**Fixed Frequency Synthesizer**

**Surface Mount Model:** FCPL840-10

840 MHz

**Features:**
- Exceptionally Low Phase Noise
- No Programming Required
- Lead Free - RoHS Compliant
- Patented REL-PRO® Technology
- Small Size, Surface Mount
- Buffered Output

**Specifications (Rev. D 12/21/10)**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>840 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Input Frequency</td>
<td>10 MHz</td>
</tr>
<tr>
<td>Reference Input Voltage</td>
<td>1.0 V p-p to 3.3 V p-p</td>
</tr>
</tbody>
</table>

**Bias Voltage**

<table>
<thead>
<tr>
<th>Vcc</th>
<th>V (Vdc)</th>
<th>I (mA Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vcc 1 (Digital)</td>
<td>+5</td>
<td>15</td>
</tr>
<tr>
<td>Vcc 2 (Vtune)</td>
<td>+5</td>
<td>10</td>
</tr>
<tr>
<td>Vcc 3 (VCO)</td>
<td>+5</td>
<td>55</td>
</tr>
</tbody>
</table>

**Lock Detect Indicator**

CMOS 3.3 V

**Output Power**

+3 dBm (Min.)

**Sporious Suppression**

85 dB (Typ.)

**Harmonic Suppression**

18 dB (Typ.)

**Power Up Time**

90 mSec (typ.) *

**Output Impedance**

50 Ohms (Nom.)

**Typical Phase Noise**

- @ 1 kHz -103 dBc/Hz
- @ 10 kHz -101 dBc/Hz
- @ 100 kHz -120 dBc/Hz

**Operating Temperature Range**

-40 to +85 °C

* From stable power on to stable lock detect.

**Absolute Maximum Ratings**

<table>
<thead>
<tr>
<th>Storage Temp. Range</th>
<th>-55 to +125 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bias Voltage (Digital)</td>
<td>+5.25 V</td>
</tr>
<tr>
<td>Bias Voltage (Vtune)</td>
<td>+8.0 V</td>
</tr>
<tr>
<td>Bias Voltage (VCO)</td>
<td>+5.5 V</td>
</tr>
<tr>
<td>DC Voltage Applied to RF Out</td>
<td>± 25 V</td>
</tr>
</tbody>
</table>

This product is manufactured under one or more of the following patents. Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623

| Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 1 1/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

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**Phase Noise**

Offset Frequency (Hz)

-170 to -120 dBc/Hz

**Recommended Part #**

SMC PART # 7,612,296

**Recommended Package**

273LF

**Pin Configuration**

- Pin 6 - Ref. Input
- Pin 7 - Vcc 1 (Digital)
- Pin 8 - Vcc 2 (Tune)
- Pin 9 - Vcc 3 (VCO)
- Pin 13 - RF Out
- Pin 14 - Lock Detect
- Pin 15, 16 - NC
- Pin 10, 11, 12 - GND

**Optimal Solder Area**

For High Vibration Environment

**Package Mounting:** See Application Note AN7200 & AN7300
PERFORMANCE PLOTS

HARMONIC SUPPRESSION

REFERENCE SIDEBAND SUPPRESSION