**Description**

fc-QFN (Flip-Chip Quad Flat No lead) is a low cost molded package using flip chip interconnections on a copper lead frame substrate.

This package provides small form factor compared with conventional QFP packages. And it also provides better electrical performance due to the short electrical path.

fc-QFN Packages include an exposed Thermal pad to improve heat transfer out of the IC. Exposed thermal pad can give a low inductance ground connection.

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**Features**

- Cu pillar with Sn/Ag plated
- Excellent electrical and thermal performance
- Minimum lead pitch 0.4mm
- Up to 12 x 12mm body size available
- Multiple lead rows available
- Body thickness of 1.0mm and below
- Low cost lead frame packaging solution
- Electrical performance achieved by shorter lead lengths
- Cost efficient vs. substrate packages
- Thermal performance enhanced by having the die pad soldered to the PCB
- VQFN Option Thickness: 0.85±0.05mm
- WQFN Option Thickness : 0.75±0.05mm
- UQFN Option Thickness : 0.65±0.05mm
- JECEC Level 1 compliant (defending on body size)

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**Applications**

- Applications include cellular phones
- DSPs, USB Controllers
- HD devices, Micro-Controllers
- Wireless LAN

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**Electrical Data**

- 5X5mm Body, 36LD
- Simulation Frequency : 800MHz

<table>
<thead>
<tr>
<th>Resistance (mΩ)</th>
<th>28~42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inductance (nH)</td>
<td>0.40~0.65</td>
</tr>
<tr>
<td>Capacitance (pF)</td>
<td>0.09~0.12</td>
</tr>
</tbody>
</table>

- Results dependent on body size, die size, and Substrate design etc..

**Thermal Data**

<table>
<thead>
<tr>
<th>BODY SIZE</th>
<th>Ball Count</th>
<th>Theta JA (°c/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4X4mm</td>
<td>24</td>
<td>29.23</td>
</tr>
<tr>
<td>6X6mm</td>
<td>44</td>
<td>22.44</td>
</tr>
</tbody>
</table>

- JEDEC STD 2S2P PCB, Still air

**Reliability**

<table>
<thead>
<tr>
<th>MSL Level</th>
<th>JEDEC Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp Cycling</td>
<td>-65C/150°C, 1000 cycles</td>
</tr>
<tr>
<td>Autoclave</td>
<td>130°C/85% RH, 2 atm, 96hrs</td>
</tr>
<tr>
<td>High Temp Storage</td>
<td>150°C, 1000hrs</td>
</tr>
</tbody>
</table>

**Signetics FC-QFN**

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