NFC Planar Ferrite Sheet Antenna

Applications
- Mobile devices
- Payment, sharing & pairing and connect to tags

Features
- Frequency 13.56 MHz
- Size 35 x 50 x 0.30 mm
- Sintered ferrite (thickness min 0.30 mm including ferrite, adhesive and antenna flex)
- Magnetic field strength optimized by ferrite material type and thickness selection, and the radiator pattern

Benefits
- Good performance on top of metal
- Thin structure
- Easily assembled to device covers
- The best reading position directed towards the back cover
- Well known antenna concept ready for mass production

Electrical specifications @ +25 °C
Note: Electrical characteristics depend from distance of metal objects and the location of the antenna on the handset

<table>
<thead>
<tr>
<th>Frequency Range [MHz]</th>
<th>Reading distance [mm]</th>
<th>Impedance [Ω]</th>
<th>Q-factor</th>
<th>Operating Temperature [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.56 MHz</td>
<td>40 EMVCo</td>
<td>28 Card (avg)</td>
<td>50/80</td>
<td>-40 to +85</td>
</tr>
</tbody>
</table>

Terminal configuration and dimensions of the antenna

<table>
<thead>
<tr>
<th>No.</th>
<th>Terminal Name</th>
<th>Terminal Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Feed</td>
<td>5.75 x 2 mm</td>
</tr>
<tr>
<td>2</td>
<td>Feed</td>
<td>5.75 x 2 mm</td>
</tr>
</tbody>
</table>
Mounting of NFC antenna
1. Recommend mounting of NFC antenna: Inside surface of Battery Cover.

2. Surface texture of face of joint: VDI 3400 NO. 24 (Ra 1.6) of equal

3. Double-curvature on face of joint are not recommended

Recommended matching network

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lemc</td>
<td>560 nH</td>
<td>Filter resonance at 15.4 MHz</td>
</tr>
<tr>
<td>Cemc</td>
<td>180 pF</td>
<td>Filter resonance at 15.4 MHz</td>
</tr>
<tr>
<td>C1</td>
<td>25 pF</td>
<td>Antenna matching component, value depends on the antenna environment</td>
</tr>
<tr>
<td>C2</td>
<td>180 pF</td>
<td>Antenna matching component, value depends on the antenna environment</td>
</tr>
<tr>
<td>Rq</td>
<td>0 Ohm</td>
<td>Rq resistors used to lower Q-value if above 35</td>
</tr>
</tbody>
</table>

For More Information

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