MPL-SE2512-150
Semi-Shielded Inductor 15µH

APPLICATIONS

- Battery-powered devices
- IoT
- Wearable
- Portable devices
- Input filters

FEATURES

- Size 2mmx2.5mmx1.2mm
- Semi-Shielded Construction
- Low DCR
- Low Profile
- 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) L</td>
<td>±20%</td>
<td>µH</td>
</tr>
<tr>
<td>Resistance R_{DC} typ</td>
<td>620</td>
<td>mΩ</td>
</tr>
<tr>
<td>Resistance MAX R_{DC MAX}</td>
<td>768</td>
<td>mΩ</td>
</tr>
<tr>
<td>Rated Current (2) I_R typ</td>
<td>0.85</td>
<td>A</td>
</tr>
<tr>
<td>Saturation Current 25°C (3) I_SAT 25°C typ</td>
<td>0.9</td>
<td>A</td>
</tr>
<tr>
<td>Saturation Current 100°C (4) I_SAT 100°C typ</td>
<td>0.9</td>
<td>A</td>
</tr>
<tr>
<td>Resonance Frequency f_r typ</td>
<td>20</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
In 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

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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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<tbody>
<tr>
<td>A</td>
<td>2.10 ref.</td>
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<tr>
<td>B</td>
<td>0.80 ref.</td>
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<tr>
<td>C</td>
<td>2.60 ref.</td>
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</table>

(unit in mm)

### PRODUCT PACKAGE AND DIMENSIONS

(unit in mm)
ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Part Number</th>
<th>L (1) typ (µH)</th>
<th>RDC typ (mΩ)</th>
<th>IR (2) typ (A)</th>
<th>ISAT 25°C (3) typ (A)</th>
<th>ISAT 100°C (4) typ (A)</th>
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<tr>
<td>MPL-SE2512-R47</td>
<td>0.47</td>
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<td>400</td>
<td>1.1</td>
<td>1.3</td>
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<tr>
<td>MPL-SE2512-150</td>
<td>15</td>
<td>620</td>
<td>0.85</td>
<td>0.9</td>
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<td>MPL-SE2512-220</td>
<td>22</td>
<td>1000</td>
<td>0.70</td>
<td>0.8</td>
<td>0.8</td>
</tr>
</tbody>
</table>

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

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

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Operating temperature: -40°C to +125°C (including temp rise)
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Storage Condition

Tape and Reel packaging: -10°C to +40°C
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