High Frequency Ceramic Solutions

862 - 928MHz Integrated Impedance-matched Balun Filter for Analog Devices, Inc. ADF7023, ADF7023-J, and ADF7024

P/N: 0900PC15F0030

Do you need a small sub-GHz antenna? Go to: www.johansontechnology.com/antennas

General Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>0900PC15F0030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency (MHz)</td>
<td>862 - 928</td>
</tr>
<tr>
<td>Unbalanced Impedance (Ω)</td>
<td>50</td>
</tr>
<tr>
<td>Balanced Impedance (Ω)</td>
<td>Impedance matched to Analog Devices, Inc. ADF7023, ADF7023-J, ADF7024</td>
</tr>
<tr>
<td>Insertion Loss (dB)</td>
<td>1.8 typ (2.3 max.)</td>
</tr>
<tr>
<td>Return Loss (dB)</td>
<td>10 min.</td>
</tr>
<tr>
<td>Phase Balance (deg)</td>
<td>180±15</td>
</tr>
<tr>
<td>Amplitude Difference (dB)</td>
<td>2.0 max.</td>
</tr>
<tr>
<td>Attenuation (dB @MHz)</td>
<td>33 min. @1736 - 1856, 40 min. @2604 - 2784, 40 min. @3472 - 3712, 35 min. @4340 - 4640</td>
</tr>
<tr>
<td>Power Capacity (W)</td>
<td>3 max. CW</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Quantity/Reel</td>
<td>4,000</td>
</tr>
</tbody>
</table>

For more Analog Devices, Inc. matched balun-filters, go to: www.johansontechnology.com/analog

Part Number Explanation

<table>
<thead>
<tr>
<th>P/N Suffix</th>
<th>Packing Style</th>
<th>Suffix = S</th>
<th>eg. 0900PC15F0030S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T &amp; R</td>
<td>Suffix = E</td>
<td>eg. 0900PC15F0030E</td>
</tr>
<tr>
<td></td>
<td>100% Tin</td>
<td>Suffix = None</td>
<td>eg. 0900PC15F0030(E or S)</td>
</tr>
</tbody>
</table>

Mechanical Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>In [mm]</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.079 ± 0.008</td>
<td>2.00 ± 0.2</td>
<td></td>
</tr>
<tr>
<td>0.049 ± 0.008</td>
<td>1.25 ± 0.2</td>
<td></td>
</tr>
<tr>
<td>0.039 max.</td>
<td>1.00 max.</td>
<td></td>
</tr>
<tr>
<td>0.010 ± 0.004</td>
<td>0.25 ± 0.1</td>
<td></td>
</tr>
<tr>
<td>0.012 ± 0.006</td>
<td>0.30 ± 0.2</td>
<td></td>
</tr>
<tr>
<td>0.008±0.004/-0.006</td>
<td>0.20 +0.1/-0.15</td>
<td></td>
</tr>
<tr>
<td>0.020 ± 0.004</td>
<td>0.50 ± 0.1</td>
<td></td>
</tr>
</tbody>
</table>

Terminal Configuration

Johanson Technology, Inc. reserves the right to make design changes without notice.
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Detail Specification: 1/4/2018

Pad-Soldermask Guidelines (with DC Feed)

GND Pads
Solder Pads
GND via (ϕ 0.20&0.35)

GND vias are crucial for filter harmonic attenuation

For reference design package and PCB CAD files, please contact us at:
www.johansontechnology.com/ask-a-question

PCB Reference Design Schematic

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Detail Specification: 1/4/2018

Measuring Diagram

Port 1 Load Impedance: 50Ω
Port 3 Load impedance: Complex conjugate to $Z_{IC,TX\,on}$ of ADF7023, ADF7023-J, ADF7024
Port 2 and 4 Load impedance: $Z_{IC,RX\,off}$ of ADF7023, ADF7023-J, ADF7024

IL = $S_{31}$
RL = $S_{11} / S_{33}$

Rx mode:

Port 1 Load impedance: 50Ω
Port 2 and 4 Load impedance: Complex conjugate to $Z_{IC,RX\,on}$ of ADI ADF7023, ADF7023-J ADF7024
Port 3 Load impedance: $Z_{IC,TX\,off}$ of ADI ADF7023, ADF7023-J, ADF7024

IL = $S_{D21}$
RL = $S_{SS11} / S_{DD22}$
Amp_balance = dB($S(1,2)/S(1,4)$)
Phase_balance = Phase($S(1,2)/S(1,4)$)

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Typical Electrical Characteristics (T=25°C)

**Transmit Mode** Insertion Loss, Return Loss, and Attenuation

![Graph](image)

If you would like the measured s-parameters, contact us at:
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Detail Specification: 1/4/2018

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Typical Electrical Characteristics (T=25°C)

Receive Mode Insertion Loss, Return Loss, and Attenuation

Receive Mode Phase Balance, Amplitude Difference

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