MPL-SE6040-100
Semi-Shielded Inductor 10µH

APPLICABLES
- Battery-powered devices
- High-efficiency SMPS
- Embedded computing
- Input filters

FEATURES
- Size 6mmx6mmx4mm
- Semi-Shielded Construction
- Low DCR
- Low Stray Field
- Max Operating Temp +125°C
- RoHS/REACH-Compliant, Halogen-Free

ELECTRICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inductance (1)</td>
<td>L ±20%</td>
<td>µH</td>
</tr>
<tr>
<td>Resistance</td>
<td>R_{DC}typ</td>
<td>mΩ</td>
</tr>
<tr>
<td>Resistance MAX</td>
<td>R_{DC MAX}max</td>
<td>mΩ</td>
</tr>
<tr>
<td>Rated Current (2)</td>
<td>I_{R}typ</td>
<td>A</td>
</tr>
<tr>
<td>Saturation Current 25°C (3)</td>
<td>I_{SAT 25°C}typ</td>
<td>A</td>
</tr>
<tr>
<td>Saturation Current 100°C (4)</td>
<td>I_{SAT 100°C}typ</td>
<td>A</td>
</tr>
<tr>
<td>Resonance Frequency</td>
<td>f_{r}typ</td>
<td>MHz</td>
</tr>
</tbody>
</table>

GENERAL SPECIFICATIONS

(1) Inductance
Measured at 100kHz, 100mA

(2) Rated Current
Rated current will cause the coil temperature rise ΔT of 40K
I_{R} measured with the inductor soldered in a single-layer PCB. Copper layer thickness
35µm Cu / PCB size 30x50mm. Temperature behavior dependent on circuit design,
PCB layout, proximity to other components, and trace dimensions and thickness.

(3) Saturation Current 25°C
Saturation current will cause L to drop from 30% at 25°C ambient temperature

(4) Saturation Current 100°C
Saturation current will cause L to drop from 30% at 100°C ambient temperature

Temperature Test Condition
Electrical specifications measured at 25°C, 35% RH if not given differently

Operating Condition
Operating temperature: -40°C to +125°C (including temp rise)
Should not exceed +125°C under worst-case operation conditions

Storage Condition
Tape and Reel packaging: -10°C to +40°C
Humidity: <50% RH
TYPICAL PERFORMANCE CURVES

Temperature Rise vs. Current

Inductance vs. Current

Impedance vs. Frequency

Inductance vs. Frequency
Quality Factor vs. Frequency

AC Resistance vs. Frequency
LAND PATTERN

<table>
<thead>
<tr>
<th>Dimensions</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>4.50 ref.</td>
</tr>
<tr>
<td>B</td>
<td>2.20 ref.</td>
</tr>
<tr>
<td>C</td>
<td>6.50 ref.</td>
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</table>

(unit in mm)

PRODUCT PACKAGE AND DIMENSIONS

<table>
<thead>
<tr>
<th>Dimensions</th>
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</thead>
<tbody>
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<td>A</td>
<td>5.0 ± 0.2</td>
</tr>
<tr>
<td>B</td>
<td>6.0 ± 0.2</td>
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</table>

(Top Marking)

Inductance Code | 100

MARKING

Inductance Code | 100

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ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Part Number</th>
<th>L (1)</th>
<th>RDC</th>
<th>IR (2)</th>
<th>ISAT 25°C (3)</th>
<th>ISAT 100°C (4)</th>
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<tr>
<td>MPL-SE6040-1R5</td>
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<td>2.35</td>
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</tbody>
</table>

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