

NON-CATALOG

Surface Mount

Voltage Controlled Oscillator

ROS-1344-119+

5V Tuning for PLL ICs 1296 to 1344 MHz



CASE STYLE: CK605

Features

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

Applications

- wireless communications
- WiMAX

+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. | | | Max. | Typ. | Max. | Vcc (volts) | Current (mA) |
| | | | | | | | | | Min. | Max. | | | | | | | | | | | | | |
| ROS-1344-119+ | 1296 | 1344 | -2 | -85 | -111 | -132 | -151 | 0.5 | 5 | 19 | 40 | 110 | -90 | -25 | -15 | 0.2 | 0.1 | 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 |

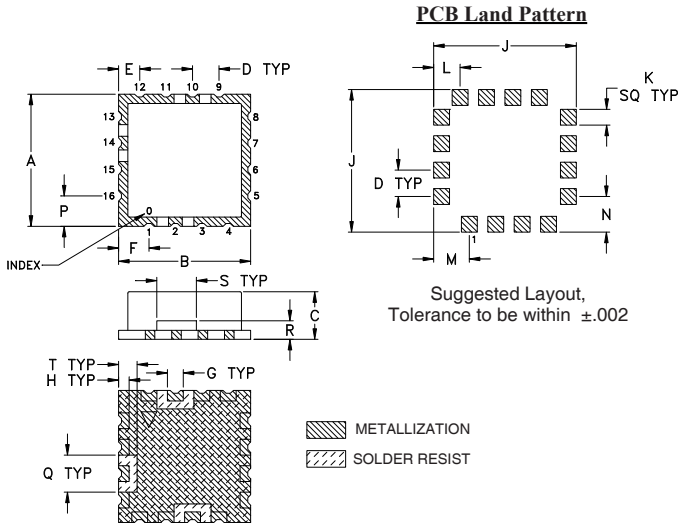
Permanent damage may occur if any of these limits are exceeded.

Tape & Reel: F37

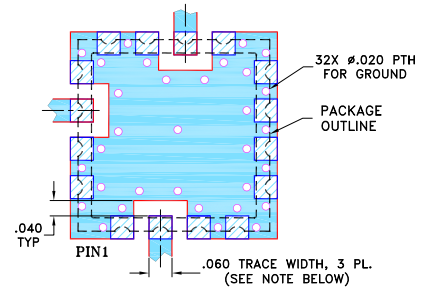
7" Reels with 10, 20, 50, 100 devices
13" Reels with 200, 500 devices

Environmental Ratings: ENV65

Outline Drawing



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



NOTES:

- TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .030" \pm .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 - 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. C
M169213
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ROS-1344-119+
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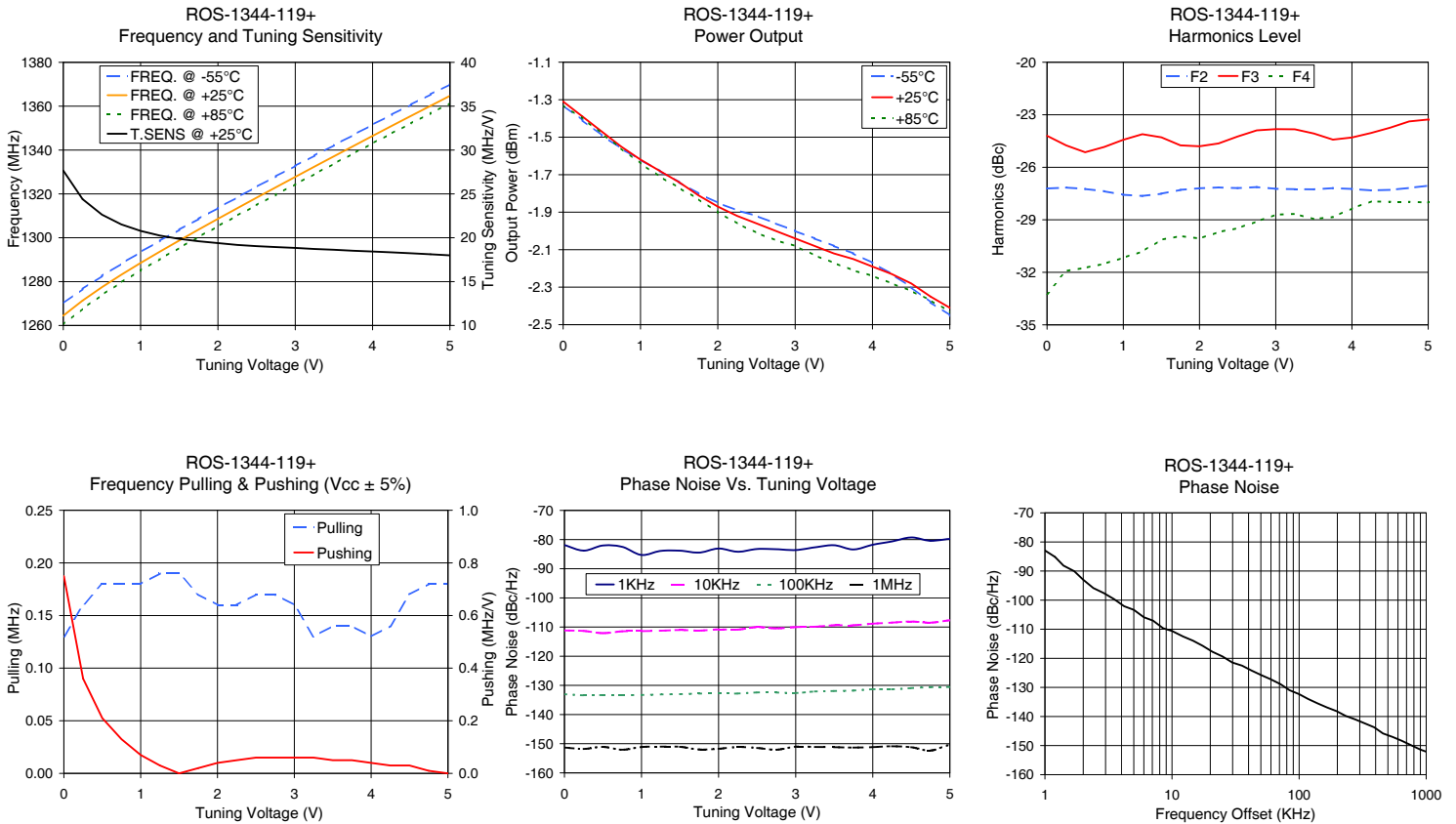
NON-CATALOG

Performance Data & Curves*

ROS-1344-119+

| 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 1320 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|----------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1KHz | 10KHz | 100KHz | 1MHz | | |
| 0.00 | 27.65 | 1270.1 | 1264.5 | 1260.4 | -1.33 | -1.31 | -1.33 | 28.51 | -27.2 | -24.2 | -33.2 | 0.75 | 0.13 | -81.9 | -111.2 | -133.0 | -151.3 | 1.0 | -82.92 |
| 0.50 | 22.63 | 1282.6 | 1277.5 | 1273.9 | -1.49 | -1.47 | -1.48 | 28.46 | -27.2 | -25.1 | -31.7 | 0.21 | 0.18 | -82.0 | -112.1 | -133.3 | -151.1 | 2.0 | -92.99 |
| 0.75 | 21.53 | 1288.1 | 1283.1 | 1279.7 | -1.56 | -1.55 | -1.56 | 28.42 | -27.4 | -24.8 | -31.5 | 0.13 | 0.18 | -82.5 | -111.5 | -133.4 | -152.1 | 3.5 | -99.68 |
| 1.00 | 20.78 | 1293.5 | 1288.5 | 1285.1 | -1.62 | -1.62 | -1.64 | 28.39 | -27.6 | -24.4 | -31.2 | 0.07 | 0.18 | -85.3 | -111.4 | -133.3 | -151.1 | 6.0 | -105.89 |
| 1.25 | 20.25 | 1298.6 | 1293.7 | 1290.3 | -1.68 | -1.68 | -1.71 | 28.36 | -27.6 | -24.1 | -30.8 | 0.03 | 0.19 | -83.9 | -111.2 | -133.1 | -151.0 | 8.5 | -109.65 |
| 1.50 | 19.88 | 1303.7 | 1298.8 | 1295.4 | -1.74 | -1.74 | -1.77 | 28.32 | -27.5 | -24.3 | -30.1 | 0.00 | 0.19 | -83.8 | -111.0 | -133.0 | -151.1 | 10.0 | -110.60 |
| 1.75 | 19.60 | 1308.7 | 1303.7 | 1300.4 | -1.80 | -1.81 | -1.83 | 28.28 | -27.3 | -24.8 | -29.9 | 0.02 | 0.17 | -84.5 | -111.2 | -132.8 | -152.0 | 20.8 | -117.75 |
| 2.00 | 19.39 | 1313.6 | 1308.6 | 1305.3 | -1.85 | -1.87 | -1.90 | 28.25 | -27.2 | -24.8 | -30.1 | 0.04 | 0.16 | -83.1 | -110.8 | -132.8 | -151.7 | 35.6 | -122.51 |
| 2.25 | 19.18 | 1318.4 | 1313.5 | 1310.1 | -1.89 | -1.92 | -1.96 | 28.21 | -27.2 | -24.6 | -29.7 | 0.05 | 0.16 | -84.2 | -110.9 | -132.8 | -151.1 | 59.7 | -127.18 |
| 2.50 | 19.04 | 1323.2 | 1318.3 | 1314.9 | -1.92 | -1.96 | -2.01 | 28.18 | -27.2 | -24.2 | -29.5 | 0.06 | 0.17 | -83.2 | -110.0 | -132.4 | -151.5 | 83.8 | -130.94 |
| 2.75 | 18.94 | 1328.0 | 1323.0 | 1319.7 | -1.96 | -2.00 | -2.05 | 28.14 | -27.1 | -23.9 | -29.1 | 0.06 | 0.17 | -83.3 | -110.5 | -132.5 | -152.1 | 100.0 | -132.32 |
| 3.00 | 18.84 | 1332.8 | 1327.8 | 1324.4 | -2.00 | -2.04 | -2.08 | 28.10 | -27.2 | -23.8 | -28.7 | 0.06 | 0.16 | -83.6 | -110.0 | -132.6 | -151.0 | 140.7 | -135.55 |
| 3.25 | 18.72 | 1337.5 | 1332.5 | 1329.1 | -2.04 | -2.08 | -2.13 | 28.06 | -27.3 | -23.8 | -28.7 | 0.06 | 0.13 | -82.7 | -109.9 | -132.1 | -151.1 | 165.2 | -136.85 |
| 3.50 | 18.63 | 1342.2 | 1337.2 | 1333.8 | -2.08 | -2.12 | -2.17 | 28.02 | -27.3 | -24.1 | -29.0 | 0.05 | 0.14 | -82.0 | -109.4 | -131.9 | -151.2 | 197.5 | -138.17 |
| 3.75 | 18.52 | 1346.9 | 1341.8 | 1338.4 | -2.12 | -2.15 | -2.21 | 27.98 | -27.2 | -24.4 | -28.8 | 0.05 | 0.14 | -83.4 | -109.4 | -131.8 | -151.3 | 277.2 | -141.03 |
| 4.00 | 18.43 | 1351.5 | 1346.5 | 1343.0 | -2.17 | -2.19 | -2.24 | 27.94 | -27.2 | -24.3 | -28.4 | 0.04 | 0.13 | -81.8 | -108.8 | -131.3 | -151.2 | 325.5 | -142.27 |
| 4.25 | 18.33 | 1356.2 | 1351.1 | 1347.6 | -2.23 | -2.23 | -2.28 | 27.89 | -27.3 | -24.0 | -28.0 | 0.03 | 0.14 | -80.7 | -108.5 | -131.4 | -150.9 | 457.0 | -145.81 |
| 4.50 | 18.23 | 1360.8 | 1355.6 | 1352.2 | -2.30 | -2.28 | -2.32 | 27.85 | -27.3 | -23.7 | -28.0 | 0.03 | 0.17 | -79.3 | -108.1 | -130.9 | -151.2 | 546.3 | -147.06 |
| 4.75 | 18.11 | 1365.4 | 1360.2 | 1356.8 | -2.38 | -2.35 | -2.37 | 27.81 | -27.2 | -23.4 | -28.0 | 0.01 | 0.18 | -80.4 | -108.5 | -130.6 | -152.4 | 900.7 | -151.38 |
| 5.00 | 17.99 | 1369.9 | 1364.7 | 1361.3 | -2.45 | -2.41 | -2.43 | 27.77 | -27.1 | -23.3 | -28.0 | 0.00 | 0.18 | -79.8 | -107.7 | -130.6 | -150.4 | 1000.0 | -152.08 |

*at 25°C unless mentioned otherwise



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