## FEATURES:
- Excellent Performance
- Small Size, Surface Mount
- Building Block For:
  - Power Amplifiers
  - Image Rejection Mixers
  - I & Q / SSB Modulators
  - Phase Shifters & More...

## SPECIFICATIONS (Rev. E 09/18/18)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>115 - 345 MHz</td>
<td></td>
</tr>
<tr>
<td>Insertion Loss (dB) *</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Amplitude Unbalance</td>
<td>0.8</td>
<td>1.4</td>
</tr>
<tr>
<td>Phase Unbalance (Deg.)</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Isolation (dB)</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Power Rating</td>
<td>1 Watt (Max.)</td>
<td></td>
</tr>
<tr>
<td>Impedance</td>
<td>50 Ohms (Nom.)</td>
<td></td>
</tr>
<tr>
<td>VSWR</td>
<td>1.4:1 (Typ.)</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-40 to +85 °C</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>-55 to +100 °C</td>
<td></td>
</tr>
</tbody>
</table>

* Insertion loss is the average loss of the 2 coupling values in excess of the theoretical 3 dB coupling.

<table>
<thead>
<tr>
<th>Package #</th>
<th>159LF</th>
</tr>
</thead>
</table>

** Port Configuration **

<table>
<thead>
<tr>
<th>Input</th>
<th>Isolated*</th>
<th>+90° Output</th>
<th>0° Output</th>
<th>GND.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>3,4</td>
</tr>
</tbody>
</table>

* Terminate ISOLATED port in 50 Ohms EXTERNALLY.
** Ground Externally

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90° HYBRID
SURFACE MOUNT MODEL: SLQ-310
3:1 BANDWIDTH
115 - 345 MHz

Data @ 25°C

PERFORMANCE PLOTS

![Frequency vs. Isolation/Amplitude Unbalance](image1)

![Frequency vs. Coupling/Insertion Loss](image2)
90° HYBRID
SURFACE MOUNT MODEL: SLQ-310

3:1 BANDWIDTH

115 - 345 MHz

Data @ 25°C
90° HYBRID
SURFACE MOUNT MODEL: SLQ-310

3:1 BANDWIDTH

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PERFORMANCE PLOTS

Group Delay (nSec)

0.0 0.4 0.8 1.2 1.6 2.0 2.4

115 138 161 184 207 230 253 276 299 322 345

Frequency (MHz)