Common Mode Chokes – MSD1048

- Only 4.8 mm high and 10.3 mm square
- Ideal for use in both power line and signal line applications
- Common- and differential-mode filtering in a single device
- Up to 200 MHz differential mode cutoff frequency
- Can be used as coupled inductors for SEPIC applications

Core material: Ferrite
Weight: 1.5–1.8 g
Environmental: RoHS compliant, halogen free
Terminations: RoHS compliant matte tin over nickel over phos bronze. Other terminations available at additional cost.
Ambient temperature: –40°C to +85°C with 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: 200 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: 800/13” reel. Plastic tape: 24 mm wide, 0.35 mm thick, 16 mm pocket spacing, 5.1 mm pocket depth

Recommended Land Pattern

Dimensions are in inches / mm

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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# Common Mode Chokes – MSD1048 Series

<table>
<thead>
<tr>
<th>Partnumber</th>
<th>Common mode impedance max (kOhms)</th>
<th>Cutoff frequency (MHz)</th>
<th>Inductance (µH)</th>
<th>DCR max (Ohms)</th>
<th>Isolation (Vrms)</th>
<th>I rms (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD1048-222NE_</td>
<td>3.49 @ 71 MHz</td>
<td>200</td>
<td>1.54</td>
<td>2.2</td>
<td>0.019</td>
<td>200</td>
</tr>
<tr>
<td>MSD1048-103ME_</td>
<td>10.1 @ 27 MHz</td>
<td>97</td>
<td>8.00</td>
<td>10</td>
<td>0.053</td>
<td>200</td>
</tr>
<tr>
<td>MSD1048-223ME_</td>
<td>17.0 @ 17 MHz</td>
<td>44</td>
<td>17.6</td>
<td>22</td>
<td>0.098</td>
<td>200</td>
</tr>
<tr>
<td>MSD1048-473ME_</td>
<td>32.4 @ 12 MHz</td>
<td>29</td>
<td>37.6</td>
<td>47</td>
<td>0.208</td>
<td>200</td>
</tr>
<tr>
<td>MSD1048-683ME_</td>
<td>52.2 @ 9.3 MHz</td>
<td>38</td>
<td>54.4</td>
<td>68</td>
<td>0.297</td>
<td>200</td>
</tr>
<tr>
<td>MSD1048-104ME_</td>
<td>58.3 @ 7.4 MHz</td>
<td>19</td>
<td>80.0</td>
<td>100</td>
<td>0.387</td>
<td>200</td>
</tr>
<tr>
<td>MSD1048-224KE_</td>
<td>87.9 @ 5.0 MHz</td>
<td>16</td>
<td>198</td>
<td>220</td>
<td>0.840</td>
<td>200</td>
</tr>
</tbody>
</table>

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

   **MSD1048-224KE**

   **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. (800 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.

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Typical Attenuation (Ref: 50 Ohms)

Typical Impedance vs Frequency