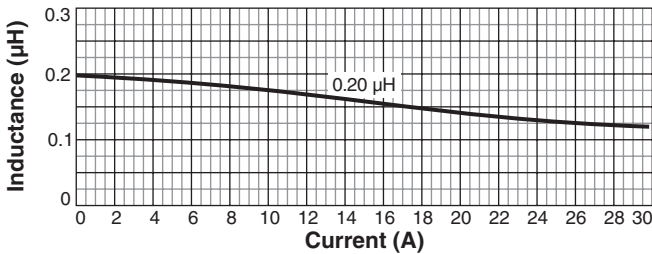
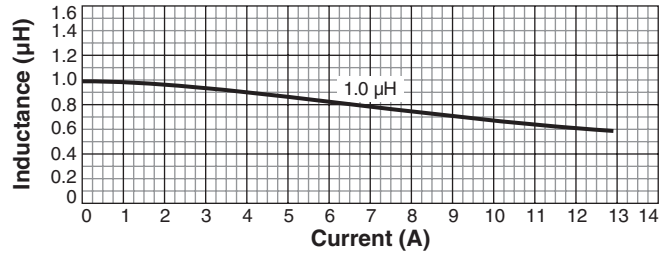
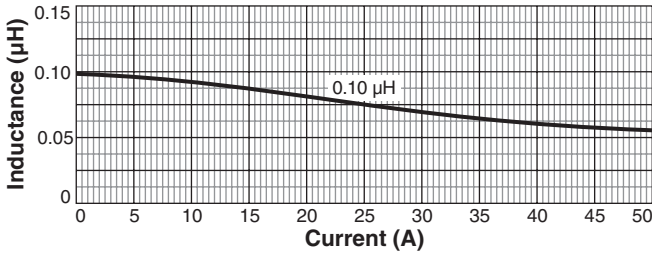
© Coilcraft Inc. 2017

This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.

**VERY LOW AC
AND DC LOSSES**

Shielded Power Inductor – XEL4020

L vs Current



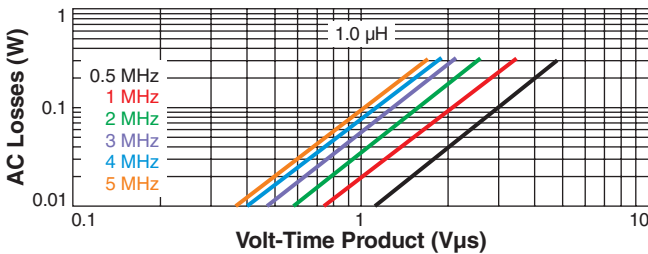
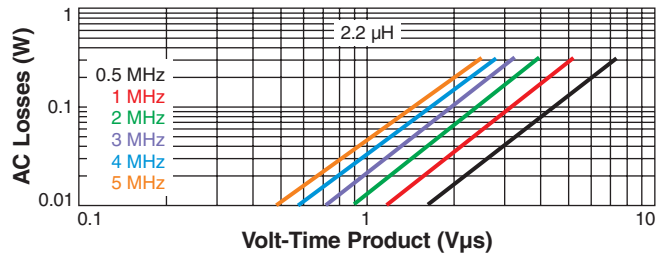
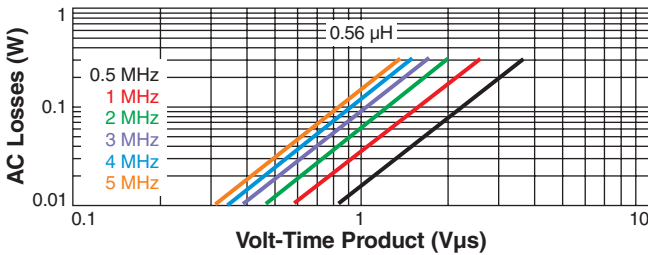
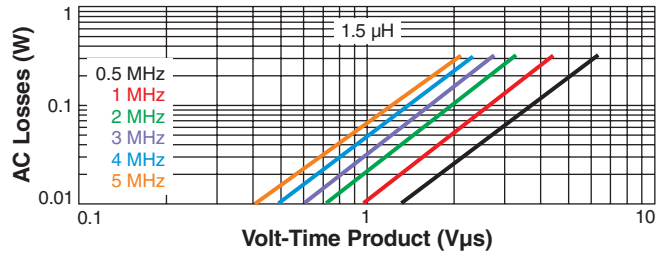
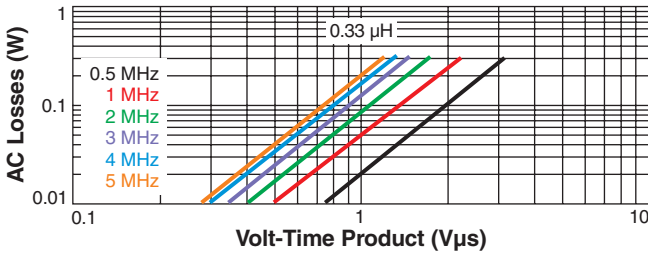
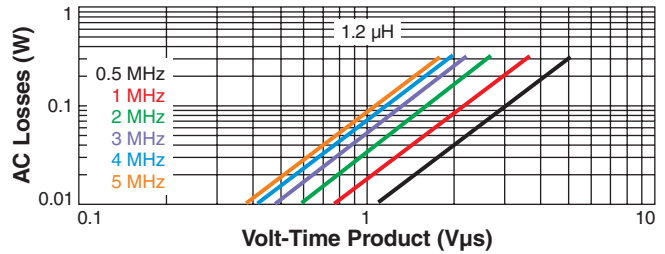
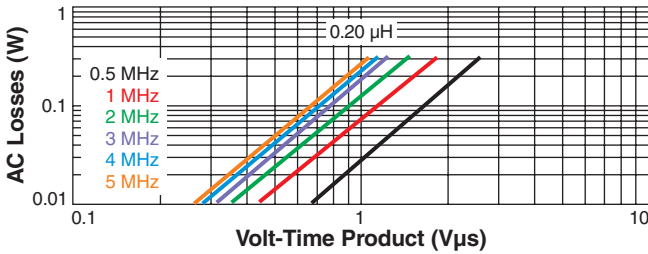
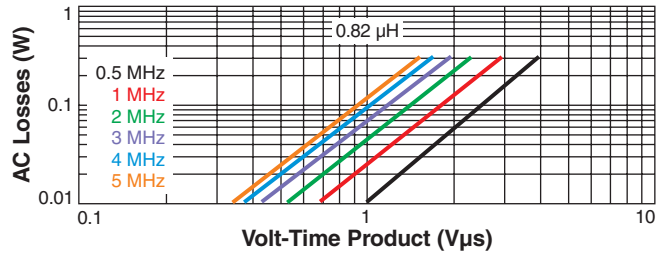
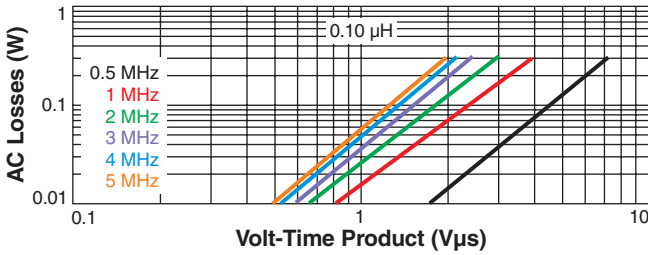
US +1-847-639-6400 sales@coilcraft.com
UK +44-1236-730595 sales@coilcraft-europe.com
Taiwan +886-2-2264 3646 sales@coilcraft.com.tw
China +86-21-6218 8074 sales@coilcraft.com.cn
Singapore + 65-6484 8412 sales@coilcraft.com.sg

Document 1302-2 Revised 08/30/17
 © Coilcraft Inc. 2017
 This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.

VERY LOW AC AND DC LOSSES

Shielded Power Inductor – XEL4020

AC Losses vs Volt-Time Product

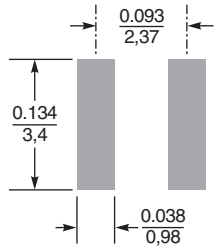
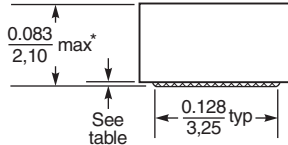
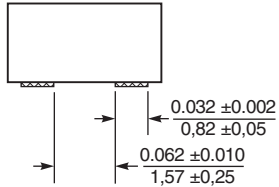
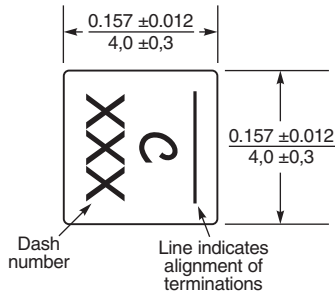


US +1-847-639-6400 sales@coilcraft.com
UK +44-1236-730595 sales@coilcraft-europe.com
Taiwan +886-2-2264 3646 sales@coilcraft.com.tw
China +86-21-6218 8074 sales@coilcraft.com.cn
Singapore + 65-6484 8412 sales@coilcraft.com.sg

Document 1302-3 Revised 08/30/17
 © Coilcraft Inc. 2017
 This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.

**VERY LOW AC
AND DC LOSSES**

Shielded Power Inductor – XEL4020



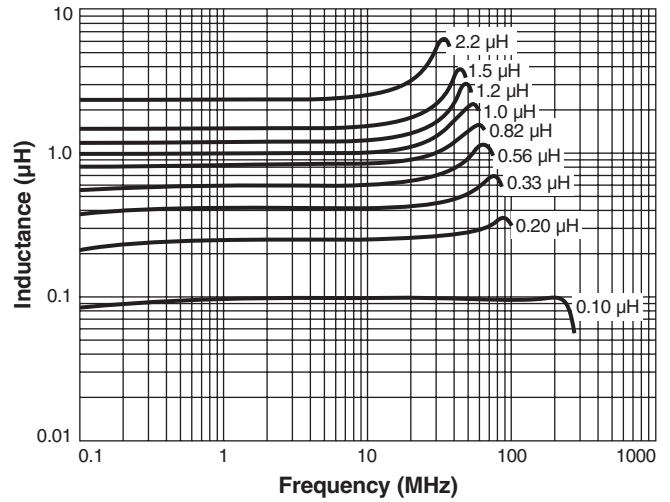
Recommended Land Pattern

Dimensions are in $\frac{\text{inches}}{\text{mm}}$

Dash number	Terminal thickness (typ) (in / mm)
-101	0.0079 / 0.20
-201	0.0079 / 0.20
-331	0.0059 / 0.15
-561	0.0047 / 0.12
-821	0.0039 / 0.10
-102	0.0039 / 0.10
-122	0.0039 / 0.10
-152	0.0031 / 0.08
-222	0.0024 / 0.06

* 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



www.coilcraft.com

US +1-847-639-6400 sales@coilcraft.com
UK +44-1236-730595 sales@coilcraft-europe.com
Taiwan +886-2-2264 3646 sales@coilcraft.com.tw
China +86-21-6218 8074 sales@coilcraft.com.cn
Singapore + 65-6484 8412 sales@coilcraft.com.sg

Document 1302-4 Revised 08/30/17

© Coilcraft Inc. 2017

This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.