



# HIGH TEMPERATURE

# Shielded Power Inductors – XAL1010



- High current – up to 98.8 A
- Very low DCR – 0.33 mOhms
- Soft saturation makes them ideal for VRM/VRD applications.

**Core material** Composite

**Core and winding loss** See [www.coilcraft.com/coreloss](http://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** 5.7 – 6.3 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 +130°C.

Tape & 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** 300/13" reel Plastic tape: 24 mm wide, 0.4 mm thick, 16 mm pocket spacing, 10.21 mm pocket depth

**PCB washing** Only pure water or alcohol recommended

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR (mOhms) <sup>3</sup> |       | SRF typ <sup>4</sup><br>(MHz) | Isat <sup>5</sup><br>(A) | Irms (A) <sup>6</sup> |           |
|--------------------------|--------------------------------------|--------------------------|-------|-------------------------------|--------------------------|-----------------------|-----------|
|                          |                                      | typ                      | max   |                               |                          | 20°C rise             | 40°C rise |
| XAL1010-221ME_           | 0.22                                 | 0.33                     | 0.37  | 115                           | 98.8                     | 41.0                  | 55.5      |
| XAL1010-451ME_           | 0.45                                 | 0.60                     | 0.66  | 66                            | 70.5                     | 40.0                  | 53.0      |
| XAL1010-102ME_           | 1.0                                  | 1.00                     | 1.10  | 42                            | 55.0                     | 32.0                  | 43.5      |
| XAL1010-152ME_           | 1.5                                  | 1.60                     | 1.76  | 33                            | 36.6                     | 31.0                  | 40.5      |
| XAL1010-222ME_           | 2.2                                  | 2.55                     | 2.80  | 22                            | 34.0                     | 24.5                  | 32.0      |
| XAL1010-332ME_           | 3.3                                  | 3.70                     | 4.10  | 21                            | 27.4                     | 18.2                  | 25.0      |
| XAL1010-472ME_           | 4.7                                  | 5.20                     | 5.70  | 19                            | 25.4                     | 17.5                  | 24.0      |
| XAL1010-562ME_           | 5.6                                  | 6.30                     | 6.93  | 16                            | 23.6                     | 15.7                  | 21.2      |
| XAL1010-682ME_           | 6.8                                  | 8.10                     | 8.90  | 14                            | 21.8                     | 14.0                  | 18.5      |
| XAL1010-822ME_           | 8.2                                  | 11.70                    | 12.90 | 12                            | 18.3                     | 12.9                  | 17.1      |
| XAL1010-103ME_           | 10                                   | 13.40                    | 14.75 | 11                            | 17.5                     | 11.5                  | 15.5      |
| XAL1010-153ME_           | 15                                   | 16.90                    | 18.60 | 9                             | 15.5                     | 9.9                   | 13.8      |

## 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** coded:

**XAL1010-153MED**

**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:** D = 13" machine-ready reel. EIA-481 embossed plastic tape (300 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 D instead.

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.



[www.coilcraft.com](http://www.coilcraft.com)

**US** +1-847-639-6400 [sales@coilcraft.com](mailto:sales@coilcraft.com)

**UK** +44-1236-730595 [sales@coilcraft-europe.com](mailto:sales@coilcraft-europe.com)

**Taiwan** +886-2-2264 3646 [sales@coilcraft.com.tw](mailto:sales@coilcraft.com.tw)

**China** +86-21-6218 8074 [sales@coilcraft.com.cn](mailto:sales@coilcraft.com.cn)

**Singapore** +65-6484 8412 [sales@coilcraft.com.sg](mailto:sales@coilcraft.com.sg)

Document 804-1 Revised 11/15/11

© Coilcraft Inc. 2011

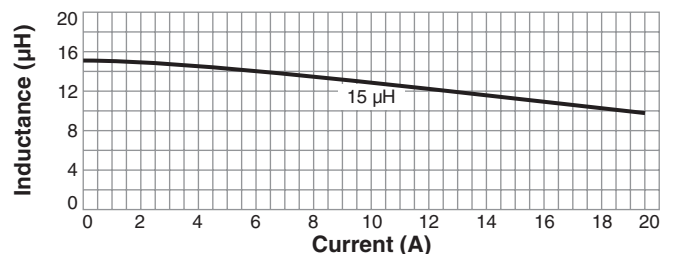
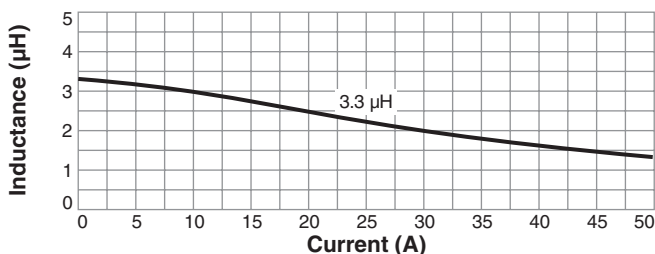
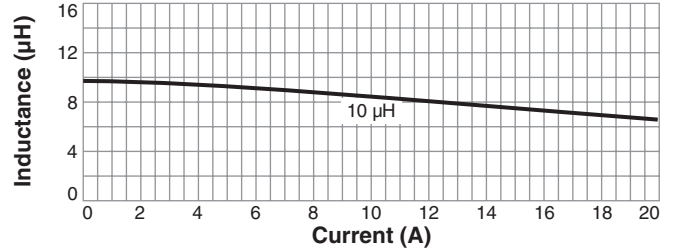
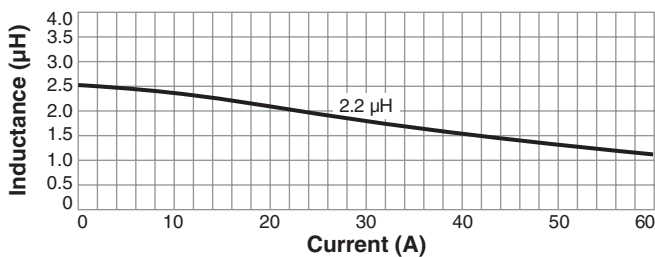
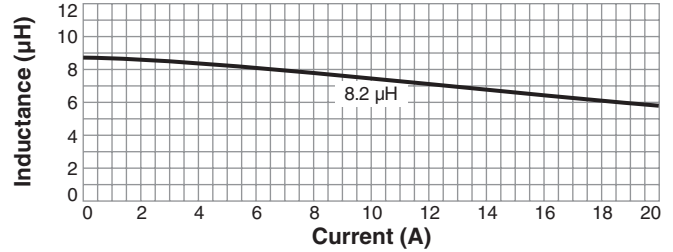
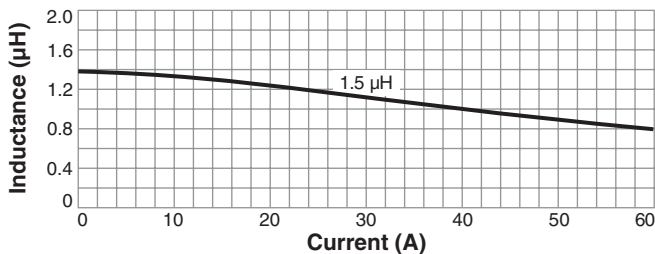
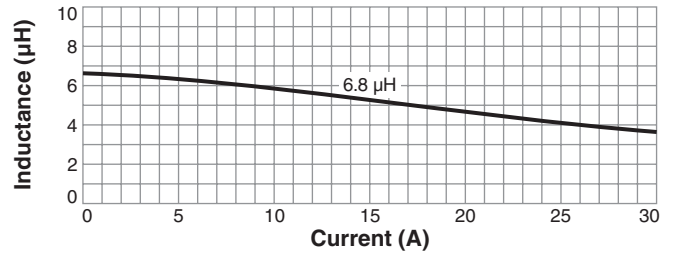
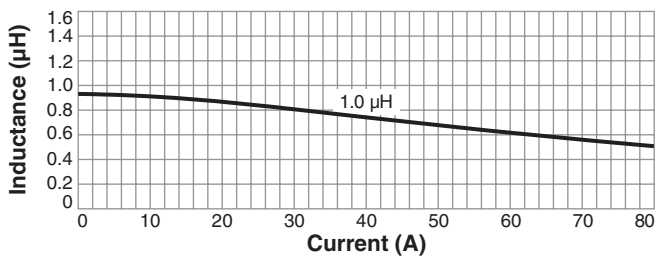
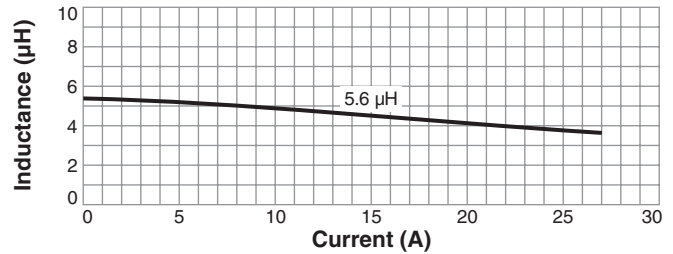
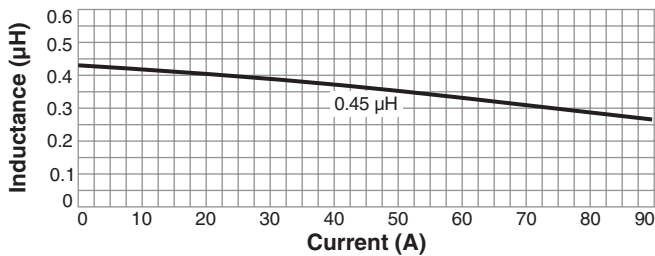
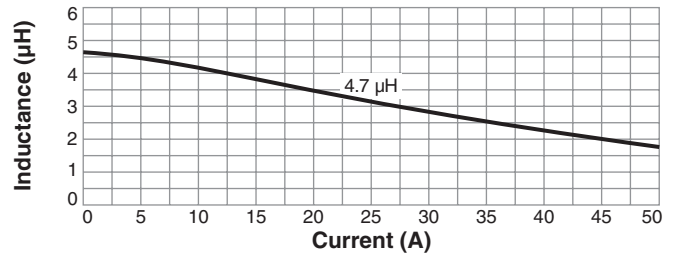
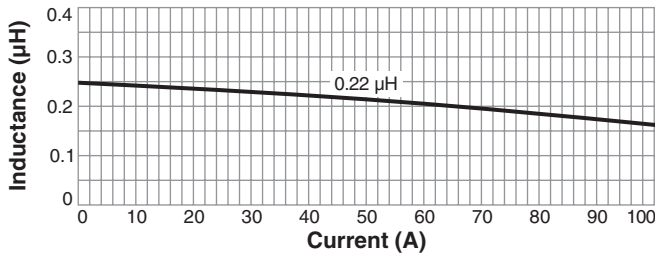
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.



# HIGH TEMPERATURE

## Shielded Power Inductors – XAL1010

### Typical L vs Current



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 804-2 Revised 12/12/11

© Coilcraft Inc. 2011

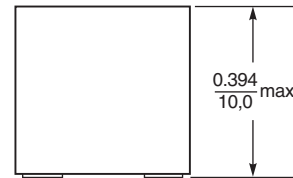
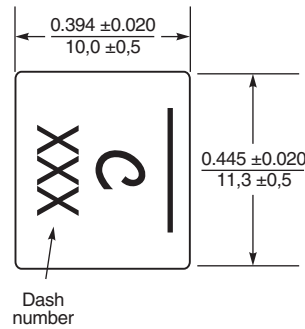
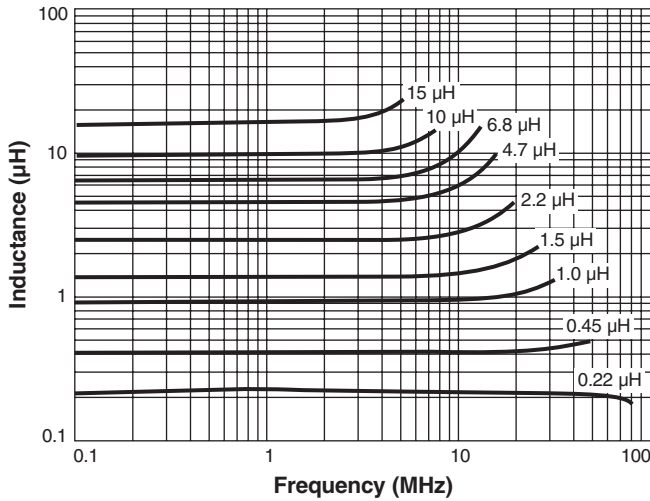
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.



# HIGH TEMPERATURE

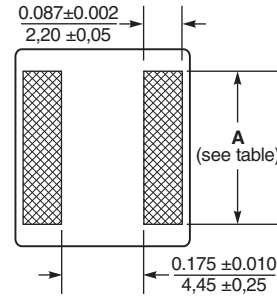
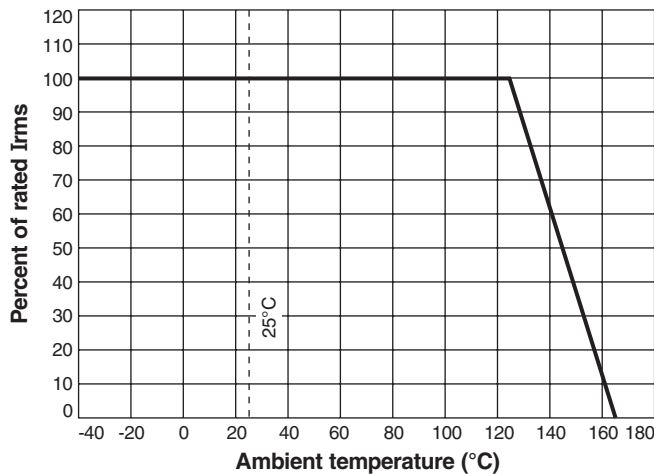
## Shielded Power Inductors – XAL1010

### Typical L vs Frequency



| Dash number | A<br>$\pm 0.008$ in<br>$\pm 0.20$ mm<br>(in / mm) | B<br>(in / mm) |
|-------------|---------------------------------------------------|----------------|
| -221        | 0.406 / 10.31                                     | 0.445 / 11.31  |
| -451        | 0.406 / 10.31                                     | 0.445 / 11.31  |
| -102        | 0.406 / 10.31                                     | 0.445 / 11.31  |
| -152        | 0.390 / 9.91                                      | 0.421 / 10.71  |
| -222        | 0.374 / 9.51                                      | 0.398 / 10.11  |
| -332        | 0.358 / 9.11                                      | 0.374 / 9.51   |
| -472        | 0.358 / 9.11                                      | 0.374 / 9.51   |
| -562        | 0.358 / 9.11                                      | 0.374 / 9.51   |
| -682        | 0.351 / 8.91                                      | 0.362 / 9.21   |
| -822        | 0.343 / 8.71                                      | 0.351 / 8.91   |
| -103        | 0.343 / 8.71                                      | 0.351 / 8.91   |
| -153        | 0.343 / 8.71                                      | 0.351 / 8.91   |

### Irms Derating



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

