**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</td>
<td>L</td>
<td>±20%</td>
</tr>
<tr>
<td>Resistance</td>
<td>R_{DC} typ</td>
<td>27</td>
</tr>
<tr>
<td>Resistance MAX</td>
<td>R_{DC MAX} max</td>
<td>32</td>
</tr>
<tr>
<td>Rated Current</td>
<td>I_{R typ}</td>
<td>4.5</td>
</tr>
<tr>
<td>Saturation Current 25°C</td>
<td>I_{SAT 25°C} typ</td>
<td>6.5</td>
</tr>
<tr>
<td>Saturation Current 100°C</td>
<td>I_{SAT 100°C} typ</td>
<td>6.5</td>
</tr>
<tr>
<td>Resonance Frequency</td>
<td>f_{r typ}</td>
<td>145</td>
</tr>
</tbody>
</table>

### GENERAL SPECIFICATIONS

**Inductance** Measured at 100kHz, 100mA

**Rated Current**

Rated current will cause the coil temperature rise ΔT of 40K

\[ I_n \text{ measured with the inductor soldered in a single-layer PCB. Copper layer thickness 35µm Cu / PCB size 30x50mm. Temperature behavior dependent on circuit design, PCB layout, proximity to other components, and trace dimensions and thickness.} \]

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

**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>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
</tbody>
</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>R_Dc (2) typ (mΩ)</th>
<th>I_R (2) typ (A)</th>
<th>I_{SAT,25°C} (3) typ (A)</th>
<th>I_{SAT,100°C} (4) typ (A)</th>
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<tbody>
<tr>
<td>MPL-SE2512-R47</td>
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<td>MPL-SE2512-2R2</td>
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<td>1000</td>
<td>0.70</td>
<td>0.8</td>
<td>0.8</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.
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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