VOLTAGE CONTROLLED OSCILLATOR
SURFACE MOUNT MODEL: MFC2941-12
OPTIMIZED BANDWIDTH 290 - 410 MHz

FEATURES:
► Low Phase Noise Performance
► Fast Tuning
► Ideal for PLL Applications
► Small Size, Surface Mount
► Lead Free Patented REL-PRO® Technology

SPECIFICATIONS (Rev. F 09/16/09)

Frequency 290 - 410 MHz
Tuning Voltage See table below.
Bias Voltage +12 VDC @ 22 mA (Max.)
Output Power +1 dBm (Min.)
Tuning Sensitivity 3 - 7 MHz/V (Typ.)
Output Impedance 50 Ohms (Nom.)
Harmonic Suppression 12 dB (Typ.)
Frequency Pulling 2 MHz (Typ. @ 1:75:1 VSWR)
Frequency Pushing 2 MHz (Typ.)
Tuning Port Capacitance 33 pF (Typ.)
Phase Noise @ 10 kHz -110 dBc/Hz (Typ.)
Operating Temperature Range -40 to +85 °C

Guaranteed Tuning Specifications

<table>
<thead>
<tr>
<th>Tuning Voltage (V)</th>
<th>Frequency (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>290 (Max.)</td>
</tr>
<tr>
<td>5</td>
<td>308 (Min.)</td>
</tr>
<tr>
<td>8</td>
<td>328 (Min.)</td>
</tr>
<tr>
<td>12</td>
<td>355 (Min.)</td>
</tr>
<tr>
<td>15</td>
<td>370 (Min.)</td>
</tr>
<tr>
<td>18</td>
<td>385 (Min.)</td>
</tr>
<tr>
<td>24</td>
<td>410 (Min.)</td>
</tr>
</tbody>
</table>

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Temp. Range</td>
<td>-55 to +125 °C</td>
</tr>
<tr>
<td>Bias Voltage</td>
<td>+12.5 V</td>
</tr>
<tr>
<td>Tuning Voltage</td>
<td>+30 V</td>
</tr>
<tr>
<td>DC Voltage Applied to RF Out</td>
<td>± 25 V</td>
</tr>
</tbody>
</table>

Phase Noise

<table>
<thead>
<tr>
<th>Offset Frequency (MHz)</th>
<th>Phase Noise (dBc/Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>-110 (Typ.)</td>
</tr>
<tr>
<td>1000</td>
<td>-105 (Typ.)</td>
</tr>
<tr>
<td>10000</td>
<td>-95 (Typ.)</td>
</tr>
<tr>
<td>100000</td>
<td>-85 (Typ.)</td>
</tr>
<tr>
<td>1000000</td>
<td>-75 (Typ.)</td>
</tr>
</tbody>
</table>

Recommended PCB Layout

Recommended solder area for high vibration environment

Dimensions are in inches.

Tolerances on three decimal places ± 0.015

All unlabeled pins to be grounded.

Package Mounting: See application note AN7200 & AN7300

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; 6,005,623; 5,803,575; 7,088,189; 7,140,916; 7,186,081; 7,269,370; 7,395,642; 7,250,113; 7,395,642; 7,495,625; 2,548,311; 5,248,311; 5,348,311; 7,495,629; 9,293,865; 7,395,642; 7,395,675; 7,095,627; 7,095,642; 2,533,625
Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 10/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,495,525; 7,495,527; 7,540,575; 7,580,693; 7,612,296; 2,524,751; 2,548,311; 7,540,575; 7,580,693; 7,612,296; 2,524,751
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PERFORMANCE PLOTS

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VOLTAGE CONTROLLED OSCILLATOR
SURFACE MOUNT MODEL: MFC2941-12

OPTIMIZED BANDWIDTH

290 - 410 MHz

PERFORMANCE PLOTS

- Control Voltage (Vdc)
- Tuning Sensitivity (MHz/V)
- 2nd Harmonic Suppression (dB)

+25°C, +85°C, -40°C

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5 25

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