Dual-Band WLAN Band Pass Filter
2.4–2.5 GHz and 5.15–5.85GHz

Applications
■ WLAN Systems Including 802.11a,b,g

Features
■ RoHS Compliant
■ Two Filters In One Package
■ SMD Package, 3.2 x 5 x 1.4 mm
■ Low Insertion Loss (0.9 dB @ 2.45 GHz and 1.1 dB @ 5.5 GHz)

Description
The BP110BC is a dual ceramic filter using LTCC design and manufacturing technology. The filter has two sections, one for the 2.4–2.5 GHz band and one section for the 5.15–5.85 GHz band. The design is compatible with the 802.11 WLAN specifications.

Electrical Specifications at 25°C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
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</thead>
<tbody>
<tr>
<td>2.45 GHz Filter Section</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Passband</td>
<td>2.4</td>
<td>2.5</td>
<td>GHz</td>
<td></td>
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<tr>
<td>Insertion Loss</td>
<td>1.0</td>
<td>1.4</td>
<td>dB</td>
<td></td>
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<tr>
<td>Return Loss (I/O)</td>
<td>10</td>
<td>14</td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>Attenuation @ DC–1.62 GHz</td>
<td>30</td>
<td>40</td>
<td>dB</td>
<td></td>
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<tr>
<td>Attenuation @ 5 GHz</td>
<td>30</td>
<td>dB</td>
<td></td>
<td></td>
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<tr>
<td>Attenuation @ 7.5 GHz</td>
<td>60</td>
<td>dB</td>
<td></td>
<td></td>
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<tr>
<td>5.5 GHz Filter Section</td>
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<tr>
<td>Passband</td>
<td>5.15</td>
<td>5.85</td>
<td>GHz</td>
<td></td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>1.2</td>
<td>2.0</td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>Return Loss (I/O)</td>
<td>10</td>
<td>15</td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>Attenuation @ DC–4.5 GHz</td>
<td>30</td>
<td>40</td>
<td>dB</td>
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<tr>
<td>Attenuation @ 11 GHz</td>
<td>25</td>
<td>dB</td>
<td></td>
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<tr>
<td>Attenuation @ 15.5 GHz</td>
<td>10</td>
<td>dB</td>
<td></td>
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</tr>
</tbody>
</table>

Typical variation over temperature (-40 to +85 °C) is 0.16 MHz/C and 0.003 dB/C at the 2.45 GHz section and 0.24 MHz/C and 0.009 dB/C at the 5.50 GHz section.
Typical Performance Data

2.45 GHz Filter Section

5.5 GHz Filter Section

2.45 GHz Filter Section

5.5 GHz Filter Section

2.45 GHz Filter Section

5.5 GHz Filter Section

Specifications subject to change without notice. Rev. Feb 04.
Dual-Band WLAN Band Pass Filter 2.4–2.5 GHz and 4.9–5.9 GHz

Block Diagram

2.45 GHz IN

2.45 GHz OUT

5.5 GHz IN

5.5 GHz OUT

Pin Out (Top View)

2.45 GHz IN

2.45 GHz OUT

5.5 GHz IN

5.5 GHz OUT

Suggested Land Pattern

Dimension in mm.

Integrated Module Technology Inc. Tel 886-3-4091046 • Fax 886-3-4090756 • Email sales@imt.com.tw

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