**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)</td>
<td>L</td>
<td>±20% 1.0 µH</td>
</tr>
<tr>
<td>Resistance</td>
<td>R_{DC} typ</td>
<td>45 mΩ</td>
</tr>
<tr>
<td>Resistance MAX</td>
<td>R_{DC MAX} max</td>
<td>53 mΩ</td>
</tr>
<tr>
<td>Rated Current (2)</td>
<td>I_r typ</td>
<td>3.35 A</td>
</tr>
<tr>
<td>Saturation Current 25°C (3)</td>
<td>I_{SAT 25°C} typ</td>
<td>4.2 A</td>
</tr>
<tr>
<td>Saturation Current 100°C (4)</td>
<td>I_{SAT 100°C} typ</td>
<td>4.2 A</td>
</tr>
<tr>
<td>Resonance Frequency</td>
<td>f_r typ</td>
<td>90 MHz</td>
</tr>
</tbody>
</table>

**APPLICATIONS**

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

**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 35um 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 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

Inductance vs. Current

Impedance vs. Frequency

Inductance vs. Frequency
Quality Factor vs. Frequency

AC Resistance vs. Frequency

[Graphs showing Quality Factor and 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

Dimensions (unit in mm)
## ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Part Number</th>
<th>( L^{(1)} ) typ (µH)</th>
<th>( R_{dc} ) 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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</thead>
<tbody>
<tr>
<td>MPL-SE2512-R47</td>
<td>0.47</td>
<td>27</td>
<td>4.5</td>
<td>6.5</td>
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<tr>
<td>MPL-SE2512-R68</td>
<td>0.68</td>
<td>33</td>
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<tr>
<td>MPL-SE2512-1R0</td>
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<td>45</td>
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<td>MPL-SE2512-1R5</td>
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<tr>
<td>MPL-SE2512-2R2</td>
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<td>92</td>
<td>2.5</td>
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<tr>
<td>MPL-SE2512-3R3</td>
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<td>158</td>
<td>1.8</td>
<td>2.4</td>
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<tr>
<td>MPL-SE2512-4R7</td>
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<td>205</td>
<td>1.6</td>
<td>1.9</td>
<td>1.9</td>
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<tr>
<td>MPL-SE2512-100</td>
<td>10</td>
<td>400</td>
<td>1.1</td>
<td>1.3</td>
<td>1.3</td>
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<tr>
<td>MPL-SE2512-150</td>
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<td>620</td>
<td>0.85</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<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>

### GENERAL SPECIFICATIONS

(1) **Inductance**

Measured at 100kHz, 100mA

(2) **Rated Current**

Rated current will cause the coil temperature rise \( \Delta T \) 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.

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

(4) **Saturation Current**

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

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Should not exceed +125°C under worst-case operation conditions

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

Humidity: <50% RH

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