SMT Power Inductor – ME3220

Miniature power inductor: 2.5 × 3.2 base × 2.0 mm tall

- Specified by NSC for their LM2830 Buck Converter

**Designer’s Kit C386** contains samples of all values
**Core material** Ferrite
**Core and winding loss** See www.coilcraft.com/coreloss

**Terminations**

- RoHS tin-silver-copper over tin over nickel over silver.
- Other terminations available at additional cost.

**Weight** 56 – 65 mg

- Ambient temperature –40°C to +85°C with (40°C rise)
- 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
- **Packaging**
  - 2000/7” reel; 7000/13” reel
  - Plastic tape: 12 mm wide, 0.25 mm thick, 4 mm pocket spacing, 2.25 mm pocket depth

- **PCB washing**
  - Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

**Part number**

<table>
<thead>
<tr>
<th>Part number1</th>
<th>Inductance2 (µH)</th>
<th>DCR typ3 (Ohms)</th>
<th>SRF typ4 (MHz)</th>
<th>Isat (A)5 drop</th>
<th>Irms (A)6 rise</th>
<th>20°C rise</th>
<th>40°C rise</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME3220-102ML</td>
<td>1.0±20%</td>
<td>0.058</td>
<td>170.7</td>
<td>2.7</td>
<td>3.0</td>
<td>3.2</td>
<td>2.0</td>
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<tr>
<td>ME3220-152ML</td>
<td>1.5±20%</td>
<td>0.068</td>
<td>138.0</td>
<td>2.2</td>
<td>2.5</td>
<td>2.7</td>
<td>1.6</td>
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<tr>
<td>ME3220-202ML</td>
<td>2.0±20%</td>
<td>0.104</td>
<td>92.6</td>
<td>1.8</td>
<td>2.1</td>
<td>2.2</td>
<td>1.5</td>
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<td>ME3220-252ML</td>
<td>2.5±20%</td>
<td>0.138</td>
<td>75.6</td>
<td>1.5</td>
<td>1.6</td>
<td>1.7</td>
<td>1.4</td>
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<tr>
<td>ME3220-302ML</td>
<td>3.0±20%</td>
<td>0.190</td>
<td>58.2</td>
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<tr>
<td>ME3220-502ML</td>
<td>5.0±20%</td>
<td>0.200</td>
<td>52.5</td>
<td>1.1</td>
<td>1.3</td>
<td>1.4</td>
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<td>ME3220-602ML</td>
<td>6.0±20%</td>
<td>0.270</td>
<td>46.2</td>
<td>1.0</td>
<td>1.1</td>
<td>1.2</td>
<td>0.88</td>
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<tr>
<td>ME3220-802ML</td>
<td>8.0±20%</td>
<td>0.290</td>
<td>45.2</td>
<td>0.98</td>
<td>1.0</td>
<td>1.1</td>
<td>0.80</td>
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<tr>
<td>ME3220-103KL</td>
<td>10±10%</td>
<td>0.434</td>
<td>39.9</td>
<td>0.78</td>
<td>1.0</td>
<td>1.1</td>
<td>0.63</td>
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<tr>
<td>ME3220-123KL</td>
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<td>0.475</td>
<td>37.0</td>
<td>0.76</td>
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<td>0.98</td>
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<td>ME3220-153KL</td>
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<td>ME3220-183KL</td>
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<tr>
<td>ME3220-223KL</td>
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<td>0.787</td>
<td>29.4</td>
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<td>ME3220-273KL</td>
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<td>1.19</td>
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<td>0.63</td>
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<tr>
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<td>1.27</td>
<td>23.0</td>
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<td>0.57</td>
<td>0.60</td>
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<tr>
<td>ME3220-393KL</td>
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<td>0.54</td>
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<td>ME3220-473KL</td>
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<tr>
<td>ME3220-563KL</td>
<td>56±10%</td>
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<td>20.3</td>
<td>0.37</td>
<td>0.42</td>
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<td>ME3220-683KL</td>
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<td>2.30</td>
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<td>0.38</td>
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<tr>
<td>ME3220-823KL</td>
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<td>3.00</td>
<td>13.7</td>
<td>0.30</td>
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<tr>
<td>ME3220-104KL</td>
<td>100±10%</td>
<td>3.50</td>
<td>13.3</td>
<td>0.28</td>
<td>0.32</td>
<td>0.34</td>
<td>0.24</td>
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</tbody>
</table>

1. Please specify termination and packaging codes:

- **ME3220-104KL**

  - **Termination:** L = RoHS tin-silver-copper over tin over nickel over silver.
  - **Special order:** S = non-RoHS tin-lead (63/37).
  - **Packaging:** C = 7” machine-ready reel. EIA-481 embossed plastic tape (2000 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).
  - **B** = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to C.
  - **D** = 13” machine-ready reel. EIA-481 embossed plastic tape (7000 parts per full reel).

2. Inductance measured at 100 kHz, 0.1 Vrms, 0 Adec using Coilcraft SMD-A fixture in Agilent/HP 4284A impedance analyzer.

3. DCR measured on a micro-ohmmeter and Coilcraft CCF858 test fixture.

4. SRF measured using Agilent/HP 8753D network analyzer and Coilcraft SMD-D test fixture.

5. DC current at 25°C that causes the specified inductance drop from its value without current.

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.

- Inductance drop from its value without current.
- SRF measured using Agilent/HP 8753D network analyzer.
- DC current at 25°C that causes the specified inductance drop from its value without current.
- Current that causes the specified temperature rise from 25°C ambient.
- Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

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**PCB washing**

- Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

**Click for temperature derating information.**

**Electrical specifications at 25°C.**

- **Soldering Surface Mount Components** before soldering.
SMT Power Inductor – ME3220 Series

Typical L vs Frequency

Typical L vs Current

Typical Temperature Rise vs Current

Recommended Land Pattern

Dimensions are in inches

mm