

5V Tuning for PLL IC's 510 to 610 MHz

Features

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

Applications

- wireless sensor



CASE STYLE: CK605
PRICE: \$ 19.95 ea. QTY (5-49)

+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) | SENSITIVITY (MHz/V) | PORT CAP (pF) | | 3 dB MODULATION BANDWIDTH (MHz) | Typ. | | | Max. | Typ. | Max. |
| ROS-610-319+ | 510 | 610 | +4.2 | -80 | -108 | -129 | -149 | 0.25 | 4.5 | 41-55 | 73 | 50 | -90 | -25 | -10 | 0.9 | 0.5 | 5 | 40 |

Pin Connections

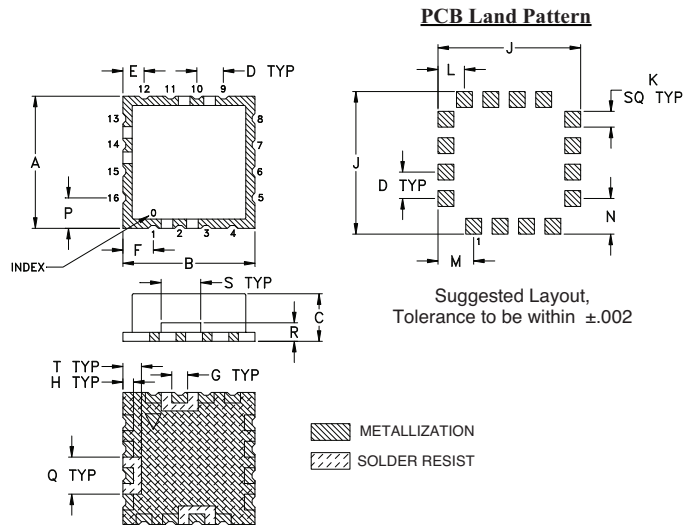
| | |
|--------|--------------------------------|
| RF OUT | 10 |
| VCC | 14 |
| V-TUNE | 2 |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

Maximum Ratings

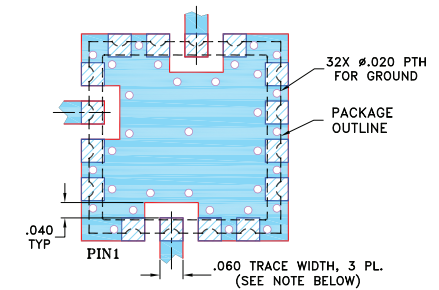
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | 7V |
| Absolute Max. Tuning Voltage (Vtune) | 7V |
| All specifications | 50 ohm system |

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.
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Outline Dimensions (inch/mm)

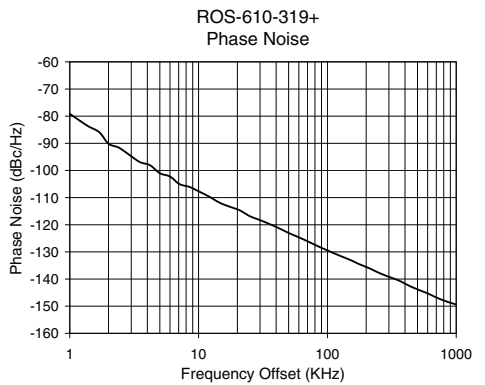
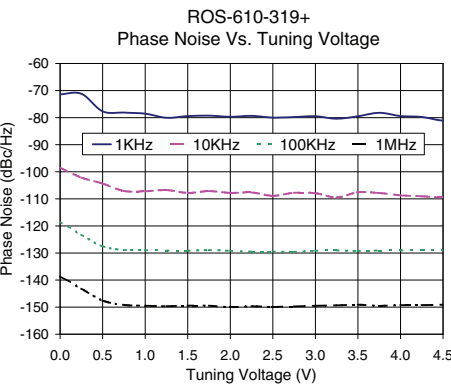
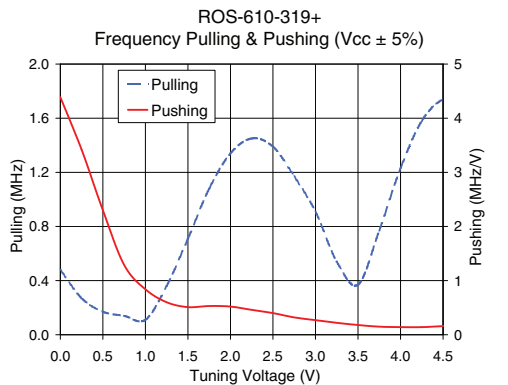
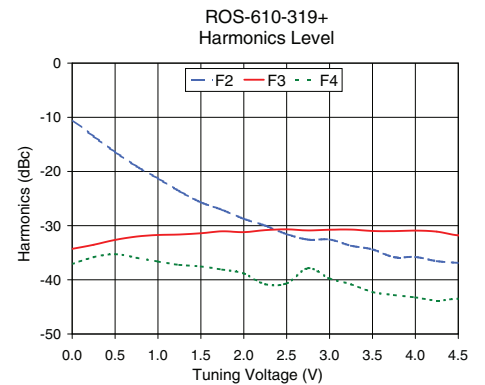
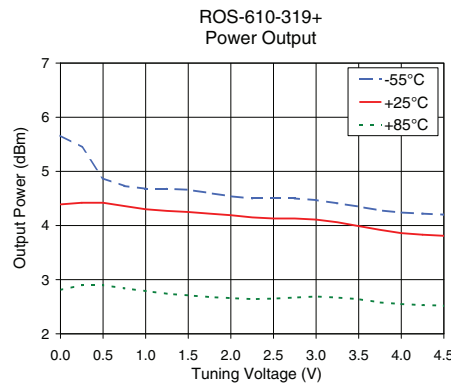
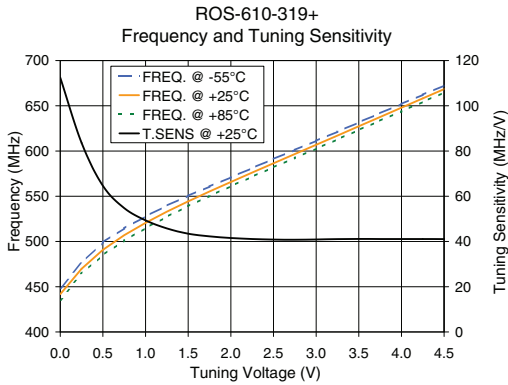
| A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | R | S | T | wt. |
|-------|-------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|-------|
| .500 | .500 | .180 | .100 | .080 | .115 | .060 | .040 | .540 | .060 | .100 | .135 | .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 |

Performance Data & Curves*

ROS-610-319+

| 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 560 MHz (dBc/Hz) |
|--------|-------------------|-----------------|-------|-------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|---------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 112.48 | 448.4 | 441.8 | 435.3 | 5.66 | 4.39 | 2.81 | 32.61 | -10.5 | -34.3 | -37.1 | 4.39 | 0.48 | -71.4 | -98.5 | -118.5 | -138.6 | 1.0 | -79.13 |
| 0.25 | 83.60 | 476.2 | 469.9 | 464.5 | 5.45 | 4.42 | 2.90 | 32.53 | -13.5 | -33.5 | -35.8 | 3.42 | 0.27 | -71.2 | -102.1 | -123.3 | -143.2 | 2.0 | -90.15 |
| 0.50 | 64.63 | 499.1 | 490.8 | 484.9 | 4.87 | 4.42 | 2.90 | 32.50 | -16.4 | -32.6 | -35.3 | 2.30 | 0.17 | -77.7 | -104.3 | -127.5 | -147.6 | 3.5 | -96.90 |
| 0.75 | 54.77 | 514.6 | 506.9 | 501.0 | 4.73 | 4.36 | 2.84 | 32.53 | -19.1 | -32.0 | -35.9 | 1.29 | 0.14 | -78.1 | -107.1 | -128.9 | -149.2 | 6.0 | -102.22 |
| 1.00 | 49.33 | 527.7 | 520.6 | 514.8 | 4.68 | 4.30 | 2.79 | 32.57 | -21.3 | -31.7 | -36.6 | 0.84 | 0.11 | -78.5 | -107.2 | -129.0 | -149.5 | 8.5 | -106.07 |
| 1.25 | 45.76 | 539.6 | 533.0 | 527.4 | 4.68 | 4.27 | 2.74 | 32.60 | -23.6 | -31.6 | -37.2 | 0.60 | 0.36 | -80.1 | -106.8 | -129.1 | -149.7 | 10.0 | -107.66 |
| 1.50 | 43.43 | 550.4 | 544.4 | 539.1 | 4.66 | 4.25 | 2.71 | 32.63 | -25.7 | -31.4 | -37.5 | 0.51 | 0.71 | -79.4 | -107.8 | -129.2 | -149.5 | 20.8 | -114.65 |
| 1.75 | 42.26 | 560.7 | 555.3 | 550.2 | 4.60 | 4.22 | 2.68 | 32.67 | -27.1 | -31.0 | -38.1 | 0.53 | 1.08 | -79.3 | -107.1 | -128.9 | -149.5 | 35.5 | -119.72 |
| 2.00 | 41.54 | 571.0 | 565.8 | 561.1 | 4.54 | 4.19 | 2.66 | 32.71 | -28.8 | -31.2 | -38.8 | 0.52 | 1.34 | -79.7 | -107.8 | -129.2 | -150.0 | 60.7 | -124.74 |
| 2.25 | 41.08 | 581.1 | 576.2 | 571.6 | 4.50 | 4.15 | 2.64 | 32.76 | -30.0 | -30.8 | -40.8 | 0.46 | 1.45 | -79.4 | -107.6 | -129.5 | -149.7 | 86.7 | -128.15 |
| 2.50 | 40.85 | 591.2 | 586.5 | 582.0 | 4.50 | 4.13 | 2.65 | 32.81 | -31.6 | -30.7 | -40.7 | 0.40 | 1.39 | -80.0 | -108.9 | -129.5 | -149.9 | 100.0 | -129.46 |
| 2.75 | 40.77 | 601.2 | 596.7 | 592.3 | 4.50 | 4.13 | 2.67 | 32.87 | -32.6 | -30.9 | -37.9 | 0.32 | 1.17 | -79.8 | -107.8 | -129.6 | -149.7 | 148.1 | -132.83 |
| 3.00 | 40.87 | 611.3 | 606.9 | 602.6 | 4.47 | 4.11 | 2.69 | 32.92 | -32.6 | -30.8 | -39.8 | 0.27 | 0.91 | -79.5 | -107.9 | -129.2 | -149.5 | 211.6 | -136.03 |
| 3.25 | 41.04 | 621.4 | 617.1 | 612.9 | 4.41 | 4.06 | 2.67 | 32.96 | -33.7 | -30.7 | -40.8 | 0.22 | 0.54 | -80.4 | -109.5 | -129.0 | -149.3 | 302.4 | -139.22 |
| 3.50 | 41.11 | 631.6 | 627.4 | 623.2 | 4.35 | 3.99 | 2.64 | 33.01 | -34.4 | -31.0 | -42.3 | 0.18 | 0.37 | -79.5 | -107.6 | -129.3 | -149.1 | 361.5 | -140.60 |
| 3.75 | 41.08 | 641.8 | 637.6 | 633.5 | 4.28 | 3.92 | 2.58 | 33.06 | -35.8 | -31.0 | -42.8 | 0.15 | 0.77 | -78.2 | -107.8 | -129.1 | -149.5 | 507.5 | -143.93 |
| 4.00 | 41.07 | 652.0 | 647.9 | 643.9 | 4.24 | 3.86 | 2.55 | 33.11 | -35.8 | -30.9 | -43.3 | 0.14 | 1.23 | -79.4 | -108.7 | -129.1 | -149.3 | 606.7 | -145.39 |
| 4.25 | 41.07 | 662.2 | 658.2 | 654.3 | 4.22 | 3.83 | 2.53 | 33.15 | -36.6 | -31.1 | -43.8 | 0.14 | 1.58 | -79.7 | -109.0 | -129.0 | -149.3 | 851.6 | -148.34 |
| 4.50 | 41.06 | 672.4 | 668.4 | 664.6 | 4.20 | 3.81 | 2.52 | 33.18 | -36.9 | -31.8 | -43.5 | 0.16 | 1.74 | -81.1 | -109.4 | -129.0 | -149.1 | 1000.0 | -149.38 |

*at 25°C unless mentioned otherwise



For detailed performance specs & shopping online see web site

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IF/RF MICROWAVE COMPONENTS

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