

Voltage Controlled Oscillator

ROS-3800-119+

Wide Band 1900 to 3700 MHz

Features

- low phase noise
- low pulling
- low pushing
- aqueous washable

Applications

- wireless communications
- point-to-point systems



CASE STYLE: CK605
PRICE: \$ 16.95 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. | Typ. | | | Typ. | Typ. |
| ROS-3800-119+ | 1900 | 3700 | +5 | -65 | -89 | -110 | -130 | 0.5 | 20 | 60-150 | 50 | 70 | -90 | -22 | -10 | 2 | 4.5 | 6 | 55 |

Pin Connections

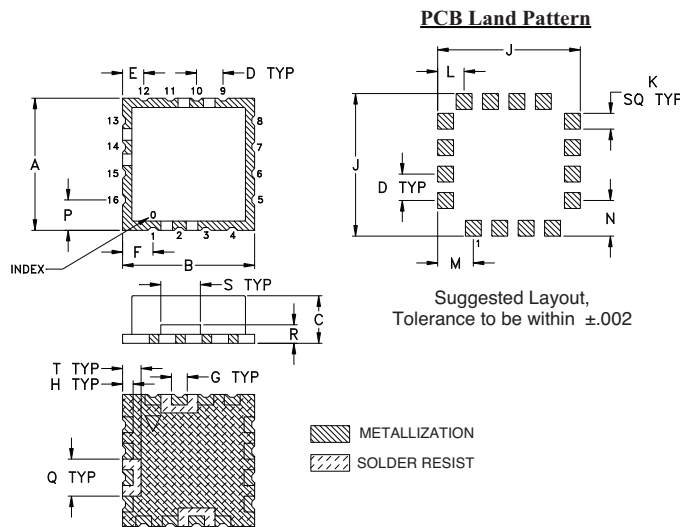
| | |
|--------|--------------------------------|
| RF OUT | 10 |
| VCC | 14 |
| V-TUNE | 2 |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

Maximum Ratings

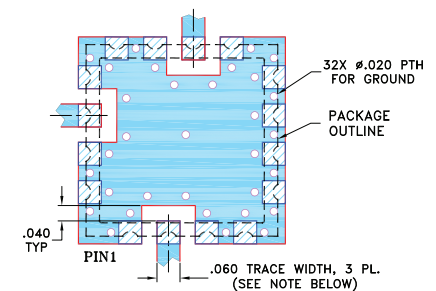
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | 7V |
| Absolute Max. Tuning Voltage (Vtune) | 21V |
| All specifications | 50 ohm system |

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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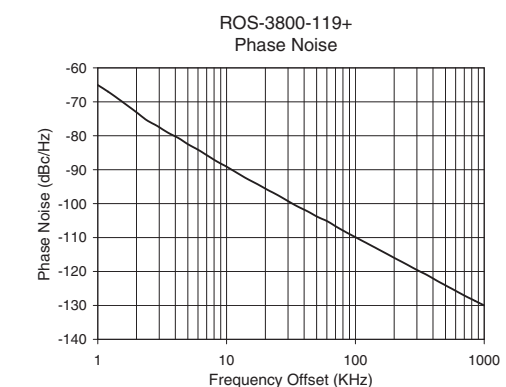
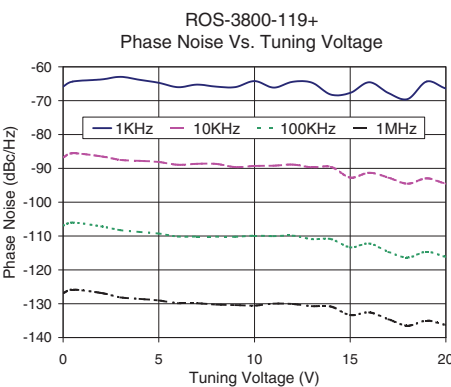
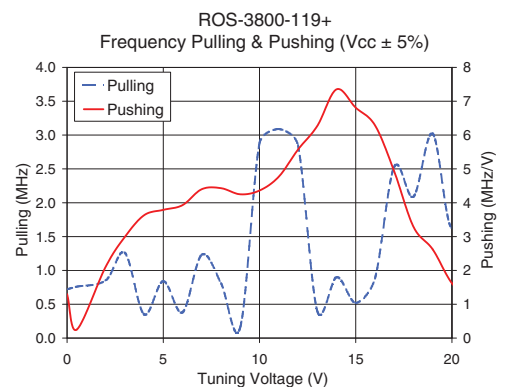
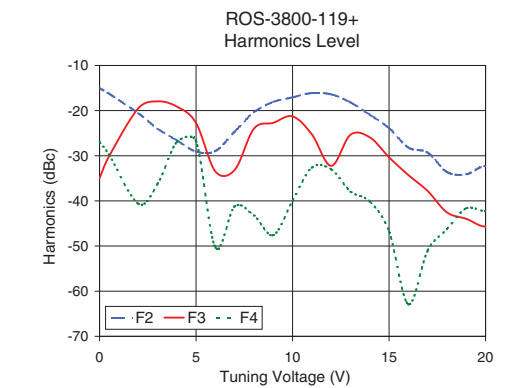
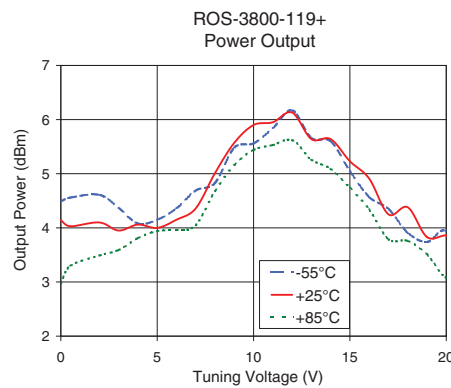
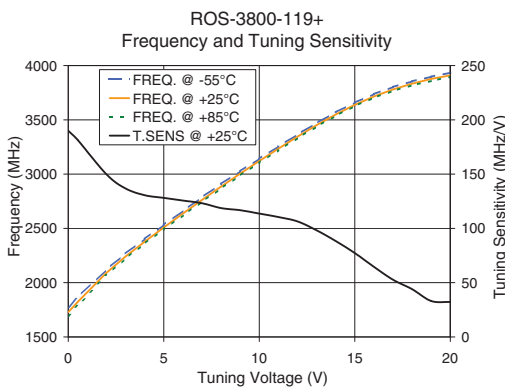
REV. OR
M120402
EDR-8194/12MPF1
ROS-3800-119+
RAV
121003
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Performance Data & Curves*

ROS-3800-119+

| 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 2800 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|-------|--------|--------|-------------------|----------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 189.89 | 1773.4 | 1728.6 | 1694.5 | 4.49 | 4.14 | 2.97 | 45.57 | -15.0 | -35.0 | -26.9 | 1.30 | 0.72 | -65.8 | -86.8 | -106.9 | -126.9 | 1.0 | -65.06 |
| 0.50 | 181.35 | 1865.4 | 1823.6 | 1791.2 | 4.56 | 4.03 | 3.30 | 45.58 | -16.3 | -30.1 | -29.8 | 0.25 | 0.76 | -64.4 | -85.5 | -106.0 | -125.9 | 2.0 | -73.10 |
| 2.00 | 149.82 | 2121.5 | 2091.3 | 2068.1 | 4.61 | 4.10 | 3.49 | 45.83 | -20.6 | -19.5 | -40.6 | 2.10 | 0.85 | -63.7 | -86.5 | -107.2 | -126.8 | 3.5 | -79.07 |
| 3.00 | 136.80 | 2267.9 | 2241.1 | 2222.1 | 4.37 | 3.95 | 3.59 | 46.08 | -24.0 | -18.0 | -36.3 | 2.99 | 1.26 | -63.0 | -87.5 | -108.3 | -128.1 | 6.0 | -84.11 |
| 4.00 | 130.57 | 2402.9 | 2377.9 | 2360.4 | 4.08 | 4.06 | 3.81 | 46.23 | -26.6 | -19.1 | -27.0 | 3.63 | 0.35 | -63.8 | -87.8 | -108.8 | -128.6 | 8.5 | -87.69 |
| 5.00 | 128.11 | 2532.7 | 2508.5 | 2491.5 | 4.15 | 4.00 | 3.94 | 46.40 | -29.1 | -22.8 | -26.7 | 3.79 | 0.84 | -64.7 | -88.1 | -109.3 | -129.0 | 10.0 | -89.12 |
| 6.00 | 125.63 | 2661.2 | 2636.6 | 2619.4 | 4.36 | 4.15 | 3.96 | 46.48 | -29.0 | -33.5 | -50.3 | 3.93 | 0.38 | -66.0 | -89.0 | -110.2 | -129.8 | 20.8 | -95.95 |
| 7.00 | 123.22 | 2786.9 | 2762.2 | 2745.0 | 4.69 | 4.36 | 4.05 | 46.50 | -24.7 | -33.1 | -41.2 | 4.40 | 1.23 | -65.3 | -88.7 | -110.2 | -129.9 | 35.5 | -100.82 |
| 8.00 | 118.70 | 2909.2 | 2885.5 | 2867.7 | 4.83 | 5.01 | 4.68 | 46.48 | -20.4 | -24.0 | -43.2 | 4.43 | 0.81 | -65.9 | -88.7 | -110.2 | -130.3 | 60.7 | -105.23 |
| 9.00 | 116.77 | 3027.0 | 3004.2 | 2987.9 | 5.48 | 5.57 | 5.16 | 46.50 | -18.1 | -22.7 | -47.6 | 4.25 | 0.16 | -66.0 | -89.6 | -110.2 | -130.4 | 86.7 | -108.65 |
| 10.00 | 113.65 | 3142.2 | 3120.9 | 3104.8 | 5.56 | 5.90 | 5.44 | 46.29 | -17.1 | -21.3 | -40.0 | 4.36 | 2.88 | -64.2 | -89.3 | -109.9 | -130.6 | 100.0 | -109.90 |
| 11.00 | 110.48 | 3255.1 | 3234.6 | 3220.1 | 5.84 | 5.95 | 5.53 | 46.15 | -16.1 | -25.3 | -32.6 | 4.77 | 3.09 | -66.1 | -89.2 | -110.0 | -130.0 | 148.1 | -113.33 |
| 12.00 | 106.45 | 3365.4 | 3345.1 | 3331.5 | 6.17 | 6.13 | 5.62 | 45.91 | -16.4 | -32.3 | -33.0 | 5.57 | 2.85 | -64.4 | -88.9 | -109.9 | -130.1 | 177.0 | -114.89 |
| 13.00 | 98.24 | 3470.1 | 3451.5 | 3437.7 | 5.66 | 5.64 | 5.26 | 45.62 | -18.2 | -25.4 | -37.9 | 6.27 | 0.40 | -64.7 | -89.7 | -110.9 | -130.7 | 211.6 | -116.49 |
| 14.00 | 88.34 | 3568.9 | 3549.8 | 3536.7 | 5.60 | 5.64 | 5.09 | 45.37 | -20.9 | -25.9 | -40.2 | 7.35 | 0.90 | -68.2 | -89.6 | -110.9 | -130.8 | 302.4 | -119.62 |
| 15.00 | 77.29 | 3658.0 | 3638.1 | 3626.7 | 5.05 | 5.23 | 4.74 | 45.19 | -23.9 | -30.4 | -46.8 | 6.81 | 0.52 | -67.7 | -92.7 | -113.4 | -133.4 | 361.5 | -121.09 |
| 16.00 | 64.66 | 3736.8 | 3715.4 | 3703.6 | 4.57 | 4.91 | 4.34 | 45.03 | -28.2 | -34.3 | -62.9 | 6.29 | 0.88 | -64.6 | -91.3 | -112.2 | -132.6 | 507.5 | -124.21 |
| 17.00 | 52.67 | 3802.4 | 3780.0 | 3766.3 | 4.35 | 4.25 | 3.79 | 44.94 | -29.3 | -37.8 | -51.0 | 4.93 | 2.53 | -67.7 | -92.7 | -114.7 | -134.6 | 606.7 | -125.81 |
| 18.00 | 44.03 | 3854.8 | 3832.7 | 3817.8 | 3.91 | 4.38 | 3.76 | 44.86 | -33.6 | -42.6 | -46.3 | 3.29 | 2.09 | -69.5 | -94.5 | -116.4 | -136.5 | 851.6 | -128.71 |
| 20.00 | 32.21 | 3934.5 | 3909.9 | 3896.2 | 3.94 | 3.86 | 3.08 | 44.77 | -32.3 | -45.7 | -42.3 | 1.62 | 1.63 | -66.4 | -94.5 | -116.1 | -136.3 | 1000.0 | -130.02 |

*at 25°C unless mentioned otherwise



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