INTELLIGENT INTERACTIVE SYNTHESIZER
SURFACE MOUNT MODEL: LFSW400460-1M

OPTIMIZED BANDWIDTH

4000 - 4600 MHz

FEATURES:
- Exceptionally Low Phase Noise
- Interactive Communication
- Standard Programming Interface
- Ultra Wide Tuning Range
- Lead Free - RoHS Compliant
- Patented REL-PRO® Technology
- Small Size, Surface Mount
- Buffered Output

SPECIFICATIONS (Rev. A 09/19/08)

Frequency
4000 - 4600 MHz
Step Size
10 MHz
Reference Input Frequency
10 MHz
Reference Input Voltage
1 V p-p to 3.3 V p-p
Bias Voltage

<table>
<thead>
<tr>
<th>Vcc</th>
<th>V (Vdc)</th>
<th>I (mA Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital</td>
<td>+5</td>
<td>50</td>
</tr>
<tr>
<td>VCO</td>
<td>+5</td>
<td>40</td>
</tr>
<tr>
<td>Converter</td>
<td>+5</td>
<td>60</td>
</tr>
</tbody>
</table>

Lock Detect Indicator
CMOS 3.3 V

Output Power
+5 dBm (Min.)

Spurious Suppression
80 dB (Typ.)

Harmonic Suppression
18 dB (Typ.)

Settling Time
3 mSec (Typ.)

Output Impedance
50 Ohms (Nom.)

Typical Phase Noise

<table>
<thead>
<tr>
<th>Offset Frequency (Hz)</th>
<th>Phase Noise (dBc/Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 kHz</td>
<td>-90 dBc/Hz</td>
</tr>
<tr>
<td>10 kHz</td>
<td>-95 dBc/Hz</td>
</tr>
<tr>
<td>100 kHz</td>
<td>-100 dBc/Hz</td>
</tr>
</tbody>
</table>

Operating Temperature Range
-40 to +85 ºC

Programming
See Application Note: AN7100

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Storage Temp. Range</th>
<th>-55 to +125 ºC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bias Voltage (Digital)</td>
<td>+5.25 V</td>
</tr>
<tr>
<td>Bias Voltage (VCO)</td>
<td>+5.5 V</td>
</tr>
<tr>
<td>Bias Voltage (Converter)</td>
<td>+8 V</td>
</tr>
<tr>
<td>DC Voltage Applied to RF Out</td>
<td>±25 V</td>
</tr>
</tbody>
</table>

Package #
197LF

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; 2,524,751

| Pin 5 - RF Out | Pin 8 - 12,14,16,17 - NC |
| Pin 7 - Lock Detect Out | Pin 21 - Ref. In |
| Pin 9 - Data In | Pin 22 - Vtune (Output) |
| Pin 10 - Error Flag | Pin 25 - Vcc (VCO) |
| Pin 11 - Clock In | Pin 26 - Vout (Converter) |
| Pin 13 - VCO (On/Off)**** | Pin 27 - Vcc (Tune) *** |
| Pin 19 - Latch Enable In | Pin 28 - Vcc (Converter) |

* High when locked (source/sink 500 uA)
*** Connect externally. Bypassed with a 10uF 35V tantalum capacitor.
**** NC if unused.
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REFERENCE SIDE BAND SUPPRESSION
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PERFORMANCE PLOTS
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PERFORMANCE PLOTS

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