MPL-AT2512-1R5
Low-Profile Molded Inductor 1.5µH

APPLICATIONS

- Battery-powered devices
- High switching frequency SMPS
- IoT
- Wearable
- Portable devices
- Input filters

FEATURES

- Size 2.5mmx2.0mmx1.2mm
- Low Profile
- Low Audible Noise
- Molded Construction
- Soft Saturation
- Stable Over High Temperatures
- Low DCR
- 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>±20%</td>
<td>1.5  µH</td>
</tr>
<tr>
<td>Resistance</td>
<td>56</td>
<td>mΩ</td>
</tr>
<tr>
<td>Resistance MAX</td>
<td>68</td>
<td>mΩ</td>
</tr>
<tr>
<td>Rated Current (2)</td>
<td>4.3</td>
<td>A</td>
</tr>
<tr>
<td>Saturation Current 25°C (3)</td>
<td>4.2</td>
<td>A</td>
</tr>
<tr>
<td>Saturation Current 100°C (4)</td>
<td>4.2</td>
<td>A</td>
</tr>
<tr>
<td>Resonance Frequency</td>
<td>52</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

All MPS parts are lead-free, halogen-free, and adhere to the RoHS directive. For MPS green status, please visit the MPS website under Quality Assurance. “MPS”, the MPS logo, and “Simple, Easy Solutions” are registered trademarks of Monolithic Power Systems, Inc. or its subsidiaries.
### TYPICAL PERFORMANCE CURVES

**Temperature Rise vs. Current**

![Temperature Rise vs. Current Graph](image)

**Inductance vs. Current**

![Inductance vs. Current Graph](image)

**Impedance vs. Frequency**

![Impedance vs. Frequency Graph](image)

**Inductance vs. Frequency**

![Inductance vs. Frequency Graph](image)
Quality Factor vs. Frequency

AC Resistance vs. Frequency
### LAND PATTERN

<table>
<thead>
<tr>
<th>Dimensions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.0 ref.</td>
</tr>
<tr>
<td>B</td>
<td>1.20 ref.</td>
</tr>
<tr>
<td>C</td>
<td>2.80 ref.</td>
</tr>
</tbody>
</table>

(unit in mm)

### PRODUCT PACKAGE AND DIMENSIONS

<table>
<thead>
<tr>
<th>Dimensions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(unit in mm)</td>
</tr>
</tbody>
</table>

### TOP MARKING

<table>
<thead>
<tr>
<th>Marking</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Start of Winding</td>
<td>· (dot)</td>
</tr>
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</table>

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### GENERAL SPECIFICATIONS

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#### 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