Low-Profile, High-Current Inductor

KEY BENEFITS

- Integrated e-field shield eliminates the need for separate shielding
- Up to 20 dB e-field reduction at 1 cm when the integrated shield is connected to ground
- Co-planarity of the 4 terminals ≤ 100 µm

APPLICATIONS

- Energy storage DC/DC converters
- High-current filtering

RESOURCES

- For technical questions, contact magnetics@vishay.com
- Material categorization: for definitions, please see www.vishay.com/doc?99912
Low-Profile, High-Current Inductor

**APPLICATIONS**
- Engine and transmission control units
- Diesel injection drivers
- Noise suppression for motors
  - Windshield wipers
  - Power seats
  - Power mirrors
  - Heating and ventilation blowers
  - LED lighting
- Coplanarity of the 4 terminals
- Handles high transient current spikes without saturation
- Lowest DCR/μH, in this package size
- AEC-Q200 qualified
- Material categorization: for definitions of compliance
- Sidewall height: 0.128 in [3.25 mm]
- High temperature, up to 155 °C
- Shielded construction
- Integrated e-field shield eliminates need for separate shielding
- 20 dB e-field reduction at 1 cm
- Noise suppression for motors
- Engine and transmission control units
- HID lighting
- Heating and ventilation blowers
- Power mirrors
- Power seats
- Windshield wipers
- Power mirrors
- Diesel injection drivers
- LED drivers

**HIGHLIGHTS**
- Engine and transmission control units
- Diesel injection drivers
- Noise suppression for motors
- Windshield wipers
- Power seats
- Power mirrors
- Heating and ventilation blowers
- LED lighting
- For technical questions, contact: magnetics@vishay.com

**STANDARD ELECTRICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>L₀</th>
<th>DCR TYP. 25 °C (mΩ)</th>
<th>DCR MAX. 25 °C (mΩ)</th>
<th>HEAT RATING CURRENT DC TYP. (A)</th>
<th>SATURATION CURRENT DC TYP. (A)</th>
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<tbody>
<tr>
<td>0.47</td>
<td>1.55</td>
<td>1.66</td>
<td>30.0</td>
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<td>2.87</td>
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<td>8.15</td>
<td>8.76</td>
<td>15.0</td>
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<td>12.0</td>
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<td>14.3</td>
<td>15.32</td>
<td>9.8</td>
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<td>16.5</td>
<td>17.60</td>
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<td>20.9</td>
<td>22.36</td>
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<td>47</td>
<td>167</td>
<td>178.00</td>
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**Notes**
1. All test data is referenced to 25 °C ambient
2. Operating temperature range -55 °C to +155 °C
3. DC current (A) that will cause L₀ to drop approximately 20 %
4. DC current (A) that will cause L₀ to drop approximately 20 %
5. The part temperature (ambient + temp. rise) should not exceed 155 °C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

**APPLICATIONS**

- Engine and transmission control units
- Diesel injection drivers
- Noise suppression for motors
- Windshield wipers
- Power seats
- Power mirrors
- Heating and ventilation blowers
- LED lighting
- **LEAD (Pb)-FREE STANDARD**
- **JEDEC®**

**GLOBAL PART NUMBER**

<table>
<thead>
<tr>
<th>PRODUCT FAMILY</th>
<th>SIZE</th>
<th>PACKAGE CODE</th>
<th>INDUCTANCE VALUE</th>
<th>TOL.</th>
<th>SERIES</th>
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<tbody>
<tr>
<td>1 H L E 4 0 4 0</td>
<td>D C E R 3 3 0 M 5 A</td>
<td>4040 DC-5A</td>
<td>33 μH</td>
<td>±20 %</td>
<td>e3</td>
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</tbody>
</table>

**DIMENSIONS in inches [millimeters]**

- **ORIENTATION MARK**
- **RECOMMENDED PAD LAYOUT**
- **DIMENSIONS in inches [millimeters]**

**DESCRIPTION**

<table>
<thead>
<tr>
<th>IHLE-4040DC-5A</th>
<th>33 μH</th>
<th>±20 %</th>
<th>ER</th>
<th>E3</th>
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<tbody>
<tr>
<td>MODEL</td>
<td>INDUCTANCE VALUE</td>
<td>INDUCTANCE TOLERANCE</td>
<td>PACKAGE CODE</td>
<td>JEDEC® LEAD (Pb)-FREE STANDARD</td>
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