Common Mode Chokes – MSD1514

- Ideal for use in both power line and signal line applications
- Common- and differential-mode filtering in a single device
- Up to 100 MHz differential mode cutoff frequency
- Can be used as coupled inductors for SEPIC applications

Core material  Ferrite
Environmental  RoHS compliant, halogen free
Terminations  RoHS compliant matte tin over nickel over phos bronze. Other terminations available at additional cost.
Weight  9.0 – 11.8 g
Ambient temperature  –40°C to +85°C with (40°C rise) Irms current.
Maximum part temperature  +125°C (ambient + temp rise).
Storage temperature  Component: –40°C to +125°C.
Tape and reel packaging: –40°C to +80°C
Winding-to-winding isolation  500 Vrms, one minute
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  175/13” reel; Plastic tape: 32 mm wide, 0.5 mm thick, 24 mm pocket spacing, 14.3 mm pocket depth
PCB washing  Tested with pure water or alcohol only. For other solvents, see Doc787_PCB_Washing.pdf.

Dimensions are in inches

Recomended Land Pattern

* For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.012 inch (0.3 mm).

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This product may not be used in medical or high risk applications without prior Coilcraft approval.
Specification subject to change without notice.
Please check web site for latest information.
## Common Mode Chokes – MSD1514 Series

<table>
<thead>
<tr>
<th>Partnumber&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Common mode impedance max (kOhms)</th>
<th>Cutoff frequency&lt;sup&gt;2&lt;/sup&gt; (MHz)</th>
<th>Inductance (µH)&lt;sup&gt;3&lt;/sup&gt;</th>
<th>DCR max&lt;sup&gt;4&lt;/sup&gt; (Ohms)</th>
<th>Isolation&lt;sup&gt;5&lt;/sup&gt; (Vrms)</th>
<th>Irms&lt;sup&gt;6&lt;/sup&gt; (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD1514-252ME_</td>
<td>2.96 @ 35 MHz</td>
<td>100</td>
<td>2.00</td>
<td>2.5</td>
<td>0.012</td>
<td>500</td>
</tr>
<tr>
<td>MSD1514-472ME_</td>
<td>4.02 @ 23 MHz</td>
<td>18.0</td>
<td>3.76</td>
<td>4.7</td>
<td>0.014</td>
<td>500</td>
</tr>
<tr>
<td>MSD1514-103ME_</td>
<td>6.54 @ 14 MHz</td>
<td>17.0</td>
<td>8.00</td>
<td>10</td>
<td>0.018</td>
<td>500</td>
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<tr>
<td>MSD1514-123ME_</td>
<td>7.83 @ 14 MHz</td>
<td>26.0</td>
<td>9.6</td>
<td>12</td>
<td>0.022</td>
<td>500</td>
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<tr>
<td>MSD1514-153ME_</td>
<td>11.7 @ 11 MHz</td>
<td>9.30</td>
<td>12.00</td>
<td>15</td>
<td>0.028</td>
<td>500</td>
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<tr>
<td>MSD1514-223ME_</td>
<td>17.1 @ 8.10 MHz</td>
<td>14.0</td>
<td>17.60</td>
<td>22</td>
<td>0.036</td>
<td>500</td>
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<tr>
<td>MSD1514-273ME_</td>
<td>17.9 @ 7.20 MHz</td>
<td>10.0</td>
<td>21.60</td>
<td>27</td>
<td>0.039</td>
<td>500</td>
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<tr>
<td>MSD1514-333ME_</td>
<td>22.6 @ 7.10 MHz</td>
<td>21.0</td>
<td>26.40</td>
<td>33</td>
<td>0.052</td>
<td>500</td>
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<tr>
<td>MSD1514-473ME_</td>
<td>47.6 @ 6.40 MHz</td>
<td>5.30</td>
<td>37.60</td>
<td>47</td>
<td>0.075</td>
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<tr>
<td>MSD1514-683ME_</td>
<td>37.8 @ 4.30 MHz</td>
<td>8.80</td>
<td>54.40</td>
<td>68</td>
<td>0.090</td>
<td>500</td>
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<tr>
<td>MSD1514-104KE_</td>
<td>59.8 @ 3.70 MHz</td>
<td>11.0</td>
<td>90.00</td>
<td>100</td>
<td>0.126</td>
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<tr>
<td>MSD1514-224KE_</td>
<td>85.6 @ 2.50 MHz</td>
<td>10.0</td>
<td>198</td>
<td>220</td>
<td>0.287</td>
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<tr>
<td>MSD1514-334KE_</td>
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<td>297</td>
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<tr>
<td>MSD1514-474KE_</td>
<td>101.9 @ 1.60 MHz</td>
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<td>470</td>
<td>0.550</td>
<td>500</td>
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<tr>
<td>MSD1514-105KE_</td>
<td>157.9 @ 1.10 MHz</td>
<td>4.90</td>
<td>900</td>
<td>1000</td>
<td>1.25</td>
<td>500</td>
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</tbody>
</table>

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

   **MSD1514-105KED**

   **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 (175 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.

2. Frequency at which the differential mode attenuation equals 3 dB
3. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A LCR meter or equivalent.
4. DCR is for each winding.
5. Interwinding isolation (hipot) tested for one minute.
6. Current that causes a 40°C temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
9. Electrical specifications at 25°C.
Refer to Doc 362 “Soldering Surface Mount Components” before soldering.
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Typical Attenuation (Ref: 50 Ohms)

Typical Impedance vs Frequency