Flexible Ferrite Sheets  
For NFC & Wireless Charging  
MHLL Series

**FEATURES**
- Flexible ferrite sheets for 13.56 MHz NFC, RFID application & wireless charging application
- Made by thin, high permeability sintered ferrite with PET film and adhesive tape
- Standard ferrite layer thickness 0.05mm, 0.1mm and 0.2mm
- Custom size or thickness available upon request
- Operating temperature -40°C to 85°C
- RoHS compliant

**APPLICATIONS**
- NFC antenna for mobile phones
- NFC antenna for automobile
- NFC or RFID antenna for security & access control system
- Wireless charging for mobile phones and battery powered handheld electronic devices
- NFC or RFID read/write devices, improved read distance
- EMI suppression for IC or IC circuitry

**SHAPES AND DIMENSIONS**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>A mm (inches)</th>
<th>B mm (inches)</th>
<th>C mm (inches)</th>
<th>D mm MAX (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHLL5040-000</td>
<td>50 (1.969)</td>
<td>40 (1.575)</td>
<td>0.20 (0.008)</td>
<td>0.35 (0.014)</td>
</tr>
<tr>
<td>MHLL5040-200</td>
<td>50 (1.969)</td>
<td>40 (1.575)</td>
<td>0.10 (0.004)</td>
<td>0.20 (0.008)</td>
</tr>
<tr>
<td>MHLL6060-300</td>
<td>60 (2.362)</td>
<td>60 (2.362)</td>
<td>0.05 (0.002)</td>
<td>0.09 (0.004)</td>
</tr>
<tr>
<td>MHLL12060-000</td>
<td>120 (4.724)</td>
<td>60 (2.362)</td>
<td>0.20 (0.008)</td>
<td>0.35 (0.014)</td>
</tr>
<tr>
<td>MHLL12060-200</td>
<td>120 (4.724)</td>
<td>60 (2.362)</td>
<td>0.10 (0.004)</td>
<td>0.20 (0.008)</td>
</tr>
</tbody>
</table>

**PART NUMBER SYSTEM EXAMPLE**

MHLL 12060 - 000

Material Code  Part Size Code  Thickness Code  Catalog or Custom Information

MCP-DS-MHLL SHEET REV1.2 0814

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MATERIAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Property</th>
<th>MHLL Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Permeability, $\mu'$@13.56MHz, 0.1V</td>
<td>130 ± 20%</td>
</tr>
<tr>
<td>Imaginary Permeability, $\mu''$@13.56MHz, 0.1V</td>
<td>5 max</td>
</tr>
<tr>
<td>Operating Temperature, °C</td>
<td>-40°C ~ +85°C</td>
</tr>
</tbody>
</table>

TYPICAL ELECTRICAL CHARACTERISTICS

![Complex Permeability vs. Frequency](image)

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