

Surface Mount Voltage Controlled Oscillator

ROS-2150VW+

Wide Band 970 to 2150 MHz

Features

- wide bandwidth, 970 to 2150 MHz
- low phase noise, -138 dBc/Hz at 1 MHz typ.
- linear tuning, 30-70 MHz
- 5V operation

Applications

- PCS
- cellular
- instrumentation



CASE STYLE: CK605
PRICE: \$29.95 ea. QTY (5-49)

+ 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

| FREQUENCY (MHz) | | POWER OUTPUT (dBm) | TUNING VOLTAGE (V) | | PHASE NOISE (dBc/Hz) | | | | PULLING pk-pk @ 12 dB (MHz) | PUSHING (MHz/V) | TUNING SENSITIVITY (MHz/V) | HARMONICS (dBc) | | 3 dB MODULATION BANDWIDTH (MHz) | DC OPERATING POWER | |
|-----------------|------|--------------------|--------------------|------|---------------------------------|--------|---------|-------|-----------------------------|-----------------|----------------------------|-----------------|------|---------------------------------|--------------------|------|
| Min. | Max. | | Min. | Max. | SSB at offset frequencies: Typ. | | | | | | | Typ. | Typ. | | Typ. | Max. |
| | | Typ. | | | 1 kHz | 10 kHz | 100 kHz | 1 MHz | Typ. | Typ. | Typ. | Typ. | — | Typ. | 5 | 25 |
| 970 | 2150 | 4.0 | 0.5 | 25 | -70 | -96 | -118 | -138 | 7.0 | 2.5 | 30-70 | -15 | — | 6 | | |

Pin Connections

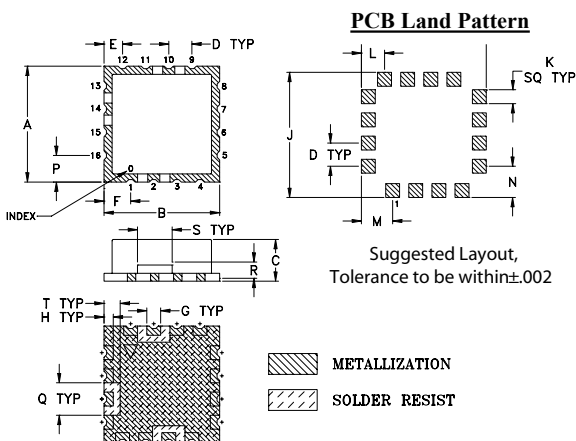
| | |
|--------|--------------------------------|
| RF OUT | 10 |
| VCC | 14 |
| V-TUNE | 2 |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

Maximum Ratings

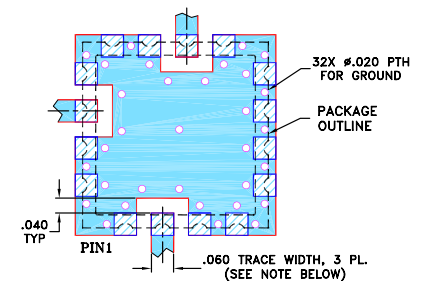
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | +6V |
| Absolute Max. Tuning Voltage (Vtune) | +28V |

all specifications: 50 ohm system
Permanent damage may occur if any of these limits are exceeded.

Outline Drawing



Demo Board MCL PIN: 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 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 | .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 |

Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED

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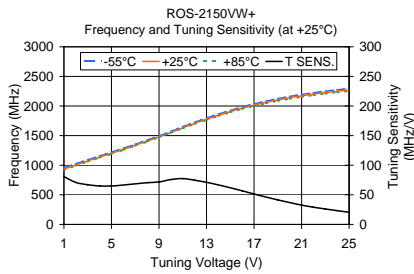
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For detailed performance specs & shipping online see web site

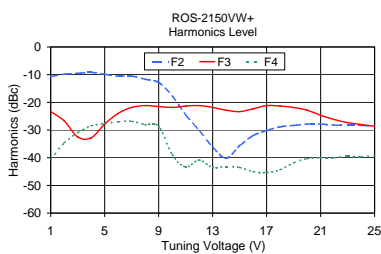
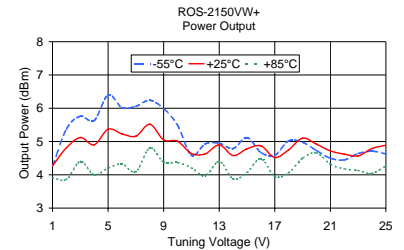
REV. D
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Page 1 of 2

Performance Data & Curves

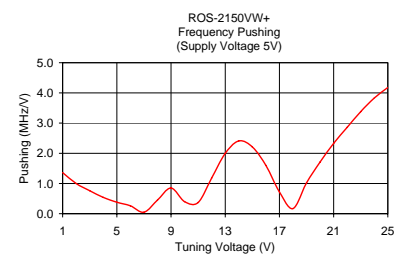
ROS-2150VW+



| V TUNE | TUNING SENS. (MHz/V) | FREQUENCY (MHz) | | | POWER OUTPUT (dBm) | | |
|--------|----------------------|-----------------|---------|---------|--------------------|-------|-------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C |
| 1.00 | 80.73 | 955.42 | 934.09 | 916.09 | 4.26 | 4.27 | 3.91 |
| 2.00 | 70.90 | 1025.58 | 1004.99 | 989.25 | 5.37 | 4.81 | 3.86 |
| 3.00 | 67.06 | 1091.78 | 1072.04 | 1057.71 | 5.76 | 5.12 | 4.40 |
| 4.00 | 64.88 | 1156.07 | 1136.93 | 1123.57 | 5.63 | 4.90 | 4.00 |
| 5.00 | 64.91 | 1220.32 | 1201.83 | 1189.14 | 6.40 | 5.37 | 4.20 |
| 6.00 | 66.54 | 1286.42 | 1268.38 | 1255.89 | 6.02 | 5.23 | 4.33 |
| 7.00 | 68.49 | 1354.82 | 1336.87 | 1324.51 | 6.06 | 5.16 | 4.09 |
| 8.00 | 70.51 | 1424.80 | 1407.38 | 1395.27 | 6.24 | 5.52 | 4.81 |
| 9.00 | 71.72 | 1495.25 | 1479.10 | 1467.63 | 5.99 | 5.05 | 4.38 |
| 10.00 | 75.82 | 1571.08 | 1554.92 | 1542.78 | 5.49 | 5.01 | 4.37 |
| 11.00 | 77.42 | 1650.56 | 1632.35 | 1618.68 | 4.59 | 4.64 | 4.21 |
| 12.00 | 74.70 | 1725.84 | 1707.04 | 1692.78 | 4.93 | 4.63 | 3.97 |
| 13.00 | 71.07 | 1797.08 | 1778.12 | 1763.58 | 4.95 | 4.90 | 4.40 |
| 14.00 | 66.67 | 1864.07 | 1844.78 | 1829.93 | 4.79 | 4.58 | 3.88 |
| 15.00 | 61.89 | 1926.53 | 1906.68 | 1891.24 | 5.12 | 4.78 | 4.07 |
| 16.00 | 56.77 | 1984.03 | 1963.44 | 1947.21 | 4.67 | 4.87 | 4.49 |
| 17.00 | 51.35 | 2036.01 | 2014.80 | 1997.77 | 4.59 | 4.52 | 3.95 |
| 18.00 | 46.32 | 2082.83 | 2061.12 | 2043.30 | 5.02 | 4.75 | 4.06 |
| 19.00 | 41.30 | 2124.64 | 2102.42 | 2083.86 | 4.98 | 5.10 | 4.50 |
| 20.00 | 36.90 | 2161.79 | 2139.32 | 2120.07 | 4.73 | 4.92 | 4.66 |
| 21.00 | 32.63 | 2194.67 | 2171.95 | 2152.28 | 4.50 | 4.72 | 4.32 |
| 22.00 | 29.07 | 2224.07 | 2201.02 | 2180.90 | 4.45 | 4.62 | 4.18 |
| 23.00 | 26.05 | 2250.28 | 2227.06 | 2206.43 | 4.64 | 4.57 | 4.13 |
| 24.00 | 23.24 | 2273.51 | 2250.30 | 2229.32 | 4.71 | 4.79 | 4.04 |
| 25.00 | 20.51 | 2294.13 | 2270.81 | 2249.59 | 4.63 | 4.89 | 4.27 |



| V TUNE | HARMONICS (dBc) | | | FREQ. PUSHING (MHz/V) |
|--------|-----------------|--------|--------|-----------------------|
| | F2 | F3 | F4 | |
| 1.00 | -10.67 | -23.34 | -40.50 | 1.36 |
| 2.00 | -9.84 | -26.67 | -34.67 | 1.00 |
| 3.00 | -9.50 | -32.50 | -31.00 | 0.76 |
| 4.00 | -9.17 | -32.84 | -28.50 | 0.54 |
| 5.00 | -9.83 | -27.83 | -27.67 | 0.38 |
| 6.00 | -10.50 | -24.00 | -27.00 | 0.26 |
| 7.00 | -10.50 | -21.83 | -26.83 | 0.05 |
| 8.00 | -11.66 | -21.16 | -28.00 | 0.45 |
| 9.00 | -12.83 | -21.50 | -28.67 | 0.85 |
| 10.00 | -17.67 | -21.83 | -38.83 | 0.40 |
| 11.00 | -24.50 | -21.34 | -43.34 | 0.37 |
| 12.00 | -30.17 | -21.17 | -40.84 | 1.18 |
| 13.00 | -36.16 | -21.83 | -43.50 | 2.00 |
| 14.00 | -40.17 | -22.84 | -43.17 | 2.41 |
| 15.00 | -35.67 | -23.34 | -43.50 | 2.21 |
| 16.00 | -32.00 | -22.33 | -45.00 | 1.60 |
| 17.00 | -30.17 | -21.17 | -45.33 | 0.72 |
| 18.00 | -28.84 | -21.34 | -44.34 | 0.17 |
| 19.00 | -28.34 | -21.84 | -41.84 | 1.02 |
| 20.00 | -27.83 | -22.83 | -40.33 | 1.71 |
| 21.00 | -27.83 | -24.67 | -40.00 | 2.33 |
| 22.00 | -28.17 | -26.17 | -40.00 | 2.86 |
| 23.00 | -28.33 | -27.33 | -39.50 | 3.38 |
| 24.00 | -28.34 | -28.00 | -39.67 | 3.83 |
| 25.00 | -28.50 | -28.67 | -39.33 | 4.18 |



For detailed performance specs & shopping online see web site

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