SRN8040HA Series - Semi-shielded Power Inductors

Features
- Semi-shielded construction
- High operating temperature
- AEC-Q200 compliant
- RoHS compliant* and halogen free**

Additional Information
Click these links for more information:
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- TECHNICAL LIBRARY
- INVENTORY
- SAMPLES
- CONTACT

General Specifications
Operating Temperature
- -40 °C to +150 °C (Temperature rise included)
Storage Temperature (Component)
- -40 °C to +150 °C
Temperature Rise
- 40 °C at rated Irms
Rated Current
- Inductance drops 30 % at Isat
Moisture Sensitivity Level
- 1
ESD Classification (HBM)
- N/A

Materials
- Core
- Ferrite
- Wire
- Enamelled copper
- Terminal Finish
- Ag/Ni/Sn
- Coating
- Magnetic silica
- Packaging

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Users should verify actual device performance in their specific applications.
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WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

Electrical Specifications @ 25 °C

<table>
<thead>
<tr>
<th>Bourns Part No.</th>
<th>Inductance @ 100 kHz / 1 V</th>
<th>Q Typ. @ 1 MHz</th>
<th>SRF (MHz) Typ.</th>
<th>DCR (mΩ) Typ.</th>
<th>DCR (mΩ) Max.</th>
<th>Irms (A) Typ.</th>
<th>Isat (A) Typ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRN8040HA-R50Y</td>
<td>0.5 ± 30%</td>
<td>15</td>
<td>110</td>
<td>5.0</td>
<td>7.0</td>
<td>10.0</td>
<td>15.0</td>
</tr>
<tr>
<td>SRN8040HA-1R0M</td>
<td>1.0 ± 20%</td>
<td>15</td>
<td>85</td>
<td>6.9</td>
<td>10.0</td>
<td>8.5</td>
<td>13.8</td>
</tr>
<tr>
<td>SRN8040HA-1R5M</td>
<td>1.5 ± 20%</td>
<td>15</td>
<td>55</td>
<td>8.0</td>
<td>11.0</td>
<td>7.0</td>
<td>12.0</td>
</tr>
<tr>
<td>SRN8040HA-2R2M</td>
<td>2.2 ± 20%</td>
<td>14</td>
<td>43</td>
<td>11.0</td>
<td>14.0</td>
<td>6.3</td>
<td>10.5</td>
</tr>
<tr>
<td>SRN8040HA-2R7M</td>
<td>2.7 ± 20%</td>
<td>14</td>
<td>37</td>
<td>16.0</td>
<td>21.0</td>
<td>5.6</td>
<td>9.0</td>
</tr>
<tr>
<td>SRN8040HA-3R6M</td>
<td>3.6 ± 20%</td>
<td>13</td>
<td>34</td>
<td>18.0</td>
<td>24.0</td>
<td>4.9</td>
<td>8.0</td>
</tr>
<tr>
<td>SRN8040HA-4R7M</td>
<td>4.7 ± 20%</td>
<td>13</td>
<td>29</td>
<td>24.0</td>
<td>30.0</td>
<td>4.1</td>
<td>7.0</td>
</tr>
<tr>
<td>SRN8040HA-6R8M</td>
<td>6.8 ± 20%</td>
<td>12</td>
<td>23</td>
<td>33.0</td>
<td>42.0</td>
<td>3.9</td>
<td>5.5</td>
</tr>
<tr>
<td>SRN8040HA-8R2M</td>
<td>8.2 ± 20%</td>
<td>11</td>
<td>22</td>
<td>37.0</td>
<td>48.0</td>
<td>3.7</td>
<td>5.2</td>
</tr>
<tr>
<td>SRN8040HA-100M</td>
<td>10.0 ± 20%</td>
<td>11</td>
<td>20</td>
<td>47.0</td>
<td>61.0</td>
<td>3.1</td>
<td>4.8</td>
</tr>
<tr>
<td>SRN8040HA-150M</td>
<td>15.0 ± 20%</td>
<td>10</td>
<td>15</td>
<td>66.0</td>
<td>86.0</td>
<td>2.4</td>
<td>3.7</td>
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<tr>
<td>SRN8040HA-220M</td>
<td>22.0 ± 20%</td>
<td>10</td>
<td>12</td>
<td>92.0</td>
<td>120.0</td>
<td>2.2</td>
<td>3.3</td>
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<tr>
<td>SRN8040HA-330M</td>
<td>33.0 ± 20%</td>
<td>8.5</td>
<td>10</td>
<td>133.0</td>
<td>166.0</td>
<td>1.7</td>
<td>2.6</td>
</tr>
<tr>
<td>SRN8040HA-470M</td>
<td>47.0 ± 20%</td>
<td>8.5</td>
<td>8.5</td>
<td>190.0</td>
<td>237.0</td>
<td>1.4</td>
<td>2.2</td>
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<tr>
<td>SRN8040HA-680M</td>
<td>68.0 ± 20%</td>
<td>8.0</td>
<td>7.0</td>
<td>268.0</td>
<td>337.0</td>
<td>1.1</td>
<td>1.7</td>
</tr>
<tr>
<td>SRN8040HA-101M</td>
<td>100.0 ± 20%</td>
<td>8.0</td>
<td>6.0</td>
<td>383.0</td>
<td>479.0</td>
<td>1.0</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Electrical Schematic

Recommended Layout

How to Order
SRN8040HA - 1R0M

Model
Value Code (see table)

Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

Materials
- Core
- Ferrite
- Wire
- Enamelled copper
- Terminal Finish
- Ag/Ni/Sn
- Coating
- Magnetic silica
- Packaging

Product Dimensions

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Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.
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Inductance vs. IDC and Temperature Rise vs. IDC

<table>
<thead>
<tr>
<th>L @ 25 °C</th>
<th>T @ 25 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRN8040HA-R50Y</td>
<td>L</td>
</tr>
<tr>
<td>SRN8040HA-100M</td>
<td>L</td>
</tr>
<tr>
<td>SRN8040HA-101M</td>
<td>L</td>
</tr>
</tbody>
</table>

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**Soldering Profile**

<table>
<thead>
<tr>
<th>Temperature Rising Area</th>
<th>Preheat Area</th>
<th>Reflow Area</th>
<th>Forced Cooling Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>+4.0 °C/sec. max</td>
<td>150-200 °C / 60-120 sec.</td>
<td>+3.0 °C/sec. max</td>
<td>&lt;1.0-5.0 °C/sec. max</td>
</tr>
</tbody>
</table>

**Packaging Specifications**

**Dimensions:**
- Diameter (DIA.): 13 ± 0.5 (0.512 ± 0.020)
- Diameter (DIA.): 16 (0.630)
- Height (h): 22.4 (0.882)
- Width (w): 18 ± 0 (0.709 ± 0)

**Soldering Temperature Profile**

- **Temperature:** 250 °C
- **Rising Area:** +4.0 °C/sec. max
- **Preheat Area:** 150-200 °C / 60-120 sec.
- **Reflow Area:** +3.0 °C/sec. max
- **Forced Cooling Area:** <1.0-5.0 °C/sec. max

**Soldering Profile Details:**
- **Peak Temperature:** 250 °C
- **60-120 sec.**
- **60-150 sec.**
- **217 °C**

**User Direction of Feed**

- **QTY:** 1000 PCS PER REEL

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