Shielded Power Inductors—MSS1583

- 14.8 × 14.8 mm footprint; 8.6 mm high shielded inductors
- 16 inductance values from 10 µH to 1 mH
- Low DCR and excellent current handling

**Core material** Ferrite

**Core and winding loss** See www.coilcraft.com/coreloss

**Environment** RoHS compliant, halogen free

**Terminations** RoHS compliant matte tin over nickel over phos bronze. Other terminations available at additional cost.

**Weight:** 3.7 – 4.4 g

**Ambient temperature** –40°C to +85°C with (40°C rise) Irms current.

**Maximum part temperature** +125°C (ambient + temp rise). Derating.

**Storage temperature** Component: –40°C to +125°C. Tape and reel packaging: –40°C to +80°C

**Resistance to soldering heat** Max three 40 second refloWS at +260°C, parts cooled to room temperature between cycles

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)** 38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

### Specifications

1. **Inductance**

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance (µH) typ</th>
<th>DCR (Ohms)</th>
<th>SRF (MHz)</th>
<th>Isat (A) 10% drop</th>
<th>Isat (A) 20% drop</th>
<th>Isat (A) 30% drop</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSS1583-103ME_</td>
<td>10 ±20%</td>
<td>0.012</td>
<td>17.0</td>
<td>12.0</td>
<td>13.6</td>
<td>14.7</td>
</tr>
<tr>
<td>MSS1583-123ME_</td>
<td>12 ±20%</td>
<td>0.014</td>
<td>14.5</td>
<td>11.7</td>
<td>13.3</td>
<td>14.2</td>
</tr>
<tr>
<td>MSS1583-153ME_</td>
<td>15 ±20%</td>
<td>0.018</td>
<td>13.5</td>
<td>10.1</td>
<td>11.5</td>
<td>12.4</td>
</tr>
<tr>
<td>MSS1583-183ME_</td>
<td>18 ±20%</td>
<td>0.020</td>
<td>12.0</td>
<td>9.2</td>
<td>10.5</td>
<td>11.2</td>
</tr>
<tr>
<td>MSS1583-223ME_</td>
<td>22 ±20%</td>
<td>0.023</td>
<td>10.5</td>
<td>8.2</td>
<td>9.1</td>
<td>10.4</td>
</tr>
<tr>
<td>MSS1583-333ME_</td>
<td>33 ±20%</td>
<td>0.033</td>
<td>8.5</td>
<td>7.0</td>
<td>7.9</td>
<td>8.6</td>
</tr>
<tr>
<td>MSS1583-473ME_</td>
<td>47 ±20%</td>
<td>0.048</td>
<td>7.3</td>
<td>5.9</td>
<td>6.7</td>
<td>7.3</td>
</tr>
<tr>
<td>MSS1583-683ME_</td>
<td>68 ±20%</td>
<td>0.061</td>
<td>6.0</td>
<td>4.7</td>
<td>5.5</td>
<td>6.0</td>
</tr>
<tr>
<td>MSS1583-104KE_</td>
<td>100 ±10%</td>
<td>0.090</td>
<td>4.8</td>
<td>3.9</td>
<td>4.4</td>
<td>4.8</td>
</tr>
<tr>
<td>MSS1583-154KE_</td>
<td>150 ±10%</td>
<td>0.138</td>
<td>3.7</td>
<td>3.1</td>
<td>3.6</td>
<td>3.9</td>
</tr>
<tr>
<td>MSS1583-224KE_</td>
<td>220 ±10%</td>
<td>0.205</td>
<td>3.0</td>
<td>2.6</td>
<td>3.0</td>
<td>3.3</td>
</tr>
<tr>
<td>MSS1583-334KE_</td>
<td>330 ±10%</td>
<td>0.300</td>
<td>2.7</td>
<td>2.0</td>
<td>2.3</td>
<td>2.5</td>
</tr>
<tr>
<td>MSS1583-474KE_</td>
<td>470 ±10%</td>
<td>0.386</td>
<td>2.2</td>
<td>1.8</td>
<td>2.0</td>
<td>2.2</td>
</tr>
<tr>
<td>MSS1583-684KE_</td>
<td>680 ±10%</td>
<td>0.570</td>
<td>1.8</td>
<td>1.4</td>
<td>1.6</td>
<td>1.8</td>
</tr>
<tr>
<td>MSS1583-824KE_</td>
<td>820 ±10%</td>
<td>0.640</td>
<td>1.6</td>
<td>1.3</td>
<td>1.5</td>
<td>1.6</td>
</tr>
<tr>
<td>MSS1583-105KED_</td>
<td>1000 ±10%</td>
<td>0.860</td>
<td>1.5</td>
<td>1.1</td>
<td>1.3</td>
<td>1.4</td>
</tr>
</tbody>
</table>

2. **Inductance tested at 100 kHz, 0.1 Vrms, 0 A dc using an Agilent/HP 4263B LCR meter or equivalent.
3. **DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
4. **SRF measured using Agilent/HP 4191A or equivalent.
5. **DC current at 25°C that causes the specified drop in inductance from its value without current. Click for temperature derating information.
6. **Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. Click for temperature derating information.
7. **Electrical specifications at 25°C. Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

1. Specify termination and packaging codes:

**MSS1583-105KED**

**Termination:** E = RoHS compliant matte tin over nickel over phos bronze.

**Special order:** Q = RoHS tin-silver-copper (95.5/4/0.5) or P = non-RoHS tin-lead (63/37).

**Packaging:** D = 13” machine-ready reel. EIA-481 embossed plastic tape (300 parts per full reel).

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter D instead.

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Coilcraft

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Shielded Power Inductors – MSS1583

Typical L vs Current

Typical L vs Frequency

Dimensions are in inches

Recommended Land Pattern

RoHS Compliant
Halogen Free

US +1-847-639-6400 sales@coilcraft.com
UK +44-1236-730595 sales@coilcraft-europe.com
Taiwan +886-2-22643646 sales@coilcraft.com.tw
China +86-21-62188074 sales@coilcraft.com.cn
Singapore +65-64848412 sales@coilcraft.com.sg

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