

NON-CATALOG

Surface Mount

Voltage Controlled Oscillator

ROS-4424-119+

5V Tuning for PLL IC's 4420 to 4430 MHz



CASE STYLE: CK605

Features

- Linear tuning characteristics
- Low phase noise
- Low pushing
- Aqueous washable

Applications

- Wireless communications
- Test equipment

+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. | Max. | Typ. | Max. | Vcc | Current (mA) |
| | | | | | | | | | Min. | Max. | | | | | | | | | | | | | |
| ROS-4424-119+ | 4420 | 4430 | +7.5 | -76 | -99 | -119 | -139 | 0.5 | 5 | 21 | 20 | 100 | -90 | -27 | -17 | 6 | 1.4 | 5 | 51 | | | | |

Pin Connections

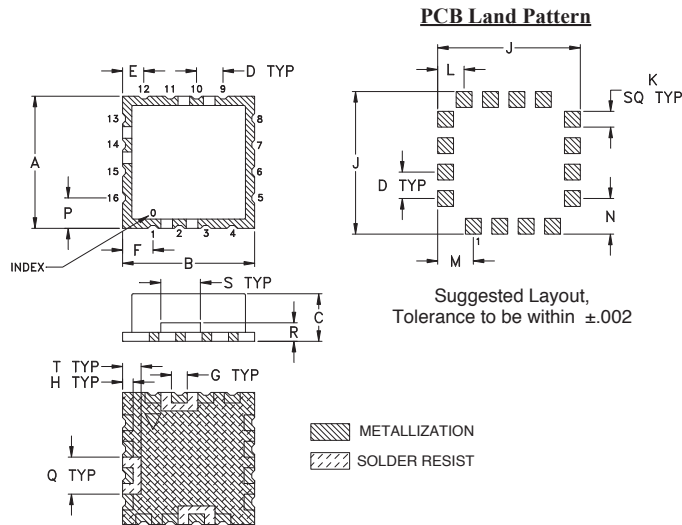
| | |
|--------|--------------------------------|
| RF OUT | 10 |
| VCC | 14 |
| V-TUNE | 2 |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

Maximum Ratings

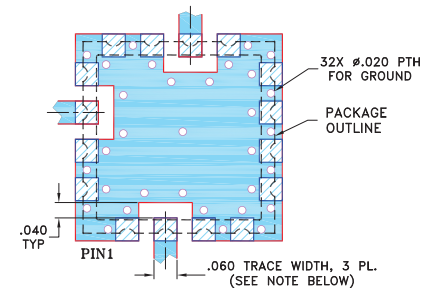
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | 7V |
| Absolute Max. Tuning Voltage (Vtune) | 7V |
| All specifications | 50 ohm system |

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 |



For detailed performance specs & shopping online see web site

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REV. A
 M149087
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 RAW
 141229
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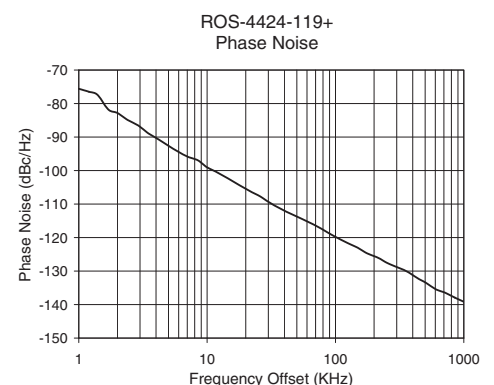
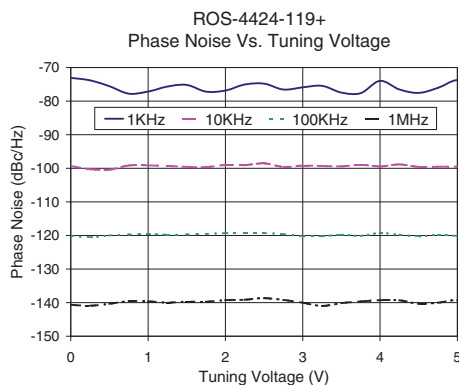
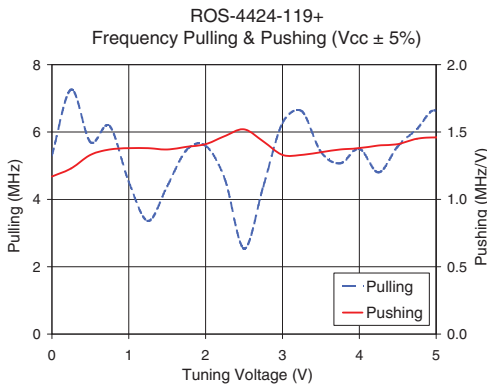
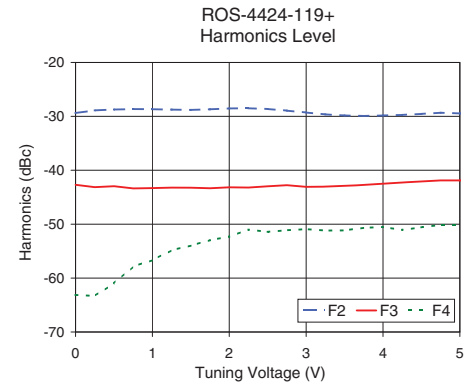
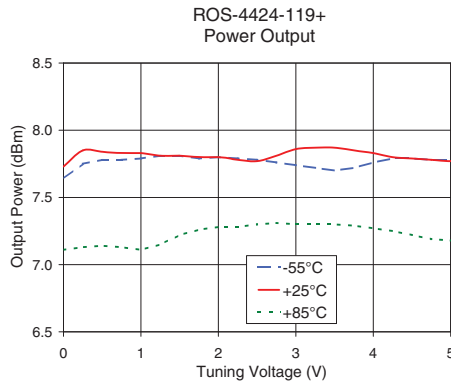
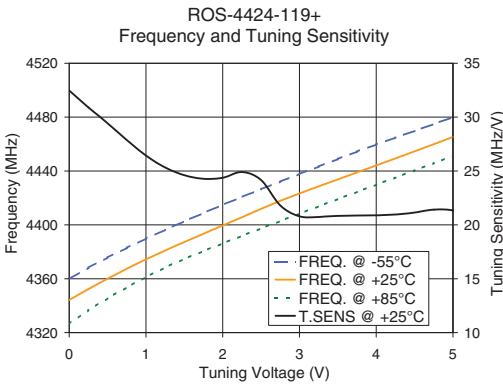
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Performance Data & Curves*

ROS-4424-119+

| 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 4425 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|----------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 32.47 | 4359.8 | 4344.2 | 4326.5 | 7.64 | 7.73 | 7.11 | 44.64 | -29.4 | -42.7 | -63.1 | 1.17 | 5.31 | -73.1 | -99.3 | -120.1 | -140.7 | 1.0 | -75.60 |
| 0.50 | 29.44 | 4375.8 | 4360.1 | 4345.6 | 7.78 | 7.84 | 7.14 | 44.72 | -28.7 | -43.0 | -61.0 | 1.33 | 5.70 | -75.6 | -100.4 | -120.0 | -140.4 | 2.0 | -82.81 |
| 0.75 | 27.88 | 4382.9 | 4367.4 | 4353.6 | 7.78 | 7.83 | 7.13 | 44.71 | -28.7 | -43.4 | -57.8 | 1.37 | 6.18 | -77.8 | -99.2 | -119.7 | -139.5 | 3.5 | -88.96 |
| 1.00 | 26.44 | 4389.8 | 4374.4 | 4361.2 | 7.79 | 7.83 | 7.11 | 44.70 | -28.7 | -43.3 | -56.7 | 1.38 | 4.52 | -77.2 | -99.1 | -119.6 | -139.6 | 6.0 | -94.49 |
| 1.25 | 25.33 | 4396.4 | 4381.0 | 4368.4 | 7.81 | 7.81 | 7.15 | 44.68 | -28.8 | -43.2 | -54.8 | 1.38 | 3.36 | -75.7 | -99.3 | -119.8 | -140.0 | 8.5 | -96.97 |
| 1.50 | 24.61 | 4402.7 | 4387.3 | 4374.7 | 7.81 | 7.81 | 7.22 | 44.66 | -28.8 | -43.2 | -54.0 | 1.37 | 4.39 | -75.2 | -99.6 | -119.7 | -139.7 | 10.0 | -99.05 |
| 1.75 | 24.28 | 4408.8 | 4393.5 | 4380.6 | 7.79 | 7.80 | 7.26 | 44.64 | -28.7 | -43.3 | -53.0 | 1.39 | 5.46 | -77.2 | -99.7 | -119.5 | -139.7 | 20.8 | -105.80 |
| 2.00 | 24.38 | 4414.8 | 4399.6 | 4386.3 | 7.80 | 7.80 | 7.28 | 44.61 | -28.5 | -43.2 | -52.3 | 1.41 | 5.59 | -76.9 | -99.0 | -119.3 | -139.3 | 35.5 | -111.00 |
| 2.25 | 24.91 | 4420.7 | 4405.6 | 4391.8 | 7.79 | 7.78 | 7.28 | 44.58 | -28.5 | -43.2 | -51.0 | 1.47 | 4.60 | -75.1 | -99.1 | -119.3 | -139.1 | 60.7 | -115.24 |
| 2.50 | 24.16 | 4426.5 | 4411.9 | 4397.4 | 7.78 | 7.77 | 7.30 | 44.56 | -28.6 | -43.0 | -51.4 | 1.52 | 2.54 | -74.8 | -98.5 | -119.3 | -138.7 | 86.7 | -118.46 |
| 2.75 | 21.80 | 4432.1 | 4417.9 | 4402.9 | 7.76 | 7.81 | 7.31 | 44.59 | -28.9 | -42.8 | -51.1 | 1.43 | 4.38 | -76.6 | -99.6 | -119.6 | -139.2 | 100.0 | -119.80 |
| 3.00 | 20.80 | 4437.8 | 4423.4 | 4408.4 | 7.74 | 7.86 | 7.30 | 44.62 | -29.3 | -43.1 | -50.9 | 1.33 | 6.27 | -75.9 | -99.2 | -120.2 | -140.0 | 148.1 | -122.99 |
| 3.25 | 20.73 | 4443.3 | 4428.6 | 4413.8 | 7.72 | 7.87 | 7.30 | 44.62 | -29.6 | -43.0 | -51.2 | 1.33 | 6.62 | -75.5 | -99.3 | -120.2 | -141.0 | 177.0 | -124.73 |
| 3.50 | 20.83 | 4448.9 | 4433.7 | 4419.2 | 7.70 | 7.87 | 7.30 | 44.62 | -29.8 | -42.9 | -51.2 | 1.35 | 5.41 | -77.5 | -99.4 | -119.8 | -140.2 | 211.6 | -125.91 |
| 3.75 | 20.88 | 4454.4 | 4439.0 | 4424.5 | 7.72 | 7.85 | 7.29 | 44.60 | -29.9 | -42.7 | -50.7 | 1.37 | 5.07 | -77.6 | -99.0 | -120.1 | -139.6 | 302.4 | -128.84 |
| 4.00 | 20.89 | 4459.7 | 4444.2 | 4429.8 | 7.76 | 7.83 | 7.27 | 44.58 | -29.8 | -42.5 | -50.5 | 1.38 | 5.50 | -74.0 | -99.5 | -119.3 | -139.3 | 361.5 | -130.14 |
| 4.25 | 20.96 | 4464.8 | 4449.4 | 4435.2 | 7.79 | 7.80 | 7.25 | 44.56 | -29.7 | -42.3 | -51.1 | 1.40 | 4.80 | -76.5 | -98.9 | -119.8 | -139.3 | 507.5 | -133.53 |
| 4.50 | 21.14 | 4469.8 | 4454.6 | 4440.5 | 7.79 | 7.79 | 7.22 | 44.54 | -29.5 | -42.1 | -50.6 | 1.41 | 5.57 | -77.6 | -99.6 | -120.3 | -140.3 | 606.7 | -135.45 |
| 4.75 | 21.41 | 4474.9 | 4459.9 | 4445.8 | 7.78 | 7.78 | 7.19 | 44.52 | -29.3 | -41.9 | -50.1 | 1.45 | 6.09 | -76.0 | -99.5 | -119.8 | -140.0 | 851.6 | -137.93 |
| 5.00 | 21.35 | 4480.0 | 4465.3 | 4451.2 | 7.78 | 7.77 | 7.18 | 44.50 | -29.5 | -41.9 | -50.1 | 1.46 | 6.63 | -73.7 | -99.5 | -120.1 | -139.3 | 1000.0 | -139.15 |

*at 25°C unless mentioned otherwise



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