Shielded Power Inductors – LPS4040

- Very low DCR; excellent current handling
- 4.0 x 4.0 mm footprint; less than 4 mm tall
- AEC-Q200 Grade 1 (–40°C to +125°C)

Core material: Ferrite
Core and winding loss: See 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: 200 mg
Ambient temperature: –40°C to +125°C with (40°C rise) Imms current.
Maximum part temperature: +165°C (ambient + temp rise). Derating.
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 refows 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
Recommended pick and place nozzle: OD: 4 mm; ID: ≤ 2 mm

1. Please specify termination and packaging codes:
LPS4040-565MR
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 (500 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 (1500 parts per full reel).

2. Inductance tested at 100 kHz, 0.1 Vrms 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 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.

<table>
<thead>
<tr>
<th>Part number1</th>
<th>Inductance2</th>
<th>DCR (µH)</th>
<th>SRF typ3</th>
<th>Isat (A)4</th>
<th>Irms (A)5</th>
<th>10% drop</th>
<th>20% drop</th>
<th>30% drop</th>
<th>20°C rise</th>
<th>40°C rise</th>
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<td>LPS4040-223MR</td>
<td>22</td>
<td>0.210</td>
<td>24.0</td>
<td>0.620</td>
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<td>0.051</td>
<td>0.070</td>
<td>0.100</td>
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</tr>
</tbody>
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Shielded SMT Power Inductors – LPS4040 Series

Typical L vs Current

Typical L vs Frequency

Dimensions are in inches/mm

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).

Packaging 500/7" reel; 1500/13" reel

Plastic tape: 12 mm wide, 0.30 mm thick, 8 mm pocket spacing, 4.32 mm pocket depth