### SMD Shielded Power Inductor PAHP24

**Features**
- Low Profile
- Magnetically Shielded Construction for power circuits using metallic magnetic material
- Compatible with high-density mounting
- RoHS Compliant and Halogen Free

#### Electrical
- **Inductance Range**: 24µH to 4.7µH
- **Tolerance**: ±20% over entire range
- **Test Frequency**: 1MHz
- **Operating Temp**: -40°C to +125°C
- **MSL**: Level 1
- **Isat**: The Current at which the Inductance will drop by 30% typically.
- **Irms**: The Current at which the Coil temperature will rise by approximately 40°C without core loss.

#### Resistance to Soldering Heat
- **Pre-heating**: 150°C, 1min
- **Temperature**: 245±5°C
- **Flux for lead free**: Rosin. 9.5%
- **Depth**: completely cover the termination

#### Test Equipment
- **Inductance**: HP4284A, CH11025, CH3302, CH1320, CH1320S LCR Meter
- **DCR**: CH16502, Agilent 33420A Micro-OmH Meter
- **Physical**
  - **Packaging**: 2000 pieces per 7 inch reel.

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### Test Measurement PCB Data:

<table>
<thead>
<tr>
<th><strong>Allied Part Number</strong></th>
<th><strong>Inductance (µH) 1MHz, 1.0V ±20%</strong></th>
<th><strong>DCR (Ω) Typ.</strong></th>
<th><strong>DCR (Ω) Max.</strong></th>
<th><strong>I sat (A) Typ.</strong></th>
<th><strong>I sat (A) Max.</strong></th>
<th><strong>I rms (A) Typ.</strong></th>
<th><strong>I rms (A) Max.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>PAHP24-R24M</td>
<td>0.24</td>
<td>.018</td>
<td>.022</td>
<td>9.50</td>
<td>8.00</td>
<td>5.50*</td>
<td>5.00*</td>
</tr>
<tr>
<td>PAHP24-R33M</td>
<td>0.33</td>
<td>.023</td>
<td>.028</td>
<td>8.00</td>
<td>6.50</td>
<td>5.30*</td>
<td>4.80*</td>
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<td>PAHP24-R47M</td>
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<td>.027</td>
<td>.035</td>
<td>7.00</td>
<td>5.90</td>
<td>4.60*</td>
<td>4.20*</td>
</tr>
<tr>
<td>PAHP24-R68M</td>
<td>0.68</td>
<td>.032</td>
<td>.040</td>
<td>5.50</td>
<td>4.60</td>
<td>4.20*</td>
<td>3.80*</td>
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<tr>
<td>PAHP24-1R0M</td>
<td>1.0</td>
<td>.044</td>
<td>.053</td>
<td>4.90</td>
<td>4.30</td>
<td>3.50*</td>
<td>3.10*</td>
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<tr>
<td>PAHP24-1R5M</td>
<td>1.5</td>
<td>.062</td>
<td>.074</td>
<td>3.80</td>
<td>3.10</td>
<td>3.20*</td>
<td>2.80*</td>
</tr>
<tr>
<td>PAHP24-2R2M</td>
<td>2.2</td>
<td>.078</td>
<td>.093</td>
<td>2.80</td>
<td>2.30</td>
<td>2.60*</td>
<td>2.30*</td>
</tr>
<tr>
<td>PAHP24-4R7M</td>
<td>4.7</td>
<td>.180</td>
<td>.216</td>
<td>1.70</td>
<td>1.40</td>
<td>1.70*</td>
<td>1.50*</td>
</tr>
</tbody>
</table>

*Irms
- Material: FR4
- Board Dimensions: 100 x 50 x 1.6t mm
- Pattern dimensions: 45 x 30 mm (Double sided board)
- Pattern thickness: 50µm

**Irms
- Material: FR4
- Board Dimensions: 100 x 50 x 1.6t mm
- Pattern dimensions: 45 x 45 mm (Double sided board)
- Pattern thickness: 70µm

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### Dimensions

**A**

- 098 - 004 + 008
  - (2.5 - 0.1/+0.2)

**B**

- 079 - 004 + 008
  - (2.0 - 0.1/+0.2)

**C**

- 039 Max
  - (1.0)

**D**

- 030 Ref
  - (0.75)

**E**

- 039 Ref
  - (1.0)

**E**

- 095

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### Test Measurement PCB Data:

- **Material**: FR4
- **Board Dimensions**: 100 x 50 x 1.6t mm
- **Pattern dimensions**: 45 x 30 mm (Double sided board)
- **Pattern thickness**: 50µm

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**Allied Part Number**

- PAHP24-R24M
- PAHP24-R33M
- PAHP24-R47M
- PAHP24-R68M
- PAHP24-1R0M
- PAHP24-1R5M
- PAHP24-2R2M
- PAHP24-4R7M

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**Physical**

- **Packaging**: 2000 pieces per 7 inch reel.
SMD Shielded Power Inductor  PAHP24

Typical Performance Curves

PAHP24-R24M

PAHP24-R33M

PAHP24-R47M

PAHP24-R68M

PAHP24-1R0M

PAHP24-1R5M

PAHP24-2R2M

PAHP24-4R7M

Typical Performance Curves
SMD Shielded Power Inductor PAHP24

Packaging Information

Reel Dimension

<table>
<thead>
<tr>
<th>Type</th>
<th>A(mm)</th>
<th>B(mm)</th>
<th>C(mm)</th>
<th>D(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>178x12mm</td>
<td>8.4±1.0</td>
<td>50 Min</td>
<td>13±0.8</td>
<td>178±2.0</td>
</tr>
</tbody>
</table>

Tape Dimension

<table>
<thead>
<tr>
<th>Bo(mm)</th>
<th>Ao(mm)</th>
<th>Ko(mm)</th>
<th>P(mm)</th>
<th>t(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.85±0.1</td>
<td>2.45±0.1</td>
<td>1.4±0.1</td>
<td>4.0±0.1</td>
<td>23±0.05</td>
</tr>
</tbody>
</table>

Bottom View

Tearing Off Force

The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

<table>
<thead>
<tr>
<th>Room Temp. (°C)</th>
<th>Room Humidity (%)</th>
<th>Room atm (hPa)</th>
<th>Tearing Speed mm/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>5~35</td>
<td>45~85</td>
<td>860~1060</td>
<td>300</td>
</tr>
</tbody>
</table>

Application Notice

• Storage Conditions
  To maintain the solderability of terminal electrodes:
  2. Temperature and humidity conditions: Less than 40°C and 60% RH.
  3. Recommended products should be used within 12 months form the time of delivery.
  4. The packaging material should be kept where no chlorine or sulfur exists in the air.

• Transportation
  1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
  2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
  3. Bulk handling should ensure that abrasion and mechanical shock are minimized.