SMT Power Inductors – DO2010

- Smallest power inductor, only 2 mm square and 1 mm high
- Can handle up to 0.51 A of saturating current

Designer’s Kit C399 contains 5 of each part
Core material: Ferrite
Core and winding loss: See www.coilcraft.com/coreloss
Terminations: RoHS compliant matte tin over nickel over silver-platinum-glass frit. Other terminations available at additional cost.
Weight: 11 mg
Ambient temperature: –40°C to +85°C with Irms current, +85°C to +125°C with derated current
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
Packaging: 1000/7" reel; 3500/13" reel Plastic tape: 12 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.19 mm pocket depth
PCB washing: Tested with pure water or alcohol only. For other solvents, see Doc787_PCB_Washing.pdf.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance ±20%² (µH)</th>
<th>DCR max³ (Ohms)</th>
<th>SRF typ⁴ (MHz)</th>
<th>Isat⁵ (A)</th>
<th>Irms⁶ (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO2010-123ML</td>
<td>12</td>
<td>1.84</td>
<td>35</td>
<td>0.51</td>
<td>0.39</td>
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<tr>
<td>DO2010-153ML</td>
<td>15</td>
<td>2.14</td>
<td>30</td>
<td>0.47</td>
<td>0.36</td>
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<tr>
<td>DO2010-223ML</td>
<td>22</td>
<td>2.80</td>
<td>25</td>
<td>0.42</td>
<td>0.32</td>
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<tr>
<td>DO2010-333ML</td>
<td>33</td>
<td>4.10</td>
<td>20</td>
<td>0.34</td>
<td>0.25</td>
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<tr>
<td>DO2010-473ML</td>
<td>47</td>
<td>6.00</td>
<td>16</td>
<td>0.28</td>
<td>0.21</td>
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<tr>
<td>DO2010-683ML</td>
<td>68</td>
<td>8.80</td>
<td>13</td>
<td>0.23</td>
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<tr>
<td>DO2010-104ML</td>
<td>100</td>
<td>15.7</td>
<td>11</td>
<td>0.18</td>
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<tr>
<td>DO2010-224ML</td>
<td>220</td>
<td>38.0</td>
<td>8.0</td>
<td>0.10</td>
<td>0.08</td>
</tr>
</tbody>
</table>

1. When ordering, please specify termination and packaging codes:

   DO2010-123ML

   Termination: L = RoHS compliant matte tin over nickel over silver-platinum-glass frit
   Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).
   Packaging: C = 7" machine-ready reel. EIA-481 embossed plastic tape (1000 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 C instead.
   D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (3500 parts per full reel).

2. Inductance tested at 100 kHz, 0.1 Vrms.
3. DCR measured on a micro-ohmmeter.
4. SRF measured using Agilent/HP 4191A or equivalent.
5. DC current at which the inductance drops 10% (typ) from its value without current.
6. Current that causes a 40°C temperature rise from 25°C ambient.
7. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

Dimensions are in inches/mm.
SMT Power Inductors – DO2010 Series

Typical L vs Current

Typical L vs Frequency

Typical Current Derating