USD004A
Band 4 USD Series Duplexer

Features
- Low Loss with High Rejection
- Superior power handling and reliability
- Universal footprint across all FDD frequency bands

Applications
- Wireless Infrastructure applications
- High-performance carrier-grade small-cells using linearized PA for 1.0-2.0W at the antenna port.
- Wide-band pico-cells or small-cells requiring multi-channel or carrier aggregation.

Description
Surface mount ceramic duplexer supports a universal footprint across all FDD frequency bands enabling the use of a common system PCB. Provides superior rejection, insertion loss, reliability, as well as both peak and average power handling compared to other duplexer technologies.

Electrical Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency (MHz)</th>
<th>Typical at 25°C</th>
<th>Spec. at 25°C</th>
<th>Spec. over -40°C to +85°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Impedance</td>
<td>-</td>
<td>50 ohms</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Average Input Power</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6.0 Watt max</td>
</tr>
<tr>
<td>Peak Input Power</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>60 Watt max</td>
</tr>
</tbody>
</table>

Antenna to UL Response
- Passband Insertion Loss (5 MHz avg): 1710 - 1755, 1.1 dB, 1.4 dB max, 1.7 dB max
- Passband Insertion Loss (single point): 1710 - 1755, 1.3 dB, 1.6 dB max, 1.9 dB max
- Passband Return Loss: 1710 - 1755, 15 dB, 12 dB min, 12 dB min
- Attenuation: 2110 - 2155, 72 dB, 68 dB min, 68 dB min

DL to Antenna Response
- Passband Insertion Loss (5 MHz avg): 2110 - 2155, 1.3 dB, 1.6 dB max, 1.9 dB max
- Passband Insertion Loss (single point): 2110 - 2155, 1.4 dB, 2.5 dB max, 2.7 dB max
- Passband Return Loss: 2110 - 2155, 15 dB, 12 dB min, 12 dB min
- Attenuation: 1710 - 1755, 72 dB, 70 dB min, 70 dB min

DL to UL Response
- Attenuation for UL band: 1710 - 1755, 72 dB, 70 dB min, 70 dB min
- Attenuation for DL band: 2110 - 2155, 72 dB, 68 dB min, 68 dB min

Note: CTS tests each unit to the critical specifications above. Subsequent audits may deviate due to repeatability among different test systems which shall not exceed these allowances.

Specification Allowance
- Insertion Loss: 0.1 dB
- Return Loss: 1.0 dB
- Attenuation: 1.0 dB

Part Dimensions: 61.6 x 12.1 x 10.9 mm • 24.0 g
Materials: Ag plated ceramic block with tin plated brass shield
**Mechanical Drawing**

**Band 4 USD Series Duplexer**

<table>
<thead>
<tr>
<th>Dim.</th>
<th>Nominal (mm)</th>
<th>Tolerance (±mm or Max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>61.60</td>
<td>Max</td>
</tr>
<tr>
<td>B</td>
<td>9.65</td>
<td>Max</td>
</tr>
<tr>
<td>C</td>
<td>2.03</td>
<td>0.13</td>
</tr>
<tr>
<td>D</td>
<td>1.27</td>
<td>0.13</td>
</tr>
<tr>
<td>E</td>
<td>6.49</td>
<td>0.13</td>
</tr>
<tr>
<td>F</td>
<td>24.21</td>
<td>0.13</td>
</tr>
<tr>
<td>G</td>
<td>24.21</td>
<td>0.13</td>
</tr>
<tr>
<td>H</td>
<td>10.90</td>
<td>Max</td>
</tr>
<tr>
<td>I</td>
<td>2.03</td>
<td>0.13</td>
</tr>
<tr>
<td>J</td>
<td>1.27</td>
<td>0.13</td>
</tr>
<tr>
<td>K</td>
<td>2.20</td>
<td>0.20</td>
</tr>
</tbody>
</table>

**PCB Layout**

**Packaging and Marking**

Product is shipped in Pre-formed foam trays.

The trays have 20 slots each with 1 filter per slot. Boxes are packed with 12 Trays per box for a total of 240 filters per box.

**Electrical Response**

- Marker 1: Freq(MHz) 1710, Gain(-dB) 74.2, Gain(-dB) 74.8, Gain(-dB) 74.8
- Marker 2: Freq(MHz) 2110, Gain(-dB) -1.57, Gain(-dB) -1.2
- Marker 3: Freq(MHz) 2155, Gain(-dB) -1.30, Gain(-dB) -1.93, Gain(-dB) -77.8