

# Shielded Power Inductors – LPS5030



- Very low DCR; excellent current handling
- 4.9 × 4.9 mm footprint; less than 3 mm tall

**Designer's Kit C420** contains 3 each of all values

**Core material** Ferrite

**Environmental** RoHS compliant, halogen free

**Terminations** RoHS compliant matte tin over nickel over silver. Other terminations available at additional cost.

**Weight** 226 – 244 mg

**Ambient temperature** –40°C to +85°C with (40°C rise) Irms current.

**Maximum part temperature** +125°C (ambient + temp rise). **Derating.**

**Storage temperature** Component: –40°C to +125°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** 750/7" reel; 2500/13" reel Plastic tape: 12 mm wide, 0.32 mm thick, 8 mm pocket spacing, 3.1 mm pocket depth

**Recommended pick and place nozzle** OD: 5 mm; ID: ≤ 2.5 mm

**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><br>±20% (μH) | DCR<br>max <sup>3</sup><br>(Ohms) | SRF<br>typ <sup>4</sup><br>(MHz) | Isat (A) <sup>5</sup> |             |             | Irms (A) <sup>6</sup> |              |
|--------------------------|--------------------------------------|-----------------------------------|----------------------------------|-----------------------|-------------|-------------|-----------------------|--------------|
|                          |                                      |                                   |                                  | 10%<br>drop           | 20%<br>drop | 30%<br>drop | 20°C<br>rise          | 40°C<br>rise |
| LPS5030-901MR_           | 0.90                                 | 0.040                             | 250                              | 3.8                   | 4.0         | 4.1         | 2.10                  | 2.80         |
| LPS5030-122MR_           | 1.2                                  | 0.043                             | 210                              | 3.5                   | 3.6         | 3.7         | 2.00                  | 2.65         |
| LPS5030-172MR_           | 1.7                                  | 0.051                             | 190                              | 3.0                   | 3.2         | 3.3         | 1.90                  | 2.50         |
| LPS5030-222MR_           | 2.2                                  | 0.057                             | 168                              | 2.9                   | 3.1         | 3.2         | 1.60                  | 2.15         |
| LPS5030-332MR_           | 3.3                                  | 0.066                             | 125                              | 2.3                   | 2.5         | 2.6         | 1.40                  | 1.80         |
| LPS5030-472MR_           | 4.7                                  | 0.083                             | 84                               | 1.9                   | 2.0         | 2.0         | 1.30                  | 1.75         |
| LPS5030-562MR_           | 5.6                                  | 0.089                             | 70                               | 1.8                   | 1.8         | 1.9         | 1.25                  | 1.65         |
| LPS5030-682MR_           | 6.8                                  | 0.099                             | 56                               | 1.6                   | 1.7         | 1.7         | 1.20                  | 1.60         |
| LPS5030-822MR_           | 8.2                                  | 0.125                             | 45                               | 1.6                   | 1.7         | 1.7         | 1.10                  | 1.55         |
| LPS5030-103MR_           | 10.0                                 | 0.127                             | 30                               | 1.4                   | 1.4         | 1.4         | 1.00                  | 1.50         |
| LPS5030-123MR_           | 12.0                                 | 0.155                             | 24                               | 1.3                   | 1.4         | 1.4         | 0.95                  | 1.40         |
| LPS5030-153MR_           | 15.0                                 | 0.160                             | 32                               | 0.80                  | 0.90        | 0.90        | 0.92                  | 1.40         |
| LPS5030-183MR_           | 18.0                                 | 0.170                             | 27                               | 0.80                  | 0.82        | 0.87        | 0.90                  | 1.30         |
| LPS5030-223MR_           | 22.0                                 | 0.190                             | 24                               | 0.70                  | 0.75        | 0.78        | 0.88                  | 1.25         |
| LPS5030-333MR_           | 33.0                                 | 0.260                             | 19                               | 0.60                  | 0.63        | 0.64        | 0.85                  | 1.20         |
| LPS5030-473MR_           | 47.0                                 | 0.330                             | 16                               | 0.50                  | 0.53        | 0.55        | 0.75                  | 1.00         |
| LPS5030-683MR_           | 68.0                                 | 0.440                             | 12                               | 0.40                  | 0.43        | 0.44        | 0.65                  | 0.900        |
| LPS5030-823MR_           | 82.0                                 | 0.470                             | 11                               | 0.38                  | 0.40        | 0.40        | 0.60                  | 0.830        |
| LPS5030-104MR_           | 100                                  | 0.600                             | 10                               | 0.27                  | 0.31        | 0.32        | 0.55                  | 0.750        |
| LPS5030-124MR_           | 120                                  | 0.800                             | 9                                | 0.26                  | 0.29        | 0.30        | 0.45                  | 0.660        |
| LPS5030-154MR_           | 150                                  | 0.860                             | 7.5                              | 0.22                  | 0.25        | 0.263       | 0.42                  | 0.570        |
| LPS5030-224MR_           | 220                                  | 1.35                              | 6.0                              | 0.21                  | 0.235       | 0.245       | 0.36                  | 0.500        |
| LPS5030-334MR_           | 330                                  | 1.80                              | 5.0                              | 0.155                 | 0.155       | 0.200       | 0.32                  | 0.420        |
| LPS5030-474MR_           | 470                                  | 2.80                              | 4.0                              | 0.117                 | 0.134       | 0.146       | 0.28                  | 0.370        |
| LPS5030-564MR_           | 560                                  | 3.20                              | 3.6                              | 0.110                 | 0.130       | 0.140       | 0.23                  | 0.320        |
| LPS5030-684MR_           | 680                                  | 3.80                              | 3.0                              | 0.100                 | 0.120       | 0.126       | 0.20                  | 0.290        |
| LPS5030-105MR_           | 1000                                 | 5.10                              | 2.5                              | 0.100                 | 0.110       | 0.110       | 0.18                  | 0.250        |
| LPS5030-155MR_           | 1500                                 | 7.60                              | 2.0                              | 0.068                 | 0.080       | 0.089       | 0.15                  | 0.210        |
| LPS5030-185MR_           | 1800                                 | 10.0                              | 1.8                              | 0.069                 | 0.081       | 0.086       | 0.13                  | 0.170        |
| LPS5030-225MR_           | 2200                                 | 11.0                              | 1.6                              | 0.063                 | 0.074       | 0.080       | 0.10                  | 0.150        |
| LPS5030-335MR_           | 3300                                 | 19.5                              | 1.3                              | 0.056                 | 0.063       | 0.067       | 0.090                 | 0.125        |
| LPS5030-475MR_           | 4700                                 | 26.0                              | 1.1                              | 0.049                 | 0.056       | 0.059       | 0.080                 | 0.110        |

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

**LPS5030-105MRC**

**Termination:** R= RoHS compliant matte tin over nickel over silver.

Special order, added cost:

**Q** = RoHS tin-silver-copper (95.5/4/0.5)  
or **P** = non-RoHS tin-lead (63/37).

**Packaging:** C= 7" machine-ready reel. EIA-481 embossed plastic tape (750 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 (2500 parts per full reel).

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4192A impedance analyzer or equivalent.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using Agilent/HP 8753ES or equivalent.

5. DC current at 25°C that causes the specified inductance drop 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.



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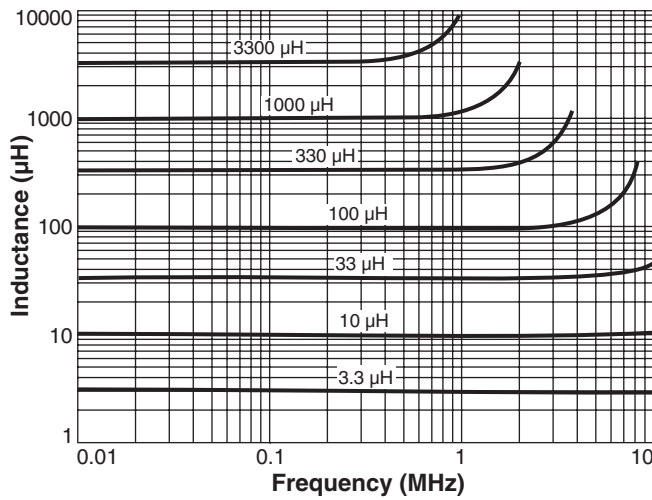
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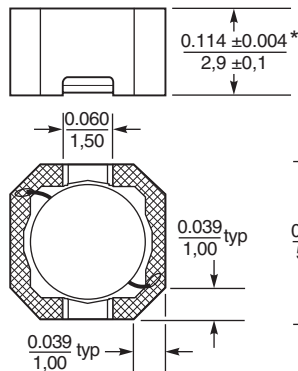
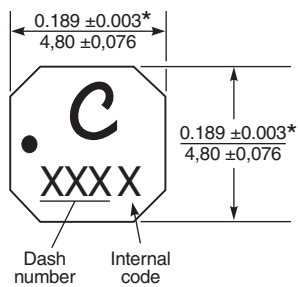
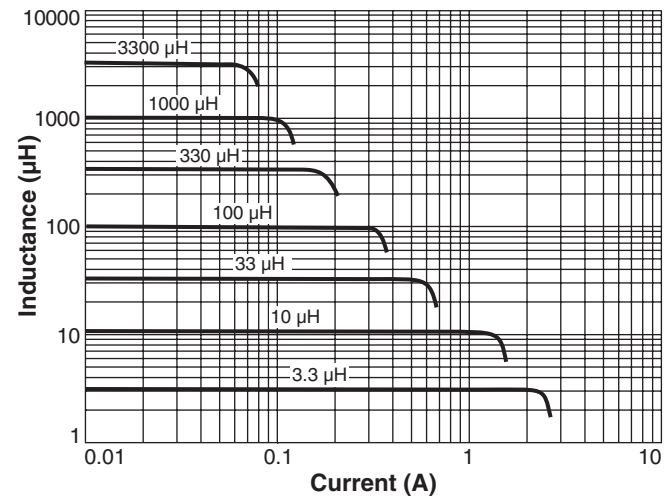


# Shielded Power Inductors – LPS5030 Series

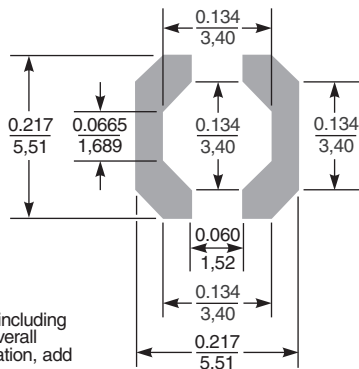
## Typical L vs Frequency



## Typical L vs Current



### Recommended Land Pattern



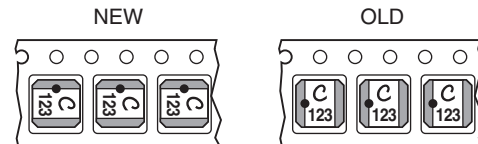
\* Dimensions are of the case not including the termination. For maximum overall dimensions including the termination, add 0.005 in / 0.13 mm.

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).

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

**Packaging** 750/7" reel; 2500/13" reel Plastic tape: 12 mm wide, 0.32 mm thick, 8 mm pocket spacing, 3.1 mm pocket depth

**NOTE NEW PART ORIENTATION** Parts are rotated 90° in the packaging tape compared to previous versions of this product.



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