



# Shielded Power Inductors—LPS4018 Series



- Very low DCR; excellent current handling
- 4.0 × 4.0 mm footprint; less than 1.8 mm tall

**Core material** Ferrite

**Core and winding loss** See [www.coilcraft.com/coreloss](http://www.coilcraft.com/coreloss)

**Terminations** RoHS compliant silver-palladium-platinum-glass frit. Other terminations available at additional cost.

**Weight** 54 – 64 mg

**Ambient temperature** –40°C to +85°C with I<sub>rms</sub> current, +85°C to +125°C with derated current

**Storage temperature** Component: –40°C to +125°C. 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, 1.9 mm pocket depth

**Recommended pick and place nozzle** OD: 4 mm; ID: ≤ 2 mm

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

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>(µH) | DCR<br>max <sup>3</sup><br>(Ohms) | SRF<br>typ <sup>4</sup><br>(MHz) | Isat (A) <sup>5</sup> |             |             | I <sub>rms</sub> (A) <sup>6</sup> |              |
|--------------------------|---------------------------------|-----------------------------------|----------------------------------|-----------------------|-------------|-------------|-----------------------------------|--------------|
|                          |                                 |                                   |                                  | 10%<br>drop           | 20%<br>drop | 30%<br>drop | 20°C<br>rise                      | 40°C<br>rise |
| LPS4018-561ML_           | 0.56±20%                        | 0.033                             | 250                              | 4.8                   | 5.2         | 5.3         | 1.9                               | 2.8          |
| LPS4018-102NL_           | 1.0±30%                         | 0.042                             | 180                              | 3.8                   | 3.9         | 4.0         | 1.8                               | 2.5          |
| LPS4018-222ML_           | 2.2±20%                         | 0.070                             | 90                               | 2.7                   | 2.8         | 2.9         | 1.5                               | 2.0          |
| LPS4018-332ML_           | 3.3±20%                         | 0.080                             | 75                               | 1.9                   | 2.0         | 2.0         | 1.4                               | 1.9          |
| LPS4018-472ML_           | 4.7±20%                         | 0.125                             | 65                               | 1.8                   | 1.9         | 1.9         | 1.3                               | 1.8          |
| LPS4018-682ML_           | 6.8±20%                         | 0.150                             | 50                               | 1.2                   | 1.3         | 1.3         | 1.0                               | 1.5          |
| LPS4018-103ML_           | 10±20%                          | 0.200                             | 40                               | 1.1                   | 1.2         | 1.3         | 0.90                              | 1.25         |
| LPS4018-153ML_           | 15±20%                          | 0.260                             | 32                               | 0.86                  | 0.91        | 0.94        | 0.80                              | 1.12         |
| LPS4018-183ML_           | 18±20%                          | 0.270                             | 27                               | 0.78                  | 0.83        | 0.85        | 0.70                              | 1.00         |
| LPS4018-223ML_           | 22±20%                          | 0.360                             | 26                               | 0.74                  | 0.80        | 0.83        | 0.65                              | 0.90         |
| LPS4018-333ML_           | 33±20%                          | 0.420                             | 20                               | 0.58                  | 0.64        | 0.68        | 0.55                              | 0.80         |
| LPS4018-473ML_           | 47±20%                          | 0.650                             | 16                               | 0.51                  | 0.55        | 0.56        | 0.45                              | 0.68         |
| LPS4018-683ML_           | 68±20%                          | 0.950                             | 13                               | 0.41                  | 0.45        | 0.46        | 0.40                              | 0.56         |
| LPS4018-104ML_           | 100±20%                         | 1.40                              | 10                               | 0.34                  | 0.36        | 0.37        | 0.35                              | 0.50         |
| LPS4018-124ML_           | 120±20%                         | 1.60                              | 9.0                              | 0.31                  | 0.33        | 0.34        | 0.30                              | 0.45         |
| LPS4018-154ML_           | 150±20%                         | 2.00                              | 8.0                              | 0.27                  | 0.29        | 0.30        | 0.28                              | 0.40         |
| LPS4018-184ML_           | 180±20%                         | 2.50                              | 7.5                              | 0.24                  | 0.26        | 0.27        | 0.26                              | 0.36         |
| LPS4018-224ML_           | 220±20%                         | 3.70                              | 6.5                              | 0.21                  | 0.225       | 0.235       | 0.20                              | 0.30         |
| LPS4018-334ML_           | 330±20%                         | 5.90                              | 5.5                              | 0.18                  | 0.19        | 0.20        | 0.17                              | 0.23         |
| LPS4018-474ML_           | 470±20%                         | 7.80                              | 4.5                              | 0.14                  | 0.16        | 0.17        | 0.15                              | 0.20         |
| LPS4018-564ML_           | 560±20%                         | 10.0                              | 4.0                              | 0.13                  | 0.14        | 0.15        | 0.14                              | 0.18         |
| LPS4018-684ML_           | 680±20%                         | 11.5                              | 3.5                              | 0.12                  | 0.13        | 0.14        | 0.12                              | 0.16         |
| LPS4018-824ML_           | 820±20%                         | 14.0                              | 2.9                              | 0.11                  | 0.12        | 0.13        | 0.10                              | 0.14         |
| LPS4018-105ML_           | 1000±20%                        | 18.0                              | 2.8                              | 0.10                  | 0.11        | 0.11        | 0.098                             | 0.125        |
| LPS4018-155ML_           | 1500±20%                        | 25.0                              | 2.4                              | 0.095                 | 0.10        | 0.105       | 0.080                             | 0.110        |
| LPS4018-185ML_           | 1800±20%                        | 31.5                              | 2.3                              | 0.090                 | 0.095       | 0.100       | 0.070                             | 0.095        |
| LPS4018-225ML_           | 2200±20%                        | 32.5                              | 2.1                              | 0.088                 | 0.094       | 0.100       | 0.070                             | 0.090        |
| LPS4018-335ML_           | 3300±20%                        | 48.0                              | 1.6                              | 0.082                 | 0.092       | 0.094       | 0.055                             | 0.075        |

1. Please specify **termination** and **packaging** codes:

LPS4018-223MLC

**Termination:** L = RoHS compliant silver-palladium-platinum-glass frit. 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).

2. Inductance tested at 100 kHz, 0.1 V<sub>rms</sub> using an Agilent/HP 4192A. Inductance at 1 MHz is the same for parts with SRF ≥ 10 MHz.
3. DCR measured on a micro-ohmmeter.
4. SRF measured using Agilent/HP 8753ES or equivalent.
5. DC current that causes the specified inductance drop 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.

**Coilcraft**<sup>®</sup>

Specifications subject to change without notice.  
Please check our website for latest information.

Document 435-1 Revised 08/05/09

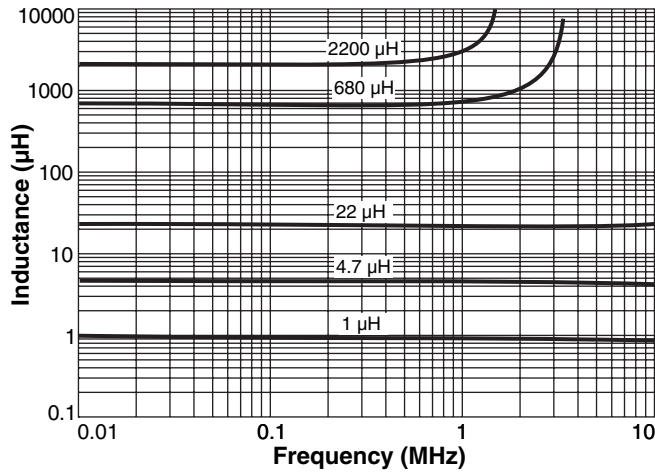
1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

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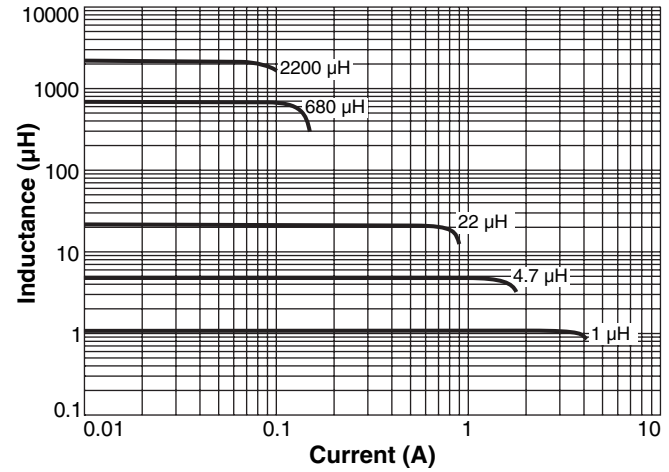


# Shielded SMT Power Inductors – LPS4018 Series

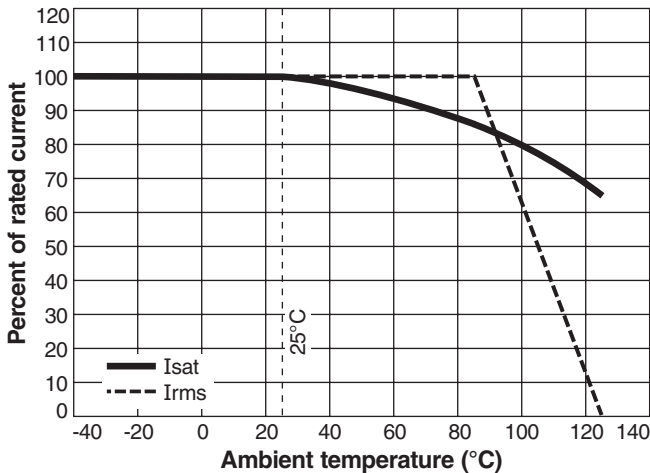
## Typical L vs Frequency



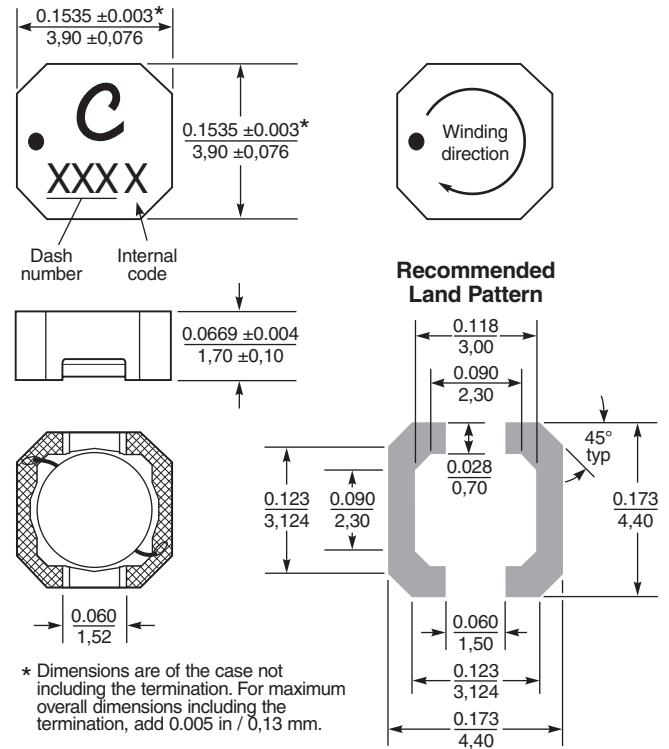
## Typical L vs Current



## Current Derating



Coilcraft **Designer's Kit C392** contains samples of 0.80 µH to 33 µH parts (3 each) from LPS3008, LPS3010 and LPS3015. **Kit C401** contains samples of 0.56 µH to 33 µH parts (3 each) from LPS4012 and LPS4018. **Kit C402** contains samples of 220 µH to 3300 µH parts (3 each) from all five series. For details of kit contents and to order, contact Coilcraft or visit <http://order.coilcraft.com>.



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Document 435-2 Revised 08/05/09

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