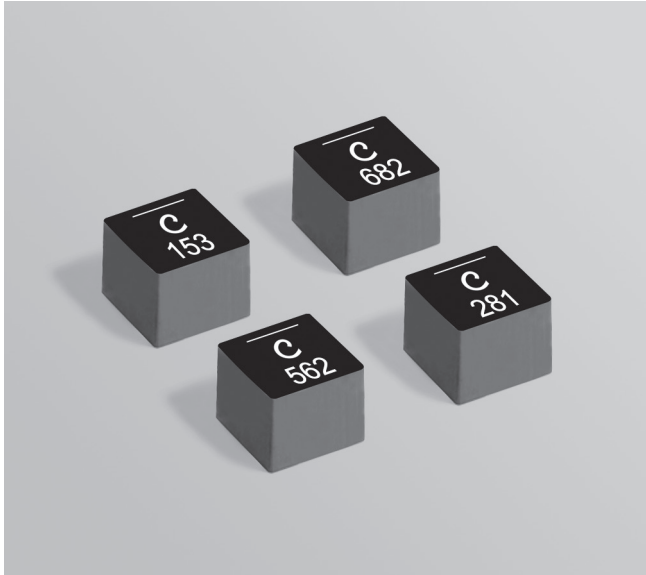


# Shielded Power Inductors – XEL5050



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

**Core material** Composite

**Environmental** RoHS compliant, halogen free

**Terminations** RoHS compliant tin-silver over copper.

**Weight** 0.64 – 0.84 g

**Operating voltage** 0 – 80 V

**Ambient temperature** –40°C to +125°C with (40°C rise) 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)

**Packaging** 250/7" reel; 750/13" reel Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 5.21 mm pocket depth

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

Part number <sup>1</sup>	Inductance <sup>2</sup> ±20% (µH)	DCR (mOhms) <sup>3</sup>		SRF typ <sup>4</sup> (MHz)	Isat (A) <sup>5</sup>			Irms (A) <sup>6</sup>	
		typ	max		10% drop	20% drop	30% drop	20°C rise	40°C rise
XEL5050-141ME_	0.14	1.48	1.78	189	16.1	27.0	39.0	24.6	35.1
XEL5050-281ME_	0.28	2.20	2.64	117	11.9	20.0	28.0	22.2	30.1
XEL5050-471ME_	0.47	3.00	3.60	78	9.3	15.3	21.0	18.8	26.0
XEL5050-681ME_	0.68	3.79	4.55	68	8.0	13.1	18.2	15.8	22.0
XEL5050-901ME_	0.90	4.67	5.60	60	7.5	12.4	17.2	14.3	19.6
XEL5050-122ME_	1.2	5.40	6.48	51	6.8	11.0	15.2	12.8	17.3
XEL5050-182ME_	1.8	7.78	9.34	43	5.7	9.3	12.8	10.5	14.4
XEL5050-222ME_	2.2	10.36	12.43	38	4.3	6.9	9.5	9.0	12.1
XEL5050-332ME_	3.3	13.30	14.60	31	3.8	6.2	8.4	7.8	10.6
XEL5050-472ME_	4.7	19.60	21.50	24	3.2	5.3	7.4	5.9	8.1
XEL5050-562ME_	5.6	22.60	24.80	23	2.9	4.8	6.6	5.5	7.6
XEL5050-682ME_	6.8	26.75	29.45	21	2.6	4.3	6.0	4.7	6.4
XEL5050-822ME_	8.2	31.75	34.95	18	2.3	3.9	5.6	4.5	6.1
XEL5050-103ME_	10.0	40.90	45.00	15	2.1	3.5	4.9	3.6	4.9
XEL5050-153ME_	15.0	69.70	76.70	13	1.7	2.9	3.7	2.9	3.9
XEL5050-223ME_	22.0	90.60	99.65	11	1.5	2.7	3.6	2.5	3.4

1. When ordering, please specify **packaging** code:

**XEL5050-223MEC**

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (250 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (750 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.

[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.

## 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.



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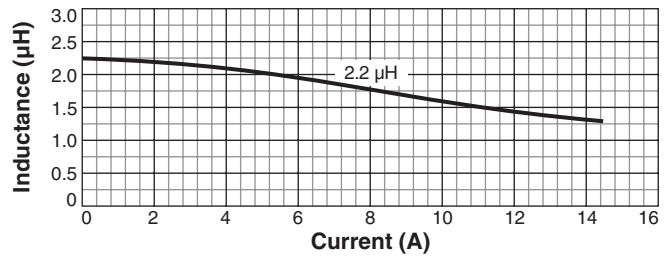
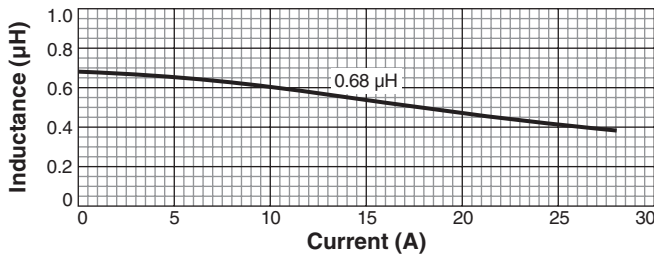
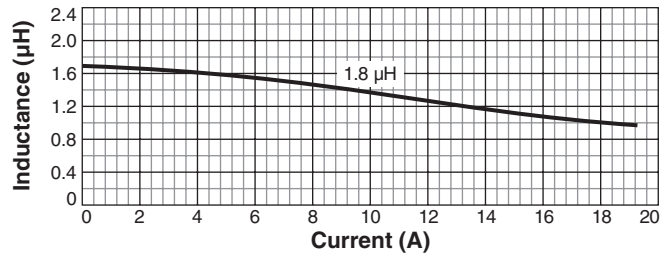
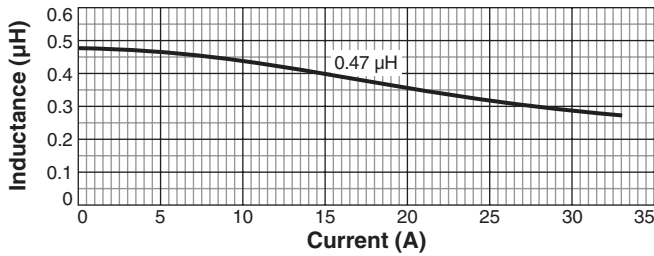
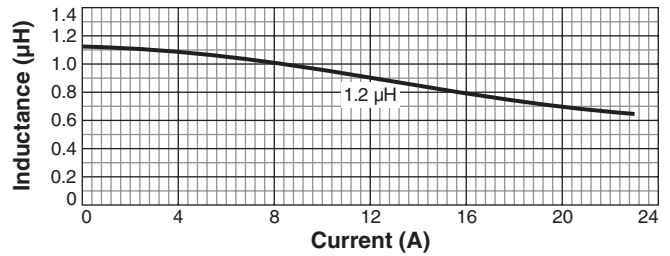
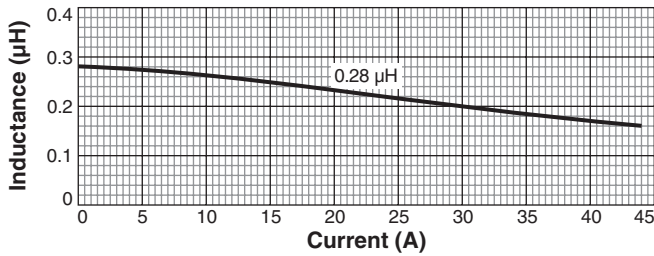
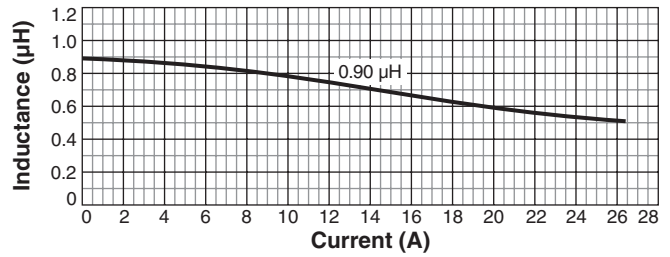
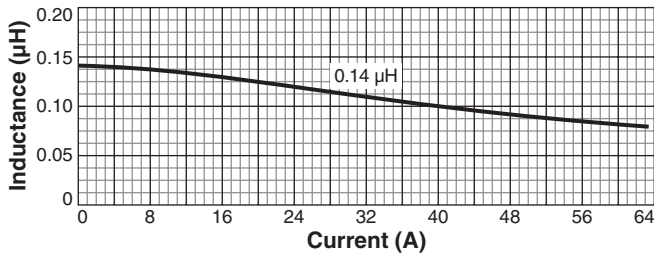
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# Shielded Power Inductors – XEL5050

## Typical L vs Current



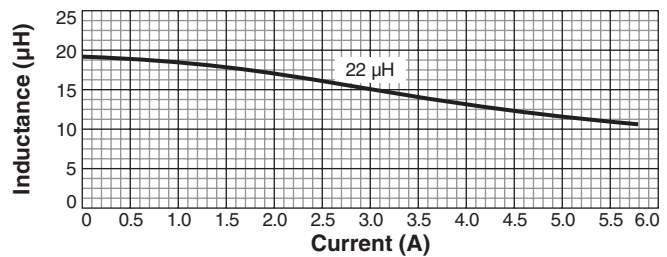
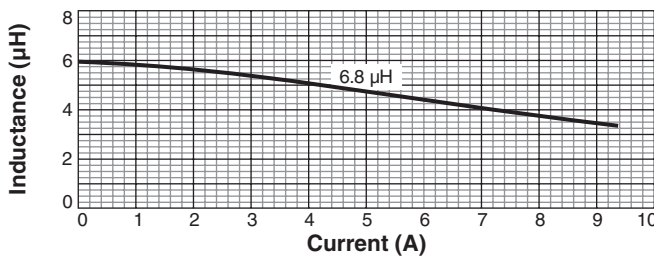
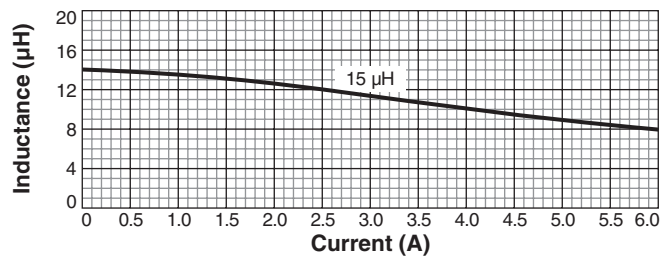
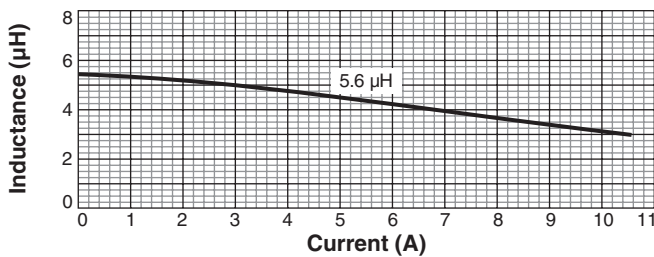
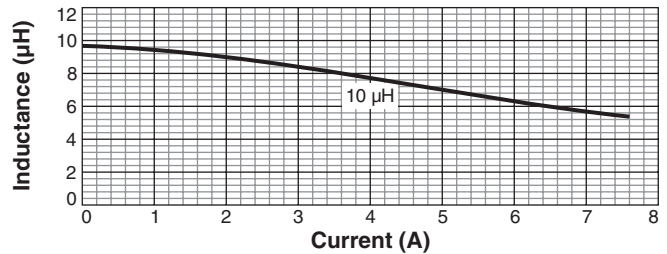
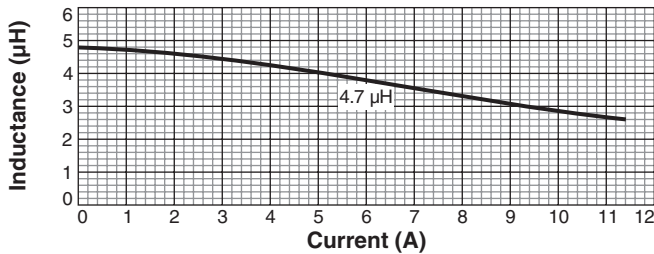
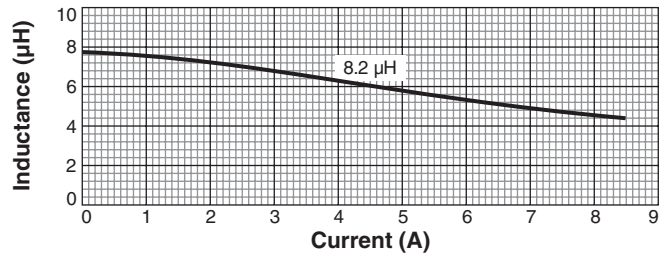
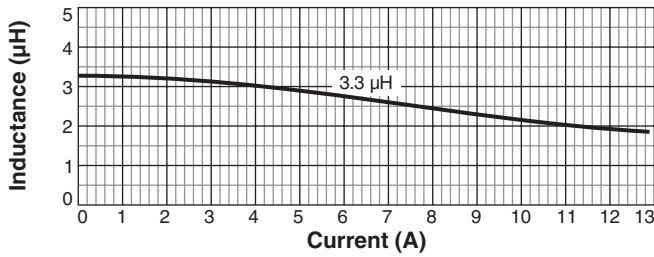
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# Shielded Power Inductors – XEL5050

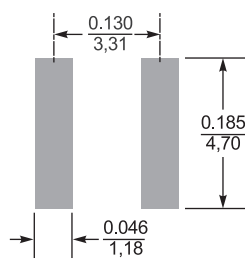
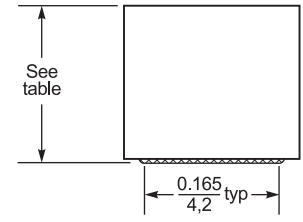
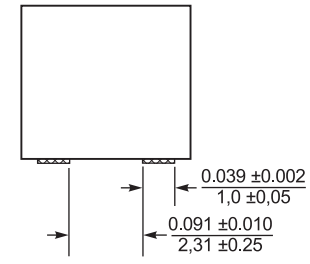
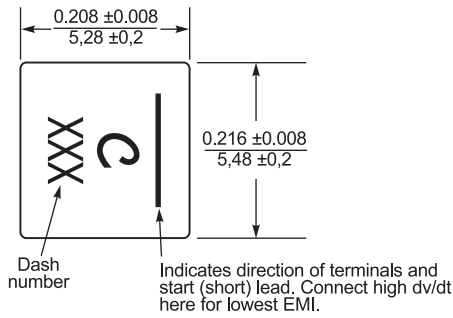
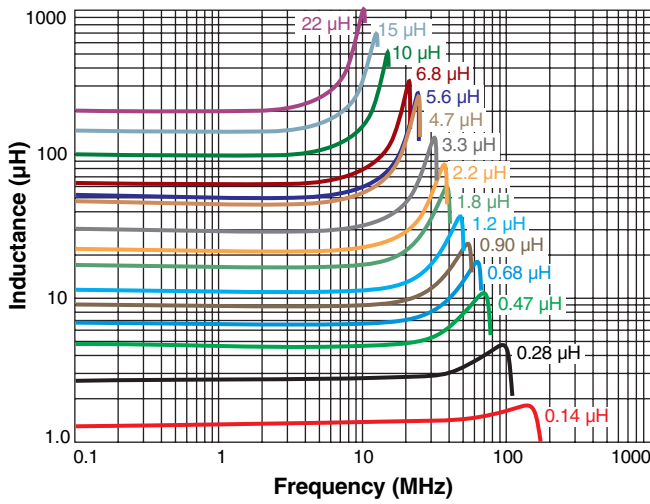
## Typical L vs Current





# Shielded Power Inductors – XEL5050

## Typical L vs Frequency



### Recommended Land Pattern

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

Dash number	Height max (in / mm)
-141	0.209 / 5.30
-281	0.209 / 5.30
-471	0.209 / 5.30
-681	0.209 / 5.30
-901	0.209 / 5.30
-122	0.209 / 5.30
-182	0.205 / 5.20
-222	0.205 / 5.20
-332	0.201 / 5.10
-472	0.201 / 5.10
-562	0.201 / 5.10
-682	0.201 / 5.10
-822	0.201 / 5.10
-103	0.201 / 5.10
-153	0.201 / 5.10
-223	0.201 / 5.10