**VOLTAGE CONTROLLED OSCILLATOR**  
**SURFACE MOUNT MODEL: DCRO3946-5**  
**OPTIMIZED BANDWIDTH 390 - 460 MHz**

**FEATURES:**
- Exceptional Phase Noise Performance
- Small Size, Surface Mount
- Lead Free Patented REL-PRO® Technology
- Planar Resonator Construction

**SPECIFICATIONS (Rev. A 10/19/08)**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>390 - 460 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuning Voltage</td>
<td>See table below.</td>
</tr>
<tr>
<td>Bias Voltage</td>
<td>+5 VDC @ 28 mA (Max.)</td>
</tr>
<tr>
<td>Output Power</td>
<td>-5 dBm (Min.)</td>
</tr>
<tr>
<td>Tuning Sensitivity</td>
<td>14 - 22 MHz/V (Typ.)</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>50 Ohms (Nom.)</td>
</tr>
<tr>
<td>Harmonic Suppression</td>
<td>12 dB (Typ.)</td>
</tr>
<tr>
<td>Frequency Pulling</td>
<td>0.05 MHz (Typ. @ 1.75:1 VSWR)</td>
</tr>
<tr>
<td>Frequency Pushing</td>
<td>0.1 MHz/V (Typ.)</td>
</tr>
<tr>
<td>Tuning Port Capacitance</td>
<td>100 pF (Typ.)</td>
</tr>
<tr>
<td>Phase Noise @ 10 kHz</td>
<td>-118 dBc/Hz (Typ.)</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-40 to +85 °C</td>
</tr>
</tbody>
</table>

**Guaranteed Tuning Specifications**

<table>
<thead>
<tr>
<th>Tuning Voltage (V)</th>
<th>Frequency (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3</td>
<td>390 (Max.)</td>
</tr>
<tr>
<td>5.0</td>
<td>460 (Min.)</td>
</tr>
</tbody>
</table>

**Absolute Maximum Ratings**

| Storage Temp. Range | -55 to +125 °C |
| Bias Voltage        | +6.5 V         |
| Tuning Voltage      | +7.5 V         |
| DC Voltage Applied to RF Out | ±25 V |

**Package #**

| Package # | 278LF |

**Recommended PCB Layout**

Dimensions are in inches. Tolerances on three decimal places are ±0.005. All unlabeled pins to be grounded. Package mounting: See application note AN7200 and AN7300.
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SURFACE MOUNT MODEL: DCRO3946-5

OPTIMIZED BANDWIDTH

390 - 460 MHz

PERFORMANCE PLOTS

Tuning Voltage (VDC)

Frequency (MHz)

Output Power (dBm)

-5.0
-4.5
-4.0
-3.5
-3.0
-2.5
-2.0
-1.5
-1.0
-0.5
0.0
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5

Tuning Voltage (VDC)

25 deg C
+85 deg C
-40 deg C

25 deg C
+85 deg C
-40 deg C
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OPTIMIZED BANDWIDTH

390 - 460 MHz

PERFORMANCE PLOTS

- Tuning Sensitivity (MHz/V)
- Harmonic Suppression (dB)

This product is manufactured under one or more of the following patents: Approved: 5,190,810; 5,122,621; 5,390,349; 5,405,431; 5,423,625; 5,416,449; 5,650,754; 5,805,431; 6,122,564; 6,238,356; 6,523,630; 6,850,573; 7,081,186; 7,403,581; 7,451,261; 7,453,171; 7,493,816; 7,495,525; 7,545,229; 7,563,174; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 7,639,562; 7,708,189; 7,718,038; 7,719,659; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 2,563,174; 7,545,229; 7,580,693; 7,612,296; 2,524,751

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