90° HYBRID
SURFACE MOUNT MODEL: SMQ-C07

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

SPECIFICATIONS (Rev. A 02/25/08)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>200 - 400 MHz</td>
</tr>
<tr>
<td>Insertion Loss (dB)*</td>
<td>Typ. 0.6 Max. 1.0</td>
</tr>
<tr>
<td>Amplitude Unbalance</td>
<td>Typ. 0.6 Max. 1.2</td>
</tr>
<tr>
<td>Phase Unbalance</td>
<td>Typ. 1.5° Max. 4°</td>
</tr>
<tr>
<td>Isolation (dB)</td>
<td>Typ. 25 Min. 18</td>
</tr>
<tr>
<td>Power Rating</td>
<td>1 Watt (Max.)</td>
</tr>
<tr>
<td>Impedance</td>
<td>50 Ohms (Nom.)</td>
</tr>
<tr>
<td>VSWR</td>
<td>1.3:1 (Typ.)</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-40 to +85 °C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>-55 to +100 °C</td>
</tr>
</tbody>
</table>

* Insertion loss in excess of the theoretical 3 dB coupling.

Package # 129

Port Configuration

<table>
<thead>
<tr>
<th>Input</th>
<th>Isolated*</th>
<th>+90° Output</th>
<th>0° Output</th>
<th>GND.**</th>
<th>No Conn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>7,8,9,10</td>
<td>3,4</td>
</tr>
</tbody>
</table>

* Terminate ISOLATED port in 50 Ohms EXTERNALLY.
** Ground Externally
90° HYBRID
SURFACE MOUNT MODEL: SMQ-C07

OCTAVE BANDWIDTH

200 - 400 MHz

Data @ 25°C

PERFORMANCE PLOTS

Coupling/Insertion Loss/ Amp. Unbal. (dB)

S21  S31

Isolation (dB)

S41

Frequency (MHz)
90° HYBRID
SURFACE MOUNT MODEL: SMQ-C07

OCTAVE BANDWIDTH
200 - 400 MHz

Data @ 25°C

PERFORMANCE PLOTS

Phase Unbalance (deg.) vs. Frequency (MHz)

Return Loss (dB) vs. Frequency (MHz)
90° HYBRID SURFACE MOUNT MODEL: SMQ-C07

OCTAVE BANDWIDTH 200 - 400 MHz

Data @ 25°C

PERFORMANCE PLOT

Group Delay (nSec)

Frequency (MHz)

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