

Voltage Controlled Oscillator

ROS-1150-519+

Wide Band 750 to 1150 MHz

Features

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



CASE STYLE: CK605

Applications

- lab
- wireless communications

+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 | Min. | Max. | Typ. | | Typ. | Typ. | | | Typ. | Typ. | Typ. | Vcc (volts) | Current (mA) |
| | Typ. | | | | | | | | | | | | | | | | | | | | |
| ROS-1150-519+ | 750 | 1150 | +6.5 | -75 | -99 | -121 | -141 | 0.5 | 13.5 | 38-45 | 60 | 70 | -90 | -20 | -12 | 5 | 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) | 6.5V |
| Absolute Max. Tuning Voltage (Vtune) | 16V |
| All specifications | 50 ohm system |

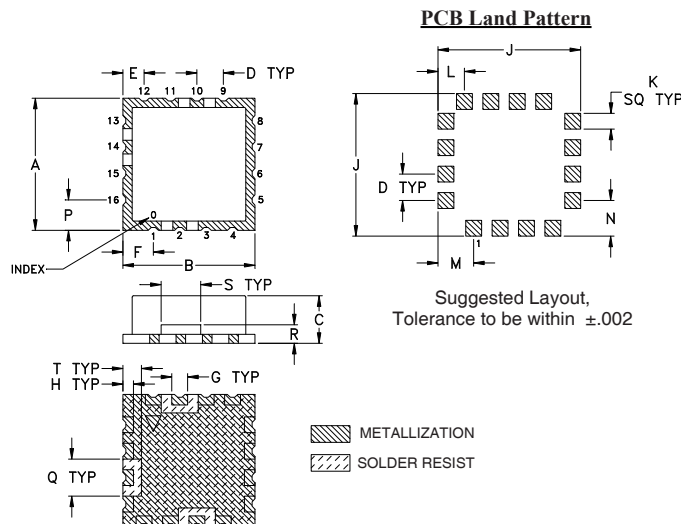
Permanent damage may occur if any of these limits are exceeded.

Tape & Reel: F37

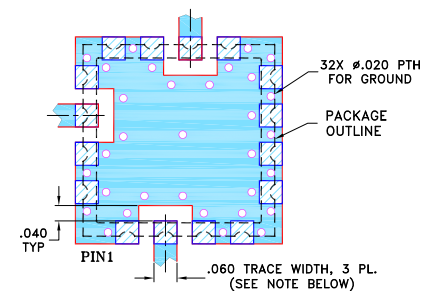
13" Reels with 20, 50, 100, 200, 500 devices

Environmental Ratings: ENV65

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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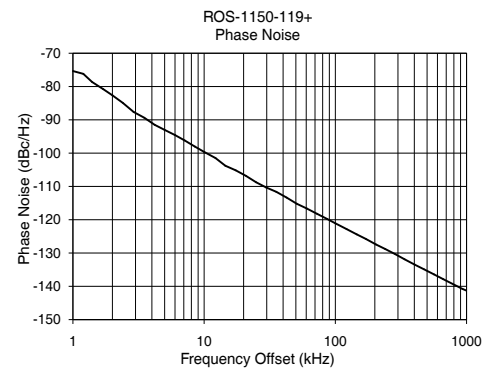
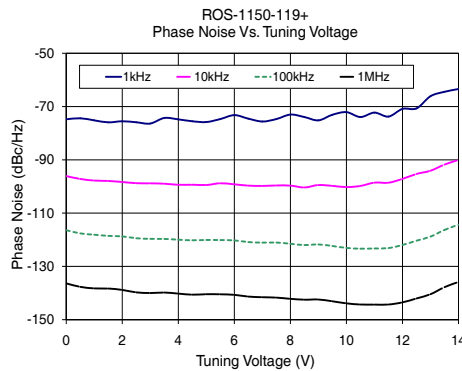
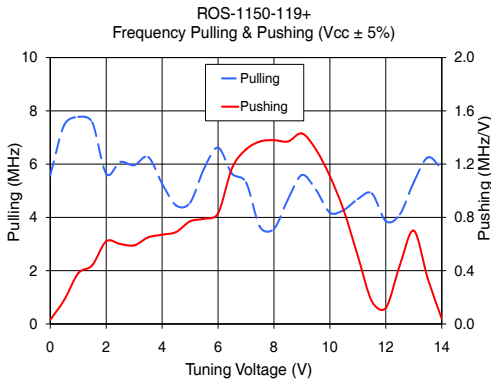
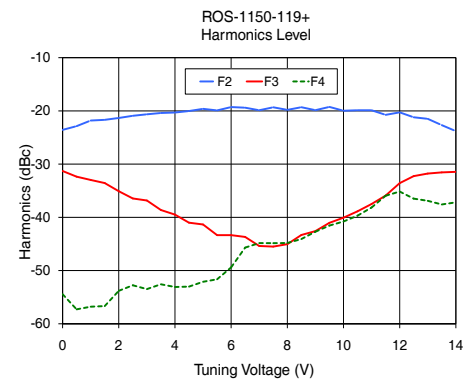
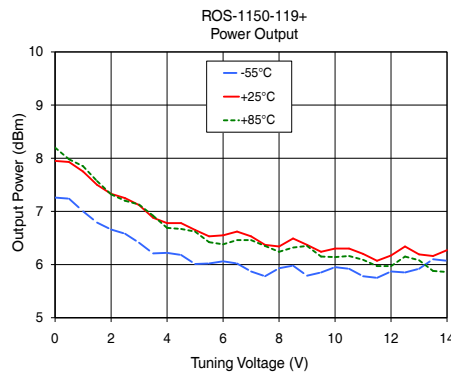
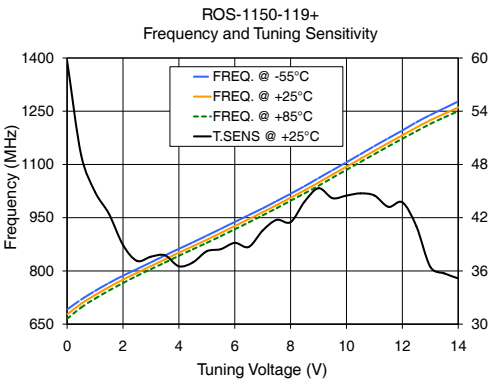


Performance Data & Curves*

ROS-1150-519+

| 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 950 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|---------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 59.66 | 691.2 | 677.5 | 665.1 | 7.26 | 7.95 | 8.20 | 23.48 | -23.6 | -31.3 | -54.4 | 0.03 | 5.58 | -74.78 | -96.1 | -116.4 | -136.4 | 1.0 | -75.34 |
| 0.50 | 49.08 | 719.2 | 707.3 | 696.8 | 7.24 | 7.93 | 7.98 | 23.55 | -22.9 | -32.4 | -57.3 | 0.18 | 7.47 | -74.40 | -97.2 | -117.6 | -137.7 | 2.0 | -82.65 |
| 1.00 | 44.91 | 743.4 | 731.9 | 721.9 | 7.00 | 7.75 | 7.85 | 23.59 | -21.8 | -33.0 | -56.8 | 0.38 | 7.77 | -75.17 | -97.8 | -118.1 | -138.3 | 3.5 | -89.38 |
| 1.50 | 42.42 | 765.8 | 754.3 | 744.6 | 6.79 | 7.50 | 7.57 | 23.63 | -21.7 | -33.6 | -56.7 | 0.44 | 7.57 | -75.92 | -97.9 | -118.5 | -138.3 | 6.0 | -94.59 |
| 2.00 | 38.92 | 786.6 | 775.5 | 765.9 | 6.66 | 7.33 | 7.32 | 23.69 | -21.3 | -35.1 | -53.8 | 0.62 | 5.64 | -75.54 | -98.3 | -118.7 | -138.8 | 8.5 | -98.03 |
| 2.50 | 37.13 | 805.2 | 795.0 | 786.1 | 6.58 | 7.25 | 7.20 | 23.77 | -20.9 | -36.5 | -52.8 | 0.60 | 6.08 | -75.90 | -98.8 | -119.4 | -139.8 | 10.0 | -99.64 |
| 3.50 | 37.76 | 843.4 | 832.3 | 823.5 | 6.21 | 6.88 | 6.92 | 23.88 | -20.4 | -38.6 | -52.6 | 0.65 | 6.27 | -74.28 | -99.0 | -119.7 | -139.8 | 20.8 | -106.81 |
| 4.50 | 36.95 | 880.4 | 869.5 | 860.9 | 6.18 | 6.78 | 6.67 | 24.08 | -20.0 | -41.0 | -53.0 | 0.69 | 4.45 | -75.52 | -99.4 | -120.2 | -140.6 | 35.5 | -111.63 |
| 5.50 | 38.45 | 918.5 | 907.1 | 898.1 | 6.02 | 6.53 | 6.42 | 24.29 | -19.9 | -43.3 | -51.6 | 0.79 | 5.83 | -74.68 | -98.8 | -120.1 | -140.5 | 60.7 | -116.66 |
| 6.50 | 38.70 | 957.3 | 945.9 | 936.7 | 6.02 | 6.62 | 6.46 | 24.62 | -19.4 | -43.7 | -45.7 | 1.17 | 5.64 | -74.54 | -99.7 | -120.9 | -141.3 | 86.7 | -119.79 |
| 7.50 | 41.76 | 997.0 | 985.5 | 976.7 | 5.78 | 6.37 | 6.35 | 24.99 | -19.3 | -45.5 | -44.9 | 1.37 | 3.64 | -74.69 | -99.6 | -121.1 | -141.7 | 100.0 | -121.08 |
| 8.50 | 43.81 | 1038.8 | 1027.1 | 1018.6 | 5.98 | 6.49 | 6.32 | 25.50 | -19.3 | -43.3 | -44.1 | 1.37 | 4.68 | -73.94 | -100.4 | -122.0 | -142.5 | 145.5 | -124.41 |
| 9.50 | 44.20 | 1084.0 | 1071.7 | 1062.6 | 5.85 | 6.24 | 6.15 | 26.07 | -19.3 | -41.0 | -41.5 | 1.31 | 5.04 | -73.08 | -99.8 | -122.4 | -143.1 | 170.8 | -125.77 |
| 10.50 | 44.74 | 1128.9 | 1116.0 | 1106.9 | 5.92 | 6.30 | 6.16 | 26.69 | -19.9 | -38.9 | -39.7 | 0.85 | 4.28 | -73.95 | -99.8 | -123.4 | -144.3 | 204.2 | -127.46 |
| 11.00 | 44.50 | 1151.8 | 1138.4 | 1129.0 | 5.78 | 6.20 | 6.09 | 26.98 | -19.9 | -37.5 | -38.2 | 0.51 | 4.69 | -72.28 | -98.6 | -123.3 | -144.4 | 286.7 | -130.38 |
| 11.50 | 43.22 | 1174.0 | 1160.7 | 1151.1 | 5.75 | 6.07 | 5.97 | 27.29 | -20.8 | -35.9 | -36.0 | 0.17 | 4.90 | -73.77 | -98.6 | -123.1 | -144.3 | 336.6 | -131.88 |
| 12.00 | 43.72 | 1195.8 | 1182.3 | 1172.7 | 5.87 | 6.17 | 5.97 | 27.54 | -20.3 | -33.6 | -35.2 | 0.12 | 3.86 | -70.88 | -97.2 | -122.0 | -143.5 | 472.5 | -134.88 |
| 12.50 | 41.04 | 1219.0 | 1204.1 | 1193.6 | 5.85 | 6.34 | 6.15 | 27.87 | -21.2 | -32.3 | -36.5 | 0.44 | 4.11 | -70.71 | -95.3 | -120.4 | -142.1 | 564.9 | -136.42 |
| 13.00 | 36.46 | 1239.5 | 1224.7 | 1214.2 | 5.92 | 6.19 | 6.08 | 28.49 | -21.5 | -31.8 | -36.9 | 0.70 | 5.32 | -66.12 | -94.1 | -118.8 | -140.5 | 931.1 | -140.78 |
| 13.50 | 35.72 | 1258.5 | 1242.9 | 1232.8 | 6.10 | 6.16 | 5.88 | 28.98 | -22.7 | -31.6 | -37.6 | 0.34 | 6.25 | -64.47 | -91.8 | -116.3 | -137.8 | 1000.0 | -141.31 |

*at 25°C unless mentioned otherwise



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