# Shielded Power Inductors - LPS4010

- Very low DCR; excellent current handling
- 4.0 x 4.0 mm footprint; less than 1.0 mm tall
- AEC-Q200 Grade 1 (–40°C to +125°C)

## Core material
- Ferrite

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

## Environmental
- RoHS compliant, halogen free

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

## Weight
- 50 mg

## Ambient temperature
- –40°C to +125°C with (40°C rise) Irms current.

## Maximum part temperature
- +165°C

## 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)

## Packaging
- 1000/7” reel; 3500/13” reel
- Plastic tape: 12 mm wide, 0.25 mm thick, 8 mm pocket spacing, 1.45 mm pocket depth

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

## PCB washing
- Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](http://www.coilcraft.com/coreloss)

### Part number | L² (µH) | DCR max | SRF typ. | Isat (A) | Irms (A)
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>LPS4010-381NR</td>
<td>0.38 ±30%</td>
<td>0.028</td>
<td>350</td>
<td>4.30</td>
<td>4.40</td>
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<tr>
<td>LPS4010-601NR</td>
<td>0.60 ±30%</td>
<td>0.034</td>
<td>240</td>
<td>3.60</td>
<td>3.70</td>
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<tr>
<td>LPS4010-861NR</td>
<td>0.86 ±30%</td>
<td>0.043</td>
<td>204</td>
<td>3.00</td>
<td>3.10</td>
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<tr>
<td>LPS4010-122NR</td>
<td>1.2 ±30%</td>
<td>0.066</td>
<td>173</td>
<td>2.50</td>
<td>2.60</td>
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<tr>
<td>LPS4010-152NR</td>
<td>1.5 ±30%</td>
<td>0.088</td>
<td>140</td>
<td>2.10</td>
<td>2.20</td>
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</tbody>
</table>

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

### LPS4010-224MR

- **Termination:** R= RoHS compliant matte tin over nickel over silver.
- **Special order, added cost:** 
  - Q = RoHS tin-silver-copper (95.5/4/0.5)
  - P = non-RoHS tin-lead (63/37)

### Packaging:
- C= 7” machine-ready reel. EIA-481 embossed plastic tape (1000 parts per 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 (3500 parts per full reel).

### Test specifications
- **Inductance**
  - Test at 100 kHz, 0.1 Vrms using an Agilent/HP 4192A.
  - Inductance at 1 MHz is the same for parts with SRF ≥10 MHz.
- **DCR measured on a micro-ohmmeter.**
- **SRF measured using Agilent/HP 8753ES or equivalent.**
- **DC current at 25°C that causes the specified inductance drop from its value without current.**
- **Click for temperature derating information.**
- **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.**
- **Electrical specifications at 25°C.**
- **Refer to Doc 362 “Soldering Surface Mount Components” before soldering.**
Shielded SMT Power Inductors – LPS4010 Series

Typical L vs Frequency

Typical L vs Current

Dimensions are in inches / millimeters.

* 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.