

Voltage Controlled Oscillator

ROS-1150C-119+

Ultra Low Noise 1146 to 1154 MHz



CASE STYLE: CK1113
PRICE: \$ 26.95 ea. QTY (5-49)

Features

- Ultra low phase noise
- Linear tuning characteristics
- Very low pushing
- Very low pulling
- Aqueous washable

Applications

- Wireless communications
- Airborn telecom system

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify 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. |
| ROS-1150C-119+ | 1146 | 1154 | +2 | -98 | -123 | -143 | -159 | 0.5 | 11 | 3 | 55 | 70 | -90 | -20 | -10 | 0.1 | 0.1 | 5 | 35 |

Pin Connections

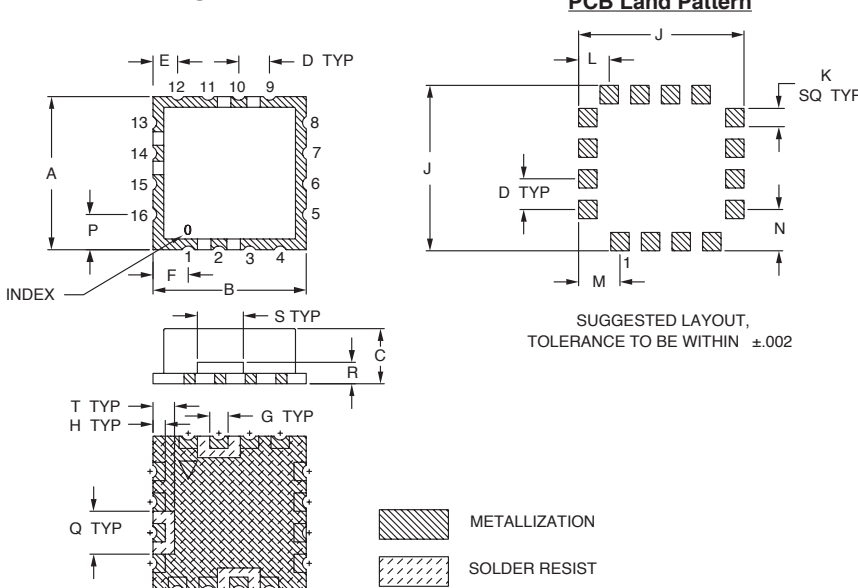
| | |
|--------|--------------------------------|
| RF OUT | 10 |
| VCC | 14 |
| V-TUNE | 2 |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

Maximum Ratings

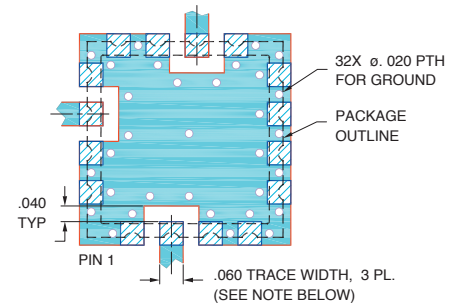
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | 7V |
| Absolute Max. Tuning Voltage (Vtune) | 13V |
| All specifications | 50 ohm system |

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 RF4 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 PCB 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 | .220 | .100 | .080 | .115 | .060 | .040 | .540 | .060 | .100 | .135 | .135 | .115 | .140 | .070 | .150 | .070 | grams |
| 12.70 | 12.70 | 5.59 | 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 | 1.2 |



For detailed performance specs & shopping online see web site

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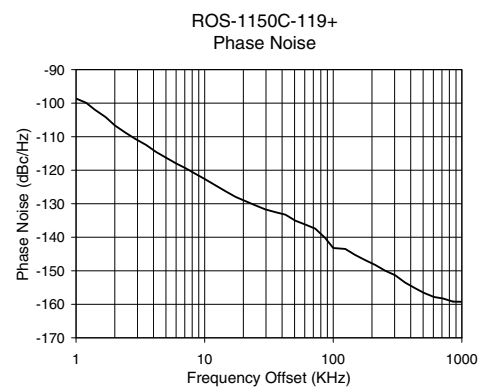
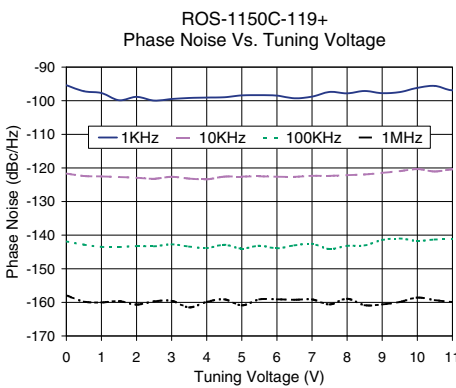
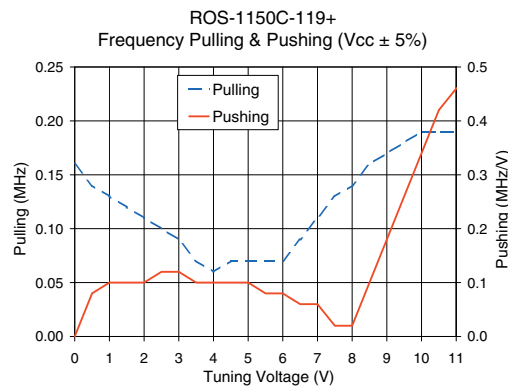
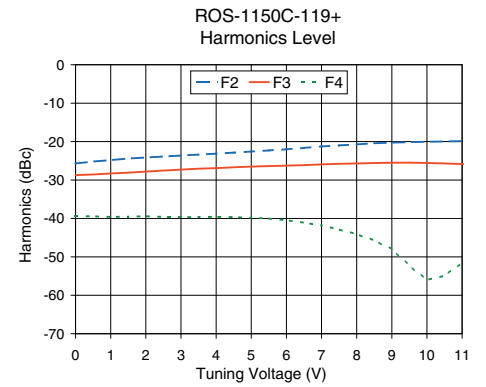
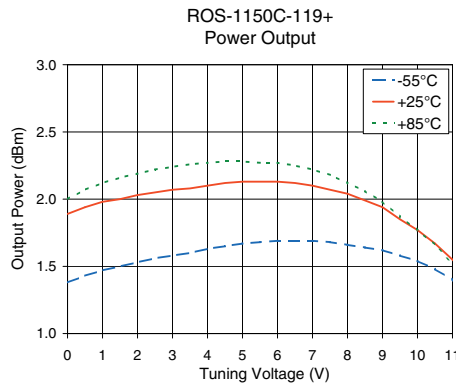
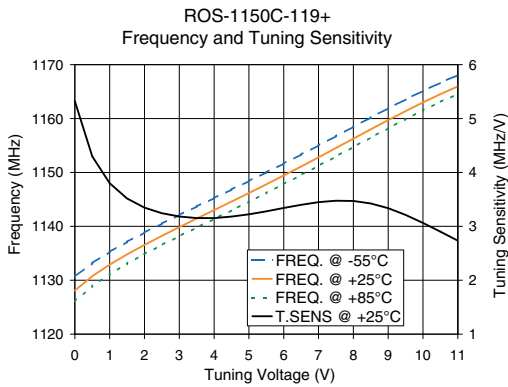
REV. OR
M110769
EDR-7975F1
ROS-1150C-119+
RAV
090818
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Performance Data & Curves*

ROS-1150C-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 1150 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|----------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 5.32 | 1130.7 | 1128.1 | 1126.1 | 1.38 | 1.89 | 2.00 | 22.80 | -25.7 | -28.7 | -39.4 | 0.00 | 0.16 | -95.4 | -121.7 | -141.9 | -157.9 | 1.0 | -98.62 |
| 0.50 | 4.30 | 1133.2 | 1130.7 | 1128.9 | 1.43 | 1.94 | 2.07 | 22.92 | -25.2 | -28.6 | -39.4 | 0.08 | 0.14 | -97.2 | -122.4 | -142.8 | -159.8 | 2.0 | -106.63 |
| 1.00 | 3.80 | 1135.3 | 1132.9 | 1131.1 | 1.47 | 1.98 | 2.12 | 23.01 | -24.8 | -28.3 | -39.6 | 0.10 | 0.13 | -97.7 | -122.5 | -143.5 | -160.0 | 3.5 | -112.46 |
| 1.50 | 3.52 | 1137.1 | 1134.8 | 1133.1 | 1.50 | 2.00 | 2.16 | 23.09 | -24.4 | -28.1 | -39.6 | 0.10 | 0.12 | -99.9 | -122.7 | -143.5 | -159.6 | 6.0 | -117.97 |
| 2.00 | 3.35 | 1138.8 | 1136.6 | 1134.9 | 1.53 | 2.03 | 2.19 | 23.17 | -24.1 | -27.8 | -39.4 | 0.10 | 0.11 | -98.9 | -122.9 | -143.3 | -160.7 | 8.5 | -121.11 |
| 2.50 | 3.24 | 1140.5 | 1138.2 | 1136.5 | 1.56 | 2.05 | 2.22 | 23.25 | -23.9 | -27.5 | -39.6 | 0.12 | 0.10 | -99.9 | -123.2 | -143.3 | -159.7 | 10.0 | -122.61 |
| 3.00 | 3.18 | 1142.1 | 1139.9 | 1138.2 | 1.58 | 2.07 | 2.24 | 23.32 | -23.6 | -27.3 | -39.7 | 0.12 | 0.09 | -99.5 | -122.6 | -142.7 | -159.5 | 20.8 | -129.23 |
| 4.00 | 3.15 | 1145.3 | 1143.0 | 1141.4 | 1.63 | 2.10 | 2.27 | 23.45 | -23.1 | -26.9 | -39.6 | 0.10 | 0.06 | -99.1 | -123.4 | -143.8 | -159.9 | 35.5 | -132.51 |
| 4.50 | 3.18 | 1146.8 | 1144.6 | 1143.0 | 1.65 | 2.12 | 2.28 | 23.52 | -22.9 | -26.7 | -39.7 | 0.10 | 0.07 | -99.0 | -122.6 | -142.9 | -159.1 | 60.7 | -136.21 |
| 5.00 | 3.22 | 1148.4 | 1146.2 | 1144.6 | 1.67 | 2.13 | 2.28 | 23.57 | -22.6 | -26.5 | -39.8 | 0.10 | 0.07 | -98.4 | -122.6 | -144.0 | -160.9 | 86.7 | -140.24 |
| 5.50 | 3.28 | 1150.0 | 1147.8 | 1146.2 | 1.68 | 2.13 | 2.27 | 23.63 | -22.3 | -26.4 | -40.0 | 0.08 | 0.07 | -98.3 | -122.5 | -143.2 | -159.1 | 100.0 | -143.21 |
| 6.00 | 3.34 | 1151.7 | 1149.4 | 1147.8 | 1.69 | 2.13 | 2.27 | 23.69 | -22.0 | -26.3 | -40.4 | 0.08 | 0.07 | -98.5 | -122.6 | -143.9 | -159.1 | 148.1 | -145.28 |
| 6.50 | 3.40 | 1153.3 | 1151.1 | 1149.5 | 1.69 | 2.12 | 2.25 | 23.74 | -21.6 | -26.1 | -41.1 | 0.06 | 0.09 | -99.3 | -122.6 | -143.0 | -159.2 | 177.0 | -146.83 |
| 7.00 | 3.45 | 1155.0 | 1152.8 | 1151.2 | 1.69 | 2.10 | 2.22 | 23.77 | -21.3 | -25.9 | -41.8 | 0.06 | 0.11 | -98.8 | -122.4 | -142.6 | -159.1 | 211.6 | -148.25 |
| 8.00 | 3.47 | 1158.5 | 1156.3 | 1154.7 | 1.66 | 2.04 | 2.12 | 23.83 | -20.7 | -25.7 | -44.1 | 0.02 | 0.14 | -97.8 | -122.2 | -143.2 | -158.9 | 302.4 | -151.32 |
| 9.00 | 3.34 | 1161.9 | 1159.7 | 1158.2 | 1.62 | 1.94 | 1.98 | 23.85 | -20.3 | -25.5 | -48.0 | 0.18 | 0.17 | -97.8 | -121.5 | -141.4 | -160.6 | 361.5 | -153.51 |
| 9.50 | 3.21 | 1163.6 | 1161.4 | 1159.9 | 1.58 | 1.85 | 1.87 | 23.83 | -20.1 | -25.5 | -52.3 | 0.26 | 0.18 | -97.4 | -121.0 | -141.0 | -159.9 | 507.5 | -156.61 |
| 10.00 | 3.06 | 1165.1 | 1163.0 | 1161.5 | 1.54 | 1.77 | 1.77 | 23.82 | -20.0 | -25.6 | -56.0 | 0.34 | 0.19 | -96.2 | -120.3 | -141.7 | -158.6 | 606.7 | -157.81 |
| 10.50 | 2.90 | 1166.7 | 1164.5 | 1163.1 | 1.48 | 1.67 | 1.66 | 23.79 | -20.0 | -25.7 | -54.9 | 0.42 | 0.19 | -95.6 | -121.1 | -141.3 | -159.3 | 851.6 | -159.20 |
| 11.00 | 2.73 | 1168.1 | 1166.0 | 1164.6 | 1.40 | 1.55 | 1.52 | 23.75 | -19.9 | -25.8 | -51.5 | 0.46 | 0.19 | -96.9 | -120.4 | -141.2 | -159.9 | 1000.0 | -159.27 |

*at 25°C unless mentioned otherwise



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