

Surface Mount

Voltage Controlled Oscillator

ROS-1330-1PH19+

5V Tuning for PLL IC's 1210 to 1330 MHz

Features

- linear tuning characteristics
- low phase noise
- low pushing
- aqueous washable



CASE STYLE: CK605

Applications

- radio link
- radar receivers
- satellite systems

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications

| MODEL NO. | FREQ. (MHz) | | POWER OUTPUT (dBm) | PHASE NOISE dBc/Hz SSB at offset frequencies, kHz | | | | TUNING | | | | NON HARMONIC SPURIOUS (dBc) | HARMONICS (dBc) | | PULLING pk-pk @ 12 dB (MHz) | PUSHING (MHz/V) | DC OPERATING POWER | | |
|-----------------|-------------|------|--------------------|---|------|------|------|--------|-------------------|-----------------------|---------------|-----------------------------|---------------------------------|------|-----------------------------|-----------------|--------------------|------|------|
| | Min. | Max. | | Typ. | 1 | 10 | 100 | 1000 | VOLTAGE RANGE (V) | SENSI- TIVITY (MHz/V) | PORT CAP (pF) | | 3 dB MODULATION BANDWIDTH (MHz) | Typ. | | | Typ. | Typ. | Typ. |
| ROS-1330-1PH19+ | 1210 | 1330 | +3 | -82 | -106 | -128 | -145 | 0.5 | 5 | 39-43 | 40 | 100 | -90 | -18 | -10 | 2.5 | 0.5 | 5 | 35 |

Pin Connections

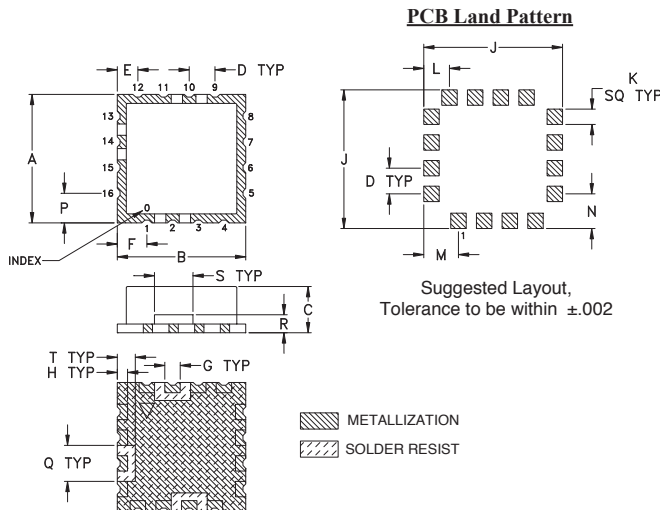
| | |
|--------|--------------------------------|
| RF OUT | 10 |
| VCC | 14 |
| V-TUNE | 2 |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

Maximum Ratings

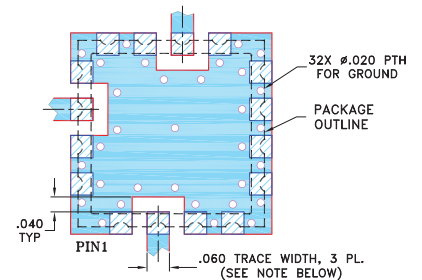
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | 7V |
| Absolute Max. Tuning Voltage (Vtune) | 7V |
| All specifications | 50 ohm system |

Permanent damage may occur if any of these limits are exceeded.

Outline Drawing



Demo Board MCL P/N: TB-10 Suggested PCB Layout (PL-012)



NOTES:

1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 2. BOTTOM SIDE OF THE BOTTOM IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | R | S | T | wt. |
|-------|-------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|-------|
| .500 | .500 | .180 | .100 | .080 | .115 | .060 | .040 | .540 | .060 | .100 | .135 | .135 | .115 | .140 | .070 | .150 | .070 | grams |
| 12.70 | 12.70 | 4.57 | 2.54 | 2.03 | 2.92 | 1.52 | 1.02 | 13.72 | 1.52 | 2.54 | 3.43 | 3.43 | 2.92 | 3.56 | 1.78 | 3.81 | 1.78 | 1.0 |

Notes

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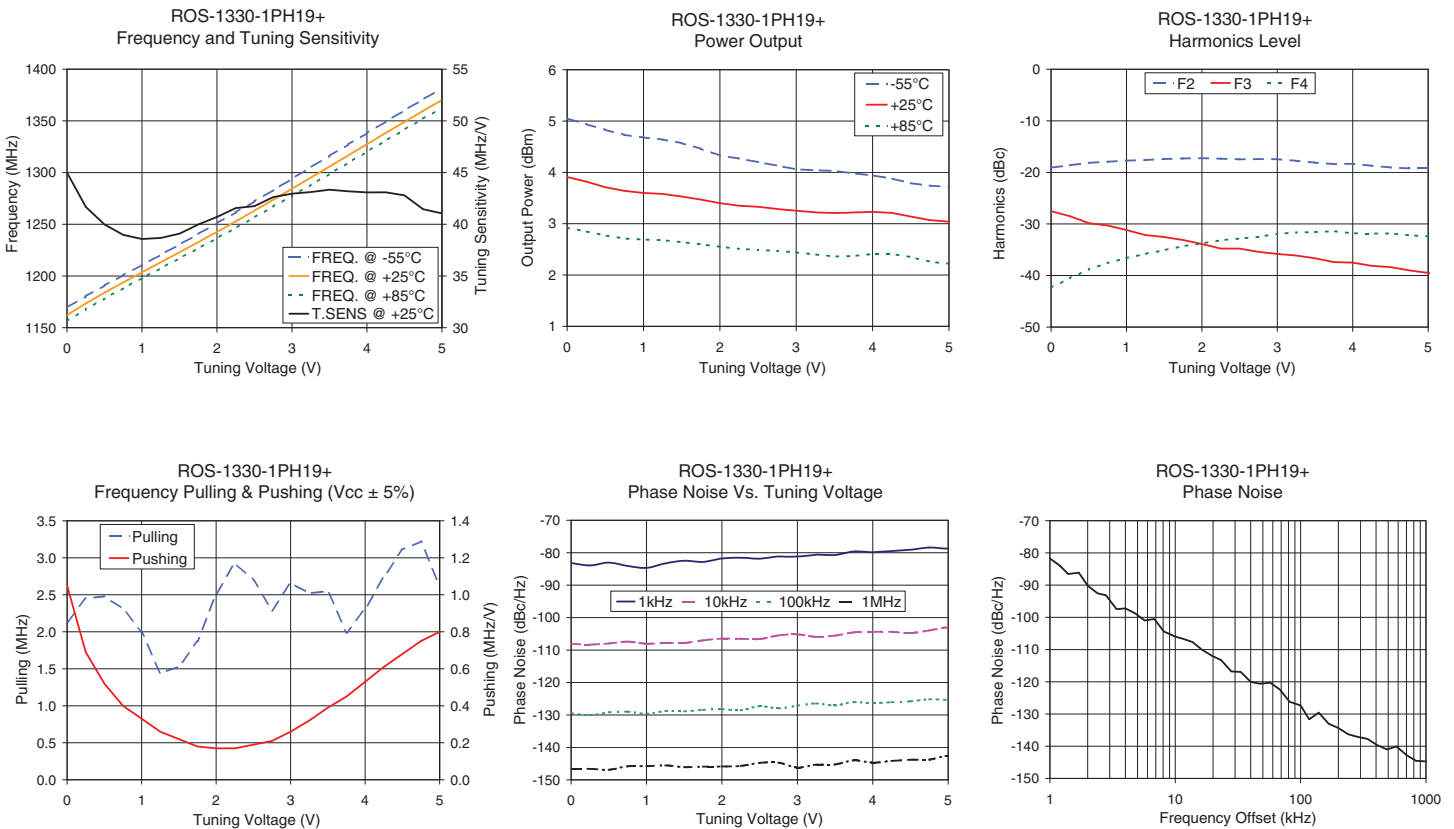
REV. A
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 ROS-1330-1PH19+
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Performance Data & Curves*

ROS-1330-1PH19+

| V TUNE | TUNE SENS (MHz/V) | FREQUENCY (MHz) | | | POWER OUTPUT (dBm) | | | Icc (mA) | HARMONICS (dBc) | | | FREQ. PUSH (MHz/V) | FREQ. PULL (MHz) | PHASE NOISE (dBc/Hz) at offsets | | | | FREQ OFFSET (KHz) | PHASE NOISE at 1265 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|----------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 45.00 | 1169.6 | 1162.2 | 1156.3 | 5.05 | 3.91 | 2.92 | 26.16 | -19.1 | -27.5 | -42.4 | 1.05 | 2.13 | -83.2 | -108.1 | -129.5 | -146.6 | 1.0 | -81.72 |
| 0.25 | 41.68 | 1180.4 | 1173.4 | 1167.9 | 4.94 | 3.82 | 2.85 | 26.22 | -18.6 | -28.5 | -40.5 | 0.69 | 2.45 | -83.9 | -108.3 | -130.1 | -146.6 | 2.0 | -90.15 |
| 0.75 | 38.97 | 1200.8 | 1193.8 | 1188.3 | 4.73 | 3.64 | 2.71 | 26.33 | -17.9 | -30.3 | -37.6 | 0.40 | 2.31 | -84.1 | -107.4 | -129.0 | -145.8 | 3.4 | -97.48 |
| 1.00 | 38.58 | 1210.6 | 1203.6 | 1197.9 | 4.68 | 3.60 | 2.69 | 26.40 | -17.7 | -31.2 | -36.6 | 0.33 | 2.00 | -84.7 | -108.0 | -129.6 | -145.8 | 5.7 | -100.98 |
| 1.25 | 38.68 | 1220.5 | 1213.2 | 1207.5 | 4.64 | 3.58 | 2.68 | 26.45 | -17.6 | -32.2 | -35.8 | 0.26 | 1.44 | -83.3 | -107.8 | -128.8 | -145.5 | 8.1 | -104.37 |
| 1.50 | 39.09 | 1230.4 | 1222.9 | 1217.1 | 4.57 | 3.53 | 2.64 | 26.51 | -17.4 | -32.5 | -35.1 | 0.22 | 1.53 | -82.5 | -107.8 | -128.9 | -146.1 | 10.0 | -105.98 |
| 1.75 | 39.98 | 1240.6 | 1232.7 | 1226.7 | 4.46 | 3.47 | 2.60 | 26.55 | -17.3 | -33.1 | -34.3 | 0.18 | 1.87 | -82.8 | -107.0 | -128.4 | -145.9 | 19.6 | -111.92 |
| 2.00 | 40.71 | 1251.0 | 1242.7 | 1236.5 | 4.33 | 3.40 | 2.55 | 26.60 | -17.2 | -33.9 | -33.8 | 0.17 | 2.51 | -81.8 | -106.5 | -128.3 | -145.9 | 33.3 | -116.95 |
| 2.25 | 41.56 | 1261.5 | 1252.8 | 1246.5 | 4.27 | 3.35 | 2.51 | 26.65 | -17.3 | -34.8 | -33.2 | 0.17 | 2.93 | -81.5 | -106.5 | -128.6 | -145.7 | 57.2 | -120.29 |
| 2.50 | 41.76 | 1272.2 | 1263.2 | 1256.7 | 4.20 | 3.33 | 2.49 | 26.70 | -17.5 | -34.8 | -32.8 | 0.19 | 2.70 | -81.8 | -106.6 | -127.3 | -144.8 | 81.8 | -126.23 |
| 2.75 | 42.63 | 1283.1 | 1273.7 | 1267.1 | 4.13 | 3.29 | 2.47 | 26.75 | -17.4 | -35.4 | -32.5 | 0.21 | 2.29 | -81.1 | -105.5 | -128.0 | -144.7 | 100.0 | -127.35 |
| 3.00 | 42.96 | 1294.0 | 1284.3 | 1277.5 | 4.06 | 3.25 | 2.44 | 26.79 | -17.5 | -35.8 | -31.9 | 0.26 | 2.66 | -81.2 | -105.2 | -127.1 | -146.2 | 139.3 | -129.56 |
| 3.25 | 43.12 | 1305.1 | 1295.1 | 1288.1 | 4.04 | 3.22 | 2.40 | 26.84 | -17.7 | -36.1 | -31.7 | 0.32 | 2.52 | -80.6 | -105.9 | -126.5 | -145.3 | 167.3 | -133.02 |
| 3.50 | 43.34 | 1316.2 | 1305.9 | 1298.8 | 4.03 | 3.21 | 2.36 | 26.87 | -18.1 | -36.7 | -31.6 | 0.39 | 2.55 | -80.7 | -105.6 | -127.1 | -145.3 | 199.2 | -134.31 |
| 3.75 | 43.19 | 1327.2 | 1316.7 | 1309.5 | 3.98 | 3.22 | 2.37 | 26.91 | -18.4 | -37.4 | -31.4 | 0.45 | 1.99 | -79.6 | -104.5 | -126.0 | -144.0 | 284.8 | -137.11 |
| 4.00 | 43.09 | 1338.2 | 1327.5 | 1320.2 | 3.94 | 3.23 | 2.41 | 26.94 | -18.3 | -37.5 | -31.8 | 0.53 | 2.31 | -79.9 | -104.4 | -126.4 | -144.7 | 342.1 | -137.75 |
| 4.25 | 43.09 | 1349.3 | 1338.3 | 1330.9 | 3.88 | 3.21 | 2.41 | 26.96 | -18.7 | -38.1 | -31.9 | 0.61 | 2.74 | -79.5 | -104.4 | -126.1 | -144.2 | 489.1 | -141.02 |
| 4.50 | 42.80 | 1360.2 | 1349.0 | 1341.5 | 3.79 | 3.14 | 2.35 | 26.99 | -19.0 | -38.4 | -31.8 | 0.68 | 3.11 | -79.1 | -104.8 | -125.8 | -143.8 | 582.3 | -140.05 |
| 4.75 | 41.45 | 1370.8 | 1359.7 | 1352.1 | 3.74 | 3.07 | 2.26 | 27.02 | -19.2 | -39.0 | -32.2 | 0.75 | 3.22 | -78.4 | -104.0 | -125.2 | -143.8 | 832.6 | -144.53 |
| 5.00 | 41.06 | 1381.3 | 1370.1 | 1362.6 | 3.72 | 3.04 | 2.22 | 27.05 | -19.2 | -39.5 | -32.4 | 0.80 | 2.62 | -78.7 | -103.0 | -125.4 | -142.6 | 1000.0 | -144.73 |

*at 25°C unless mentioned otherwise



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