### Features
- Unit height of 2.9 mm
- Inductance range: 1 to 1000 μH
- Rated current up to 2.9 A
- RoHS compliant*

### Applications
- DC/DC converters
- Power supplies for:
  - Portable communication equipment
  - Laptop computers
  - Camcorders, HDTV

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**SDE6603 Series - SMD Power Inductors**

#### Electrical Characteristics

<table>
<thead>
<tr>
<th>Bourns Part No.</th>
<th>Inductance @ 100KHz L (μH) ±20 %</th>
<th>SRF (MHz) Typ.</th>
<th>DCR (Ω) Max.</th>
<th>I rms (A)</th>
<th>I sat (A)</th>
<th><strong>K-Factor</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>SDE6603-1R0M</td>
<td>1.0</td>
<td>130</td>
<td>0.05</td>
<td>2.9</td>
<td>2.9</td>
<td>1000</td>
</tr>
<tr>
<td>SDE6603-1R5M</td>
<td>1.5</td>
<td>115</td>
<td>0.06</td>
<td>2.8</td>
<td>2.6</td>
<td>867</td>
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<tr>
<td>SDE6603-2R2M</td>
<td>2.2</td>
<td>90</td>
<td>0.07</td>
<td>2.4</td>
<td>2.3</td>
<td>684</td>
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<tr>
<td>SDE6603-3R3M</td>
<td>3.3</td>
<td>70</td>
<td>0.08</td>
<td>2.0</td>
<td>2.0</td>
<td>520</td>
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<tr>
<td>SDE6603-4R7M</td>
<td>4.7</td>
<td>50</td>
<td>0.09</td>
<td>1.5</td>
<td>1.5</td>
<td>448</td>
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<tr>
<td>SDE6603-6R8M</td>
<td>6.8</td>
<td>45</td>
<td>0.13</td>
<td>1.4</td>
<td>1.2</td>
<td>371</td>
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<tr>
<td>SDE6603-100M</td>
<td>10</td>
<td>35</td>
<td>0.16</td>
<td>1.1</td>
<td>1.1</td>
<td>302</td>
</tr>
<tr>
<td>SDE6603-150M</td>
<td>15</td>
<td>30</td>
<td>0.23</td>
<td>1.0</td>
<td>0.9</td>
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<tr>
<td>SDE6603-220M</td>
<td>22</td>
<td>20</td>
<td>0.37</td>
<td>0.8</td>
<td>0.7</td>
<td>200</td>
</tr>
<tr>
<td>SDE6603-330M</td>
<td>33</td>
<td>15</td>
<td>0.51</td>
<td>0.6</td>
<td>0.5</td>
<td>160</td>
</tr>
<tr>
<td>SDE6603-470M</td>
<td>47</td>
<td>14</td>
<td>0.64</td>
<td>0.5</td>
<td>0.5</td>
<td>137</td>
</tr>
<tr>
<td>SDE6603-680M</td>
<td>68</td>
<td>11</td>
<td>0.86</td>
<td>0.4</td>
<td>0.4</td>
<td>70</td>
</tr>
<tr>
<td>SDE6603-101M</td>
<td>100</td>
<td>9</td>
<td>1.27</td>
<td>0.3</td>
<td>0.31</td>
<td>57</td>
</tr>
<tr>
<td>SDE6603-151M</td>
<td>150</td>
<td>6</td>
<td>2.0</td>
<td>0.25</td>
<td>0.27</td>
<td>45</td>
</tr>
<tr>
<td>SDE6603-221M</td>
<td>220</td>
<td>5.5</td>
<td>3.11</td>
<td>0.2</td>
<td>0.22</td>
<td>38</td>
</tr>
<tr>
<td>SDE6603-331M</td>
<td>330</td>
<td>5</td>
<td>3.8</td>
<td>0.16</td>
<td>0.18</td>
<td>30</td>
</tr>
<tr>
<td>SDE6603-471M</td>
<td>470</td>
<td>4</td>
<td>5.06</td>
<td>0.15</td>
<td>0.16</td>
<td>26</td>
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<tr>
<td>SDE6603-681M</td>
<td>680</td>
<td>3</td>
<td>9.2</td>
<td>0.12</td>
<td>0.14</td>
<td>22</td>
</tr>
<tr>
<td>SDE6603-102M</td>
<td>1000</td>
<td>2</td>
<td>13.8</td>
<td>0.07</td>
<td>0.1</td>
<td>18</td>
</tr>
</tbody>
</table>

*K-Factor: To calculate core flux density, Bp-p (gauss) = K x L(μH) x Δ I (peak-to-peak ripple current, A), determine core loss from Core Loss vs. Flux Density plot.

### Core Loss vs. Flux Density

![Core Loss vs. Flux Density](image)

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**General Specifications**

- Test Voltage: 0.1 V
- Reflow Soldering: 230 °C, 50 sec max.
- Operating Temperature: -25 °C to +105 °C
- Storage Temperature: -40 °C to +125 °C
- Moisture Sensitivity Level: 1

### Materials

- Core: Ferrite
- Wire: Enameled copper
- Base: Ceramic
- Adhesive: Epoxy resin
- Terminal: Ag/Ni/Au

- Rated Current: Ind. drop of 10% typ. at Isat
- Temperature Rise: 40 °C typical at Irms

- Packaging: 2000 pcs. per 13-inch reel

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**Product Dimensions**

![Product Dimensions](image)

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**Recommended Layout**

![Recommended Layout](image)

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*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

**WARNING** Cancer and Reproductive Harm

www.P65Warnings.ca.gov
### Soldering Profile

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>200 ± 0.1</th>
<th>(0.079 ± 0.004)</th>
<th>300 ± 0.5</th>
<th>(0.197 ± 0.004)</th>
<th>400 ± 0.5</th>
<th>(0.197 ± 0.004)</th>
<th>500 ± 1.0</th>
<th>(0.394 ± 0.004)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (Seconds)</td>
<td>200 ± 0.1</td>
<td>(0.079 ± 0.004)</td>
<td>300 ± 0.5</td>
<td>(0.197 ± 0.004)</td>
<td>400 ± 0.5</td>
<td>(0.197 ± 0.004)</td>
<td>500 ± 1.0</td>
<td>(0.394 ± 0.004)</td>
</tr>
</tbody>
</table>

- Maximum of 18 seconds between +255 °C and +260 °C
- 255 °C peak
- 260 °C maximum
- Ramp Up 4 °C/second maximum
- 10 seconds minimum
- 120-150 seconds
- Ramp Down 5 °C/second

### How to Order

**Model**

SDE603 - 100M

**Value Code (see table)**

### Packaging Specifications

**Dimensions:**

- **Ramp Up:** 4 °C/second maximum, 10 seconds minimum
- **Ramp Down:** 5 °C/second

**Thermocouple: User Direction of Feed**

**QTY:** 2000 PCS. PER REEL

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